

An Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)

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DECLARATION

I declare that this thesis entitled "An Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in the candidature of any other degree.

This thesis is lovingly dedicated to my dear parents—my late father, **Mohamad Yasim**, whom I lost when I was just four years old. Though our time together was brief, not a single day has passed without you in my prayers, and to my beloved mother, **Habshah Yusoff**, whose love and sacrifices have shaped me.

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ABSTRACT

Traditional Malay houses (TMH) in Kelantan represent a significant aspect of Malaysia's architectural and cultural heritage. However, rapid modernisation, urban expansion, and shifting socio-economic conditions have led to alterations that compromise their authenticity. This research investigates the evolution of TMH, focusing on how changes in materials, spatial configurations, and conservation approaches impact their authenticity and heritage value. The study seeks to address the central question: *How can the authenticity of Kelantan Traditional Malay Houses be effectively preserved within contemporary conservation practices?*

This study uses a qualitative methodology to integrate historical analysis, empirical fieldwork measured drawing reviews, and semi-structured interviews with homeowners, conservation experts, and heritage practitioners. Site observations document physical transformations in KTMH, while legislative and policy analyses assess the effectiveness of existing conservation frameworks. The study also draws upon international and national conservation guidelines to contextualise authenticity-oriented conservation strategies.

Findings indicate that KTMH has undergone consistent and inconsistent changes over time. A key challenge is balancing the need for adaptation with preserving authenticity, as many interventions prioritise convenience over cultural continuity. Additionally, current conservation policies exhibit gaps in addressing the specific needs of vernacular timber structures, leading to inconsistent conservation practices.

This study culminates in developing an Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF), offering a structured approach to maintaining authenticity while accommodating necessary modifications. The framework emphasises context-driven conservation, continuity in traditional craftsmanship, adaptive reuse, and community participation to ensure the sustainable preservation of KTMH and comprises six key components of Authenticity: (a) Form and Design, (b) Materials and Substance, (c) Use and Function, (d) Traditions, Techniques, and Management Systems, (e) Location and Setting, and (f) Spirit and Feeling. This research contributes to heritage conservation discourse by redefining authenticity as a dynamic and adaptable concept rather than a static ideal. It advocates for culturally responsive conservation strategies that respect tangible and intangible heritage values, ensuring the survival of KTMH as a living architectural legacy for future generations.

Keywords: Authenticity-Oriented Framework, Kelantan Traditional Malay Houses (KTMH), Traditional Malay architecture, Conservation Framework, Vernacular Architecture

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LIST OF ABBREVIATIONS

ASEAN	The Association of Southeast Asian Nations
GCHB	Guideline of Conservation of Heritage Building
ICOMOS	International Council on Monuments and Sites
KALAM	Centre for the Study of Built Environment in the Malay World
LGD	Local Government Department
MYR	Malaysian Ringgit
NHA	National Heritage Act
NHD	National Heritage Department
КТМН	Kelantan Traditional Malay House
KTMH-AoCF	Kelantan Traditional Malay House Authenticity-Oriented Conservation Framework
ТМН	Traditional Malay House
UiTM	Universiti Teknologi MARA
UNESCO	United Nations Educational, Scientific and Cultural Organization

Introduction

Traditional Malay houses represent a distinctive and rich architectural and cultural heritage that has evolved over centuries, reflecting their time's social, environmental, and historical context. This research explored the evolution of traditional Malay architecture, examining its defining characteristics, cultural symbolism, and the various factors that have influenced its transformation over the past century. The central research problem addresses the challenge of maintaining the authenticity of these houses in the context of their conservation. The primary objectives of this study are twofold: first, to provide a refined and comprehensive definition of a traditional Malay house that captures its architectural form, cultural meaning, and historical relevance, and second, to propose a conservation framework that prioritizes the preservation of these houses' authenticity. The structure of this chapter will follow a clear and logical sequence, beginning with an overview of the background and contextual setting, followed by a detailed examination of the research problem, objectives, and research questions, along with a discussion of the significance of this study. The chapter will conclude by acknowledging the research limitations and potential challenges.

1.1 Background of study

The traditional Malay house in Peninsular Malaysia is a quintessential example of vernacular architecture, deeply rooted in the cultural and historical fabric of the Malay people. In her seminal work The Living House, Waterson (1990) emphasises that vernacular architecture serves more than just a shelter; it embodies a social and symbolic space that reflects and shapes the worldview of its creators and inhabitants. Within the context of this thesis, the term "Traditional Malay House" refers to timber constructions renowned for their exceptional craftsmanship (Aida et al., 2021) and represents the traditional form of dwelling for the Malay people in Peninsular Malaysia—formerly Malaya—during the British colonial era.

Craftsmanship in traditional Malay architecture encompasses two fundamental aspects: construction techniques and decorative elements. The Malay building system is characterised by its flexibility, enabling the extension, disassembly, and relocation of these dwellings. As Hilton (1992) highlighted, this modular approach is a hallmark of Malay architecture, underscoring a system that allows for both prefabrication and adaptation. Additionally, the

decorative elements found in these houses are a testament to the harmonious integration of functionality and aesthetics (Mohd, 2018). These embellishments serve as a visual manifestation of the Malay worldview, encapsulating symbols, arts, and philosophy emblematic of Malay culture. They are the product of the skilled work of indigenous artisans or carpenters. Thus, combining structural and decorative elements contributes to the high regard for craftsmanship in traditional Malay architecture.

The traditional Malay house is a profound symbol of integrating technical, cultural, and spiritual knowledge within a built form. It is not merely a dwelling but a central element of Malaysian architectural identity. Preserving these houses and their values has long been a shared goal among local architects, conservationists, and scholars. These efforts contribute to the enduring success of Malay vernacular architecture, which is inherently responsive to its surroundings' local context—both physical and cultural—and ultimately represents the nation's distinct identity.

However, questions persist regarding the specific features distinguishing traditional Malay houses from other forms of traditional architecture. Moreover, as the world changes rapidly, the conservation of these houses presents a pressing challenge. Given that traditional Malay houses embody the region's history, identity, and continuity, it is essential to address how their conservation can ensure the survival of these qualities for future generations. According to the UNESCO definition of cultural heritage, the traditional Malay house can be classified as tangible cultural heritage, as it offers invaluable insight into the culture and society that produced it. At the same time, the practices, building processes, and living customs associated with these houses fall under intangible cultural heritage. As Anthony et al. (1989) assert, "no traditional culture exists without living participants in a tradition," making it crucial to identify which aspects of authenticity should be preserved when conserving traditional Malay houses, given the presence of tangible and intangible elements within their architectural framework.

1.2 Traditional Malay House

The traditional Malay house is a key representation of Malaysian architectural identity, embodying exceptional craftsmanship and deep cultural significance (Rahman et al., 2022; Hosseini et al., 2012; Wan Nordin et al., 2022). However, early colonial writings on the subject present a contrasting perspective. In 1909, Winstedt, an English Orientalist and colonial administrator who had served in the Federated Malay States since 1902, characterised the basic Malay house as a simple structure comprising a single space that accommodated sleeping and cooking areas, as well as a reception area for visitors (Winstedt, 1909). Winstedt

was among the earliest non-local writers to document and publish information about Malay houses.

Winstedt's depiction of the Malay house as a rudimentary dwelling with limited functionality has sparked debate on Malay vernacular architecture. His account, which seemingly overlooks the complexity and sophistication of traditional Malay building traditions, contrasts historical records that highlight the architectural advancements of the Malay people as early as the 14th century. The architectural heritage of Malay houses in Peninsular Malaysia can be traced back to the Malacca Sultanate, a significant era that shaped Malay architectural and construction techniques. The remnants of the Malacca Sultanate Palace at Bukit St. Paul serve as physical evidence of this heritage. Furthermore, the *Sejarah Melayu* (Malay Annals), as recorded by Tun Seri Lanang in 1612, describes the grandeur of the Malacca Sultanate Palace, believed to have been built during the reign of Sultan Mansur Syah (1456–1477) (Tun Seri Lanang, 1612). The architectural influence of the Malacca Sultanate remains visible in various historic structures throughout Malacca Town, further affirming the advanced construction methods employed during that period. The detailed descriptions of the Melaka Palace in the *Sejarah Melayu* depict an elaborate and sophisticated structure, attesting to the rich architectural and construction heritage of the 14th century.

The Sejarah Melayu describes the Melaka Palace as an architectural masterpiece with large columns, multiple levels, finely crafted windows, intricate carvings, and elaborate decorative elements, including gold gilding and red glass embellishments. Such historical accounts challenge Winstedt's simplistic portrayal of the Malay house as an unsophisticated structure, instead highlighting its refined craftsmanship and technological ingenuity. Similarly, the *Hikayat Patani*, another historical text, provides further evidence of the architectural complexity of traditional Malay structures, reinforcing the notion that Malay architecture was far more sophisticated than early colonial interpretations suggested (Teeuw & Wyatt, 1970).



Figure 1.1: An artist impression of the Melaka Palace as described in the Malay Annals. (Source: Melaka World Heritage, 2011)



Figure 1.2: Different artist's impression of the Melaka Palace in WG Shellabear's version of Malay Annals. (Source: Melaka World Heritage, 2011)

A contemporary replica of the Malacca Sultanate Palace, constructed in 1984 and inaugurated as a Cultural Museum in 1986, was intended to represent this historical legacy. However, scholarly critiques suggest that the replica does not accurately reflect the historical descriptions it purports to be based on, and it diverges from key architectural aspects (Hoyt, 1993). One of the primary discrepancies is its location at the base of the hill on the southern side rather than near the top on the northern side, where it would have faced the river and the old merchants' quarters. The remains of a Portuguese church and Portuguese and Dutch origin tombstones occupy the original site. While the replica deserves recognition for its use of premium hardwood and its reliance on traditional timber joinery without nails, its design was not developed with input from architectural historians, master builders, or craftsmen. Instead, it was the product of an imaginative interpretation by artists from the Melaka Painters' Association (Tajudeen, 2008). The official tourism guidebook of Melaka asserts that the replica's design was based on visuals provided by the Architecture Unit of the Public Works Department (Melaka State Government, 2004). However, it is widely acknowledged that the

structure does not fully align with the historical descriptions recorded by descendants of the Melaka royal court, as it fails to incorporate all the stipulated architectural aspects (Asmad, 1980).

These discrepancies underscore the challenges of reconstructing historical architectural forms without rigorous scholarly validation. The Melaka Sultanate Palace replica case highlights the need for conservation efforts to be guided by historical accuracy and expert knowledge to ensure that reconstructions faithfully preserve the authenticity of traditional Malay architectural heritage.



Figure 1.3: Replica of Melaka Palace. (Source: Faizal Rahmat, 2018)

The evolution of Malay architecture and construction techniques since the 15th century presents significant questions regarding the factors that have influenced its transformation. These inquiries necessitate a deeper exploration of the forces that have shaped Malay architectural styles. Notably, Winstedt's interpretation of the Malay house has been frequently cited by scholars, including Malaysian researchers, demonstrating its impact on academic discourse surrounding traditional Malay architecture. However, the disparities between his account and historical descriptions highlight the complexity and diversity of Malay architectural traditions, reinforcing the need for a more nuanced and comprehensive understanding of the subject.

The scholarship of the late 19th and early 20th centuries, predominantly contributed by non-Malaysian researchers, has often presented contradictory perspectives on the traditional Malay house. Bougas (1990), in his study on Patani during the early 17th century, encountered substantial difficulties in reconstructing the appearance of a 17th-century palace at the site of Kota Raja due to the absence of surviving structures and the fragmentary nature of historical descriptions. Nevertheless, Bougas synthesised information from the Tawarikh Raja Kota and the Hikayat Patani, alongside oral traditions and comparative references to other palaces in Patani and Malaysia, to formulate a more comprehensive understanding of traditional Malay palaces and houses. His findings suggest that the dwellings of the Malay elite often mirrored the design of royal palaces, albeit on a smaller scale. Similarly, Hugh Clifford, a British civil servant who arrived in Malaya in 1883 and developed familiarity with the local people and Malay culture, contributed to the early documentation of Malay houses. While Clifford (1897) provided limited descriptions of these structures, he noted the prevalent use of bamboo as a construction material and highlighted wood carving as a common decorative feature. His observations, which suggest the presence of diverse house types, challenge Winstedt's portrayal of Malay houses as rudimentary and of inferior quality. The underlying motivations behind Winstedt's claims remain unclear; however, Professor Emeritus Kho Kay Kim (1974) argued that early European scholars often viewed Malay architecture through a Eurocentric lens. As a leading advocate of "Malaysian-centric historiography," Kho emphasised the necessity of reevaluating historical narratives to correct such biases. In addition to Winstedt and Clifford, other non-local scholars, including Ivor Evans (1918), Hilton (1956), and Mubin Sheppard (1962), have also made significant contributions to the study of traditional Malay houses.

External influences have played a crucial role in shaping the architecture of the traditional Malay house. Munshi Abdullah, a Malayan writer of mixed Tamil and Yemeni descent, observed the Malays' tendency to adopt new and foreign elements in their architectural practices. In his autobiography, *Hikayat Munshi*, published in 1849, Abdullah provided an account of daily life in Malaya, in which he indirectly described the construction of Malay houses. He noted that these houses were often built without specific arrangements or order on their sites, were oriented toward rivers, and, in some regions, were deliberately positioned to avoid facing the setting sun.

The traditional Malay house has continuously transformed due to external influences, including colonisation, immigration, intermarriage, and cultural exchanges. Over time, various architectural styles introduced to Peninsular Malaysia (formerly Malaya) have influenced Malay houses' design, spatial organisation, materials, and construction techniques. The 20th century marked a pivotal transition between traditionalism and modernity in Malay society, significantly affecting the architectural characteristics of traditional Malay dwellings. Notable changes during this period include the evolution of spatial configurations, the refinement of

construction techniques, modifications in house design, and the incorporation of nontraditional materials. While these developments have altered the architectural expression of traditional Malay houses, some have deviated from established norms and, in doing so, have reshaped the distinct identity of these structures. Nonetheless, specific architectural adaptations have been widely accepted within the Malay community in specific regions of Malaysia, ultimately becoming integral to the continued evolution of Malay architecture.

The intersection between external influences and architectural evolution raises critical concerns about maintaining authenticity in traditional Malay architecture. While modernisation has undoubtedly influenced traditional Malay houses' structural and aesthetic characteristics, the degree to which these changes are considered authentic remains subject to debate. On the one hand, deviations in spatial organisation, construction methods, and material use may compromise the authenticity of traditional Malay houses, distancing them from their cultural and historical foundations. Such changes challenge preserving the unique identity and heritage that define traditional Malay architecture.

Conversely, although departing from traditional norms, particular architectural adaptations have been embraced within Malay communities and are now regarded as integral aspects of Malay architectural heritage. These developments reflect the adaptability of traditional Malay architecture and its ability to incorporate external influences while maintaining its cultural essence. Rather than undermining authenticity, such adaptations demonstrate the resilience and dynamism of Malay architectural traditions in response to changing societal and environmental conditions.

A balanced approach is required to determine how much changes in traditional Malay architecture can be accommodated while preserving authenticity. It is crucial to safeguard traditional Malay houses' core elements and defining characteristics while acknowledging that architecture is an evolving discipline. As long as these modifications remain respectful of the cultural and historical context and are rooted in local traditions and values, they can contribute to traditional Malay architecture's sustained relevance and vitality.

Maintaining authenticity in traditional Malay architecture requires a thoughtful and critical approach. This entails striking a balance between conserving traditional Malay houses' essential features and values while recognising the external influences and adaptive strategies that have shaped their development. By doing so, traditional Malay houses' architectural heritage and cultural significance can be preserved for future generations, ensuring their continuity within Malaysia's evolving architectural landscape.



Figure 1.4: Renovated and extended traditional Malay house with brick walls under the original on stilts, located in Kota Bharu, Kelantan, Malaysia (Source: Qays & Mohamed, 2021)

1.3 Research Problem Formulation

The existing research on traditional Malay houses has provided important insights into their definition, evolution, and cultural significance. However, a significant gap remains in the literature regarding the preservation of authenticity and architectural character during the conservation process and the factors that have influenced changes in traditional Malay architecture over the past century. While several studies have explored aspects of traditional Malay houses, such as their cultural significance, architectural features, and historical development, there is a pressing need to address the challenges and approaches involved in preserving authenticity while conserving these structures. One critical issue in this field is determining which aspects of traditional Malay houses should be considered authentic and worthy of preservation. This question underscores the importance of clearly defining and understanding authenticity within the context of traditional Malay architecture, a concept subject to evolving interpretations over time. Bridging this gap in the literature is vital, as it ensures the continued preservation of the cultural and architectural heritage embodied by traditional Malay houses for future generations.

The earliest written records on Malay houses predominantly stem from non-Malaysian sources, with key contributions from scholars such as Winstedt (1929), Clifford (1897), Ivor Evans (1918), Hilton (1956), and Mubin Sheppard (1962). These early works were primarily

published by non-Malay scholars affiliated with the British colonial administration in Malaya. It was not until 1981 that a Malaysian scholar, Wan Burhanuddin, began to engage with the topic of Malay houses critically. Wan Burhanuddin (1981) recognized that changes in house forms over time were inevitable, influenced by factors such as resource availability, technological advancements, and shifts in lifestyle. However, the accuracy and reliability of early writings require critical examination, as they were authored by non-local scholars with limited understanding of the Malay cultural context. Given that these scholars often worked within the framework of colonial perspectives, it is essential to assess the extent of their knowledge and the potential biases that may have shaped their interpretations. This necessitates further investigation to address early scholarship's limitations and ensure a more nuanced and accurate understanding of traditional Malay houses.

In light of these concerns, Table 1 is referenced to guide the development of research questions and objectives to address the gaps and limitations in the literature on Malay houses. By analysing these early writings and incorporating a more detailed understanding of authenticity, future research can contribute to the preservation and continued relevance of traditional Malay architectural heritage.

SQ1 - What are the key changes and transformations have occurred in transformations in Kelantan tradit
RQ1 - What are the key factors that drive changes and transformations in Kelantan traditional Malay houses (KTMH) and factors influence these changes?Kelantan traditional Malay houses ingislation related to conserving

Table 1.1: Formulation of Research Question and Objectives

1.4 Research Methodology

To achieve the study's objectives, the research employed a methodological approach to ensure a comprehensive understanding of the evolving patterns, conservation practices, and authenticity of Kelantan Traditional Malay Houses (KTMH). Research Objective 1 (RO1) focused on investigating the transformations in KTMH and identifying the key factors driving these changes. A detailed literature review provided a historical context tracing the origins of traditional Malay houses to the Malacca Sultanate, highlighting influences such as colonisation, political shifts, and cultural interactions. Empirical investigations, including onsite observations and analysis of existing measured drawings, documented physical changes in KTMH. At the same time, in-depth interviews with house owners and experts provided qualitative insights into these transformations' socio-economic and cultural drivers. To ensure the reliability of findings, a triangulation approach integrated data from various sources, establishing a robust framework for understanding how historical, cultural, and economic factors have shaped the evolution of KTMH.

Research Objective 2 (RO2) explored the existing conservation frameworks and legislation relevant to preserving authenticity in KTMH, both within Malaysia and in an international context. The study conducted an extensive literature review to examine global and national conservation policies, emphasising how different cultural perspectives influence the conceptualisation of authenticity. A systematic document analysis assessed international charters, conventions, and Malaysian heritage legislation, identifying key strengths and gaps in conservation practices. This analysis examined how authenticity is addressed in conserving traditional Malay architecture, revealing inconsistencies between international standards and local implementation. By synthesising these findings, the research contributed valuable insights into the challenges of safeguarding KTMH within existing legal and regulatory frameworks, underscoring the need for culturally responsive conservation approaches.

Research Objective 3 (RO3) aimed to redefine the concept of authenticity in traditional Malay architecture by integrating historical, cultural, and architectural perspectives. Data from the literature review, on-site observations, measured drawing reviews, interviews, and document analysis were triangulated to offer a nuanced understanding of authenticity. This approach captured historical and contemporary perceptions of authenticity, acknowledging the dynamic nature of traditional Malay architecture. The research highlighted the tension between preserving architectural integrity and accommodating the evolving needs of house occupants, emphasising the necessity of a balanced conservation strategy that respects tradition and adaptation. By redefining authenticity within the context of KTMH, the study provided a

theoretical foundation for more culturally sensitive conservation practices that align with the realities of contemporary Malay society.

Building on RO1, RO2, and RO3 findings, Research Objective 4 (RO4) focused on developing the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This framework was constructed through an iterative process of triangulating data, cross-referencing research findings, and validating key conservation principles. By integrating empirical and theoretical insights, the KTMH-AoCF prioritises authenticity-centred conservation approaches that maintain the architectural and cultural heritage of KTMH while addressing the evolving needs of its users. The framework offers a structured methodology for policymakers, conservationists, and heritage practitioners, ensuring that conservation efforts are historically informed and practically viable. Ultimately, this study contributes to the sustainable preservation of KTMH by providing a well-founded, authenticity-oriented conservation model that safeguards Malaysia's architectural heritage for future generations.



Figure 1.5: Research methodology flowchart.

1.5 Significance of the study

1.5.1 Contribution of Knowledge

This study contributes significantly to the body of knowledge on architectural heritage and conservation by addressing the critical issue of authenticity in the conservation of Kelantan Traditional Malay Houses (KTMH). The study provides valuable insights into the factors influencing these architectural shifts by systematically examining the key changes and transformations that have occurred in KTMH. Through a comprehensive analysis of historical, cultural, and socio-economic drivers, the research highlights how modernisation, colonisation, urbanisation, and changing social dynamics have altered traditional Malay houses. This investigation contributes to an expanded understanding of how these factors impact the physical and spatial configurations of KTMH and the broader implications for the continuity of Malay architectural heritage. By documenting these transformations, the study provides a crucial reference for future research and policy development in heritage conservation, ensuring that the evolution of KTMH is understood within a broader historical and cultural context.

The study further contributes to knowledge by critically analysing existing conservation practices and legislation at both national and international levels to assess their impact on preserving authenticity in traditional Malay houses. Current conservation frameworks often adopt approaches that may not fully accommodate Malay architecture's cultural and contextual significance. By identifying strengths and limitations in existing conservation policies, the study provides an essential critique of how international charters and national heritage regulations shape the preservation of KTMH. This analysis enhances scholarly discourse on heritage conservation in Malaysia. It offers valuable recommendations for improving conservation strategies that align more closely with traditional Malay houses' architectural, cultural, and social realities. The research underscores the need for a conservation approach that balances regulatory mechanisms with community engagement, ensuring conservation efforts remain contextually relevant and culturally sensitive.

Additionally, this study advances scholarly discourse on the evolving concept of authenticity in traditional Malay house conservation. Modernisation, socio-economic shifts, and changing household needs have redefined perceptions of authenticity, creating tension between preserving original architectural elements and adapting heritage structures for contemporary use. By exploring how modernisation and occupant needs influence conservation practices, the study provides a critical perspective on authenticity's fluid and dynamic nature in heritage conservation. This

contribution is particularly valuable in Malaysia, where rapid urbanisation and technological advancements continue to impact the integrity of traditional architectural heritage. The study challenges static definitions of authenticity and advocates for a more adaptive approach that recognises the living nature of heritage buildings while ensuring the preservation of their cultural significance.

The most significant contribution of this research lies in developing an **Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)**. By synthesising insights from historical analysis, empirical fieldwork, expert interviews, and policy reviews, the study proposes a structured methodology that prioritises authenticity while addressing the practical challenges of conservation. The proposed framework provides a much-needed reference for policymakers, conservationists, and heritage practitioners seeking to implement effective conservation strategies that uphold the integrity of KTMH. Its emphasis on authenticity-centred conservation ensures that traditional Malay houses are not merely preserved as static historical artefacts but continue to serve as living cultural spaces that reflect the identity and heritage of the Malay community.



Figure 1.6: The Traditional Malay Houses of Terengganu. (Source: Mohd Rashid, 2018)

1.5.2 Intent of the Study

This study intends to explore the evolving architectural and cultural landscape of Kelantan Traditional Malay Houses (KTMH) and develop a comprehensive framework for their conservation, specifically focusing on maintaining their authenticity amidst changing societal, economic, and environmental conditions. The research addresses

critical questions concerning the factors driving changes in KTMH, the implications of these changes for their authenticity, and the broader conservation practices that shape their preservation. At its core, this study seeks to enhance the understanding of how traditional Malay houses in Kelantan have evolved and how their continued conservation can be balanced with modern needs.

Through investigating key changes and transformations in KTMH, the study examines the factors that have influenced these architectural developments. These factors include historical influences such as colonisation, political shifts, the introduction of new building materials and techniques, and the role of modern lifestyles and economic pressures. By identifying these factors, the study sheds light on how they have shaped traditional Malay houses' design, function, and structure and what this means for their cultural and architectural integrity. The research recognises that changes in these houses are inevitable. However, it also emphasises the need to critically evaluate the nature of these transformations, ensuring that they do not compromise the authenticity of these heritage structures.

A significant aspect of the study is to investigate current conservation practices and legislation, both locally and internationally, that pertain to the preservation of authenticity in traditional Malay houses. The research explores how existing conservation frameworks, policies, and laws address the complexities of preserving traditional houses' architectural and cultural authenticity. The intent is to identify the strengths and weaknesses of these practices and the broader implications for the ongoing preservation of Malay heritage in the face of modern pressures. By evaluating international charters and national regulations, the study provides insights into how authenticity is understood and applied in conservation practices, offering recommendations for improvements in heritage protection.

The study also aims to reconceptualise the notion of authenticity in the context of traditional Malay house conservation. Given the dynamic nature of the houses and the society around them, this study acknowledges that authenticity is not a fixed or static concept. Instead, it is influenced by various factors, including cultural evolution, technological advancements, and the changing needs of house occupants. As such, the research explores how modernisation and contemporary needs, including those of occupants and house owners, influence the interpretation of authenticity in conserving traditional Malay houses. This reflects a broader understanding of heritage conservation that accommodates the adaptive reuse of buildings while preserving their core cultural and architectural values.

Finally, the overarching aim of this study is to develop an Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This framework will serve as a practical and theoretical tool for guiding conservation efforts, ensuring that the preservation of KTMH is aligned with cultural authenticity and modern realities. By integrating insights from historical analysis, empirical observations, expert interviews, and conservation policy review, this framework will provide a holistic approach to preserving traditional Malay architecture in a manner that respects its cultural heritage while accommodating the evolving needs of its users.

1.6 Structure of the Thesis

This thesis is structured to address the research questions and objectives, exploring the authenticity and conservation of Kelantan Traditional Malay Houses (KTMH). The following chapter outlines the research's progression, from the introduction of the study's background to the development of a framework for conservation.

Chapter One: Introduction

Chapter one introduces the study, presenting the research problem, objectives, and methodology. The background of the traditional Malay house is explored in detail, offering a significant understanding of its cultural and architectural significance. The chapter also defines the research problem and outlines the specific research questions, which address the factors influencing changes in traditional Malay architecture, the impact of conservation practices, and the evolving concept of authenticity. The significance of the study and its contribution to architectural heritage and conservation are discussed, setting the stage for the research's broader implications. The structure of the thesis is also presented, giving the reader an overview of the organisation of the subsequent chapters.

Chapter Two: Architectural Studies of Traditional Malay Houses

This chapter provides an in-depth review of traditional Malay architecture, examining the evolution of Malay houses from a historical and cultural perspective. It introduces the concept of vernacular architecture and delves into the influences of Islam, Malay customs, and external factors such as colonisation on the design and construction of traditional Malay houses. The chapter further explores the regional variations in Malay architecture, focusing on the evolution of houses in Kelantan. Additionally, it discusses the challenges traditional Malay houses face, such as the depletion of forest resources and the impacts of urbanisation, providing a critical context for understanding the forces that have shaped their current form.

Chapter Three: Approaches, Practices, and Guidelines for Conserving Heritage and Authenticity in Building Conservation

Chapter Three reviews the international and Malaysian conservation frameworks for preserving authenticity in traditional buildings. The chapter highlights the evolution of global conservation policies, focusing on key charters and guidelines that inform heritage conservation practices. It also examines the legislative landscape in Malaysia, analysing the legal and regulatory structures that influence the conservation of traditional Malay houses. The challenges inherent in conserving heritage buildings, particularly concerning authenticity, are discussed, laying the groundwork for understanding the issues faced in conserving KTMH.

Chapter Four: Research Methodology

This chapter outlines the research methodology used to investigate the key research questions. It details the qualitative research approach, including ethical considerations, and provides a rationale for selecting Kota Bharu, Kelantan, as the study area. It describes the multi-method approach employed in the research, which includes document reviews, on-site observations, semi-structured interviews, and data analysis. This methodological framework ensures a thorough understanding of the factors influencing changes in KTMH, the current conservation practices, and the evolving concept of authenticity in Malay architecture.

Chapter Five: International and Malaysian Conservation Documents for the Preservation of KTMH in Relation to Authenticity

Chapter Five focuses on reviewing and analysing international and national conservation documents, particularly emphasising how authenticity is defined and preserved in traditional Malay houses. The chapter examines global charters and principles, comparing them to the conservation practices in Malaysia. It analyses the implications of these documents for the preservation of KTMH, identifying strengths and gaps in the existing conservation policies and practices.

Chapter Six: The Changing Pattern and Evolution of Traditional Malay House Architecture in Kelantan (KTMH)

This chapter investigates the historical and contemporary changes in the architecture of traditional Malay houses in Kelantan. Through case studies of specific houses, the research examines changes in form, design, materials, function, and tradition. The chapter also includes a detailed analysis of the factors driving these changes, such as modernisation, economic pressures, and the evolving needs of house owners. The impact of these changes on the authenticity and heritage value of KTMH is critically assessed.

Chapter Seven: Key Issues in the Conservation of Kelantan Traditional Malay Houses (KTMH) through the Insights of House Owners and Experts

Chapter Seven presents the insights gathered from interviews with house owners and experts in heritage conservation. This chapter focuses on the challenges faced in preserving KTMH and highlights the perspectives of those directly involved in the conservation process. It discusses the issues related to the physical condition of the houses, the role of traditions and techniques, and the importance of maintaining cultural continuity. The data collected provides essential insights into the complexities of preserving authenticity in the context of modern-day requirements and pressures.

Chapter Eight: Developing the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)

Chapter Eight synthesises the findings from previous chapters to develop the Authenticity-Oriented Framework for the Conservation of KTMH. This framework integrates the key components of authenticity identified throughout the research and provides a detailed approach to conserving traditional Malay houses while maintaining their cultural and architectural integrity. The chapter outlines the principles, strategies, and practices necessary to implement authenticity-focused conservation in the context of Kelantan, offering a practical tool for policymakers and conservationists.

Chapter Nine: Conclusion

The final chapter reviews the research process, summarising the key findings and contributions of the study. It reflects on the limitations of the research and proposes recommendations for future studies and policy implementation. The chapter also emphasises the importance of balancing tradition and modernisation in conserving traditional Malay houses and highlights the potential applications of the Authenticity-Oriented Framework for KTMH. Finally, the chapter offers a self-reflection on the research process, providing insights into the personal and academic growth achieved during the study.

Focus of the Research	CHAPTER 1 Introduction
	CHAPTER 2 Literature Review : Traditional Malay House
Background : Literature Review	CHAPTER 3 Literature Review : Approaches, Practices, and Guidelines in Building Conservation with a Focus on Authenticity
Methodology	CHAPTER 4 Research Methodology
	CHAPTER 5 International and Malaysian Conservation Document for the Preservation of KTMH in Relation to Authenticity
Analysis and Findings	CHAPTER 6 The Changing Pattern and Evolution of Traditional Malay House Architecture in Kelantan (KTMH)
	CHAPTER 7 Issues And Challenges in the Conservation of KTMH through the Insights of House Owners and Experts
Discussion and Final Conclusion	CHAPTER 8 Developing the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)
	CHAPTER 9 Conclusion

Figure 1.7: The summary of thesis structure.

1.7 Chapter Summary

This chapter establishes the foundation of this research by addressing the critical issue surrounding the survival of traditional Malay houses, specifically Kelantan Traditional Malay Houses (KTMH). Numerous factors, including modernisation, urbanisation, and a lack of adequate conservation efforts, threaten their preservation, which is a central concern of this study. This chapter outlines the research problem and the jeopardised conservation of KTMH and emphasises the need for an authenticity-oriented approach to their preservation.
The research aims to develop a framework for conserving KTMH that prioritizes these structures' authenticity, acknowledging their architectural and cultural significance. The research questions and objectives are clearly defined, focusing on the evolving factors influencing KTMH, the current conservation practices, and how authenticity can be maintained amid changing societal needs. The significance of the study is highlighted by its potential to contribute to the broader field of architectural heritage conservation, particularly in the context of traditional Malay houses. The thesis not only addresses the pressing issues related to KTMH conservation but also aims to expand existing knowledge on preserving this unique Malaysian heritage. The structure of the thesis is outlined, providing a roadmap for the study's exploration of these concerns and its contribution to ensuring the continued relevance and preservation of KTMH for future generations.

Architectural Studies of Traditional Malay Houses

2.1 Introduction

This chapter provides an in-depth review of traditional Malay architecture, examining the evolution of Malay houses from a historical and cultural perspective. It introduces the concept of vernacular architecture and delves into the influences of Islam, Malay customs, and external factors such as colonisation on the design and construction of traditional Malay houses. The chapter further explores the regional variations in Malay architecture, focusing on the evolution of houses in Kelantan. Additionally, it discusses the challenges traditional Malay houses face, such as the depletion of forest resources and the impacts of urbanisation, providing a critical context for understanding the forces that have shaped their current form.

2.2 Vernacular Architecture

Vernacular architecture shows how built forms are perceived and developed rationally based on the region's geography, climate and culture (Manjusha, 2016). These structures are a testament to human ingenuity, often designed by non-professionals to meet the specific needs of their communities. Defined by Ronald Brunskill, vernacular architecture prioritises functionality using local materials and techniques. However, aesthetic considerations may still play a secondary role. This feature of practical orientation and relevance to the surrounding area makes it necessary for architectural discussion.

In relative terms, rather than architecture per se, vernacular design is mainly attributed to culture and skill without learning from formal institutions. Frank Lloyd Wright expressed that it is a "folk building" that emerges as a natural growth that is functional in meeting specific requirements and is contextually situated within the landscape (Oliver, 1997). This local perspective paves the way towards creating architecture with meaning, as illustrated in Oliver's Encyclopaedia of Vernacular Architecture of the World (1997), which reflects the cultures that created the architecture within a particular historical period. Such architecture is absolute because it depends on local materials and indigenous technologies. Also, it expresses or embodies the interaction of man, place and culture.

Vernacular architecture is more than just the built form; it includes the *Tukangs* or master crafmans' cultural, spiritual, and symbolic values. People's customs may also influence the whole design and making of the building, thus attributing meaning to the site beyond its intended (Waterson, 1997; Hanan, 2017). For example, Southeast Asian cultural and religious traditions that promote hierarchy use sacred practices when constructing houses, where the spatial arrangement and order focus more on the social values within society.

The vernacular architecture of Malaysia can be viewed within the confines of the Southeast Asian cultural framework and climatic response. This climatic feature of the region has resulted in the usage of certain concepts in architecture, for example, sloping roofs, elevation of buildings above the ground, and porous walls, all used to improve the comfort for occupation (Waterson, 1997; Ahmad, 2007). This climatic feature is strongly exhibited in the construction of traditional Malay houses (TMHs) that display a unique vernacular image of the architectural profile in Malaysia. These aesthetic structures reflect the people's cultural values and are custodians of the region's artistry era.

"Vernacular" is derived from the Latin root vernaculus, which entails domestic, native, or indigenous (Rasdi, 2005). Such an etymological background reinforces its perception about place-making instead of fashion or style. For Rapoport (1969), vernacular architecture is a process usually formed around the construction necessities and the existing resources; on the other hand, Glassie (2000) focuses on it as a tool for revealing meanings concealed in architectural objects. Such an architecture is elaborated and developed through time in a context of cultural, technological, and environmental changes. Although they belong to a class of architecture previously considered basic, vernacular structures have advanced in cultural expressions and innovations, making them appealing research for modern designers.

Malaysia's vernacular architecture and, more broadly, Southeast Asia as a whole evolved from the common archetype of Austronesian cultures and similar ecological conditions. Not located in a limited geographical area, the cultures of this region, however, are pretty uniform in their adaptation to the tropical climate: raised floors, wide eaves, and open interiors for ventilation, for instance. Considered a form of art, these architectural variations were implemented to meet various environmental challenges and create room for different social and cultural aspects.

In the case of Malaysia, the traditional Malay house (TMH) would be best suited to represent the vernacular. Built mainly of timber and other local resources, these houses exhibit advanced climatic adaptation, community requirements, and cultural significance. For instance, the TMH's elaborate design features and internal arrangements are intended to be aesthetically pleasing and provide a sense of prestige and respect for the traditions of the family. With the master craftsman – *Tukang* – at the helm, these houses are designed to meet

both practical as well as spiritual purposes, resonating with the culture and the people who occupy them.

The relationship between vernacular architecture and its creators' social structures and rituals. In Malaysia, for instance, TMHs are not merely shelters; they have meanings related to identity, hierarchy, and spirituality. In terms of the design of these houses, the social status of their owners determines how elaborate a house is, with more carved figures and larger space. The layout in which these activities took place is consistent with custom, where functions such as the bedroom, family, and rituals have unique places.



Figure 2.1: Malay houses close to the banks of the Klang River in 1920. (Source: Cheah, 2011)

The vernacular architecture is further enriched in cultural terms by its philosophical and ritual aspects. In Malaysia, for example, the house orientation and the type of timber used in construction are done spiritually as part of some practices to sustain the balance of nature. Such cultures give the built forms a purpose and a connection to the past, anchoring the present into an existing culture.

Still, vernacular architecture is faced with and even challenged by some issues in modern times while holding to historical and cultural values. Resources, urbanisation, and Western elements have severely changed traditional building processes. New materials provide benefits like stability and ease of construction. However, their incorporation occasionally degrades vernacular designs' cultural and environmental integrity. In the TMHs, it is observed

that this conflict between modern and traditional values is present in that the use of nontraditional materials can lead to a loss of authentic and symbolic meanings of the building.

2.3 Malay People

Before further discussion of Malay architecture, it is essential first to define the identity of the Malay people, as it plays a fundamental role in shaping the characteristics of their built environment. As outlined in *Article 160 of the Malaysia Federal Constitution,* the definition of a Malay incorporates three key components: religious affiliation, linguistic practice, and adherence to cultural customs. These components collectively shape the Malay identity and are deeply reflected in the architecture of the Malay world specifically in Malaysia.

Firstly, a Malay person is defined as one who professes the religion of Islam, which profoundly influences the cultural and architectural expressions within Malay society. The religious beliefs of Islam significantly contribute to the design and construction of traditional Malay houses, influencing the house's architectural form and spatial organisation. For instance, Islamic principles of cleanliness, modesty, and privacy are embedded in the layout and use of spaces within Malay dwellings, with specific rooms designated for prayer and family gatherings in alignment with Islamic practices (Mutalib, 1977).

Secondly, the Malay language, being the primary means of communication among the Malay people, plays a significant role in shaping Malay culture's identity and architectural characteristics. The language is used in daily interactions and in the naming and categorisation of architectural elements, such as the *serambi* (veranda) or *rumah ibu* (main house). Additionally, the oral transmission of traditional building knowledge passed down through generations in Malay has contributed to preserving building techniques and architectural designs. The linguistic aspect of Malay identity further enhances understanding of the unique terminology and symbolism that informs the construction of traditional Malay houses (Rahman, 1998).

Thirdly, the adherence to Malay customs constitutes an integral part of the Malay identity and is manifested in the architecture of traditional Malay houses. Malay customs encompass a wide range of cultural practices, rituals, and social norms, which influence these houses' design, construction, and ornamentation. Customary practices, such as the positioning of the house to reflect cultural beliefs about the cosmos and the use of materials with symbolic significance, are fundamental to understanding Malay architectural principles. The design and construction of a traditional Malay house are thus associated with daily life, religious ceremonies, social interactions, and communal activities, all of which reflect the broader Malay cultural landscape (Daud, 1989).

The "Malay world" refers to a vast geographic area that includes Southeast Asian regions, ranging from Vietnam, Cambodia, and southern Thailand to Malaysia, Singapore, Indonesia, Brunei, and the southern Philippines (Mutalib, 1977). This region, which houses diverse cultures and societies, has a rich history that is reflected in its architecture. One of the earliest written accounts related to the Malay world is *Sejarah Melayu* or *Sulalatul Salatin*, authored by Abdullah Munshi in 1612, which serves as a foundational text for understanding Malay history and culture (Rahman, 1998). Before the arrival of Islam, large parts of the Malay world were influenced by the Kingdom of Sriwijaya, which flourished between the seventh and fourteenth centuries (George & Charles, 1992). The kingdom, deeply influenced by Hindu-Buddhist traditions, played a crucial role in developing the region's trade networks and cultural exchanges, mainly through its interactions with Indian merchants who introduced Hinduism and Buddhism to the Malay archipelago (Rajantheran, 1999).

The introduction of Islam to the Malay world occurred in the twelfth century through the state of Pasai, located in northern Sumatra. This introduction was facilitated by Arab traders from Saudi Arabia, marking a significant shift in the region's cultural and religious landscape (Hamka, 1954). While Pasai is recognised as the first state to adopt Islam, the city-state of Malacca played a significant role in the broader propagation of Islamic influence throughout the Malay world. The conversion of Parameswara, the founder of Malacca, to Islam in 1414, following his marriage to a princess from Pasai and the adoption of the Muslim name Megat Iskandar Shah, catalysed the spread of Islam to other regions, including Palembang in Sumatra, Patani in southern Thailand, North Borneo, Brunei, and Mindanao in the southern Philippines (Mutalib, 1977). The spread of Islam through these regions further shaped the architectural and cultural expressions of the Malay people, influencing the design of religious and domestic spaces, which blended indigenous traditions with Islamic influences.

The definition of the Malay people, as shaped by their religion, language, and customs, directly influences the distinct characteristics of Malay architecture. The integration of Islamic beliefs, linguistic practices, and cultural traditions is evident in the design and construction of traditional Malay houses, which serve as important cultural artefacts embodying the Malay community's values and practices. Furthermore, understanding the historical context of the Malay world, particularly the influence of Sriwijaya and the later propagation of Islam through Malacca, provides valuable insight into the development of architectural forms in the region. As such, appreciating these factors is essential for understanding traditional Malay houses'

cultural and architectural significance and their role in the broader Southeast Asian heritage landscape.

2.4 Key Features of Traditional Malay Houses

2.4.1 Kampung and Its Relationship to Traditional Malay Housing

The term *kampung* in Malay refers to a village settlement, a concept deeply intertwined with the rural and communal character of traditional Malay life. The boundaries of a *kampung* are often flexible, and its development may extend towards neighbouring *kampungs*, making it challenging to determine precise limits or perimeters (Tan, 2019). In many instances, the extent of a *kampung* is commonly identified by the distance to where the Muslim call to prayer, the *adhan*, can be heard. However, this method is not exceptionally reliable, as the direction and strength of sound can vary based on environmental factors such as wind direction (Rasdi, 2005).

Historically, the term *kampung* has two meanings. It can refer to a cluster or collection of houses forming a community or denote a single house and its surrounding compound (Lim, 1987). Older definitions emphasised the relationship between the *kampung* and its central mosque. As a central and significant religious institution, the mosque became a defining feature of the *kampung* layout. The surrounding area would radiate outwards from the mosque, reflecting the spatial organisation of the traditional Malay village, where central institutions like the mosque and the palace were the focal points of attention. This centrality of the mosque illustrates the traditional Malay spatial perception, where the community is structured around key cultural and religious institutions.

In modern usage, the definition of *kampung* as a collective of houses within a defined area is widely accepted. This is evident in the old and contemporary Malay villages across the Malay Peninsula (Rasdi, 2005). This concept of *kampung* embodies the communal aspect of Malay rural life, where the village is made up of a series of houses that are physically and socially interconnected. Traditional Malay houses within the *kampung* typically share features such as a raised floor, simple yet functional construction, and a strong connection to the surrounding natural environment. The spatial organisation of the *kampung* plays a crucial role in fostering social interaction and community ties among its residents (Rasdi, 2005).

The traditional Malay house, or *rumah Melayu*, is essential to the *kampung* layout (Lim, 1987). These houses are constructed with locally sourced materials such as timber, bamboo, and thatch, which reflect the area's rural context and available resources (Endut, 1993). The traditional Malay house's open, flexible design aligns with the kampung's communal nature, where family and social life are associated, and the spaces serve multiple functions. This architectural style facilitates a harmonious coexistence with nature and supports the lifestyle of the residents, who often engage in agricultural and communal activities.

The concept of *kampung* is not only about the physical arrangement of houses but also about how the built environment supports social and cultural practices (Lim, 1987). The *kampung* serves as a living space where religious, social, and familial values are expressed through the house and community organisation. In this context, the traditional Malay house within the *kampung* is more than just a shelter; it is a space that reflects and supports the Malay people's collective identity and way of life.



Figure 2.2: Traditional Malay house in a *kampung* setting, blending functionality with nature. (Source: Lim, 1987).

2.4.2 Main Spaces and Interior Layout of Traditional Malay Houses

The traditional Malay house follows a simple yet functional layout that reflects the Malay community's cultural values and societal structure. Typically, the house consists of three main areas: *serambi* (the reception area), *rumah ibu* (main house), and *rumah dapur* (kitchen area). These areas are defined by slight changes in floor levels and the positioning of doorways, which separate each space (Kamal et al., 2004). The *rumah ibu* is the highest floor level, symbolising its importance as the heart of the house, where family living, sleeping, and praying occur. The *serambi* and *rumah dapur* have slightly lower floors, underscoring the sanctity and centrality of the *rumah ibu* in the traditional Malay house (Said & Embi, 2008).

- i. *Serambi* (Veranda): As a transitional area between the public and private realms, the *serambi* is typically located at the front of the house. It functions as a space for social interaction, where men often engage in activities such as observing the surroundings and overseeing family affairs. Additionally, it serves as a welcoming area for guests (Yuan, 1987).
- ii. Rumah Ibu (Main House): This central, high-roofed section is the core private space for the family, exclusively accessible to family members and close acquaintances. It accommodates daily activities such as sleeping, sewing, praying, studying, and feasting. The interior design often features raised floor areas, emphasising the significance of this space and aiding in ventilation (Yuan, 1987; Said & Embi, 2008).
- iii. *Rumah Dapur* (Kitchen): Typically situated at the rear of the house, the *rumah dapur* is dedicated to cooking and food preparation. Its separation from the main house is a precautionary measure against fire hazards.

Intermediate Spaces and Hierarchical Structure

The traditional Malay house also features intermediate spaces that facilitate the transition between the primary areas:

- Anjung: Located at the front of the house, the anjung is a raised covered veranda accessed by stairs. It is a transition space between the public and private domains, where men can sit, observe their surroundings, and oversee family affairs. Additionally, this space is used to welcome and entertain casual visitors (Yuan, 1987).
- Serambi Gantung (Hanging Veranda): Positioned at a lower level than the *rumah ibu,* the *serambi gantung* is an extended, narrow area adjacent to the main house.

It functions as a space for social interactions and is often used to entertain male guests, reflecting the cultural norms of gendered spaces in traditional Malay society (Kamal et al., 2004).

- *Rumah Tengah* (Middle House): Connecting the *rumah ibu* and *rumah dapur*, the rumah tengah is an intermediate space that facilitates movement between the main house and the kitchen (Said & Embi, 2008). This area often includes the *jemuran* (drying area), highlighting the practical considerations in the spatial organisation of the house (Yuan, 1987).
- *Jemuran:* A drying area connecting the *rumah ibu* to the *rumah dapur*, facilitating the drying of clothes and other items and reflecting the practical aspects of daily life.
- *Selang:* An intermediate space or corridor that connects different sections of the house, facilitating movement and interaction between areas such as the main house (*Rumah Ibu*) and the kitchen (*Rumah Dapur*).

The design of these spaces, with varying levels and volumes and minimal dividing partitions, follows a hierarchical order based on the value assigned to each space. The spatial characteristics of the Malay traditional house involve the occupation of three-dimensional elements, encompassing mass, surface, and volume as physical, structural, and invisible attributes (Iskandar, 2001; Kamal et al., 2004).).



Figure 2.3: The Serambi Gantung on the left side serves as a space for entertaining male guests and acts as a transitional area leading to the *Rumah Ibu*. Photo is the traditional Malay house in Terengganu. (Source: Shah & Nordin, 2019)

The *serambi*, typically located at the front of the house facing the public street or garden, functions as the reception area. In many Malay houses, the *serambi* is a

covered raised platform without walls, sometimes running along the entire length of the *rumah ibu*. This open, communal space provides an area for interaction between household members and visitors, allowing for socialisation and exchange of greetings or news with passers-by (Rasdi, 2005). The *serambi* serves as a gathering place for various social activities, such as religious lessons, feasts, and other communal functions (Razali & Talib, 2013). It is a common practice to entertain male visitors in this area, while female guests are typically received in the *rumah dapur*. If the visitor is a close family member, they may be invited to the *rumah ibu*, but the separation between male and female guests is generally maintained.

The *rumah ibu* is the largest area of the house and serves as the family's main living space. This area is open, with minimal partitions, allowing for communal interaction. It houses the family sleeping areas, dining areas, and space for prayer. One of the distinctive features of the *rumah ibu* is the lack of full-height walls separating the various activities. Partitions are typically only used at night to provide temporary privacy for sleeping arrangements (Endut, 1993). During the day, the family lives in close quarters, fostering a strong sense of togetherness and intimacy. This lack of separation enhances social bonds, aligning with Malay cultural values of family unity and collective well-being (Yuan, 1987; Said & Embi, 2008). Additionally, the open-plan design facilitates better airflow and ventilation, which is essential in Malaysia's hot and humid climate.

The *rumah dapur*, located at the rear of the house, is the kitchen area where female family members often gather to cook. The space is commonly accessed through the back entrance of the house, providing a degree of privacy for the female members of the household (Lim, 1987). The kitchen serves not only as a cooking area but, in some cases, as a dining space. Small gaps between the floorboards allow waste food to be discarded beneath the house, maintaining cleanliness and providing food for domestic animals (Endut, 1993). The *rumah dapur* reflects the practicality and functionality of Malay household life, accommodating both cooking and social functions.

The *rumah dapur* is often oriented towards the washing or bathing area, including a well or river. These water sources serve multiple functions, from providing water for cooking and drinking to serving as a place for bathing and performing ablutions before prayers. The bathing area is typically shared, with bathers using a cloth (*sarung*) around their body and water poured from a hand bucket (*timba*). Integrating these elements into the *rumah dapur* highlights the connection between daily domestic

activities and spiritual practices, emphasising cleanliness and ritual purity (Rasdi, 2005).

Additionally, the *selang*, a walkway that connects the *rumah ibu* and *rumah dapur*, and the courtyard are integral spaces in the traditional Malay house. The *selang* or *jemuran* is a transitional space and a common area for socialising and casual interactions (Rasdi, 2005. It also often serves as the rear entrance, connecting the various sections of the house and facilitating movement between public and private spaces. While functional in their design, these components of the traditional Malay house also reflect the cultural importance of communal living and respect for family privacy (Endut, 1993).



Figure 2.4: Typical traditional Malay house has three main spaces: *serambi, rumah ibu,* and *rumah dapur,* with intermediate areas and their respective activities. (Source: Lim, 1987).



Figure 2.5: The basic main spaces of the traditional Malay houses. (Source: Ismail & Ahmad, 2006).

2.4.3 Design Principles of Traditional Malay Houses

The traditional Malay house represents a significant component of Malaysia's architectural heritage. Traditional Malay houses exhibit a deep responsiveness to the tropical climate while simultaneously reflecting the socio-cultural values of their inhabitants (Endut, 1993). The architectural design is highly adaptable, ensuring efficient spatial use while accommodating the family's evolving needs. The flexibility in spatial organisation enables expansions or modifications based on household requirements, making it a sustainable and practical approach to vernacular housing (Ismail & Ahmad, 2006).

Traditional Malay houses are well adapted to Malaysia's hot and humid climate. The most defining features include raised floor construction, flexible spatial planning, and the strategic use of readily available rainforest materials. These elements help to mitigate the challenges posed by the climate while preserving the cultural identity of the Malay people (Endut, 1993). One of the key environmental challenges in the region is heavy tropical rainfall, which often leads to flash floods. The raised floor design addresses this issue by elevating the living space above potential flood levels. Additionally, the elevated platform prevents ground moisture from seeping into the structure, thus maintaining indoor comfort and cleanliness. This design also serves as a protective measure against wild animals, particularly in rural areas where houses are situated near forests (Rasdi, 2005).

Traditional Malay houses share several common characteristics that define their architectural identity (Lim, 1987; Endut, 1993; Rasdi, 2005; Said & Embi, 2008). These features include:

i. Raised Floor Construction

Traditional Malay houses are elevated above the ground, primarily due to their timber construction, which requires protection from moisture and flooding. The raised floor system ensures durability and improves air circulation underneath the house, reducing indoor humidity and cooling the living spaces. The open space beneath the house or *Kolong* also serves practical functions such as storing and sheltering domestic animals.

ii. Pitched Roof and Deep Overhangs

The traditional pitched roof design and deep overhangs offer protection against heavy rain and direct sunlight. The large roof overhangs provide shade while enabling windows to remain open for ventilation, even during light rain showers. This feature ensures the interior remains well-ventilated and thermally comfortable throughout the day.

iii. Open-Plan Interior Layout

The spatial organisation of traditional Malay houses follows an open-plan concept, allowing for optimal air circulation and cross-ventilation. The minimal use of interior partitions facilitates airflow throughout the house, creating a cool and comfortable indoor environment. This layout also fosters strong familial interactions, as the open-plan design promotes communal living and shared activities among household members.

iv. Modular Construction System

Traditional Malay houses typically follow a rectangular plan that facilitates easy expansion. Additional modules or extensions are often built against the house's long side, maintaining a consistent architectural style. In cases where multiple extensions are added, a courtyard or *selang* (an intermediate space) is incorporated to enhance ventilation and natural lighting.

v. Differentiated Floor Levels

Interior spaces within traditional Malay houses are distinguished by varying floor heights rather than solid walls. This subtle variation in elevation serves both functional and symbolic purposes, marking hierarchical divisions within the household. The *rumah ibu* (main house) typically has the highest floor level, signifying its importance, while secondary spaces such as the *serambi* (veranda) and *dapur* (kitchen) have lower floor level. This differentiation activity zones and enhances ventilation within the house.



Figure 2.6: Common characteristics of traditional Malay houses that define their architectural identity. (Source: Lim, 1987)

vi. Selection of Building Materials

The choice of materials in traditional Malay construction reflects a balance between functionality and environmental sustainability. Indigenous timber varieties such as *Cengal, Merbau*, and *Meranti* are commonly used for structural components due to their durability and resistance to decay (Endut, 1993). Lightweight materials such as bamboo and woven palm leaves are also integrated into the design, reducing heat retention and enhancing indoor comfort. Roofing materials such as *atap* (palm thatch) and *Singgora* clay roof tiles provide excellent thermal insulation, keeping the house cool during the day and preventing heat accumulation at night. The limited use of glass in traditional Malay architecture reinforces the preference for natural ventilation and daylighting through perforated timber panels and wooden louvres.

vii. Large Window Openings for Ventilation and Lighting

Traditional Malay houses incorporate large windows that enhance both ventilation and natural lighting. These windows, often spanning the full height of a standard door, facilitate airflow and create a seamless connection between indoor and outdoor spaces. The placement of windows is designed to maximise cross-ventilation while maintaining privacy through carved timber panels and louvres. Integrating these openings promotes environmental sustainability and

reinforces the Malay community's appreciation for nature and outdoor living (Rashid, 2019).



Figure 2.7: A traditional Malay house in Lenggong, Perak, demonstrates raised floors, large windows, pitched roofs with deep overhangs, and varying floor levels, reflecting its climate-responsive design. (Source: iamnazirul, 2022)

2.2.4 Materials and Construction System of Traditional Malay Houses

In the construction of traditional Malay buildings, hardwood timber is the predominant material due to its availability and suitability for the local climate. Timber is commonly sourced from the surrounding forests and jungles near the house or village (*kampung*), ensuring the materials are readily accessible and sustainable. The most commonly used hardwood types in traditional Malay architecture include *Cengal*, *Merbau*, and *Meranti*, valued for their strength and durability. These high-quality timbers are primarily employed in the building's structural framework, floors, and wall panelling. In some cases, lower-grade timber or other materials, such as bamboo, may be used to construct walls, providing flexibility in material selection (Endut, 1993).

The roofing material traditionally used in Malay houses is *atap*, made from *Nipah* leaves. This thatching material is particularly prevalent in smaller structures, such as residential houses, *wakaf* (small pavilions), and *surau* (prayer rooms). For larger and more significant buildings, such as Malay palaces, roofing materials like *Singgora* clay tiles are used (Rasdi, 2005). The thatched roof provides effective insulation and is well-suited for the hot and humid tropical climate. The traditional construction system of

Malay buildings typically features a post-and-lintel timber structure with a thatched gable roof, designed to be lightweight and adaptable to local environmental conditions (Endut, 1993).

The traditional Malay construction system is characterised by raised floors, which help protect the building from dampness and pests. The structural columns of the building are typically set on concrete or stone footings, providing stability and support. These columns are braced by floor joists and roof girders, creating a robust and resilient framework for the building (Said & Embi, 2008). The house's structural components are usually fabricated on the ground and then assembled on-site. This construction process ensures efficiency and minimises the disruption of the local environment.

A distinctive feature of traditional Malay construction is the use of the *Tanggam* system. Malay craftsmen (*tukang*) employed this traditional wood joinery technique to assemble Malay houses (Rashid, 2019). This system was used during a time when nails and screws were not readily available, making it essential to rely on joinery techniques to hold the structure together. Steel fasteners such as nails and screws were uncommon in traditional Malay construction due to the temporary nature of the buildings and their intended mobility (Daud, 2021). The *Tanggam* system employs mortise-and-tenon joints, which allow perpendicular timber pieces to be securely fastened without metal fasteners. This technique results in a flexible and robust structure, with the house's layout typically square.



Figure 2.8: A traditional Malay house in Temerloh, Pahang, demonstrates the *Tanggam* technique use for construction. (Source: Penglipur.Lara, 2024)

To reinforce the connections and ensure the strength of the joints, wooden dowels or *baji* (timber wedges) were often used. This system provided durability and allowed for the easy disassembly and reassembly of the building. The ability to take the structure apart and move it to another location was a common practice in the past, mainly when there was a need to relocate the house (Rashid, 2019). The *Tanggam* system's simplicity and effectiveness made it ideal for traditional Malay houses, providing a balance of strength, flexibility, and ease of maintenance.

2.5 Historical Chronology and Evolution of Traditional Malay Architecture

2.5.1 Pre-Islamic Malay Architecture

Before the advent of Islam in the Malay Archipelago, the indigenous Malay population practised animism, Buddhism, and Hinduism, which profoundly influenced their architectural traditions (Ali, 2022). These spiritual beliefs were associated with daily life, shaping the design and construction of traditional Malay houses.

In pre-Islamic Malay culture, the spiritual realm held significant importance, leading craftsmen to possess specialized knowledge to appease spirits. This 'knowledge-power' was both a body of learning and a form of agency, resulting in effects brought about through dreams and encounters with spirits (Dilley, 2009). The natural environment, including flora, fauna, and cosmic forces, inspired architectural motifs, often potrayed in abstract or stylised forms in wood carvings embedded within traditional Malay houses (Said, 2002).

Animistic beliefs significantly influenced the decorative elements of traditional Malay houses (Lah et.al, 2015). Wood carvings, particularly those on door panels and roof eaves, often featured motifs inspired by nature and spiritual symbolism. These carvings served aesthetic purposes and functioned as protective symbols, reflecting the harmonious relationship between the physical and spiritual worlds in Malay culture.

The role of the *pawang* (shaman) was integral to constructing traditional Malay houses. Rituals performed by the *pawang* were shared with the mosque's Imam or *lebai* (religious authority), incorporating elements from Islamic scripture and concepts in the Quran (Gullick, 1987). These rituals were believed to ensure the house's and its occupants' spiritual well-being, highlighting the syncretism between indigenous beliefs and Islamic practices.

2.5.2 The Islamic Influence on Malay Houses

The traditional Malay house is an architectural expression shaped by various cultural and religious influences, with Islam playing a central role in its development. While the introduction of Islam did not significantly alter the fundamental building methods or structural arrangements of traditional Malay houses (Lah et al., 2015), it did influence key aspects of their design, particularly about the concept of privacy. The alignment of the house to face Mecca is a clear reflection of Islamic principles integrated into Malay architecture. This orientation indicates that Malay craftsmen had established architectural frameworks that balanced the practical needs of the occupants while accommodating religious considerations.

Before the arrival of Islam, Malay architecture was deeply rooted in indigenous customs and spiritual beliefs, including animism. The integration of these beliefs with Islamic teachings represents a cultural evolution in Malay architecture, where traditional knowledge and external religious influences merged. This dynamic process has significantly shaped the unique characteristics of Malay vernacular architecture. The combination of these diverse influences highlights the adaptability and flexibility of traditional Malay construction practices over time.

A central aspect of Islamic teachings that influenced the design of traditional Malay houses is the concept of privacy, which is significant in the spatial organisation of the house. In Islam, privacy is a fundamental principle that governs the relationships between men and women, particularly in their interactions within the domestic sphere. The segregation of genders, as well as the division of spaces into public and private areas, are essential components of Islamic household design (Omer, 2010). Islamic principles emphasise the importance of safeguarding the privacy of family members, particularly women, and ensure that the house is a secure and secluded space for its inhabitants (Rahim, 2008; Mortada, 2003).

The concept of privacy in the traditional Malay house is reflected in the zoning of spaces according to their function and the degree of privacy they offer. Figure 2.9 and 2.10 illustrate the privacy gradient zoning in a Muslim dwelling, which divides the house into public, semi-public, semi-private, and private zones. Public spaces are designed to accommodate *non-mahram* guests—those who are not closely related by blood or marriage—during specific occasions (Rahim, 2008). These spaces are typically located at the front of the house and are separate from more private family areas. The

semi-private and semi-public spaces serve as transitional zones, leading into the most private areas, where access is restricted and controlled.



Figure 2.9: The privacy gradient zoning in the Muslim dwelling. (Source: Razali, & Talib, 2013)



Figure 2.10: The privacy gradient zoning in the traditional Malay house in elevation. (Source: KALAM, 1994)

In the traditional Malay house, gender segregation is reinforced through the house's layout. Male guests enter through the *Serambi* and occupy the veranda (*anjung*), while female guests use a separate entrance near the hallway (*selang*) and occupy the main house (*rumah ibu*) (Razali & Talib, 2013). This division of space within the house ensures that the privacy of the female members of the household is preserved. The segregation extends beyond visitors to the household's occupants. Typically, parents sleep in the bedroom, daughters reside in the main space (*rumah ibu*), and sons often sleep in the veranda, a common practice in traditional Malay houses (Razali & Talib,

2013). This gendered spatial organisation underscores the importance of privacy and modesty in Malay Muslim households.



Figure 2.11: Typical traditional Malay house adopted from Lim (1987).

Another significant consideration in the spatial design of the traditional Malay house is the sizing of openings, doors, and windows, which regulate access to private spaces. To meet privacy requirements, louvres are often installed on window panels, providing visual privacy while allowing for ventilation (Lim, 1987). The placement of toilets and bathrooms also reflects Islamic considerations, with the bathroom typically detached from the main house and oriented away from the *qiblah* (the direction of Mecca) (Rahim, 2008). These features align with Islamic guidelines emphasising cleanliness and the importance of maintaining modesty in public and private spaces.

The traditional Malay house follows an open-plan concept, with minimal partitions dividing spaces. This open-plan design reflects the flexibility of daily life and allows spaces to serve multiple functions at different times of the day (Lim, 1987). It emphasises family bonding, respect for elders, and the flexible use of space, which are core values in Malay culture. The absence of fixed partitions and the use of

temporary partitions, such as hanging cloth or curtains, reflect the adaptability of the space to various activities and social interactions. This adaptability also allows for integrating social and religious practices into the domestic environment, supporting the lifestyle and cultural traditions of the Malay people (Rasdi, 2005).

The traditional Malay house reflects its inhabitants' cultural and religious values, particularly the principles of privacy and gender segregation derived from Islamic teachings. The spatial organisation of the house, the layout of public and private areas, and the specific architectural features, such as louvres on windows and the house's orientation, all contribute to maintaining the privacy and modesty of the family. The integration of Islamic values with indigenous Malay customs has created a unique architectural expression that continues to embody the cultural significance of the Malay people. The analysis of these elements underscores the importance of understanding the intersection of cultural, social, and religious factors in shaping the design and construction of traditional Malay houses (Razali & Talib, 2013; Omer, 2010; Rahim, 2008; Mortada, 2003).

2.5.3 Colonisation and Western Influence: Adaptation and Rejection in Traditional Malay Architecture

The period of colonialism in Malaya, which lasted for over four centuries, introduced many Western architectural influences that significantly impacted the evolution of traditional Malay architecture. Beginning with the Portuguese conquest of Melaka in 1511 and continuing through the Dutch and British colonial periods, as well as the brief Japanese occupation during World War II, the region saw various foreign powers impose their architectural aesthetics, construction techniques, and building materials onto the local built environment (Lee & Lau, 1998). This exposure to Western styles created a complex interaction between indigenous Malay architectural traditions and colonial innovations, which resulted in both adaptation and rejection within the design of traditional Malay houses.

During the Portuguese and Dutch colonial periods, Melaka became a site of architectural synthesis, where European forms were applied to civic buildings, churches, and fortifications (UNESCO, 2009). The British colonial period, particularly in the late 19th and early 20th centuries, had a more profound and lasting impact on the vernacular architecture of Malaya. The arrival of British settlers, alongside the influx of Europeans, necessitated the introduction of European construction materials such

as Portland cement, which was invented in England in 1824 by Joseph Aspdin (Siang Tan & Fujita, 2014). This cement, known for its durability and strength, was initially used in public and administrative buildings but soon found its way into residential construction, both in the houses of Europeans and in Malay houses. By the mid-19th century, cement foundations and floor slabs were introduced, reflecting the Westernization of local building practices (Lee & Lau, 1998).



Figure 2.12: Traditional Malay house in Perak *(Rumah Kutai)* features cast-concrete plinths, serving as foundations for the house posts. (Source: Razali, 2023)

One of the most significant transformations to Malay house construction during the colonial period was the introduction of cast-concrete plinths. Traditionally, Malay houses were elevated on timber stilts or bases made of hardwood or laterite. However, the arrival of cement led to the widespread use of concrete plinths, often in truncated pyramid shapes, to support the house posts. Initially seen as a foreign element, these concrete footings eventually became an integral part of the "traditional" Malay house (Talib & Sulieman, 2012). The adaptation of cement for structural purposes signified a clear shift towards incorporating Western materials in Malay architecture, with cement becoming a symbol of modernity and stability.

Similarly, the introduction of concrete staircases during the early 20th century marked a significant departure from the traditional use of timber for stairs in Malay houses. In regions like Melaka, concrete staircases adorned with coloured tiles became prominent, serving both functional and aesthetic purposes. These staircases evolved into formal architectural elements, indicative of the social and economic status of the house owners. As cement became more widely available, wealthier Malay families increasingly adopted Western-style grand staircases as symbols of affluence, further consolidating the influence of colonial aesthetics on the local architectural landscape.



Figure 2.13: A traditional Malay house in Melaka features metal corrugated roofing or zinc sheets and decorative concrete stairs adorned with vibrant tiles (Source: D.S., 2013).

The colonial period also saw the introduction of new roofing materials. Zinc, or metal corrugated sheets, initially used in large-scale utilitarian buildings such as markets and military barracks, gradually found their way into the construction of Malay houses in the late 19th century. The growing tin industry, driven by British colonial interests and Chinese immigration, contributed to the availability of zinc sheets, which were a more durable and cost-effective alternative to the traditional thatched roofs made from Nipah palm fronds *(Attap)*. Even though zinc roofing, with its high thermal conductivity, was not ideal for the hot and humid tropical climate, its durability and low maintenance made it a practical choice for the Malay population, especially after World War II (Lee & Lau, 1998). In regions like Melaka, Negeri Sembilan, and Perak, zinc became a common roofing material, replacing the more labour-intensive and perishable thatch roofs (Talib & Sulieman, 2012; Hardono & Zakaria, 2016). In contrast, states like Kelantan and Terengganu continued to favour clay tiles, known as *Singgora*, over both *Attap* and zinc, reflecting regional variations in material preferences (Hassan & Ramli, 2010).



Figure 2.14: Traditional Malay house with a steep-pitched *attap* roof showcasing the use of locally sourced thatch made from *nipah* and palm trees. (Source: FRIM, 2020)

Despite the widespread adoption of Western materials and construction techniques, the introduction of cement and zinc did not wholly displace traditional Malay architectural practices. Adapting these materials was, in many ways, a hybridization rather than a complete rejection of indigenous architectural values. The use of cement and concrete in Malay house construction did not merely imitate Western styles. However, instead, it was a reconfiguration of traditional forms, merging the modern with the indigenous in a way that responded to the social aspirations of Malay elites and the practical demands of colonial life.

In conclusion, the colonial period in Malaya marked a significant phase in the evolution of traditional Malay architecture. While Western influences, such as cement and zinc, undeniably altered the physical appearance of Malay houses, they were integrated to preserve essential Malay architectural forms. Rather than rejection, this adaptation process highlights the dynamic nature of traditional Malay architecture and its ability to absorb external influences without compromising its cultural identity.

2.5.4 Political and Social Status: Influence on Traditional Malay Architecture

The architecture of traditional Malay houses reflects environmental and cultural factors and embodies Malay society's social and political hierarchy. Pre-colonial Malay society operated within a feudal system, where status differentiation was a defining element of social interaction and community organisation. The societal structure, comprised of royalty, aristocracy, and commoners, significantly influenced traditional Malay houses' architectural design and features, with residences as visual markers of social rank and economic standing (Hosseini et.al, 2012).

Feudal Structure and Architectural Expression

The feudal hierarchy in Malay society, as evidenced in the Melakan tradition, began with the *Sultan* or *Raja*, followed by state ministers, nobles, and *ulama* (Islamic religious leaders). Nobility titles, such as *Tengku, Wan, Nik, Syed, Sharifah,* and *Raja*, were either inherited or bestowed for loyal service to the royal court (Lopez, 2001). Below the aristocracy were commoners, which included small-scale merchants, farmers, and fishermen, while the lowest societal class comprised servants or *orang hamba* who served the court and nobility (Kennedy, 2011).

Architectural features in Malay houses became a manifestation of this hierarchical structure. Houses of royalty and aristocracy displayed intricate and elaborate craftsmanship, particularly in wood carvings, which were symbolic of wealth and social prestige. While commoners' houses also incorporated decorative elements, these were less ornate and utilised more practical materials and simpler designs (Nordin, 2009).

Architectural Features and Status Representation

Royal Residences: Palaces

In traditional Malay architecture, royal palaces (*istana*) represent the highest political and social status, exemplifying the peak of architectural grandeur. A prime example is the *Istana Jahar* in Kota Bharu, Kelantan, which showcases the opulence and sophistication typical of royal residences (Rashid et al., 2018).

Originally constructed as a single-storey timber building, *Istana Jahar* underwent significant transformations to meet the evolving needs of the Sultanate. These modifications resulted in a two-storey masonry structure that harmoniously blends traditional Kelantanese architectural elements with European influences. The roof forms, wall panels, and ornamentation retain traditional Malay characteristics. At the same time, features such as wrought iron spiral staircases, iron balustrades, and a semi-octagonal porch reflect European architectural styles, particularly Georgian influences (Rashid et al., 2018).

The fusion of these architectural styles in *Istana Jahar* underscores the impact of European colonisation on Malay architecture. This led to a synthesis that preserves traditional forms while incorporating new materials and design elements. This architectural evolution mirrors the colonial period's dynamic cultural exchanges and adaptations.

Today, *Istana Jahar* functions as the Kelantan Royal Tradition and Customs Museum, preserving its historical significance and architectural heritage. The palace has served as the residence for at least two Sultans of Kelantan, further cementing its status as a significant site in the state's royal history (Hasani & Shaharuddin, 2020).



Figure 2.15: *Istana Jahar* in Kota Bharu, Kelantan was a royal residence. (Source: Malaysian Archive, 1974)

Nobles and Village Leaders: Ketua Kampung Houses

The residences of *penghulu* (village chiefs) and nobles occupied a secondary tier in the architectural hierarchy. While less grand than royal palaces, these houses displayed substantial embellishments and were often more significant than the houses of ordinary people. The *Rumah Penghulu Abu Seman* in Kedah is an exemplary structure, featuring a raised timber frame, intricate wood carvings on door panels and windows, and a spacious veranda for hosting village gatherings (Zuraini & Ahmad, 2002). These architectural elements symbolised the *penghulu's* leadership role and elevated status within the community.



Figure 2.16: Penghulu Abu Seman's house, an architectural masterpiece built between 1910 and the early 1930s, is owned by the local headman of Mukim Bagan Samak, Bandar Baharu, Kedah.

(Source: Badan Warisan Negara, 2021)

Merchant and Wealthy Houses

Wealthy merchants and affluent Malays, often involved in trade and business, constructed houses that reflected their economic success. These houses are typically built with intricate local craftsmanship in wood carvings. An example is the Rumah Tok Su in Kedah. The architectural features of Rumah Tok Su, including its spatial configurations and decorative elements, reflect the wealth and hospitality of its owners and embody the cultural and social values of traditional Malay society (Ibrahim & Azmi, 2013). The house stands as a testament to the intricate craftsmanship and design principles characteristic of Malay heritage (Mazni & Mudzafar, 2022).



Figure 2.17: Rumah Tok Su in Kedah. (Source: Wogoxette, 2020)

Commoners' Houses

the residences of ordinary Malays, including farmers and fishermen, were characterised by simplicity in design and construction, utilising locally sourced materials such as bamboo, *atap* (thatch roofs), and local available timber in the area. These materials were selected for their availability, cost-effectiveness, and suitability to the tropical climate, ensuring environmental adaptability and practicality. The lightweight construction of these houses facilitated natural ventilation and thermal comfort, aligning with sustainable building practices (Ahmad et.al, 2022).

Despite their modesty, these houses incorporated elements of artistic expression, through basic wood carvings on door panels and roof eaves. These decorative features, while less intricate than those found in the affluent residences, reflected a shared cultural appreciation for beauty and craftsmanship. The carvings often potrays motifs inspired by nature and Islamic art, serving aesthetic and symbolic purposes (Hosseini et al., 2012). This integration of artistic elements into everyday structures underscores the cultural significance of craftsmanship in Malay society.

Social Stratification and Architectural Ornamentation

Wood carving was a prominent decorative feature across all levels of society, serving as a cultural marker of the owner's status. Palaces and aristocratic houses exhibited the most elaborate carvings, with motifs reflecting religious and philosophical beliefs, such as *awan larat* (cloud patterns)(Wan & Fadil, 2022) and *pucuk rebung* (bamboo shoots) (Sulaiman et al.,2020) symbolising growth and prosperity. In contrast, the carving panels in commoners' houses were more utilitarian, often focusing on ventilation and lighting while retaining simplified decorative motifs.

The use of space within the house also indicated status. Royal and aristocratic houses had dedicated ceremonial areas, such as *balairung seri* (royal halls), for hosting dignitaries and holding official functions (Jaffar et al., 2020).

The interplay between social and political hierarchies and architectural expression was profound in traditional Malay architecture. The design and ornamentation of houses were shaped by the feudal structure of Malay society, with palaces, penghulu residences, and commoners' houses serving as tangible representations of status and authority. Whether through the grandeur of royal palaces, the dignity of penghulu houses, or the modest beauty of commoners' houses, the architecture of traditional Malay houses demonstrates the cultural significance of social stratification in precolonial and colonial Malay society.

2.6 Cultural and Societal Factors Influencing Malay Architecture

2.6.1 Malay Customs

The traditional Malay house reflects Malay customs *(adat)*, cultural practices, and daily lifestyles, embodying the collective ethos and architectural principles intrinsic to Malay society. These dwellings are metaphoric, symbolic, and abstract representations of architectural originality deeply rooted in Malay culture (Yuan, 1987). The physical and spatial attributes of these houses are meticulously designed to align with the cultural emphasis on purity, moral values, and religious considerations (Iskandar, 2001; Erana, 2008).

The spatial organisation of the traditional Malay house is intricately linked to human activities, spatial constraints, and the arrangement of furnishings, ensuring convenience and functionality for the occupants (Iskandar, 2001). This design approach reflects cultural beliefs such as family cohesion, respect for the elderly, and delineating gender roles, fostering strong familial bonds within the household (Mohamad, 2007).

In the traditional Malay house, men typically occupy the front of the house, mainly the raised covered veranda accessed by stairs called the *Anjung*. This area serves as a transition space between the public and private domains of the house, where men can sit, observe their surroundings, and oversee family affairs. Additionally, this space is used to welcome and entertain casual visitors (Yuan, 1987).

The Serambi Gantung, or hanging verandah, is where most guests are entertained. Its design includes low windows that enable proper ventilation and offer views of the surrounding exterior. In some cases, the *Serambi* may not have walls and instead function as an open-covered verandah, similar to the *Anjung*. From the *Serambi Gantung*, one enters the core area of the Malay traditional house, known as the *Rumah Ibu*, a high-roofed section that serves as the main private space for the family. This area is exclusively accessible to family members and close acquaintances, where most daily activities include sleeping, sewing, praying, ironing, studying, and feasting (Yuan, 1987).

In the early days of traditional Malay culture, furniture such as sofas or dining tables was not commonly used in households. Instead, people would engage in various activities while sitting on the floor, with men adopting a cross-legged sitting position on woven mats and women sitting in a side sitting position (Wahab et al., 2015). Sitting cross-legged is a common practice among Malays (Wahab et al., 2015). Shoes are not allowed inside the house to maintain cleanliness and avoid bringing bad omens to the owner. Malays remove their shoes and wash their feet before entering the house, and walking barefoot on the internal floor areas is a customary practice, even in modern houses. The raised floor areas inside the house help define specific functions, such as ventilation and sleeping arrangements. This area is the most significant space in the house and is characterised by its elevated floor level, emphasising its significance (Yuan, 1987).



Figure 2.18: Women sat on the floor in a side sitting position, reflecting the traditional Malay culture where furniture was not commonly used in households. (Source: Evans Collection, 1930)



Figure 2.19: Firewood stove. (Source: Juli, 2012)



Figure 2.20: Firewood stove at kitchen area. (Source: Juli, 2012)

These design elements underscore the profound influence of Malay customs and daily lifestyles on the architecture of traditional Malay houses, reflecting a harmonious integration of cultural values, social structures, and environmental considerations.

2.7 Regional Variations in Traditional Malay Architecture

The geographical location of a region plays a crucial role in shaping its architectural style, which is evident in the traditional Malay architecture of Peninsular Malaysia. The influence of neighbouring regions, particularly Sumatra in Indonesia and southern Thailand, has significantly developed Malay architectural forms (Endut, 1993). These influences can be traced back to the migration and settlement of Indonesian and Siamese communities during the rule of the Sri Vijayan Empire and the Empire of Langkasuka¹. As Peninsular Malaysia is a diverse region with distinct historical and cultural influences, it is essential to understand the geographical context to appreciate the unique variations in Malay architecture across its states.

Peninsular Malaysia comprises 11 states, which can be classified into four main regions: southern, central, northern, and the east coast. This classification, established by Malaysian historians and scholars, reflects the varying architectural characteristics across different parts of the peninsula and corresponds with regional patterns of settlement (Endut, 1993; Rasdi, 2005). These regions have evolved through cultural exchanges, migration, and trade, and each has developed a distinct architectural identity.

The architecture of these regions has been shaped by the diverse cultures transmitted through historical processes such as intermarriage, trade, migration, and territorial dominance. Over the centuries, Peninsular Malaysia has been influenced by various Malay communities from the Malay Archipelago, including the Acheh, Minangkabau, Riau, Bugis, Banjar, Java, and Pattani (Wan Ismail & Samsuddin, 2005). Furthermore, the region's history of contact with foreign powers—such as the influence of the British, Arabs, Indians, Portuguese, Dutch, and the southern Chinese—has significantly contributed to the evolution of Malay vernacular architecture.

¹ Langkasuka was located on the isthmian portion of the Malay Peninsular which is later known as Pattani.



Figure 2.21: The variations of regional style of the traditional Malay house in Peninsular Malaysia (Source: Endut, 1993)

Distinct regional variations in traditional Malay houses are apparent, with common features including raised floor structures, stilt foundations, and long, sweeping roof forms (Wan Ismail & Samsuddin, 2005). These features reflect local environmental responses and the cultural influences shaping the region's architectural practices. For instance, in the east coast region, which includes states like Kelantan and Terengganu, the architectural style has been influenced by neighbouring southern Thailand, particularly the Pattani region, due to geographical proximity (Endut, 1993). While these areas share certain architectural traits, such as stilted structures and elevated floors, regional variations are also evident in the materials used, roof styles, and spatial layouts, reflecting each region's unique cultural influences and social practices.

The architecture of each region within Peninsular Malaysia provides valuable insights into the diverse origins and influences that have shaped Malay vernacular architecture. From the northern states influenced by the Minangkabau and Bugis to the east coast's connection with Pattani and the broader influences from other regions, the traditional Malay house is a rich

tapestry of cultural exchange, reflecting the dynamic history and cultural diversity of the Malay Archipelago (Lim, 1987).

2.7.1 Southern Region

The southern region of Peninsular Malaysia, encompassing Johor, Melaka, and Negeri Sembilan, exhibits distinct architectural characteristics shaped by the diverse ethnic communities residing there, including Malays, Bugis, Javanese, and Riau communities (Rasdi, 2005). The interaction between these ethnic groups, particularly those from Indonesia, has significantly influenced the region's architectural styles. The architectural features of the southwest coast, in particular, showcase the distinct influences of Bugis, Javanese, and Riau cultures, which can be seen in the staggered gable ends (*Tebar Layar Bertingkat*), large side openings, decorative elements atop gable ends, and the entrance hall (*Anjung*) positioned at the side of the house (Yuan, 1987).



Figure 2.22: Johor Long-roofed house, Segamat, Johor. (Source: Penglipur.Lara, 2025)

In Melaka, the traditional Malay house incorporated not only regional and Western cultural influences but also foreign influences from diverse traders who frequented the port. These traders came from Persia, Arabia, China, India, and neighbouring Malay islands (Hall, 2004). In addition to the Portuguese, Dutch, and British colonial impacts, Melaka's status as a bustling international port city led to significant architectural diversification, integrating imported building materials and designs (Tan, 2020). The use of brick and cement in the main staircase and the *Anjung*, alongside Chinese

decorative tiles replacing traditional timber steps, reflects these foreign influences (Yuan, 1987).

The traditional Malay houses in Melaka are predominantly characterised by longroofed designs with verandas, often called *Rumah Panjang Berserambi* (Talib & Sulieman, 2012). Among these, the twelve-pillared house is slightly smaller than its sixteen-pillared counterpart. The twelve-pillared house has six tall pillars supporting the main structure and six additional pillars for the adjoining veranda (*Serambi*). The pillars are arranged in three rows from the front, with four rows visible from the side view.

The verandas in traditional Malay houses in Melaka are open and often feature low wooden or no walls, providing a semi-public space. In contrast, houses in Negeri Sembilan tend to feature fully walled verandas. However, in Melaka, the presence and height of the walls can vary (Yaman et al., 2018). For example, houses near the Melaka-Negeri Sembilan border may have completely walled verandas with trellis work or windows. This architectural design reflects the unique cultural perspective of Melaka's Malays, shaped by a blend of foreign and regional influences, creating a more liberal architectural style. In some cases, the veranda and porch (*Anjung*) are not separated by walls, and the transition between spaces is marked by a central area known as the *Ruang Tengah*. This area is flanked by the *Serambi Samanaik*, with curtains historically used for privacy when rooms were constructed (Nasir & Wan Teh, 2011).

In some Melaka houses, *Loteng* (lofts) are constructed in the base of the roof's gable ends (*Tebar Layar*). These lofts are typically used for storage or occasionally as an attic accessible by a special ladder (Wahab et al., 2012). However, many older Melaka houses no longer use these lofts except for occasional cleaning and maintenance.

The twelve-pillar house is commonly found in coastal areas and rural settings, where it is designed to withstand the harsh conditions of the seafront. These houses feature higher roofs with steep inclines (approximately 55 to 70 degrees) to manage strong coastal winds. The steep roof design includes gaps or spaces at the gable ends to allow the wind to pass through, offering ventilation. In contrast, the sixteen-pillared house, often found further inland and owned by wealthier Malays, has a less steep roof (below 55 degrees) and is generally not as high.



Figure 2.23: Traditional Malay house in Melaka. (Source: Source: Said & Embi, 2008)

In Melaka, some long-roofed houses combine the veranda, main house, and kitchen into a single building, while others comprise two or three separate structures (Gazali, 2024). This diversity in architectural form reflects the region's historical influences and practical needs. The elevated middle pillars in these houses are taller than the veranda pillars and are crucial in shaping the roof's structure. These pillars support the main structure and the veranda, with the long crossbars at the top supporting the roof's kingpost (*kayu tunjuk langit*), contributing to the roof's inverted boat-like appearance.

The sixteen-pillared house is larger than the twelve-pillared house, with eight tall pillars supporting the main structure and eight additional pillars for the veranda. This design results in a house with three rooms, compared to the two rooms found in the twelve-pillared house (Nasir & Wan Teh, 2011).. The sixteen-pillared house is also about three meters wider. However, this difference is primarily noticeable from the front view, as both types share the same arrangement of four rows of tall pillars for the main structure and two rows for the veranda.

The twelve- and sixteen-pillared houses share a common room division, with the veranda parallel to the main house and an additional partially enclosed area, known as *Serambi*, projecting forward (Nasir & Wan Teh, 2011). The floor of this area is lower
than the veranda's and serves as the location for the front stairs. Traditionally made of wood, these stairs have incorporated concrete due to foreign influences, with wealthier Malays often adorning them with imported tiles from various countries.

The traditional Malay architecture of Negeri Sembilan is distinguished by its iconic curved roof structure, which reflects a distinct regional identity. Although the roofs do not replicate the horn-like designs seen in Minangkabau architecture (Hardono & Zakaria, 2016), most scholars agree that this architectural style originated from the Minangkabau region of West Sumatra, Indonesia. Over time, it has adapted to the Malaysian context and environment. Nasir (1985) and Chen (1998) in *The Encyclopedia of Malaysia: Architecture*, trace the ancestry of Negeri Sembilan's Malay population to the Minangkabau, emphasising the strong architectural and cultural influences from this origin. However, Masri (2012) offers a perspective, asserting that Negeri Sembilan's traditional architecture is not solely an extension of Minangkabau design but a hybrid manifestation of Minangkabau and Biduanda cultures. The Biduanda clan, the original settlers of Negeri Sembilan, influenced the architectural style through intermarriages with Minangkabau leaders, blending matrilineal customs and creating a unique regional identity.

The long-roofed houses of Negeri Sembilan, akin to the architectural traditions of Melaka, can be classified into two primary types: the twelve-pillared and sixteenpillared houses. These houses are characterised by their spatial configurations, with some comprising multiple units, including the main house, middle house (*Rumah Tengah*), and kitchen (*Rumah Dapur*), while others consist solely of the main house (Hardono & Zakaria, 2016). A significant feature of these houses is the elongated veranda, which can extend at both the front and rear, creating three distinct sections—front, middle, and rear. This extension not only increases the width of the house but also necessitates additional supporting pillars, with the number of pillars often reflecting the house's size and social stature.

The veranda in Negeri Sembilan houses is enclosed by walls with small windows, contrasting with the open veranda style typical of Melaka houses. This architectural distinction underscores the influence of regional preferences and social practices. While the Melaka veranda facilitates seamless interaction between indoor and outdoor spaces, the enclosed veranda in Negeri Sembilan prioritises privacy and protection, aligning with the cultural values of its community (Hardono & Zakaria, 2016).



Figure 2.24: Traditional Malay house in Negeri Sembilan. (Source: National Archive of Malaysia, 2023)

The spatial organisation of Negeri Sembilan's long-roofed houses reflects societal roles, gender dynamics, and functional needs. The veranda serves as a communal space for male guests and unmarried individuals, supporting various activities and interactions. Beyond the veranda lies the main house and *Kelek Anak*, which form the heart of family life. These spaces accommodate daily household responsibilities and family gatherings, highlighting the role of women in managing domestic affairs forward (Nasir & Wan Teh, 2011).



Figure 2.25: Traditional Malay house in Negeri Sembilan. (Source: Masri, 2012)





The *Rumah Tengah* (middle house), separated from the main house by an interconnecting passageway, is reserved for special occasions and ceremonial functions. An open area typically separates the *Rumah Tengah* from the kitchen (*Rumah Dapur*), which is located at the rear of the house. The kitchen is a functional hub, spatially connected to the main house and *Rumah Tengah*, underscoring the seamless interplay between practicality and social organisation in traditional Malay architecture (Chen, 1998).

The long-roofed houses of Negeri Sembilan bear discernible influences from Minangkabau architectural elements, such as the upward-curving roof points and the presence of lofts (*loteng*), which are often used for storage or additional living space. These lofts exemplify the adaptability of the structures to the functional and social needs of the occupants (Nasir, 1985). The number and arrangement of pillars, steepness of roof inclines, and spatial layout vary depending on the occupants' social status and economic conditions, further reflecting the integration of cultural identity with architectural expression.

2.7.2 Northern Region

The northern region of Peninsular Malaysia, encompassing Kedah, Perlis, Penang, and the northern part of Perak, has a distinct architectural heritage shaped by its

historical and political context. The Sultan of Kedah historically governed these states and were once part of a larger territory under Kedah's aristocracy during traditional Malay rule (Adnan et al., 2014; Halimi & Pitchai, 1985). However, the region experienced significant political upheavals, particularly when it fell under the control of Burmese and Siamese forces, eventually coming completely under Siamese rule in 1821 (Mior Hamzah, 2002). In an effort to prevent Kedah from regaining power and resisting Siamese control, the Siamese partitioned the territory into smaller regions (Halimi & Pitchai, 1985). This division contributed to the evolution of a shared architectural style across the northern states of Peninsular Malaysia.

Due to their geographical proximity to southern Thailand, states such as Kedah, Perlis, and Perak have absorbed architectural influences from the Malay Pattani region of Thailand (Mamat et al., 2019). This influence is evident in the northern states' structural layout of traditional houses, particularly in the positioning of key building components. In these areas, the main house (*rumah ibu*) and the kitchen (*rumah dapur*) are typically separated and connected by an uncovered intermediate space (*selang*), which is often accompanied by a roof along the open area of the side wall. This configuration distinguishes the architecture of the northern states from the central and southern Malay traditions, where the main entrance is commonly positioned on the front façade rather than the gable end (Nasir, 1995).

An essential feature of early Malay houses in Kedah, Perlis, and Penang is the use of *Kelarai*, a traditional wattle work made from woven bamboo strips. These walls, intricately designed with floral patterns, were widely used in the region's long-roofed houses, palaces, and mosques (Nasir, 1995). Remarkably durable, some of these bamboo strip walls have lasted for up to 80 years, demonstrating the resilience of this construction method. Significant structures that still feature this form of wattle work include Istana Kenangan, a palace converted into a museum, and Masjid Ihsaniah Iskandariah, a small mosque (Nasir, 1995). These remnants highlight the lasting impact of traditional construction techniques on the architectural heritage of the northern Malay states.



Figure 2.27: Istana Kenangan of Kuala Kangsar Figure bamboo wattle work, exemplifying traditional walls Malay architectural craftsmanship.

(Source: Lembaga Muzium Negeri Perak, 2023)

Iskandariah, 2.28: Masjid Ihsaniah uses the distinctive Kelarai wall, an intricate constructed in 1936, showcases bamboo woven as architectural elements, drawing inspiration from the design of Istana Kenangan. (Source: Lembaga Muzium Negeri Perak, 2023)



Figure 2.29: An abandoned Rumah Kutai in Kuala Kangsar, Perak, featuring traditional wattle work made from bamboo strips (known as kelarai) for the walls. (Source: Aminrul Mukminin, 2008).

The architectural evolution of traditional Malay houses in Perak since the 1830s reflects significant transformations shaped by cultural and societal changes, which led to the development of two main architectural styles: Rumah Kutai and Rumah Limas Bumbung Perak (Rashid et al., 2021). Roof design has played a significant role in determining the typology of these houses. Before 1900, the Bumbung Panjang (Long Roof) style, characterised by gable-end roofs, dominated the architecture of Rumah Kutai. However, after 1900, the Bumbung Perak roof design became prominent and was associated specifically with Rumah Limas Bumbung Perak.

In terms of spatial organisation, traditional Malay houses in Perak follow a typical layout with three main areas: the Anjung (front area), Rumah Ibu (central living area), and the kitchen. The Rumah Selang or Rumah Tengah serves as a connecting space between the Rumah Ibu and the kitchen, while the Serambi is often attached to the front area. Rumah Kutai differs from other house types in that it lacks the frontal compartments of *Anjung* and *Serambi*, making it distinct from the more common *Rumah Limas Bumbung Perak* (Ahmad Razali, 2023).



Figure 2.30: Rumah Kutai, characterised by the prominent *Bumbung Panjang* or Long-roofed, commonly called gable end roofs, distinctly defines its architectural style. (Source: Najihah, 2021)

Architectural elements and materials are central to the identity of traditional Malay houses in Perak. Openings, such as windows, serve functional purposes like ventilation and privacy. *Rumah Kutai* typically features windows and *tebar layar* or gables, with patterned *Bertam* leaves or *Kelarai* (woven bamboo strips) providing natural cooling (Ahmad Razali, 2023). In contrast, *Rumah Limas Bumbung Perak,* along with its variations, is characterised by *tingkap labuh* (long windows), with later iterations incorporating louvred glass windows (Choo et al., 2020). The roofing materials also evolved over time, with *Rumah Kutai* originally using *Nipah* and *Rumbia* leaves, while *Rumah Limas Bumbung Perak* transitioned to zinc and clay tiles (Choo et al., 2021). The adoption of zinc as a roofing material significantly impacted the design of *Rumah Limas*, and the roof style itself became influenced by the Dutch colonial style in the early 20th century.



Figure 2.31: Plan of the Rumah Kutai with a side veranda. (Source: Wan Hashim & Abdul Halim, 2011)



Figure 2.32: *Rumah Limas Bumbung Perak.* (Source: Najihah, 2021)

Decorative elements in these houses play a vital role in expressing the owner's architectural style and social status. *Rumah Kutai* is typically simpler in decoration,

while *Rumah Limas Bumbung Perak* features more elaborate ornamental elements, including *Lebah bergantung*, *Selak cantik*, and *Kelarai* (Rashid et al., 2021). Additionally, the distinct *Kepala Cicak* (lizard head) and *Tunjuk Langit* (sky pointer) ornamentations are unique to *Rumah Limas Bumbung Perak*. Earlier versions of *Rumah Limas Bumbung Perak* were often more ornate, whereas later iterations saw a simplification of motifs and ornamentation. Furthermore, the *Rumah Kutai Kecil* represents a hybrid architectural form, incorporating elements of both traditional and modern designs (Ahmad Razali, 2023).

The transformation of Perak's traditional Malay houses illustrates the dynamic and adaptive nature of architecture, closely tied to cultural, religious, and social changes. The shift from *Rumah Kutai* to *Rumah Limas Bumbung Perak* reflects the integration of external influences, including colonial and regional designs, into local architectural traditions. Despite these changes, the preservation of traditional characteristics in Perak's Malay houses reflects the values and worldview of the Malay people, shaped by interactions with diverse cultures over time.

2.7.3 Central Region

The central region of Peninsular Malaysia, located in the southwest and near the southern tip of the peninsula, encompasses the states of Selangor, the Federal Territory of Kuala Lumpur, and the southern part of Perak. This region's architectural style is heavily influenced by its southern counterparts, reflecting cultural and historical exchanges over time. In Selangor, traditional Malay architecture varies across districts, with regional differences shaped by the specific influences experienced by each area.

In the southern part of Selangor, particularly in districts such as Kuala Langat and Kuala Selangor, the traditional Malay houses retain strong connections to the architectural traditions of Negeri Sembilan. This is primarily due to the shared ethnic roots of the communities in these areas, which have historical ties to the people of Negeri Sembilan. The influence of Negeri Sembilan's architectural style is especially evident in the roof designs and spatial organisation of the houses.

In these districts, examples of traditional Malay houses with *Bumbung Panjang* (Longroofed) continue to exist, reflecting the Melakan house style prevalent during the Malacca Sultanate era. Historical records suggest that architectural influences from Malacca began when Selangor was under the rule of the Malacca Sultanate in the late fifteenth and early sixteenth centuries (Nordin, 2017). Additionally, in Malay history, a prince from Sultan Mansur Shah's reign in Malacca became a ruler in the district of

Jeram, Selangor. This connection further supports the presence of Malaccan architectural influences in the southern part of Selangor (Nasir, 1989).



Figure 2.33: Long-roofed house, Kuala Lumpur. (Source: Penglipur.Lara, 2023)

Thus, the traditional architecture of the central region, especially in Selangor, reflects the historical and cultural interactions that have shaped its development. The continued presence of architectural features from the Malacca Sultanate and the influence of neighbouring regions such as Negeri Sembilan underscores the dynamic nature of Malay architectural traditions in the central region.



Figure 2.34: Long-roofed house in Selangor. (Source: Yuan, 1987)



Figure 2.35: Traditional Malay house in Selangor. (Source: Endut, 1993)

2.7.4 East Coast Region

The east coast region of Peninsular Malaysia, encompassing the states of Kelantan, Terengganu, and Pahang, is renowned for its unique architectural heritage, particularly the distinct forms of traditional Malay houses such as the *Rumah Bujang* and *Rumah Tiang Dua Belas*. These house types are emblematic of the region's historical and cultural influences, particularly the impact of Patani, a prosperous Malay kingdom in Southern Thailand, which significantly shaped the architectural aesthetics of Kelantan and Terengganu in the eighteenth century.

Sheppard's research in 1968 provides conclusive evidence that the architectural forms of *Rumah Bujang* and *Rumah Tiang Dua Belas* were prevalent among the Malay populations in Patani over a century ago, a connection that further reinforces the historical relationship between the region's architectural styles. Bougas' comprehensive study, conducted in the early seventeenth century, also draws parallels between the traditional East Coast Malay houses and the architectural forms of the Patani palace, citing sources such as the *Hikayat Patani, Tawarikh Raja Kota*, seventeenth-century Dutch accounts, and oral traditions.

The *Rumah Tiang Dua Belas*, or twelve-pillared house, is a remarkable architectural typology in Kelantan and Terengganu. This house is characterised by its structural reliance on twelve elongated pillars—six supporting the main house and the remaining six supporting the veranda. Traditionally made from interwoven palm fronds, the roof culminates in gable walls, known as "tebar layar," key features of this house style. A wooden frame called *Pemeleh*, shaped like a dragon, is positioned along the roof's perimeter, symbolising the strength and resilience of the house.





Figure 2.36: *Rumah Tiang Dua Belas,* Kuala Terengganu, Terengganu. (Source: Penglipur.Lara, 2023)

Figure 2.37: *Rumah Tiang Dua Belas,* Kuala Terengganu, Terengganu. (Source: Penglipur.Lara, 2023)

The twelve-pillared houses also feature functional spaces that serve different purposes. The main house is typically divided into the primary living area, veranda, and the *Kelek Anak*, separated by passageways such as the uncovered *wet-floor* area, which acts as a transitional space between the main house and the kitchen. If this passageway is roofed, it is referred to as *selasar*. In terms of materials, most of these houses utilise Singgora tiles, often imported from southern Thailand, although local versions are also crafted. The walls of these houses, especially those belonging to wealthier Malays, are often intricately carved or crafted from specialised planks known as *papan kembus* or adorned with designs called *janda berhias*.

In addition to the twelve-pillared houses, another important house form in Kelantan and Terengganu is the *Rumah Bujang*. Six pillars support this house and consists of three main sections: the inner house, the outer house, and an adjoining kitchen, which is separated from the main house by an exposed zone known as *jemuran* or *ruang lantai basah*. This area is used for drying activities and wet operations and, in some cases, is referred to as the *selang* or an unroofed passageway that facilitates the connection between the various functional spaces. The *Rumah Bujang* also features an open veranda, known as *selasar*, with a rail and protective fencing for safety. A distinctive feature of this house type is the absence of the *Pemeleh* in the inner veranda, a characteristic seen in the twelve-pillared house but absent in the *Rumah Bujang* due to the unroofed nature of its veranda.

In the case of Pahang, another state in the east coast region, the traditional *Rumah Serambi Pahang* presents a distinct architectural style. Characterised by sixteen pillars—eight supporting the main house and another eight for the veranda—this house type was widely constructed until the Second World War. The roofline of the *Rumah Serambi Pahang* is typically configured with an inverted "V" shape, lacking the loft and *Pemeleh* found in the houses of Kelantan and Terengganu. Like the other traditional Malay houses, the *Rumah Serambi Pahang* incorporates passageways, such as *selang* or *ruang penanggah*, to separate the kitchen area from the main house. The rear of the house may also feature an open space known as *pelantar*, which can either be unroofed or integrated into the kitchen area, depending on the specific design.



Figure 2.38: Pahang Long-roofed house in Temerloh, Pahang. (Source: Penglipur.Lara, 2024)



Figure 2.39: Pahang Long-roofed house, Temerloh, Pahang. (Source: Penglipur.Lara, 2022)



Figure 2.40: Pahang Long-roofed house, Maran, Pahang. (Source: Penglipur.Lara, 2022)



Figure 2.41: Pahang Long-roofed house, Maran, Pahang. (Source: Penglipur.Lara, 2022)

2.8 Challenges Influencing Changes to the Traditional Malay House

Various environmental, social, economic, and cultural factors shape the transformation of traditional Malay houses over time. Different regions and individual dwellings reflect distinct attitudes toward the intersection of societal needs and architectural adaptation, influenced by ecological, technological, and cultural shifts (Asquith & Velinga, 2006). Traditional architecture is expected to engage with these transformations as societies evolve while preserving their fundamental identity.

During the 1990s, Lim Jee Yuan, in his seminal work *The Malay House*, highlighted the increasing loss of confidence in traditional Malay architecture due to the growing influence of modern construction materials and Western-style house forms. The preference for ground-level masonry houses over stilted timber houses was driven by socio-economic aspirations, where modernity was equated with status. At the same time, traditional houses were perceived as outdated and symbols of rural poverty. This shift led to a significant decline in the appreciation of traditional Malay houses, with many being abandoned or replaced by contemporary structures.

However, recent years have witnessed a resurgence in recognising the value of traditional timber architecture. Increasing awareness of heritage conservation and the aesthetic and functional benefits of traditional designs has contributed to a renewed interest in maintaining these structures. Nonetheless, the challenges associated with their preservation persist. The primary concerns revolve around the high cost of traditional building materials, durability issues, structural performance, and adherence to modern fire safety regulations (Bysheim & Nyrud, 2008). Studies by Ab Latib et al. (2019) further highlight the deterrents to using timber in contemporary construction, including restrictive building codes, inadequate fire resistance, and concerns over long-term maintenance.

This evolving discourse signifies a paradigm shift in the perception of traditional Malay houses—from an initial phase of cultural rejection to a contemporary recognition of their historical and architectural significance. Despite this, the challenges of material sourcing, craftsmanship sustainability, and adaptation to modern living standards necessitate a critical examination of how authenticity can be preserved while ensuring the continued viability of traditional Malay houses.

2.8.1 Challenges in Sourcing Traditional Building Construction Materials

The authenticity of traditional Malay houses is intrinsically linked to the use of original materials such as *Singgora* tiles, *Kelarai* woven walls, and carved timber panels. However, the scarcity of these materials and the dwindling number of skilled artisans present significant challenges in conservation efforts. While the demand for these

materials remains high, particularly in heritage conservation projects, their availability is limited, leading to increased costs and difficulty in maintaining traditional authenticity.

One of the most iconic materials in traditional Malay houses is *Singgora* tiles, a clay roofing material predominantly found in Kelantan and Terengganu. Characterised by their distinctive fish-scale arrangement, these tiles have been widely used in historical buildings such as the Jahar Palace in Kelantan, constructed in 1887 (Mohd Asri & Zainal, 2023). The origin of *Singgora* tile production in Malaysia remains uncertain, but scholars suggest that the historical trade connections between the Malay Peninsula and Southern Thailand have influenced its craftsmanship.

Contrary to earlier assumptions of its decline, *Singgora* tiles remain in high demand today, especially for conservation projects and high-profile restorations. A significant example is the relocation and conservation of Kampung Laut Mosque, which required a significant quantity of *Singgora* tiles for authenticity in restoration (Hanafi & Rashid, 2023). Despite this demand, the supply remains constrained due to the complexity of production. The manufacturing process is highly labour-intensive, requiring high-quality clay sourced from mineral-rich paddy fields, which have become increasingly difficult to access due to changes in land use (Mohd Asri & Zainal, 2023).

The production process follows a meticulous sequence: clay kneading, moulding into traditional 'V' or diamond shapes, sun-drying for up to two days, and firing in traditional kilns (*goak*) for ten days to enhance durability (Hassan et al., 2015; Mohamad & Surip, 2016). These stringent requirements have led to a decline in manufacturers, with only one surviving traditional *Singgora* tile factory in Malaysia, located in Bachok, Kelantan. This facility, run by master craftswoman Noraini Jusoh, has been recognised by the Malaysian Handicraft Development Corporation for her efforts in preserving this craftsmanship (Mohd Asri & Zainal, 2023).

Although *Singgora* tiles are still widely sought after, their high production cost and limited supply contribute to conservation challenges. Balancing authenticity with practical constraints remains a key issue, necessitating efforts to sustain traditional craftsmanship through structured apprenticeship programs and incentives for artisans.

Another integral component of traditional Malay house construction is *Kelarai*, which is an intricately woven bamboo or *Bertam* bark panel used for walls. The production of *Kelarai* is an arduous process requiring expert craftsmanship, beginning with the careful selection of young *Bertam* plants. The weaving itself is entirely manual, without the aid of machines, making it time-consuming and limited in output (Taufik et al., 2022). The sustainability of *Kelarai* weaving is threatened by both material scarcity and the decline in skilled artisans. Harvesting bertam is labour-intensive, as the plant's sharp prickles pose challenges for collection (Taufik et al., 2022). Once processed, the bark must be carefully woven into specific motifs, a skill that takes years to master. Additionally, the durability of *Kelarai* walls is contingent upon meticulous maintenance, including regular applications of shellac and repainting to prevent deterioration. These requirements make it difficult to sustain traditional *Kelarai* production, leading to its gradual replacement with modern materials such as plywood and fiberboards, which, although practical, compromise the authenticity of traditional houses.

Timber carving is another crucial aspect of Malay architectural heritage, exemplified in elements such as *Janda Berhias* wall panels. These intricate carvings serve aesthetic and functional purposes, allowing ventilation while maintaining privacy. However, the continuity of this craft is at risk due to a shortage of skilled artisans and rising production costs.

Nazuki and Kamarudin (2017) highlight the challenges in sourcing and maintaining carved timber materials, mainly due to the cost-intensive nature of producing and replacing deteriorated panels. The declining interest among younger generations in pursuing traditional woodworking further exacerbates the issue. Without intervention, the scarcity of master carvers may lead to the eventual loss of this distinctive architectural feature.

Therefore, efforts to preserve traditional timber carving must focus on documentation, training programs, and incentives to encourage continuity in craftsmanship. Without such initiatives, the gradual disappearance of carved timber elements could significantly impact the authenticity of traditional Malay houses.

2.8.2 The Impact of Urbanisation on Traditional Malay Houses

Urbanisation in Malaysia has significantly influenced the transformation of traditional Malay houses, particularly in the 20th and 21st centuries. The rapid expansion of cities, infrastructure development, and the shift towards modern construction practices have led to noticeable spatial and functional modifications in traditional settlements. Traditionally, Malay houses were designed to accommodate communal living within kampung environments that emphasised social cohesion and environmental harmony. However, as urbanisation accelerates, these houses are increasingly being

repurposed or demolished to create contemporary structures that reflect modern housing preferences and economic demands (Asquith & Velinga, 2006).

One of the most profound consequences of urbanisation is the displacement of traditional settlements. As cities expand, land once supported by *Kampung* houses is repurposed for commercial or high-density residential developments. Consequently, many traditional houses have been relocated, altered, or abandoned due to changing land ownership patterns and rising property values. In some cases, new roads, commercial zones, and public infrastructure projects have further fragmented historic neighbourhoods, disrupting the traditional socio-spatial arrangement of Malay communities. Additionally, urbanisation has replaced vernacular architecture with Western-inspired masonry houses. This phenomenon was critiqued by Lim Jee Yuan (1990), who highlighted how this shift resulted in the gradual loss of traditional Malay architectural identity.

Another significant factor is the shift in lifestyle preferences. In urban settings, traditional Malay houses, once raised on stilts and featuring large open verandahs, are being replaced by modern houses prioritising compact design and enclosed spaces. This transition reflects changing perceptions of privacy, convenience, and security in urban environments. Unlike traditional houses that promoted airflow and passive cooling, modern housing developments often emphasise air-conditioned interiors, leading to the gradual decline of passive ventilation strategies that were once integral to Malay house design. Furthermore, due to urban constraints, many traditional houses have undergone structural modifications, including adding cement foundations, expanding interior spaces, and replacing timber walls with concrete materials to comply with urban building regulations.

These urban influences increasingly challenge the authenticity of traditional Malay houses. According to the ICOMOS Charter on the Built Vernacular Heritage (1999), changes over time should be considered part of a site's evolution; however, the Burra Charter (2013) asserts that changes should not compromise cultural significance. In this regard, urbanisation has led to a complex dichotomy—while some changes ensure the continued use and adaptation of traditional houses, others significantly alter their original form and function, thus raising concerns about the erosion of authenticity in built heritage conservation.

2.8.3 The Impact of Deforestation on Traditional Malay Houses

In addition to urbanisation, deforestation poses a significant threat to conserving traditional Malay houses. Historically, these houses were constructed using high-

quality tropical hardwoods such as Chengal (*Neobalanocarpus heimii*), Getahling (*Ochanostachys amentacea*), Fernpinis (*Sloanea excelsa*), and Jati (*Tectona grandis*). These materials were chosen for their exceptional durability, resistance to humidity, and ability to withstand the tropical climate. However, the widespread depletion of Malaysia's forest resources has led to the scarcity of these hardwoods, making it increasingly difficult to source materials to repair and reconstruct traditional Malay houses (Ab Latib et al., 2019).

Deforestation in Malaysia has been driven by excessive logging, agricultural expansion, and industrial development. Before the 20th century, primary and secondary forests covered approximately 90% of Peninsular Malaysia. By the early 1920s, this figure had declined to 67%, and by 1990, the Malaysian Forestry Department reported that forest cover had shrunk to 56%, with only 5% under conservation protection. More recent data from 2017 estimated that Malaysia's forest cover stood at 55.52% of the total land area, with projections suggesting a further decline to 47.35% due to ongoing deforestation. This depletion of forest resources has directly affected the availability of materials for traditional house construction and restoration (Malaysian Forestry Department, 1990).

The rising cost of timber has also contributed to changes in material selection. As the demand for hardwoods exceeds supply, the price of materials such as *Chengal* has escalated, prompting houseowners to seek alternative building materials. Consequently, cement, bricks, and metal have increasingly replaced timber elements, particularly in kitchens, flooring, and staircases, which were historically constructed using timber. Additionally, the shift towards non-traditional roofing materials such as zinc and asbestos has altered traditional Malay houses' aesthetic and thermal properties, further impacting their authenticity.

2.8.4 The Intersection of Urbanisation and Deforestation in Malay House Conservation

The combined effects of urbanisation and deforestation present a significant challenge in conserving traditional Malay houses. While urbanisation influences spatial configurations, functional adaptations, and lifestyle changes, deforestation directly impacts the availability and affordability of authentic materials. These forces complicate conservation efforts, requiring innovative approaches that balance modernisation with heritage preservation.

According to the Burra Charter (2013), changes to heritage sites should minimise negative impacts on cultural significance. However, economic constraints, material

scarcity, and evolving land use policies often necessitate alterations that diverge from traditional construction methods. The challenge, therefore, lies in developing adaptive conservation strategies that prioritise authenticity while ensuring practicality. This includes sourcing alternative sustainable materials, documenting traditional craftsmanship techniques, and raising awareness among local communities and policymakers about the importance of preserving Malay house heritage.

Furthermore, the lack of skilled artisans in traditional Malay timber construction exacerbates the problem. The declining number of craftsmen proficient in *Kelarai* weaving, *Singgora* roof tile-making, and *Janda Berhias* carvings poses a risk to the transmission of traditional knowledge. Without active efforts to sustain these craft traditions, the authenticity of future conservation projects may be compromised (Nazuki & Kamarudin, 2017).

Ultimately, the intersection of urbanisation and deforestation underscores the urgent need for a holistic conservation framework that addresses material sustainability and ensures the continuation of traditional construction practices. Conservation efforts must integrate community engagement, policy interventions, and financial incentives to sustain the architectural heritage of traditional Malay houses in an increasingly urbanised and resource-depleted landscape.

2.8.5 Adoption and Integration of Western and Contemporary Materials in Traditional Malay Houses

The adoption of Western materials in traditional Malay houses reflects a complex interplay between global architectural trends and local adaptation. In particular, the integration of concrete and brick in Melaka houses demonstrates the influence of colonial-era construction techniques. The use of tiled brick staircases in these houses, as observed by Hilton (1992), illustrates how European building practices were introduced and incorporated into Malay domestic architecture. Similarly, the inclusion of zinc roofing in traditional houses in Melaka and Perak reveals a shift from organic materials such as thatch and timber to industrial materials that were more durable and fire-resistant (Talib & Sulieman, 2012). This shift represents technological advancements and the broader societal preference for materials associated with modernity and colonial aesthetics.



Figure 2.42: Johor Long-roofed house in Segamat, Johor is using concrete staircase. (Source: Penglipur.Lara, 2025)



Figure 2.43: Melaka Long-roofed house in is using concrete staircase. (Source: Shaukani Abbas, 2019)

The widespread use of zinc roofing in Melaka and Perak traditional houses, particularly in the *Rumah Limas Bumbung Perak*, highlights the pragmatic response of Malay builders to changes in material availability and construction trends. As zinc is a lightweight, durable, and fire-resistant material, it became a preferred choice in the early 1900s, replacing traditional *attap* roofing in many houses (Rashid et al., 2021). Additionally, the adoption of clay roof tiles, a material introduced by the British, further demonstrates how Western materials were incorporated into traditional Malay architecture. These clay tiles were commonly used in *Rumah Limas Bumbung Perak* and other colonial buildings, signifying a direct European influence on roof construction. This adaptation suggests that while traditional Malay houses maintained their distinctive spatial and structural characteristics, they gradually absorbed new materials that aligned with contemporary functional needs and evolving aesthetic preferences.



Figure 2.44: Embun Mad's house with a zinc roof and concrete staircase, photographed in 2002.

(Source: Rumah Mak Embun, 2018)



Figure 2.45: Pahang Lon-roofed house in, Temerloh, Pahang using zinc roof. (Source: Penglipur.Lara, 2022)

While these material changes illustrate the impact of global architectural trends, the adaptation of Western materials in Malay houses was not an isolated phenomenon but rather part of a broader global trend of material hybridisation in vernacular architecture. The use of imported materials such as clay tiles, zinc, and concrete in Malay houses mirrors similar shifts observed in vernacular traditions worldwide, where industrialised materials were integrated to enhance durability, maintenance efficiency, and fire resistance. However, the uniqueness of Malay adaptation lies in the selective integration of these materials while retaining core traditional spatial elements. For instance, although Western materials were widely used, Malay houses continued to emphasise elevated structures, natural ventilation, and multi-functional living spaces, ensuring that their intrinsic architectural identity remained intact despite material changes. Thus, the adaptation of Western materials in Malay houses reflects a delicate balance between modernisation and the retention of authenticity, illustrating the dynamic nature of Malay architectural heritage (Talib & Sulieman, 2012; Rashid et al., 2021).



Figure 2.46: The open area beneath the Long Roofed house in Perlis, previously elevated, is now enclosed with a brick wall to create more space, altering the house's original character. (Source: Penglipur.Lara, 2022)



Figure 2.47: The open space beneath the Long Roofed house in Perlis has been enclosed with a brick wall, transforming the traditional elevated structure into a more enclosed form for additional living space. (Source: Penglipur.Lara, 2022)

While the selective adaptation of Western materials in traditional Malay houses maintained much of the original architectural identity, there have been instances where excessive adaptation of new materials and construction methods has significantly altered the core characteristics of these structures. A significant example of this transformation is the shift from the traditional elevated stilt construction to enclosed, ground-level foundations. Traditionally, traditional Malay houses were built on stilts, a design feature that facilitated natural ventilation, protection from floods, and a connection to the surrounding environment. The space beneath the house served various functions, including storage, domestic activities, and social spaces, while maintaining an open, airy atmosphere that allowed cooling breezes to circulate. This design also offered a sense of separation between the house and the ground, providing safety from animals and pests.

However, with the widespread adoption of concrete and other modern materials, many traditional Malay houses began to forgo their elevated structures in favour of solid, enclosed foundations. This shift not only changed the aesthetic and functional aspects of the house but also disrupted the underlying principles of natural ventilation and flexible spatial interactions that were integral to traditional Malay architecture. The enclosing of the space beneath the house effectively removed the raised platform's ventilatory benefits and connection to the natural environment, leading to a loss of the house's characteristic openness and flexibility. In some cases, the transformation extended beyond the structural elements, with modern materials and designs altering the form of the house in ways that diminished its historical authenticity. This excessive adaptation of materials, while offering certain benefits such as durability and resistance to weathering, has led to a dramatic change in the identity of the traditional Malay house, moving it away from its origins as an elevated, open, and naturally ventilated space to a more enclosed, fixed, and less adaptable form. This example highlights the complexities involved in balancing modernisation with preserving architectural heritage, underscoring the importance of maintaining the traditional design principles that define Malay houses.

2.9 Managing Changes in Traditional Malay Houses

The conservation of Traditional Malay Houses (TMHs) necessitates a strategic and community-driven approach that aligns with authenticity principles while addressing contemporary challenges. The Burra Charter (2013) emphasises the need for minimal intervention, ensuring that any modifications do not compromise the cultural significance of these dwellings. This calls for rigorous historical research before implementing changes, particularly those incorporating modern living standards. While traditional houses should retain their original structure and character, adaptations may be necessary to ensure functionality, particularly in evolving social and environmental conditions. Vellinga (2006) highlights that vernacular architecture is inherently dynamic and adaptive, allowing modern modifications to coexist with traditional forms, provided they respect the house's architectural and cultural integrity.

A primary concern in managing changes to TMHs is material authenticity and the challenges posed by unsympathetic alterations, such as inappropriate extensions, material replacements, and functional shifts. The use of non-traditional materials, such as concrete, asbestos, and metal sheets, often diminishes these houses' traditional aesthetic and environmental performance. However, in some cases, modern interventions are necessary for structural stability and climate resilience. According to Petzet (2009), conservation efforts should focus on effectively managing change rather than rigidly preserving buildings in their original state. The ICOMOS Nara Document on Authenticity (1994) also underscores the evolving nature of authenticity, advocating for context-sensitive adaptations that retain cultural significance. Therefore, conservation efforts must balance historical integrity with contemporary needs, ensuring that any modifications complement rather than replace the house's traditional identity.

Community participation and legislative support are essential in ensuring the sustainable preservation of TMHs. Engaging local communities, heritage professionals, and policymakers is necessary to cultivate awareness and foster a sense of ownership among property owners. Watson (2013) suggests that property owners should be central actors in conservation decisions, as their acceptance and involvement are key to long-term sustainability. Additionally, policies promoting incentives for conservation, such as tax relief, grants, and technical assistance, can encourage house owners to retain traditional elements rather than opt for complete reconstruction. Addressing climate change and environmental sustainability should also be integrated into conservation strategies, ensuring that traditional materials and techniques remain viable and accessible. Ultimately, adaptive conservation strategies, rooted in historical research, material authenticity, and community engagement, will be crucial in preserving Traditional Malay Houses' cultural and architectural significance for future generations.

2.10 Chapter Summary

This chapter explores the evolution of Traditional Malay Houses (TMHs), tracing their transformation from original vernacular forms to contemporary structures incorporating modern materials and spatial adaptations while retaining core cultural and architectural values. Historically, TMHs were designed to respond to environmental conditions, social customs, and indigenous construction techniques. Their elevated stilted structures, timber materials, and spatial hierarchies reflected traditional lifestyles and communal living. Over time, factors such as economic shifts, urbanisation, and changing lifestyle needs have influenced their adaptation, integrating modern materials and spatial reconfigurations.

The chapter highlights the critical balance between modernisation and heritage conservation in preserving TMHs. While using modern materials like concrete and zinc offers practical benefits in terms of durability and safety, it poses a risk to the authentic character of these structures. The demand for additional spaces, such as bedrooms and bathrooms, has driven architectural changes, further altering traditional forms. However, the chapter asserts that thoughtful conservation strategies can prevent the loss of cultural integrity while accommodating contemporary needs.

By examining architectural changes, material transitions, and conservation practices, the chapter underscores the importance of balancing authenticity with modern functionality in the preservation of TMHs. It emphasises the need for conservation frameworks that prioritise minimal intervention and culturally sensitive approaches, ensuring that TMHs continue to serve as living representations of Malaysia's rich architectural heritage..

The Approaches, Practice, and Guidelines for Conserving Heritage with Emphasis on Authenticity

This chapter investigates the different heritage management strategies and the definition of authenticity in the context of international practices and conservation efforts in Malaysia. By focusing on how different international concepts and local practices evolved, this chapter explain the development of authenticity in conservation and its practices in securing cultural assets. The goal is to present a systematic survey that incorporates theoretical and practical dimensions of the protection of timber houses with an emphasis on authenticity.

Over the years, *authenticity* as a term has gained particular prominence in the heritage of any type. It is acknowledged by many as one of the criteria for the determination of the importance and worth of a heritage asset (Jokilehto, 1999). This is vital in protecting and safeguarding the values of the cultural heritage in its understood mode, periods, and space. International charters such as the Venice Charter (1964) and Burra Charter (1999) further explain approaches to protect cultural heritage, including a range of desirable changes. These documents assist in the management of built heritage places by advocating for retaining original features and ensuring that conservation works are undertaken appropriately with regard to the cultural significance and context of the place. It is especially critical in these frameworks to ensure that actions taken do not degrade the historical, cultural, or material aspects or attributes of the heritage entities in question.

In the Malaysian context, the concept of authenticity also becomes more complicated because of the struggles of modernisation and development and the distinctive cultural features of the regions (Tan, 2013). Indeed, these differing approaches and perspectives on authenticity in conservation are essential to understanding both the challenges and the opportunities for conserving traditional Malay architecture.

3.1 Building Conservation at the International Level

The conservation of cultural heritage, particularly built heritage, remains a critical aspect of international efforts in safeguarding cultural landmarks and monuments. Charters and conservation doctrines are guiding principles for heritage professionals worldwide, outlining the procedures for identifying, maintaining, and preserving physical and non-physical cultural

artefacts. These charters, developed through global assemblies of experts in heritage conservation, represent a mutual agreement on the principles and practices that should be employed when conserving built heritage. The foundations of classical conservation theory have been instrumental in shaping conservation practices for over a century, with a primary focus on maintaining the aesthetic integrity and original fabric of heritage buildings (Alatli & Binan, 2020). The discourse surrounding this theory continues to evolve and remains a significant topic in contemporary conservation debates (ICOMOS, 1964).

The International Council on Monuments and Sites (ICOMOS), an organisation established to provide a platform for the global exchange of conservation knowledge, ratified the Venice Charter in 1964, which laid down the fundamental principles for safeguarding and refurbishing historical edifices and monuments. This Charter emphasises the importance of preserving the authentic essence of these buildings, particularly their material authenticity and historical significance. ICOMOS is a non-governmental organisation closely affiliated with UNESCO, playing a central role in guiding international heritage conservation practices. With nearly 90 national committees worldwide, ICOMOS is the primary consultant for UNESCO on matters concerning the protection and conservation of monuments (ICOMOS, 1964). The emergence of conservation charters post-World War II established the Venice Charter as the cornerstone of conservation practice, serving as a preeminent framework for global cultural heritage management.

3.1.1 Theory and Principles of Conservation Practice

The theory of conservation is essential for the safeguarding of cultural heritage sites around the world. Conservation practices have evolved, shaped by societal values and technological advancements. Today, conservation encompasses many activities, including documentation, research, evaluation, intervention, and surveillance, all aimed at preserving the historical authenticity, cultural significance, and physical integrity of cultural heritage sites. These practices also focus on facilitating the sustainable use and development of heritage properties while respecting their intrinsic value (Alatli & Binan, 2020).

International policies and guidelines regarding conservation have become essential in framing the global discourse on heritage conservation. They serve as a foundation for global collaboration and offer a set of benchmarks for conservation practices worldwide. The evolution of these guidelines reflects the growing recognition of cultural heritage's role in sustainable development, with increasing importance placed on community engagement, inclusivity, and sustainability in conservation efforts. Over

time, the scope of conservation has expanded from a narrow focus on safeguarding monuments to a more inclusive approach that recognises the value of cultural landscapes, intangible heritage, and community involvement (UNESCO, 1972). International organisations like UNESCO and ICOMOS have played a pivotal role in shaping and advancing these frameworks, ensuring conservation practices align with evolving cultural, ecological, and social contexts.

3.1.2 The Evolution of Global Policies and Guidelines Related to Conservation

Charters and documents are integral components of international conservation practices, often used interchangeably to refer to policies and guidelines that govern the protection and management of heritage sites. However, the distinction between charters and documents is important. Charters are formal statements developed by international organisations such as ICOMOS or UNESCO that outline general principles and standards for conservation. These documents are typically aspirational, aiming to establish broad guidelines for safeguarding cultural heritage without dictating specific methodologies or actions. In contrast, documents provide more prescriptive guidance, offering detailed methodologies and tools for conservation practitioners to preserve heritage sites. They may include specific conservation techniques, tools, and approaches that help practitioners implement best practices in preserving cultural heritage (ICOMOS, 2003; UNESCO, 2019).

The Venice Charter (1964) remains one of the most influential documents in heritage conservation, shaping how conservationists approach the preservation of architectural monuments and historical sites. However, as the field has evolved, subsequent charters have introduced new concepts and principles. For instance, the Nara Document on Authenticity (1994) expanded on the Venice Charter by emphasising the cultural relativity of authenticity and acknowledging that different cultures may approach authenticity in diverse ways (ICOMOS, 1994). Moreover, the ICOMOS Charter on the Interpretation and Presentation of Cultural Heritage Sites (2008) built on the Venice Charter by introducing a more inclusive and context-sensitive approach to interpreting and presenting cultural heritage sites. These subsequent charters represent an evolving understanding of conservation, incorporating new concepts such as cultural landscapes, intangible heritage, and community participation, which address the complexity of heritage conservation in today's globalised world.

The Athens Charter, adopted in 1931, is considered the first milestone in the history of conservation charters. It emerged from the International Conference for the

Protection and Conservation of Artistic and Historic Monuments, held in Athens, Greece. The conference brought conservation architects from various countries together to coordinate efforts to preserve historical and artistic works. Although the Athens Charter did not hold legislative authority, it provided operational principles for conservation administrators and practitioners, and it became a foundational document in the state of conservation in Europe during the inter-war era (Sonkoly, 2017). The Charter introduced several novel ideas, some of which remain relevant in contemporary conservation practices. It emphasised the need for public authorities to develop a respect for historical and creative works, regardless of their cultural or temporal origin. The Athens Charter balanced historical conscience and public-spiritedness, considering both essential to conservation efforts. It also rejected stylistic and historical approaches, advocating for preserving monuments and sites, including their context.

An Italian architect, Gustavo Giovannoni, was pivotal in shaping the Athens Charter. He argued for expanding the definition of monuments to include 'secondary works' as expressions of a community's heritage and material culture (Giovannoni, G., La restauration des monuments en Italie. Principes generaux, in: Office International des Musées). Cristina lamandi (1997) further highlighted Giovannoni's influence, noting his broader impact on conservation philosophy. The Athens Charter marked a significant moment in developing international cooperation in conservation, affirming the common interest of states in preserving artistic and archaeological heritage. The Charter also emphasised the universality of preservation values, positioning them within the newly established international order of the League of Nations, which was grounded in universal solidarity. Although the Athens Charter laid the groundwork for subsequent conservation charters, such as the Venice Charter of 1964, it has faced criticism, particularly for its Eurocentric focus. Scholars have argued that it reflected an Italian conservation philosophy and did not sufficiently account for the perspectives of non-European countries (Brumann, 2018). Additionally, the Charter's call for preserving monuments and sites in their entirety has been questioned in recent years, with some asserting that this approach may not always be feasible or desirable.

The Venice Charter, adopted in 1964 following the Second International Congress of Architects and Technicians of Historic Monuments in Venice, Italy, is another landmark document in the field of heritage conservation. Convened by Professor G. De Angelis d'Ossat, the Italian Director General of Antiquities and Fine Arts, the summit addressed the growing need for expert training, specialised agencies, and interdisciplinary collaboration in conservation. The Venice Charter introduced a set of principles that

significantly influenced conservation practice. One of its core tenets is an objective, scientific approach to preserving the actual state of monuments, with particular emphasis on the documentary quality of *"original material"* (Item 9). According to the Venice Charter, the most acceptable treatment of a monument should recognise all periods' legitimate contributions to its construction. The Charter conceptualises a monument as a *"historical document,"* linking its physical fabric to historical accuracy. In this regard, authenticity is understood as a monument's capacity to convey historical truth by preserving its fabric.

The Venice Charter has profoundly impacted global conservation practice and continues to serve as a key reference for national governments and international bodies, including UNESCO. The Charter has been crucial in promoting scientific methods and documentation as guiding principles for interventions on historic buildings and monuments (Erder, 1977). However, it has also faced criticism, particularly for its emphasis on defining the *"true state"* of a monument. Critics argue that this rigid approach can be challenging, often leading to a conservative conservation strategy that prioritises the preservation of fabric over contemporary society's functional and social needs. In this regard, the Charter's focus on authenticity has been criticised for neglecting historic structures and sites' social and cultural values.

The Burra Charter, established in 1979 by Australia ICOMOS (International Council on Monuments and Sites), has become Australia's national standard for cultural heritage conservation. The Burra Charter represents a careful reworking of the Venice Charter and has since become an influential document in conservation. It was updated in the mid-1990s to reflect evolving conservation practices better and address the growing need for community involvement. The Burra Charter differs from the Venice Charter in several key respects. Firstly, it employs the term "place" instead of "building" or "monument," allowing for a broader application to various types of cultural heritage sites. Secondly, the Burra Charter emphasises the cultural significance of a place, arguing that the value of the place should guide all conservation and management decisions. Moreover, it separates the significance assessment from management decisions, advocating for a logical sequence of investigations and decisions before initiating any conservation work (Brooks, 1992). The Burra Charter has significantly influenced national and international conservation practices and has shaped the creation of other conservation charters, including the Standards and Guidelines for the Conservation of Historic Places in Canada. Furthermore, the Burra Charter has promoted greater community involvement in heritage conservation, facilitating a clearer understanding of the conservation planning process.

The updated version of the Burra Charter, released in 1999, further emphasised the importance of community involvement, particularly with Indigenous communities. It acknowledged that the significance of a place is not limited to its physical fabric but also encompasses its social, spiritual, and historical values. The publication of the Illustrated Burra Charter in 1992 made the document more accessible to a broader audience, further expanding its reach. While the Burra Charter has been praised for its emphasis on cultural significance and community involvement, it has also faced criticism for focusing too heavily on the physical fabric of a place, sometimes neglecting other aspects of significance, such as social or spiritual values.

The Nara Document on Authenticity, established in 1994 at the ICOMOS conference in Nara, Japan, represents a significant departure from previous conservation charters. The document emerged from a growing recognition of the diversity of cultural perspectives on heritage conservation and sought to move away from the universal absolutes introduced by the Venice Charter. The Nara Document advocates for a more relativist and contextual approach to authenticity, acknowledging that definitions of authenticity may vary between cultures and even within the same culture. Item 11 of the document reflects this shift, asserting that judgments about the values assigned to cultural properties and the sources of information associated with them may vary significantly. Consequently, the Nara Document challenges the notion of fixed criteria for determining authenticity, suggesting that competing definitions should be respected (Item 6).

Herb Stovel, a Canadian heritage conservation expert, played a significant role in developing the Nara Document. Stovel (2008) highlighted the document's importance as a turning point in conservation history, marking the transition from the belief in international absolutes to accepting relativism and contextuality in conservation judgments. The Nara Document's emphasis on intangible heritage and the meanings associated with cultural properties has profoundly impacted conservation theory and practice. It has encouraged a more holistic approach to heritage conservation, which incorporates heritage's social, cultural, and spiritual dimensions alongside its physical fabric. Additionally, the Nara Document has reinforced the importance of community involvement in heritage conservation, emphasising the need for their participation in decision-making processes. However, the document's recognition of diversity and pluralism has also presented challenges, particularly when cultural values conflict, making it difficult to establish a consensus on appropriate conservation practices.

The Nara Document on Authenticity represents a significant shift in the field of heritage conservation, as it challenges the rigid, universal approach of previous charters and promotes a more relativist and contextual understanding of authenticity. Its focus on intangible heritage and the conservation of meanings has expanded the scope of heritage conservation, fostering a more inclusive and community-centred approach. However, the document's emphasis on diversity and pluralism has also raised challenges in reconciling differing cultural perspectives on protecting built heritage.

3.2 Conservation Principles of Vernacular Architecture

The ICOMOS Principles for the Preservation of Historic Timber Structures (1999), alongside the ICOMOS International Wood Charter, represent the primary international guidelines specifically addressing the conservation of historic timber buildings (Worthing & Dann, 2000). These frameworks are critical for any timber structure of cultural significance that requires protection and preservation. The Wood Charter, in particular, provides fundamental, universally applicable principles for conserving historic timber buildings. It offers detailed guidance on a wide range of activities, including inspection, documentation, monitoring, and interventions for repair and replacement. The Charter also emphasises the importance of maintaining historic forest reserves, integrating contemporary materials and technologies, and ensuring ongoing education and training for conservation professionals.

This Charter is particularly relevant for the conservation of Traditional Malay Houses (TMH) in Kelantan, where efforts are increasingly focused on the organised protection of these structures. Given the significant cultural and historical value of TMH, the principles outlined in the Wood Charter will serve as a comprehensive checklist for conservationists working in the region. The Charter's integration with other international provisions established by UNESCO and ICOMOS further enhances its applicability, ensuring that the conservation practices adopted in Kelantan align with global standards for preserving timber heritage. This collaborative approach offers a robust framework for maintaining the integrity of traditional Malay houses while balancing the need for modern interventions in their preservation.

3.2.1 International Context on Conservation Principles of Vernacular Timber Architecture

In order to establish an appropriate approach to conservation for vernacular timber architecture in Malaysia, it is essential to analyse the key elements outlined in various international and local charters and principles. This analysis aims to identify strategies that can be adapted to the Malaysian context while achieving the overarching heritage conservation goals. Several international conventions, such as the *Charter on the Built Vernacular Heritage* (1999), the *ICOMOS Charter: Principles for the Analysis, Conservation, and Structural Restoration of Architectural Heritage* (2003), the *Australia ICOMOS Charter for Places of Cultural Significance* (Burra Charter, 2013), the *International Charter for the Conservation and Restoration of Monuments and Sites* (Venice Charter, 1964), and the *ICOMOS Principles for the Recording of Monuments, Groups of Buildings, and Sites* (1996), offer valuable guidance. The *ICOMOS Guideline on Education and Training in the Conservation of Monuments, Ensembles, and Sites* (1993) and the *Scottish Historic Environment Policy* (2011) are important references. As Worthing and Dann (2000) noted, the *Burra Charter* is considered one of the most respected modern international charters, and its principles offer substantial relevance for the conservation of vernacular timber structures.

Table 3.1: The criteria in the Burra Charter, The Australia ICOMOS Charter for Places of Cultural Significance (2013) (Source: Adopted from the Burra Charter.2013)

	Proemble
	Preamble
1	

Definition				
Conservation Principles	Conservation Processes	Conservation Practice		
 Conservation and management 	 Conservation processes 	 Applying the Burra Charter Process 		
 Cautious approach 	 Change 	 Managing change 		
 Knowledge, skills and techniques 	 Maintenance 	 Disturbance of fabric 		
 Values 	 Preservation 	 Responsibility 		
 Burra Charter Process 	 Restoration and reconstruction 	 Direction, supervision and implementation 		
 Use 	 Restoration 	 Keeping a log 		
 Setting 	 Reconstruction 	 Records 		
 Location 	 Adaptation 	 Removed fabric 		
 Contents 	 New work 	 Resources 		
 Related places and objects 	 Retaining or introducing use 			
 Participation 	 Retaining associations and meanings 			
 Co-existence of cultural values 	 Interpretation 			

The *ICOMOS Built Vernacular Heritage* (1999) outlines five fundamental principles of conservation that are particularly pertinent to vernacular architecture. These principles emphasise the importance of applying multidisciplinary expertise in conservation efforts, recognising the dynamic nature of buildings through time, and respecting the community's cultural identity. All contemporary interventions must align with the traditional and cultural values associated with the building, preserving them in the context of the group or region they belong to. The conservation process should focus

on physical and structural preservation and consider the intangible values, customs, and practices tied to the building's use, traditions, and spatial form.

According to Oliver (1997), key principles of vernacular architecture include the integration of cultural traits, the role of the environment, the availability of materials, construction techniques, and the symbolic aspects of design. These principles also highlight the connection between a building's physical form and functional uses. In understanding the values of vernacular architecture, it is crucial to recognise the unique relationship between the community and its built environment, which reflects the community's social, cultural, and historical values.

Three primary methodologies are identified when considering approaches to studying and conserving vernacular architecture: the archaeological approach, the spatial approach, and the recording and documentation approach. The archaeological approach emphasises the empirical collection of knowledge about the construction and evolution of buildings, often through archaeological excavation or analysis of historical records. The spatial approach involves interdisciplinary discussions, focusing on the conceptual understanding of how space and form contribute to the function and significance of a building. Finally, the recording and documentation approach is a methodological process that involves documenting architectural elements and spatial organisation to preserve the building's history.

Earlier approaches to studying vernacular architecture were primarily aesthetic, focusing on the quality and value of design. As Ames and Hamroun (2011) suggest, vernacular architecture is an empirical practice, and its true character can only be understood within the context of the community that created it. This understanding of vernacular architecture is enriched through archaeology, which explores the sequences of changes in building periods, revealing the significance of social and environmental conditions. This, in turn, contributes to the conservation process by preserving the visual and aesthetic character of the building without compromising its stylistic integrity.

Vernacular architecture is closely connected with socio-cultural phenomena, economic activities, religious beliefs, traditions, and cultural values, each influencing the use and function of buildings. The status and authority of the owner are often reflected in the scale of the building, with differentiation in architectural form marking distinctions in rank, power, or wealth. This hierarchical division in building design underscores the connection between physical space and social structure. However, challenges arise from limited building resources and the need to address the distinctions between

builders and inhabitants of distinct cultural backgrounds, especially when conserving vernacular architecture for future generations. These factors must be acknowledged and carefully considered in the conservation process to ensure the preservation of authentic cultural heritage.

The principles set out in the *Burra Charter* are frequently applied as guidelines for cultural heritage protection, promoting a holistic approach to conservation. This approach involves managing change with adaptability and knowledge to apply sustainable practices progressively (Chan, 2011). The *Burra Charter* emphasises the importance of considering a community's local context and specific cultural needs, which is why it remains a central reference in timber conservation practices. It provides a closed yet highly relevant framework for preserving the heritage of timber buildings, particularly in settings like traditional Malay houses, where the connection to local culture is integral to their design and function.

However, Chan (2011) noted in her report on the *Preservation and Restoration of Timber Heritage Structures* that these buildings are increasingly neglected within the conservation profession. The scarcity of high-quality timber, the decline in traditional craftsmanship, and the rise of standardised industrial timber construction present significant challenges to effective conservation. There has been an increasing focus on enhancing traditional skills through proper training to address these issues. This gap in specialised training is not unique to Malaysia. However, it is a global concern, as few institutions offer formal education in traditional timber skills, unlike the widespread training for stone masonry (Chan, 2011). The lack of such training further exacerbates the challenges in conserving timber heritage, including traditional Malay houses.

Stewart Brand's work, *How Buildings Learn: What Happens After They're Built* (1995), offers an insightful exploration of the vernacular building process, particularly in the context of American historic and cultural architecture. Through the lens of sustainability, Brand advocates for a scholarly rather than aesthetic approach to the vernacular process. He describes it as an organic yet ordered process where cultures evolve, shaped by constraints, durability, and thrift. These values continue influencing contemporary architecture and remain relevant in conserving vernacular settlements, including traditional Malay houses. By considering these core sustainability principles, conservationists can ensure that vernacular architecture remains resilient and adaptable, preserving the built environment and the cultural values it represents.

It has been widely acknowledged that the more specific the conservation approach, the more systematic the survey and recording of vernacular architecture must be, particularly when based on scientific principles (Oliver, 1997). Effective conservation requires careful documentation and analysis to guide restoration, rehabilitation, reconstruction, relocation, or replication interventions. Ames and Hamroun (2011) highlight several guiding principles for interventions in historic architecture, including the minimum alteration of historic fabric, minimising risks associated with material selection and performance, and the reversibility of interventions. Furthermore, the original structure should be retained as much as possible, while any new materials should be distinguishable from the original fabric. The quality of the place must be respected, with a preference for original materials and craftsmanship, ensuring the longevity of the completed work.

While international conservation guidelines, charters, and policies have been instrumental in protecting historic sites globally, they do not always align with the needs and values of local communities. Sometimes, these international standards may overshadow local practices (Stubbs, 2009). In the context of Traditional Malay Timber Houses (TMTH), interventions should minimise alterations to the structure's cultural value, including its form, fabric, and function. The introduction of new materials must be carefully considered, ensuring that these materials not only respect the quality of the place but also adhere to principles of reversibility and maintain the integrity of the original building. Understanding the characteristics of new materials and their impact on the overall process is essential to preserving the authenticity of traditional Malay houses.

Although an influential document, the Venice Charter does not adequately address vernacular architecture or traditional construction techniques, which are crucial for conserving traditional houses (Stubbs, 2009). In contrast, the Burra Charter provides more specific guidance, emphasising using traditional techniques and materials to conserve significant fabric (Burra Charter, Article 4.2). This principle aligns with the overarching goal of maintaining the authenticity and integrity of the building, particularly in the context of traditional Malay architecture, where the conservation of historical techniques and materials is paramount.

Ultimately, any intervention in historic architecture, including that of traditional Malay houses, should adhere to an ethical approach grounded in integrity and authenticity (Orbasli, 2008). The conservation principles outlined in these charters provide a framework for balancing preserving cultural heritage and allowing for necessary

adaptations. Ensuring that interventions are both respectful and reversible while maintaining the authenticity of the building's materials and craftsmanship is essential to safeguarding the long-term value of traditional Malay houses.

No	The Basic Principles of Building Conservation		
		Working with the evidence	
1	Understanding	Understanding layers	
		Setting and context	
		Appropriate uses	
	Implementation	Material repairs	
2		Tradition and technology	
		• Legibility	
		Patina of time	
		New problems may require new approaches	
3	Evaluation	• Sustainability	
		Interpretation	

Table 3.2: The basic principles of building conservation. (Source: Orbasli , 2008)

Ames and Hamroun (2011) highlight several key elements that can enhance our understanding and conservation of vernacular architecture. First, it is crucial to appreciate the scale of an individual building within its broader environment, as this contextual understanding informs the significance of the structure. Vernacular buildings, particularly traditional Malay houses, are subject to changes over time through additions or alterations that may depart from their original form. Such transformations necessitate an effective conservation strategy to address both the physical and functional aspects of the building. The interconnectivity of all architectural elements, each representing different changes and periods of deterioration, further underscores the need for a comprehensive approach to conservation.

Documentation is central to the conservation process, which serves as a vital record of what was once present, offering valuable insights for future research and interventions. Documentation not only preserves the history of the building but also assists in understanding its cultural and historical significance. As Ames and Hamroun (2011) suggest, the planning process for conservation decisions should consider the historical context, the significance of the building, and the land use and treatment plans. Additionally, buildings must be considered part of sustainable resources, ensuring their preservation and continued relevance in modern times.

Vernacular buildings, including traditional Malay houses, are often described as *"architecture without an architect,"* reflecting their organic development through experience, community interaction, and local craftsmanship (Glassie, 2000). Unlike architecture designed for aesthetic purposes or professional architects, vernacular

architecture evolves from the lived experiences of its people. Their users' needs shape the structures, and the tactile connection between the inhabitants and their environment creates a deep sense of belonging. Glassie (2000) emphasises that this experiential quality fosters a connection between people and place, contributing to identity formation. The physicality of vernacular buildings—whether through the design of joinery, the arrangement of space, or the choice of materials—embodies the collective memory and cultural values of the community, further reinforcing the relationship between people and their built environment.

Vernacular architecture provides a profound sensory experience that enriches the modern architectural discourse, offering valuable insights for contemporary debates and traditional building conservation. The sensory and cultural attributes inherent in vernacular structures are integral to their uniqueness and demand preservation as part of comprehensive conservation strategies (Zhang et al., 2022). In the context of traditional Malay houses, the meticulous craftsmanship, locally sourced materials, and time-honoured construction techniques represent the harmonious integration of cultural identity, environmental adaptability, and societal values (Rasdi, 2005). These elements represent more than physical structures; they embody the historical narratives and environmental interactions that define the community's cultural fabric. Therefore, modern conservation practices must thoughtfully incorporate these traditional values, balancing the need for heritage preservation with contemporary functional malay houses as living representations of cultural heritage while meeting the evolving needs of modern society.

As articulated in the Venice Charter (1964) and the Nara Document on Authenticity (1994), the values associated with a building are fundamental in determining its authenticity. While varying across cultures, these values are intrinsic to the cultural context in which the building exists. For traditional Malay houses, relocating the house, could compromise its authenticity, as the cultural and environmental context would be altered. The aesthetic qualities of vernacular buildings, including their symbolic representation of traditional beliefs and customs, play an important role in preserving the unique identity of the cultural context to which they belong.

Vernacular architecture particularly that of traditional Malay houses, serves as a tangible record of daily life, embodying the community's cultural practices, traditions, and values. This architecture is inherently linked to the identity of its people, and its preservation is essential for maintaining a connection to the past. Although informal in
appearance, vernacular architecture is orderly and appropriately designed for its intended functions. The care and attention given to preserving these buildings ensure that the harmonious traditions and cultural values they represent are maintained for future generations.

3.3 The Concept of Authenticity in Heritage Conservation

3.3.1 Definition of Authenticity in heritage conservation

The ideas of authenticity have been important in the relationship between heritage preservation and culture because it determines how the communities interact with history and how they define themselves. In many cases, authenticity in the simplest of its forms can be defined as the quality of being genuine, unique, and trustworthy. As per the Oxford English Dictionary, it denotes something original and unique, whereas the American Heritage Dictionary recognises the sources as authentic and reliable. Such definitions highlight the complex perception of authenticity as a value associated with integrity and distinctiveness, both physical and non-physical.

Over the years, the understanding of authenticity in heritage conservation has undergone a significant evolution, shaped by the diverse perspectives of various authors. For instance, Jokilehto (1995) viewed authenticity as an inherent characteristic tied to a heritage site's creative and intellectual essence, arguing that the duplicative originality of its form and content is a tool for its value retention. He advocated for a more integrated understanding of authenticity, encompassing both physical and non-physical dimensions. Later, he explored into the cultural components of heritage management (Jokilehto, 2019). This shift in perspective allows for the integration of traditional approaches with the demands of contemporary times in heritage management, providing a comprehensive view of the field's evolution.

Rodwell (2008) explores the topic of authenticity, emphasising its originality and synergies with the structure and content of the heritage site. He links authenticity with sustainability in conservation, suggesting that preserving vernacular aspects should not be a mere reflection of the past, but a forward-looking endeavour to ensure the relevance and resilience of one's heritage. Rodwell's perspective underscores the dynamic nature of authenticity, highlighting the need for conservation to adapt to evolving contexts while preserving the essence of the site's original form. His work aligns with a broader understanding of heritage as a living, evolving entity, inviting the

audience to engage in the ongoing discourse about the balance between preservation and adaptation.

Jones (2009) introduced a new dimension to the authenticity debate by considering the politics of defining and validating authenticity. He argues that authenticity is not solely a cultural and historical construct, but is also shaped by politics, social structures, and individual perspectives. Jones highlights the complexities of authenticity in heritage conservation, where different stakeholders, often with conflicting interests, influence what is considered authentic. This perspective underscores the subjective nature of defining authenticity in heritage, challenging the audience to critically evaluate their own perspectives and understand the negotiation of identities and meanings within a given socio-political context.

Gao et al. (2010) in his their study, extended their scope to include material change and non-physical determinants of authenticity. According to them, there are three main themes: the social and sacred aspects of antique objects, changes of a physical nature, and non-physical entities' aspects such as religious practices and faiths. All these factors must be considered in any evaluation of authenticity in a broader sense, not only structural but also cultural relations of a place with its history. This new perspective on the concept of authenticity questions the traditional conservation approach that gives greater weight to the physical aspects of the heritage over the non-physical ones, contributing to a more integrated set of solutions in heritage management.

Benton and Watson (2010) played a significant role in reinforcing the idea that authenticity is not just a measure of physical preservation, but also an expression of social and cultural values. Their work underscored the difficulty in determining and validating authenticity, raising essential questions about how heritage is experienced and understood across different contexts. This emphasis on the multifaceted nature of authenticity enriches the discourse on heritage conservation, highlighting its subjective nature and the role of social and cultural values in its preservation.

Holtorf (2013) brought a unique perspective to the discourse on authenticity, approaching it from a more experiential standpoint. He argued that people's connection to heritage is more about the feelings and sensations evoked by physical changes, such as ageing and patina, than historical accuracy. This perspective challenges traditional notions of authenticity that focus on preserving the exact historical form of a site, proposing instead that authenticity may reside in the lived experience and emotional engagement with heritage. It aligns with the growing recognition of the

affective dimensions of heritage, where the experience of authenticity can be as meaningful as its material preservation.

Talking of the implications of authenticity to one's identity and belonging, Chapagain (2017) also maintained that this is also important for heritage studies. Similar to Jones, however, and like Chapagain, he also dealt with the question of power: who determines what is authentic and what is not, and how is this legitimacy exercised? This perspective adds another layer to the discussion. It supports the notion that the purpose of heritage conservation can be much more than just the anxiety of protecting the past for the sake of the future and is focused towards the current and future discourses centred on cultural identity.

Table 3.3: Scholarly Perspectives on Authenticity in Heritage Conservation outlines key ther	mes
in the definition of authenticity as explored by various scholars.	

Themes/ Scholars	Identity & Authorship	Conservation & Sustainability	Power & Politics	Cultural & Material Dimensions	Affective Responses	Aesthetic, Structural, and Cultural
Jokilehto (1995)	Х					
Rodwell (2008)		Х				
Jones (2010)	Х		Х			
Gao, Qian, and Jones (2010)				Х		
Benton and Watson (2010)			Х			
Holtorf (2013)					Х	
Chapagain (2017)	Х		Х			
Jokilehto (2019)						Х

The views of these scholars, in unison, broaden and deepen the discourse pertaining to the authenticity of the heritage conservation process. While there are indeed gaps in some places, they share a common concern with the ceaseless challenges posed by compromises necessary for defining and maintaining authenticity and witnessing the need for context, social conditions and other non-physical aspects in the work of conservation. Managing these views allows heritage conservation to respond to modern-day transformations without abandoning its cultural and historical roots.

3.3.2 Interaction of authenticity with conservation charters and documents

Authenticity is a cornerstone concept in architectural heritage conservation, influencing how practitioners approach the preservation of heritage sites. The seven key documents examined—*The Nara Document on Authenticity* (1994), *The Operational Guidelines for the Implementation of the World Heritage Convention* (2017), *The Burra Charter* (2013), *The Venice Charter* (1964), *Principles for the Preservation of Historic Timber Structures* (1999), and *Charter on the Built Vernacular Heritage* (1999)—offer varying definitions and guidelines for understanding authenticity, from material integrity to cultural significance. Each document provides a framework for assessing authenticity that reflects differing philosophies, yet they share key attributes that help define the broader concept of heritage conservation.

The *Venice Charter* (1964) is one of the earliest documents to establish a formal approach to authenticity, emphasising the importance of preserving heritage buildings' original materials and form.

Article 9 states, "The process of restoration is a highly specialised operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents."

This statement highlights the core attribute of material authenticity, asserting that any conservation work should respect the original materials and form of the structure. The focus on maintaining the physical integrity of the building reflects the aesthetic and historic value of the monument, a principle that remains foundational in conservation practices today. However, the *Venice Charter's* strict emphasis on original materials may present challenges when dealing with dynamic and evolving forms of heritage, such as vernacular or indigenous architecture, which require more flexibility in preserving authenticity.

In contrast, the *Nara Document on Authenticity* (1994) offers a broader, more flexible understanding of authenticity, accounting for the evolving nature of cultural heritage.

Article 10 affirms, "Authenticity, considered in this way and affirmed in the Charter of Venice, appears as the essential qualifying factor concerning values."

The Nara Document further emphasises that authenticity should be assessed through "various sources of information," including form and design, materials and substance, use and function, traditions and techniques, location and setting, spirit and feeling, and other internal and external factors. This inclusion of intangible heritage aspects represents a significant shift from the Venice Charter's more rigid approach. The Nara Document encourages cultural context to play a central role in determining authenticity, allowing for change and adaptation over time, essential for understanding the authenticity of living heritage sites. This more inclusive and flexible definition of authenticity aligns with the Charter on the Built Vernacular Heritage, which also stresses the importance of cultural practices in assessing authenticity.

The *Burra Charter* (2013) expands the concept of authenticity by linking it directly to cultural significance. While it does not explicitly mention the word "authenticity" in many of its items, its principles implicitly emphasise authenticity in relation to the preservation of cultural values.

Item 3.1 states, "Conservation is based on a respect for the existing fabric, use, associations and meanings. It requires a cautious approach of changing as much as necessary but as little as possible."

This approach reflects a broader view of authenticity, encompassing physical attributes and the social, cultural, and functional roles that buildings play in their communities. The *Burra Charter* advocates for minimal intervention, ensuring that any changes do not compromise the significance of a place. This holistic understanding of authenticity, which includes a site's tangible and intangible heritage, is essential in addressing the complexities of conserving vernacular and functional buildings.

The Operational Guidelines for implementing the World Heritage Convention (2017) align with the Nara Document in recognising a broader definition of authenticity, though with a more structured framework for assessing it.

Article 82 states, "Authenticity can be expressed through a variety of attributes, including form and design; materials and substance; use and function; traditions, techniques and management systems; location and setting; language, and other forms of intangible heritage; spirit and feeling; and other internal and external factors.."

This comprehensive list reflects the growing recognition that authenticity extends beyond just the physical aspects of a building to include functional, cultural, and environmental attributes. The *Operational Guidelines* integrate tangible and intangible heritage into their definition of authenticity, emphasising a more inclusive, flexible approach that accommodates the cultural evolution of heritage sites.

The *Principles for the Preservation of Historic Timber Structures* (1999) focuses on preserving the physical structure of timber buildings, where authenticity is primarily linked to maintaining the integrity of materials and craftsmanship. Although the document does not explicitly mention "authenticity," the principles underscore the importance of historical authenticity by promoting minimal intervention and using materials compatible with the original structure. The principles advocate for reversible interventions, ensuring authenticity is maintained over time and the timber heritage continues to reflect its historical and cultural context. This approach reflects a more material-focused view of authenticity, similar to the *Venice Charter*, but also provides room for adaptive techniques in timber conservation to retain authenticity through compatible repairs.

The *Charter on the Built Vernacular Heritage* (1999) provides guidance specifically for vernacular architecture, emphasising that authenticity should be evaluated not only through the physical form of a building but also by its use and social significance.

Item 5 states, "The vernacular embraces not only the physical form and fabric of buildings, structures and spaces, but the ways in which they are used and understood, and the traditions and the intangible associations which attach to them."

This approach aligns with the *Burra Charter*'s emphasis on cultural significance, recognising that authenticity is not merely a matter of preserving physical elements but involves maintaining the continuity of cultural practices and values associated with a building. The inclusion of social use and community significance as part of authenticity reflects the evolving nature of vernacular buildings and their importance in living communities.

The relationship between these documents highlights a shift in the understanding of authenticity in heritage conservation. The *Venice Charter* and *Principles for the*

Preservation of Historic Timber Structures focus more on **material and structural authenticity**, aiming to preserve original materials and craftsmanship.

Item 7 - "If it is necessary to renew or replace surface finishes, the original materials, techniques and textures should be duplicated as far as possible".

In contrast, the *Nara Document* and *Burra Charter* expand the definition of authenticity to include cultural practices, meanings, and evolving uses. These later documents provide a more flexible, context-sensitive approach to authenticity, particularly in relation to vernacular and functional buildings, where changes over time are part of the site's authenticity. The *Operational Guidelines* balance these two perspectives, offering a structured framework that incorporates tangible and intangible aspects of authenticity while maintaining global standards.

Although the documents share many common attributes of authenticity, there are subtle contradictions in how authenticity is applied. The *Venice Charter's* strict emphasis on original materials contrasts with the more flexible approach in the *Nara Document* and *Burra Charter*, which acknowledge that heritage properties may evolve. This tension between preservation and adaptation presents challenges, especially when dealing with buildings that are in constant use or have undergone significant changes. The *Operational Guidelines* provide a middle ground, incorporating material integrity and cultural context. However, applying these guidelines in local contexts may still require careful interpretation to account for regional differences in how authenticity is perceived.

The documents offer various approaches to understanding and preserving authenticity. While *The Venice Charter* emphasises material authenticity, documents like the *Nara* and *Burra Charter* encourage a broader, more inclusive definition incorporating cultural, social, and functional dimensions. These documents collectively reflect the evolution of conservation practices, highlighting the need for a more flexible and context-sensitive approach to authenticity, particularly when considering the dynamic and evolving nature of vernacular architecture and living heritage. The varying perspectives provide a robust framework for addressing the complexities of authenticity in heritage conservation today.

	W1	W2	W3	W4	W5	W6	W7
COMPONENT OF AUTHENTICITY * The attributes of Authenticity from Operational Guidelines for the Implementation of the World Heritage Convention as main references.	The Nara Documents on Authenticity in 1994	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013.	Principles for the Preservation of Historic Timber Structures (1999), ICOMOS	Charter on the Built Vernacular Heritage (1999)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (2003),	Principles for the analysis, conservation and Structural Restoration of Architectural Heritage
Form and design;	Form and design;	Form, scale and character	X	x	Addition not allowed except not detract from building interesting part	New work must respect and not distort the cultural significance of the place (siting, form, scale, texture, etc.	should respect the overall integrated plan considering architecture, structure, installations, and functionality.
Materials and substance;	Materials and substance;	Fabric	Minimal intervention on fabric and material	Replacement of materials and parts	Original material, replacement missing part harmonious	Retaining, modifying, or reintroducing significant uses may require changes to the fabric but should be minimized.	choice between "traditional" and "innovative" techniques should be based on compatibility with heritage value
Use and function;	Use and function;	Use	x	Adaptation	Not change the building's layout or decoration.	minimal changes to fabric and use	Change in use or function must be carefully considered with conservation requirements.
Traditions, techniques, and management systems;	Traditions and techniques	Traditional technique and materials	Follow traditional technique	Traditional building systems, training	Use all the sciences and techniques that contribute to safeguarding architectural heritage. respect for original material and historical evidence	Preference for traditional techniques and materials.	Preference for traditional techniques
Location and setting;	Location and setting;	Place and setting	Structure and cultural context	Siting, landscape and groups of buildings	historical context	remain in their historical location, Retaining an appropriate setting includes visual, sensory, and spiritual relationships	Interventions should not alter the historic or traditional setting, maintaining a balance.
Language and other manifestations of intangible heritage;	x	x	X	X	X	meanings of a place relate to intangible dimensions	The cultural context to which it belongs.
Spirit and feeling;	Spirit and feeling	Meanings	emotional resonance;	Changes and period restoration	connection to its historical context must be preserved	Cultural significance, including social and spiritual values.	Cultural and historical significance.
Other internal and external factors.	X	X	x	x	Excavations should adhere to scientific standards and UNESCO principles	Managing change requires assessing its impact on the cultural significance of a place,	Documentation of checks and monitoring should be kept as part of the building's history.
Remark	Specifically mention authenticity	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect

Table 3.4: The findings of analysis for Authenticity aspect/section for international document reviews.

*Discussed further in Chapter 5.

3.3.3 Existing Studies on Authenticity in Heritage Conservation

Carlos Alberto de Assunção Alho, in his research on Authenticity Criteria for the Conservation of Historic Places (2000), developed a set of authenticity criteria derived from international documents such as the Venice Charter (1964), Nara Document on Authenticity (1994), and the Operational Guidelines for the Implementation of the World Heritage Convention (1996). Alho emphasised a holistic approach to authenticity, considering material, design, workmanship, function, setting, and associated values. These criteria were validated using a Delphi study involving experts from diverse backgrounds and institutions such as UNESCO, ICOMOS, and ICCROM. Alho's first attribute, *Material*, refers to the physical elements that make up a property, emphasising the original materials used in its construction and their role in maintaining the site's authenticity. Design encompasses the property's form, structure, and spatial arrangement, reflecting its historical and cultural context. Workmanship highlights the craft and techniques used during the construction, marking the property's cultural craftsmanship. Function addresses the continuity of use, indicating that authenticity is tied to how the site has been utilised and its role within the community. Setting emphasises the importance of the property's physical and contextual environment, contributing to its historical and cultural value.

The methodology Alho employed, including qualitative research and the Delphi process, offers a valuable model for adapting to the *KTMH Framework* for conserving Traditional Malay Houses (KTMH). The flexibility of incorporating diverse expert opinions can enhance the adaptation of the framework to local needs, particularly in balancing physical integrity with cultural significance. However, one potential challenge for KTMH conservation lies in Alho's reliance on Western-centric criteria, such as the strict focus on original materials and design, which may not always align with traditional Malay architecture's dynamic, adaptive nature (Rasdi, 2005). The focus on materiality and form might need adaptation to account for the cultural flexibility and continuous evolution inherent in KTMH construction practices, where modifications and repairs are often integral to their identity and use (Rashid & Alauddin, 2005).

Alha's final rejection of "feeling" and "association" as authenticity criteria is not explicitly stated. However, the methodology section provides some insights. Alho's focused on indicators that could be measured and utilised in conservation practice. The last five criteria – design, materials, workmanship, function, and setting – were chosen for additional inclusion because they are tangible and measurable attributes that align with

conservation objectives more practically and fit in with what was being evaluated in the case studies.

Feeling and association are more abstract and personal and hence more difficult to elaborate and have appropriate application in a standardised form. Some of these criteria may have been neglected due to the Delphi technique, whereby experts ranked the criteria as only moderately encouraging or contextual, particularly regarding the criteria. Such a practical restriction likely explains the neglect of these measures; the authors nonetheless argue that this is an equally important aspect of the theoretical development of the problem.

So, although *feeling and association* were key issues for the early rounds of discussions, their exclusion probably witnessed the selection of criteria that combine theoretical soundness with the practicality of conservation work. These omissions point to a need for more investigation, particularly in contexts like Kelantan traditional Malay houses, where intangible cultural heritage is central to authenticity.

Table 3.5: Alho proposed five authenticity criteria based on relevant research and theories used in case studies of historic buildings to understand best practises in Europe. (Source : Alho, 2000)

Aspect	Criteria
Design	The combination of elements creates a property's form, plan, space, structure, and style. It comes from the choices made when a property was first thought of and planned (or when it was changed in a big way). It applies to activities as different as community planning, engineering, architecture, and landscape architecture. The design includes such elements as the organisation of space, proportion, scale, technology, ornamentation, and materials
Material	Are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property? The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.
Workmanship	The physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labour and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.
Setting	The physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space
Function/Use	The degree of continuity of a property's original or significant uses. An historic area and its surroundings form a coherent whole including associated human activities and constructions; continuation of original or compatible uses minimizes negative impact on authenticity

Kwanda (2015) proposes an authenticity principle with a physical orientation that can assist in constructing frameworks for conservation. Kwanda, concentrating on the conservation of the De Javasche Bank in Surabaya, stresses the conservation of *materials, substance,* and *form* while employing scientific methods and typological studies. This strategy corresponds to the principles set forth in international charters such as the *Athens* and *Venice Charters,* which support minimal intervention and reversal of alterations. As much as these strategies help safeguard physical integrity, the focus on physical authenticity still puts a strain on delving into other values, such as culture, in reference to traditional Malay houses in the state of Kelantan.

Kwanda's study reveals case studies of effective strategies for both preservation and adaptive reuse, perhaps benefiting the conservation of Kelantan traditional Malay houses. For example, the reproduction of damaged materials and their modern infrastructure to be reversible alterations demonstrates how original components of a structure can be maintained even while newer developments are integrated. This argument is particularly applicable to Kelantan, where vernacular architecture seeks to ensure cultural practices and ecology together with the materials are preserved. However, the limited scope on physical features emphasises the opposing view that there is a need for a framework that integrates the non-physical features of heritage which are crucial to the character of the Malay houses.

Kwanda's research adds value to the discussion on the authenticity-oriented conservation approach, but the demerits also call for its improvement. The emphasis on physical features, notwithstanding their significant role in Southeast Asian heritage, makes such a purely material framework limited in its appraisal. For traditional Malay houses, the issue of authenticity can encompass more than maintenance and the material; it can also encompass narratives and the spirituality of the culture. Incorporating the Nara Document principles or regionally practised conservation principles would enhance the relevance and scope of the frameworks, making them more suited to culturally layered heritage like that of Kelantan.

3.3.4 Western and Asian Perspectives on Authenticity and Preservation

Heritage conservation has long been shaped by differing philosophical, cultural, and historical perspectives, leading to significant debates between Western and Asian approaches. Over the past few decades, this discourse has intensified as scholars and practitioners examine the applicability of Western conservation models in Asia's diverse and dynamic heritage landscape. The fundamental distinction lies in the perception of authenticity—while Western models, influenced mainly by organisations such as UNESCO and ICOMOS, emphasise the preservation of *original materials* and *historic fabric*, Asian conservation approaches acknowledge the flexibility and impermanence of heritage, advocating for renewal and reconstruction where necessary (Ndoro & Wijesuriya, 2015). Given these philosophical divergences, assessing how conservation principles align with or contradict cultural traditions, material conditions, and regional heritage management strategies is crucial.

A defining characteristic of Western conservation is its reliance on *material authenticity,* where retaining the original fabric is paramount. This perspective is

evident in foundational documents such as the Venice Charter (1964), which asserts that preserving historical monuments must maintain their *authentic form, materials,* and *workmanship.* This principle was further institutionalised in the Operational Guidelines for the Implementation of the World Heritage Convention (1977), which established design, materials, workmanship, and setting as key criteria for authenticity in heritage sites (UNESCO, 1977). Similarly, the Burra Charter (2013) reinforces the notion that conservation must respect the physical integrity of a site while ensuring minimal intervention (Australia ICOMOS, 2013).

However, the homogenisation of these principles has led to a significant imbalance in the representation of global heritage. The 2000 World Heritage List revealed that 60% of the listed sites are in Europe, Canada, and the USA, with only 14% in China and India and just 1% in Asia-Pacific (Fu, 2005). This distribution underscores the Eurocentric lens through which authenticity is assessed, highlighting the need for a more inclusive and context-sensitive approach that accounts for diverse cultural perspectives on heritage conservation.

Conversely, Asian heritage conservation is deeply embedded in spiritual, philosophical, and practical traditions, which often prioritise continuity over material preservation (Winter, 2014). Many traditional Asian societies, influenced by Buddhist, Hindu, and Islamic worldviews, perceive heritage as a living entity where structures must evolve and adapt over time to retain cultural significance (Tom, 2013; Chapagain, 2013). This perspective is reflected in the *Nara Document on Authenticity* (1994), which introduced cultural relativity as a critical factor in defining authenticity. The document emphasised that authenticity should not be universally determined based on material conservation but understood within specific cultural, social, and environmental contexts (ICOMOS, 1994). This broader perspective led to the adopting of regional conservation frameworks, such as the *Hoi An Protocols* (2001) and the *Xi'an Declaration* (2005), which advocate for more context-sensitive approaches.

The divergence between Western and Asian conservation approaches becomes particularly evident in the adaptive reuse and reconstruction debate. In the West, conservationists often adhere to principles of *minimum intervention* and *preservation in situ*, opposing large-scale restorations that could alter the historical authenticity of a site (Ndoro & Wijesuriya, 2015). This approach was evident in the criticisms surrounding the Bagan stupa conservation project in Myanmar, where extensive reconstruction efforts drew condemnation from Western scholars for compromising the site's historical authenticity (Stadtner, 2005). However, periodic reconstruction and renewal in Asia are essential for sustaining heritage sites' cultural and spiritual essence. For example, the Ise Shrine in Japan is dismantled and rebuilt every 20

years, preserving its ritual significance while transmitting traditional craftsmanship and building techniques to future generations (Crouch & Johnson, 2001). Another example is in Bat Trang Village in Vietnam, where the local community constructed a new temple using local materials instead of conserving the original temple, reflecting a desire to maintain the ritual and spiritual significance of the space rather than preserving the physical fabric (Ellsmore, 2008).

In China and Korea, similar approaches have been observed in restoring *hutongs* and *hanok* houses, where heritage buildings are either rebuilt or modernised to accommodate contemporary needs while retaining their traditional aesthetic and spatial configurations (Ito, 1995). The *Principles for the Preservation of Historic Timber Structures* (1999) further highlight the challenges of conserving wooden heritage buildings, emphasising that periodic replacement and adaptation are necessary due to material decay, environmental factors, and continued use (ICOMOS, 1999). This contradicts the Western conservation ethic, which tends to favour stabilisation over renewal, often at the expense of the site's continued functionality.

A crucial element distinguishing Western and Asian conservation approaches is the recognition of intangible cultural heritage. Western conservation frameworks, particularly the Venice Charter (1964) and Operational Guidelines for the Implementation of the World Heritage Convention (1977), focus primarily on architectural and material preservation, with minimal reference to heritage sites' social and spiritual aspects. The Nara Document on Authenticity (1994) marked a shift by explicitly acknowledging intangible attributes such as *spirit, feeling, traditions, techniques*, and *management systems* as key components of authenticity (ICOMOS, 1994).

This broader understanding of heritage aligns with the Asian worldview, where rituals, craftsmanship, and communal practices are integral to the identity of historic sites. The Charter on the Built Vernacular Heritage (1999) reinforces this perspective, emphasising in its conservation principle that vernacular buildings should be conserved in a way that respects local communities' traditions, techniques, and socio-cultural practices (ICOMOS, 1999) (Kwanda, 2009). This is particularly relevant in Southeast Asia, where wooden houses, temples, and other structures rely on continuous maintenance and reconstruction, ensuring that cultural knowledge is passed down rather than solely focusing on material preservation (Wijesuriya, 2005; Peleggi, 2012).

Despite the ongoing debate, the influence of Western conservation models in Asia cannot be ignored. Many Asian countries have adopted global heritage standards to gain UNESCO recognition and international funding. However, applying rigid Western frameworks without adapting them to local cultural contexts has led to tensions, as seen in the redevelopment of *hutongs* in Beijing and the Yongding Gate restoration during the 2008 Olympics, where global conservation standards clashed with national urban development priorities (Friedmann, 2010; Bideau, 2017).

To reconcile these differences, contemporary conservation efforts must adopt a hybrid approach, integrating scientific conservation principles with culturally appropriate management strategies. Documents like the Burra Charter (2013) have already moved in this direction by introducing adaptive management principles that balance physical preservation with cultural sustainability (Australia ICOMOS, 2013). The Nara Document on Authenticity (1994) also serves as a guiding framework, advocating for conservation practices that respect the diversity of heritage expressions across cultures (ICOMOS, 1994).

The contrast between Western and Asian approaches to heritage conservation is rooted in differing philosophical and material perspectives. While Western conservation emphasises material authenticity and minimal intervention, Asian heritage management prioritises continuity, renewal, and the transmission of cultural knowledge (Winter, 2014). The Nara Document on Authenticity has played a critical role in bridging these perspectives, challenging the Eurocentric emphasis on physical preservation and advocating for a more inclusive, culturally sensitive conservation framework. Global heritage conservation must acknowledge that authenticity is not a fixed concept but a flexible, evolving principle (Winter, 2014). Conservation practitioners should embrace context-specific methodologies, ensuring that heritage sites are preserved as static monuments and living, evolving cultural entities. The integration of Western scientific methodologies with Asian traditions of conservation represents the next step in heritage management, fostering a future where heritage conservation is inclusive, sustainable, and culturally resonant.

3.4 Malaysian Practices and Approaches to Heritage Conservation

3.4.1 International Conservation Documents and Guidelines in the Context of Malaysia's Building Conservation Practice

The Venice Charter (1964) and the Operational Guidelines for the Implementation of the World Heritage Convention (2017) are both comprehensive frameworks for preserving cultural heritage, which can be applied globally. The Venice Charter's emphasis on preserving the "original character" of buildings through minimal intervention and using "recognisable materials" provides a solid foundation for maintaining the authenticity of architectural forms. In the context of Malaysia, this can offer a straightforward approach to preserving significant historical structures, particularly those with substantial historical value, such as colonial-era buildings or iconic heritage sites in cities like George Town or Melaka. The Operational Guidelines also offer a structured methodology for evaluating properties for inclusion on the World Heritage List, with their clear criteria for assessing "outstanding universal value," which can aid in recognising Malaysia's most significant cultural sites. These documents contribute to a global conservation standard that helps ensure consistency and credibility in Malaysia's building conservation efforts.

However, one of the flaws of these documents in the Malaysian context is their insufficient attention to the unique characteristics of local vernacular architecture, especially in rural areas. The *Burra Charter* (2013) and the *Venice Charter* both focus on material integrity and the preservation of form, which may not be suitable for conserving more flexible and adaptive structures typical of Malaysia's vernacular buildings, including traditional Malay houses, longhouses, and indigenous dwellings. These structures, often built using organic materials such as bamboo, timber, and thatch, reflect a dynamic process of construction and modification over time. The rigid approach to authenticity, especially in maintaining the original materials and fabric, may be inappropriate for these buildings where change and adaptation are integral to their cultural value. This presents a challenge for conservation efforts that seek to maintain the physical structure and the evolving traditions and social functions of these buildings.

Moreover, the emphasis on *"outstanding universal value"* and *"integrity"* in the *Operational Guidelines* may not always align with the local cultural and environmental context of Malaysia's built heritage. While these international frameworks provide essential guidelines for protecting globally recognised heritage, they may inadvertently

prioritise monumental buildings or those with clear historical significance over more every day, local heritage equally vital to Malaysia's cultural identity. The *Nara Document on Authenticity* (1994), which allows for more flexibility and context-based assessments, offers an alternative strength by advocating for an understanding of authenticity that accounts for cultural and temporal changes. However, its lack of specific applications to the diverse building traditions found in Malaysia, particularly its vernacular heritage, may limit its practical use. Malaysia would benefit from a more localised set of conservation principles that respect the tangible and intangible heritage of local communities, allowing for a balanced approach to preserving the diversity of its building traditions while still adhering to international conservation standards

In the context of traditional Malay houses, the *Nara Document on Authenticity* (1994), while advocating for a more flexible understanding of authenticity in a cultural context, does not provide explicit criteria for evaluating the intangible and evolving aspects of heritage that are particularly significant in traditional Malay houses. The *Nara Document* emphasises the importance of *"traditions, techniques,* and *management systems"* as part of authenticity. However, it lacks a clear framework for assessing the intangible cultural practices associated with traditional Malay architecture, such as rituals and community participation in construction and maintenance. This oversight can make it challenging to apply the principles of authenticity described in the *Nara Document* to the Malaysian context, where the preservation of intangible heritage—such as craftsmanship, cultural practices, and social meaning—is equally important as preserving the physical structure of the building itself.

Finally, although comprehensive, the Operational Guidelines for the Implementation of the World Heritage Convention (2017) may present challenges in the Malaysian context due to their focus on the "Outstanding Universal Value" and global criteria for World Heritage inscription. This focus often leads to a more standardised and uniform approach to heritage conservation that may not be fully compatible with the localised and context-specific needs of Malaysia's traditional Malay houses. The guidelines emphasise attributes such as "form," "function," and "materials," which, while relevant, may not fully encapsulate the socio-cultural and environmental adaptability of Malay architecture. The documents' treatment of authenticity as primarily determined by formal attributes might undermine traditional Malay houses' dynamic, adaptive nature, where changes and modifications over time are integral to their cultural significance and authenticity. Therefore, a more detailed approach tailored to local traditions and environmental conditions is necessary to address the particularities of Malaysia's heritage.

3.4.1 Policies, Legislation, and Guidelines in Malaysia

Heritage conservation in Malaysia is based on legal frameworks, guidelines, and global documents. The primary legal instrument, the National Heritage Act 2005 (Act 645), repealed the previous laws' the Treasure Trove Act of 1957 and the Antiquities Act of 1976. The purpose of this act is to protect both tangible and intangible cultural heritage in accordance with various UNESCO conventions. As time passed, additional policies and state-level enactments have also been passed to enhance built heritage conservation. This discourse analyses the scope of these policies, their practice, and the problems experienced in their implementation concerning heritage conservation.

As for the National Heritage Act 2005 (Act 645), the legislation has been attributed towards enhancing heritage conservation and management in Malaysia. It has structured the heritage management framework into 16 broad sections and manages the overall heritage assets management, including setting up the heritage council, the heritage fund, and listing processes. This act identifies nine key criteria for determining heritage properties, ranging from historical and architectural significance to cultural and educational value (National Heritage Act, 2005).

For instance, the law also enables owners of specific national heritage properties to seek assistance funds to help them overcome the economic constraints of conservation and maintenance. It imposes a fine for failure to adhere to such practices, further enhancing the relative importance of maintaining historic buildings. However, it is a conditional framework; its effectiveness depends on enforcement, public knowledge and integration with other laws.

Several additional federal acts indirectly address conservation supplement The National Heritage Act. For example, the Town and Country Planning Act 1976 (Act 172) and the Federal Territory Planning Act 1982 (Act 267) provide for urban planning, including the protection of places, buildings, and historical importance. These acts promote heritage preservation by ensuring that growth does not overwhelm cultural endowments. Much the same, the Local Government Act 1976 (Act 171) expands the role of local authorities in assisting in conserving heritage sites, making conservation activities more decentralised.

At the state level, heritage conservation legislation appears as individual enactments and ordinances. One of these would be the Malacca Preservation and Conservation Cultural Heritage Enactment 1988 and the Johore Enactment 1988, which aim to protect the cultural heritage in the states. These enactments supplement federal laws on cultural heritage as they deal with unique provisions of conservation within the regions.

For instance, Malacca's enactment, in particular, has played a significant role in the responsible protection of the Malacca Traditional Malay Houses (TMH) in light of the development occurring in the region (Ismail, 2012). The enactment sets a practical case example that other states can use to help formulate local approaches that focus on preserving heritage. Nevertheless, sometimes, there are also minority discourses in prosecuting such cases induced by conflicts between state and federal laws. In this case, effective coordination of the two limbs of the government would overcome such problems (Ismail, 2012).

In 2016, Malaysia introduced the Guideline for the Conservation of Heritage Buildings to support the implementation of the National Heritage Act 2005. This guideline offers practical instructions for conservation work and ensures that interventions align with national and international standards. It emphasises minimal intervention, the use of traditional materials, and the retention of authenticity.

The guideline has adopted principles from various international charters, such as the ICOMOS Burra Charter and the Venice Charter (1964), bringing Malaysian conservation endeavours to par with global standards. Yet, its adoption is not uniform, and some areas have enforcement deficiencies and a lack of sufficient expertise, hence the need for capacity building for stakeholders.

Even with these frameworks, the tools for analysis have been less helpful in situating the heritage conservation challenges in Malaysia. Before the establishment of the National Heritage Act 2005, any prior legislation did not cover the detailed conservation management issues. For instance, archaeological sites were considered in the Antiquities Act 1976 but not built heritage. While the current legal structure is much better than before, there are still gaps in its enforceability.

Unfortunately, one strategic concern that stands out is the disconnection between federal and state policies and, as such, their coordination. State enactments respond to local demands, but compliance sometimes depends on political will and available resources. There are also states without local heritage conservation laws per se, which are guided by the federal enabling laws that are sometimes too generic for local application.

International charters such as the ICOMOS Burra Charter and the Venice Charter inform Malaysia's heritage conservation policies. These charters emphasise the

importance of authenticity, minimal intervention, and the adaptive reuse of heritage buildings. By referencing these charters, Malaysia ensures its conservation practices align with international norms. However, Malaysia's unique cultural and historical context requires adaptations to these guidelines, as rigid adherence may overlook local values and traditions.

In Malaysia, where intangible heritage plays a significant role in cultural identity, conservation efforts must balance these dimensions. This calls for reinterpreting international principles to suit Malaysia's diverse heritage landscape.

To enhance heritage conservation, Malaysia must address policy implementation and coordination gaps. Greater collaboration between federal and state authorities is essential to harmonise legislation and ensure consistent enforcement. Enhancing the capacity of conservation professionals and local authorities can also improve the effectiveness of conservation work.

Public awareness campaigns should also be undertaken, which will create a sense of appreciation for heritage and encourage communities to get involved in conservation activities. Malaysia can further promote its heritage by incorporating it into national education systems and involving the local communities in heritage education.

There is a need for periodic reviews of legislation and guidelines that will provide solutions to rising challenges and showcase best practices. If policies are responsive to and in line with the changing scenarios of heritage conservation, then Malaysia's culture will have its assets safeguarded for future generations.

As much as Malaysia's heritage conservation framework is sound, it has gaps that must be filled to provide better conservation policies. The 2005 National Heritage Act gives a legal endorsement, further enhanced by federal law and some state laws like the Malacca Preservation and Conservation of Cultural Heritage Enactment. Nonetheless, some states like Kelantan have no such provincial guidelines, challenging conserving specific cultural assets, including traditional Malay architecture. Lacking such specific frameworks for local building heritage, these assets remain at risk for loss. It is crucial to formulate state-level conservation guidelines that consider the social, cultural and architectural features of a particular region such as Kelantan. If practical, these local measures, in addition to better coordination, public involvement, and compliance with international guidelines, will sustainably promote and protect Malaysia's diverse and precious heritage.

The findings from Tables 3.6 and 3.7 reveal a significant gap in Malaysia's national and local policies and guidelines, as none specifically address or are dedicated to the protection of timber or traditional Malay buildings. The only reference to authenticity is found in the "Guidelines for the Conservation of Heritage Buildings" (2016); however, the guidelines mention authenticity generally without offering specific criteria or detailed descriptions. Furthermore, these guidelines do not specify any particular building typology, limiting their applicability to traditional timber structures. A more detailed discussion of these findings is provided in Chapter 5.

	\$1	\$2	\$3	\$4	S5	S6
	Malacca State Cultural Heritage Conservation and Restoration Enactment, 1988	Enactment (No.7) of the Johor State Heritage Foundation 1988	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	Sarawak Cultural Heritage Ordinance 1993	State of Penang Heritage Bill 2011 (<i>Warisan Kerajaan</i> Negeri Pulau Pinang 2011)	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007
Content	This enactment is the provisions for the preservation, conservation and enhancement of cultural hertage of the Malacca State. Aimed more towards the protection of privately owned buildings and monuments over which the Government has no Jurisdiction. Comprises of administration, register, restriction on planning permission, repairs, fund, conservation and preservation proposal and programme and etc. No section specific on enforcement but there is penalty charge.	Specific for the cultural and historical heritage of the Johore State. Little interpretation and more focus on the Yayasan's power and function, fund, penalty and estimated expenses. No section specific on enforcement.	Covers preservation and Historical monuments, Archaeological sites, antiquities, regulate matters connected with research, law relating to treasure trove in Sabah. It also covers register, care of historical monuments and sites, as well as penalty charge.	Preservation of antiquities, archaeological, architectural, religious, architectural, interest, and value for the benefit of the State and as a heritage of the people. It covers register, care of historical monument and sites as well as penalty charge. It also hiphilighted the traditional arts and handicraft as one of the cultural heritage under specific section that need to be preserved.	Management, preservation and conservation of cultural heritage for the State of Penang. This enactment is the only one has a section on the application of NHA as it was billed in 2011. The content of this legislation is quite similar to NHA but suited to the local context. Besides having a register, financing and care of heritage site, they also have own Heritage Council and a form of Enforcement.	This guideline is specific on certain conservation areas in George town area. It is more planning system and application more specific to the certain type of building such as shop house. It has very detail explanation in term of conservation principles, listed building and control system.
Key Observation	The most comprehensive act with financial incentive, tax relief, and conservation and preservation proposal and programme "Interpretation "Register "Care "Conservation Program "Fund "Administration	The most comprehensive act with financial incentive, tax relief, and conservation proposal and programme "Interpretation "Register "Care "Conservation Program "Fund "Administration	"More to antiquity and treasure trove "Interpretation "Register "Care "Administration	The only specific Section on Traditional Arts and Handicraft is unique as it promote, stimulate interest and rehabilitate traditional manual skills, while preserve it, with incentives and establish centre for exhibition and workshop. "Interpretation "Register Care	"Interpretation "Register "Care "Fund *Administration *Restriction Planning	More specific to conservation area particularly shop houses. Very detail conservation principles and control system. "Interpretation "Register "Care "Administration "Restriction Planning

Table 3.6: The findings of analysis for local document reviews.

Table 3.7: The findings of analysis for national document reviews.

	M1	M2	M3	M4	M5
	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning Act 1976 (Act 172)	Federal Territory Act 1982 (Act 267), (Act 267), applicable applicable applicable Lumpur, and Lubuan, and Putrajaya	Guidelines Conservation Heritage Buildings (2016)
Content	The main national heritage legislation, it covers most aspects, from interpretation, administration to the establishment of council and committee, fund, register, declaration and etc., tangible and intangible, underwater cultural heritage, or treasure trove.	More relevant to the workings of local government. Only Part XII Section 101, about maintenance (conversion) of historical buildings in town area.	This Act related to the regulation of town and country planning. Section 12 (viii) the preservation and enhancement of character and appearance of buildings Section 19 (2) (a) (i), (iii): no planning permission: Maintenance (alteration, conversion, material use) which affect interior only. Not involve external. Section 22 (i), (j), (k): compatibility to the existing architecture or historical interest, any addition or alteration, reerection/ demolition should be retained the façade and external	This Act related to the regulation in the Federal Territory. Section 20 (2) (a) (i), (ii), (iii) stated about no planning permission be necessary for maintenance which affect interior only (not involve any alteration, conversion, change of use and material use that affect external).	A guide for the implementation of heritage building conservation work in Malaysia. It is very detail explanation that covers: Part II (2.0) Principles and conservation process Part III (3.0) Documentation Guideline Part VI (4.0) Conservation Guidelines and Principles on Architectural elements.
Key Observation	Too general None of the section stated about the Traditional Malay house in particular "Interpretation "Register "Care "Fund "Administration "Restriction "Planning Interpretation	Villages are also subject to get permission from Local Authority (LA) or Local Planning Authority (LPA) Unbalanced enforcement to this area by the LA or LPA *Interpretation *Administration	Highlighted in draft local plan and treatment of applications *Interpretation *Administration	"Interpretation *Administration	
Finding	Register Proposal/program for Conservation	Care Fund and Incentive Restriction of Planning Submission	None of the legislation above (S1, S2 S3, S4, S5 S6, M1, M2, M3, M4, M5) stated about protecting or conserving the Traditional Malay house in particular		

Table 3.8 provides an overview of the key stakeholders involved in heritage conservation in Malaysia, their functions, and roles at the federal, state, and local levels. These stakeholders work collaboratively to protect and conserve Malaysia's rich cultural heritage for future generations. The conservation of built heritage in Malaysia is a collaborative effort that involves multiple stakeholders, including the government, NGOs, local authorities, heritage building owners, conservation architects and consultants, and researchers. A diverse group of professionals is required to effectively preserve historic buildings, such as town planners, building surveyors, landscape architects, quantity surveyors, specialized engineers, and building contractors. However, achieving effective conservation practices can be challenging due to different agendas and priorities, limited funding and resources, and inadequate enforcement of conservation practices are necessary to preserve heritage buildings for future generations. Ultimately, the quality of building defects and adherence to conservation standards are fundamental to successfully preserving built heritage in Malaysia.

Table 3.8: Stakeholders of Heritage and Conservation in Malaysia.

Level	Agency	Function/Role
National	Department of National Heritage (JWN)	Primary agency responsible for the protection and management of Malaysia's national heritage sites. Develops policies, guidelines, and regulations for heritage conservation practices.
National	Department of Town and Country Planning (JPBD)	Develops and implements the National Physical Plan, which includes the preservation and conservation of heritage sites.
State	State Heritage Departments	Responsible for the protection and management of heritage sites within their respective states. Work closely with JWN to ensure compliance with national heritage conservation policies and guidelines.
Local	Municipal Councils and Local Authorities	Responsible for the enforcement of building codes and regulations related to heritage sites within their jurisdiction. Collaborate with heritage departments to ensure the conservation of heritage buildings and sites.
Private Sector	Property owners and developers	Play a critical role in heritage conservation practices, as they own and manage many heritage buildings and sites. Must comply with conservation regulations and guidelines set by the relevant agencies.



Figure 3.1: The basic conservation activities in current practice. (Source: Adopted from Malaysian Heritage Department, 2015)

Figure 3.1 shows Malaysia's conservation of heritage buildings conservation process beginning with preliminary study, which includes historical research and the creation of measured drawings. Historical research gathers essential documents such as original design drawings, historical photographs, maps, and previous reports, while measured drawings help to document the building's current state and any changes over time (Akboy-İlk, 2017; Gunewardene, 2016). Following this, a dilapidation survey is carried out to assess the building's condition, identify defects, and determine the causes of deterioration. This survey involves a comprehensive condition assessment of structural components and site testing, such as moisture monitoring and crack detection. Laboratory analysis of materials, including mortar, timber, and paint, is conducted to understand the original composition of materials and ensure the correct choice of compatible materials for restoration (Mohd Noor et al., 2019).

After the research and assessment stages, preliminary conservation works such as cleaning, stabilisation, and applying compatible materials are carried out. These works are followed by the main conservation works, which involve deconstructing deteriorated elements, repairing and restoring structural components, and using traditional materials like terra cotta tiles and timber to maintain the building's historical appearance. The management and maintenance of heritage sites are ongoing processes, requiring the development of maintenance plans to ensure the preservation of the buildings over time. These plans include periodic inspections and conservation activities to prevent further degradation, extend the lifespan of the building and ensure its continued cultural and historical significance (William, 2019; Tommy et al., 2018).

3.4.3 Challenges in building conservation practice in Malaysia

The preservation of heritage buildings in Malaysia faces several challenges, particularly in urban areas like Kuala Lumpur, where rapid development has led to the demolition of historical buildings to make way for modern infrastructure. As Malaysia's cities continue expanding to accommodate a growing population, heritage buildings in prime urban areas are increasingly being targeted for demolition. This trend is particularly evident in the case of iconic buildings such as those in Merdeka Square and the Sultan Abdul Samad Building, which high-rise developments have replaced. The lack of a coherent policy and proper enforcement regarding protecting heritage buildings has been a major challenge. While public opposition to the demolition of heritage sites is widespread, the issue remains unresolved mainly due to the difficulty in quantifying the value of historical landmarks in economic terms, which fuels further development threats. The rapid expansion of cities is not just a matter of physical

infrastructure development but also the absence of clear and enforceable conservation policies prioritising cultural heritage preservation (Said, 2013).

Furthermore, Malaysia's National Heritage Act (NHA) has been critiqued for its inadequacies in protecting heritage buildings. While the NHA sets out to safeguard historical sites, its enforcement is undermined by gaps in the law and a lack of clarity in determining the value of heritage sites (Harun, 2011). This is evident in the revocation of heritage site status, such as in the case of the Pudu Jail, which was demolished in 2010 to make way for a mixed-use development. Despite the building's historical significance, the Deputy Finance Minister dismissed it, claiming it was "not something to be proud of." The Malaysia Heritage Trust (MHT) disagreed, emphasising the building's value, especially its role in Malaysia's colonial history. This example illustrates the subjective nature of heritage site assessments and the lack of public input in the decision-making process. The failure to incorporate public feedback, as seen in the case of Bok House in 2010, further exacerbates the challenges in protecting heritage sites. The structural condition of a building should not be the sole criterion for determining its cultural or historical significance (Rober, 2015). There is a critical need for more precise guidelines and greater transparency in assessing and listing heritage buildings to prevent the arbitrary destruction of historically significant sites.

Another major challenge in heritage conservation in Malaysia is the inadequate attention to **post-conservation maintenance**. Once a building has been conserved, maintaining its condition is often neglected. As Mohd Isa et al. (2011) highlighted, effective maintenance plans are often absent, leaving buildings vulnerable to deterioration over time. This lack of long-term care exacerbates the challenges of ensuring that conservation efforts are sustained and that the integrity of heritage buildings is upheld. Additionally, **political, social, and economic factors** complicate the conservation process. Political decisions regarding the value and preservation of heritage buildings can be swayed by economic interests, leading to the prioritisation of development over conservation. This is evident in the demolition of buildings such as the Ocean Uda and Plaza Warisan to accommodate infrastructure projects like the MRT, which, despite public outcry, went ahead (Bavani, 2015). While NGOs and the voluntary sector have played a role in contesting these decisions, their ability to influence government policy is often limited (Chen et al., 2013).

A lack of clear enforcement policies further complicates the conflict between development and conservation. As cities expand, particularly in areas with limited land, historical buildings in prime locations risk being sacrificed for commercial and residential developments (Said et al., 2013). A key challenge lies in the lack of **clear**

guidelines that can balance the need for development with the need for heritage preservation. Despite a growing recognition of the importance of built cultural heritage, Malaysia's legislative framework remains insufficient in addressing these issues. Without a more robust system of conservation laws and guidelines, such as supplementary by-laws or updated policies for heritage site management, the destruction of cultural landmarks will likely continue (Harun, 2011). Therefore, the government must work with local communities, NGOs, and experts to create and enforce a cohesive policy that respects the value of Malaysia's built heritage, ensuring that development and conservation can coexist sustainably.

The challenges faced in building conservation practice in Malaysia are multifaceted, involving political, economic, and legal factors that hinder the adequate protection of heritage buildings. While the National Heritage Act provides a framework for conservation, its implementation is often marred by subjective assessments, lack of public involvement, and inadequate post-conservation management. The rapid urbanisation and prioritisation of commercial development over cultural preservation continue to threaten historical landmarks, with demolition practices frequently outweighing conservation efforts. To address these issues, Malaysia requires more substantial, more precise policies and greater public and private sector involvement in heritage conservation. Additionally, integrating cultural values and long-term maintenance plans must be central to the conservation strategy, ensuring that heritage buildings are preserved for future generations (Mohd Isa et al., 2011; Said, 2013).



Figure 3.2: Ocean Uda buildings at Jalan Sultan. (Source: Csong, 2011)



Figure 3.3: Bukit Bintang Girls' School used to know as Chinese Girls' School (Source: Malaysia National Archive, 1983)



Figure 3.4: Bok House was a privately owned property (Source: Hong, 2012)

3. 5 Authenticity in the Practice of Building Conservation in Malaysia

The concept of authenticity in heritage conservation is a complex and multifaceted issue that has gained considerable attention in recent years, particularly in Malaysia. While global conservation frameworks, such as those established by UNESCO and ICOMOS, advocate for the preservation of physical authenticity—the physical form, materials, and design of heritage

buildings—there is growing recognition that this approach does not adequately address the intangible dimensions of heritage. In Malaysia, this gap in understanding is particularly apparent in the conservation of traditional Malay houses and vernacular buildings, where both tangible and intangible elements must be considered for effective conservation. Recent studies, such as those by Mahmoud et al. (2024), Mat Hasan et al. (2019), and Md Ali and Ahmad (2002), have made valuable contributions to the field of heritage conservation in Malaysia but have highlighted critical gaps, particularly in integrating the intangible cultural heritage within authenticity discussions.

In Malaysia, authenticity is often understood through the lens of physical conservation, emphasising preserving architectural forms, materials, and construction techniques (Mahmoud et al., 2024). However, this narrow focus overlooks the rich cultural and spiritual narratives embedded in heritage buildings. For example, the traditional Malay houses in Kelantan are not just physical structures but carry profound symbolic meanings intimately connected to the community's cultural practices, social values, and spirituality. Mahmoud et al. (2024) stress the importance of documentation, restorative practices, and the application of modern technologies such as photogrammetry and building information modelling (BIM) to preserve these physical aspects. However, these technologies primarily address tangible heritage without fully incorporating the intangible cultural heritage associated with the buildings, such as oral traditions, cultural practices, and the spiritual significance of the spaces. The study underscores the need for a more comprehensive approach that integrates both the material and intangible aspects of authenticity in conserving Malaysia's traditional Malay houses.

While Mahmoud et al. (2024) offer a multi-dimensional framework that involves structural and material conservation, the approach overlooks the cultural narratives and symbolism integral to buildings like traditional Malay houses. This omission reflects a broader gap in Malaysia's heritage conservation efforts, where intangible authenticity aspects—such as stories, customary practices, and local oral traditions—are often sidelined (Mat Hasan et al., 2019). Mat Hasan et al. (2019) further critique Malaysia's lack of state-specific guidelines for maintaining authenticity, especially in Kelantan, where traditional Malay houses are increasingly at risk due to urbanisation and changing social structures. Without comprehensive frameworks that integrate both tangible and intangible aspects of authenticity, conservation efforts in Malaysia will continue to miss out on fully preserving the cultural significance of its heritage.

The adaptive reuse of heritage buildings, particularly in urban centres like Melaka, presents another significant challenge in maintaining authenticity. Adaptive reuse allows heritage buildings to be repurposed for modern functions, but often at the cost of their historical integrity (Fernando, 2001). For instance, many shophouses in Melaka have been significantly altered to accommodate commercial and tourism-driven purposes, leading to the loss of authenticity in their materials, designs, and cultural meaning. According to Fernando (2001), only 8% of early heritage buildings in Melaka remain in their original form, while 51% have undergone renovations that have compromised their historical value, and 41% have been lost altogether. Ab Wahab et al. (2016) highlight that renovations often replace traditional materials with modern substitutes, diluting these buildings' historical and cultural value. Moreover, the pressure to cater to tourist expectations leads to superficial restorations that mask the original materiality of the buildings, focusing instead on aesthetic appeal (Ab Wahab, 2013).

The lack of a comprehensive and enforceable conservation framework in Malaysia has led to widespread confusion among stakeholders, especially developers, building owners, and architects. The existing conservation guidelines are often incomplete, vague, or insufficiently detailed, particularly when assessing authenticity in adaptive reuse projects. Due to insufficient information, research indicates that many stakeholders fail to follow appropriate guidelines when restoring heritage buildings (Al-Obaidi et al., 2017). Moreover, local authorities often lack the authority and resources to enforce compliance with conservation laws, leaving heritage buildings vulnerable to unauthorised and damaging modifications (Hassan, 2019).

The core challenge of adaptive reuse in Malaysia is balancing the preservation of authenticity with the functional needs of contemporary society. As Scannell and Gifford (2010) discussed, maintaining the "sense of place" is crucial in adaptive reuse projects to ensure that the historical and cultural significance of the building is not lost. The issue lies in how adaptive reuse projects are often driven by commercial interests, resulting in interventions prioritising aesthetic appeal over historical accuracy (Jasme et al., 2014). Without proper guidelines and a clear understanding of authenticity, adaptive reuse projects risk undermining the authenticity of heritage sites and erasing the cultural identity of these buildings.

An essential aspect of authenticity in heritage conservation is the development of clear, context-specific guidelines that address both tangible and intangible dimensions. In Malaysia, local authorities often lack the authority or resources to enforce conservation laws, leading to the degradation of heritage buildings (Hassan, 2019). Furthermore, conservation guidelines are often vague or generic, failing to account for the specific needs of each heritage site. As Mat Hasan et al. (2019) argue, the absence of state-specific guidelines for traditional Malay houses in Kelantan has hindered efforts to maintain their authenticity. Moreover, the lack of community engagement in conservation projects further complicates preserving cultural

values associated with heritage sites. A more participatory approach involving local communities in decision-making could help ensure that conservation efforts align with the cultural significance of heritage buildings and maintain the authenticity of the spaces.

To address authenticity's challenges in heritage conservation, Malaysia must adopt a more integrated approach that considers both the tangible and intangible aspects of heritage. As emphasised by Md Ali and Ahmad (2002), the integration of modern conservation techniques with traditional craftsmanship is key to preserving the authenticity of timber buildings in Malaysia. Their approach, which combines scientific techniques like non-destructive decay detection with traditional craftsmanship like timber carvings, provides a valuable framework for authentic conservation (Md Ali & Ahmad, 2002). However, the preservation of timber structures in Malaysia faces challenges, including sourcing authentic materials like teak and copper nails, which are becoming increasingly difficult to obtain (Md Ali & Ahmad, 2002). These challenges underscore the need for innovative conservation practices that respect buildings' material integrity and the cultural significance they embody.

To enhance Malaysia's approach to authenticity in heritage conservation, state-specific guidelines should be developed to address each heritage site's unique cultural, social, and environmental contexts. These guidelines should prioritise the integration of intangible cultural heritage, ensuring that conservation practices preserve the physical fabric of heritage buildings and the cultural narratives and symbolic meanings embedded in them. Moreover, public awareness and stakeholder engagement are critical in fostering a greater understanding of authenticity in conservation and ensuring that future generations can enjoy and appreciate the cultural richness of Malaysia's heritage (Idrus & Sodangi, 2010)..

Therefore, authenticity in heritage conservation is a multi-faceted issue that requires a nuanced approach, particularly in the Malaysian context. While existing studies have made significant contributions to understanding tangible authenticity—particularly material conservation and adaptive reuse—there remains a significant gap in addressing intangible authenticity. Cultural significance, spiritual values, and social practices must be integrated into conservation frameworks to preserve the whole meaning of heritage sites. By developing state-specific guidelines, engaging local communities, and combining modern conservation techniques with traditional craftsmanship, Malaysia can create a more holistic framework for preserving its multi-faceted heritage. In doing so, Malaysia can ensure its heritage remains relevant, meaningful, and authentic for future generations.

3.7 Chapter Summary

This chapter explores the evolving practices and guidelines in heritage conservation, focusing on authenticity in Malaysia's built heritage context. Drawing on international charters such as the Venice Charter (1964), the Burra Charter (2013), and the Nara Document on Authenticity (1994), it outlines key principles for preserving cultural heritage by respecting original materials and forms while also recognising the need for flexibility in accommodating diverse cultural contexts. In Malaysia, these global frameworks sometimes conflict with the adaptive nature of traditional Malay houses, where the preservation of both physical structures and intangible cultural practices is crucial. The chapter highlights the challenges of applying international conservation standards to local vernacular architecture, especially in rural areas, and advocates for a more context-sensitive approach. By balancing the preservation of tangible and intangible heritage, the chapter calls for conservation practices that reflect Malaysia's unique cultural and architectural identity, ensuring that heritage buildings' physical integrity and cultural significance are maintained.

Research Methodology

4.1 Introduction

This chapter provides overview of the research methodology employed in this study, which predominantly follows a qualitative approach. The chapter outlines the methods used for data collection and analysis, with the aim of developing the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF).

The methodology chapter is structured around several key components. It begins by presenting the qualitative research approach that forms the foundation of this study, highlighting its importance in investigating the authenticity of Kelantan Traditional Malay Houses (KTMH). The chapter then details the various data collection techniques used, including semi-structured interviews with house owners and heritage experts, on-site building observations, and a detailed review of existing measured drawings. These methods collectively offer an understanding of the authenticity of the KTMH.

Additionally, the chapter describes the analysis methods employed. A cultural heritage model is used to assess authenticity during on-site observations, while template analysis is applied to review historical documents and existing measured drawings. These techniques are integral in evaluating the historical accuracy and authenticity of the KTMH. The chapter also addresses issues of research trustworthiness, particularly regarding the concept of authenticity, and provides an ethical review of the study's procedures to ensure the culturally sensitive and respectful handling of this significant architectural heritage.

4.2 Qualitative Research Approach

Qualitative research is distinct from quantitative methods as it focuses on understanding social phenomena through in-depth exploration rather than statistical analysis (Silverman, 1993). This approach is particularly valuable for gaining a deep understanding of complex social realities, especially those that are underexplored or not well understood (Miles & Huberman, 1984). It emphasizes the perspectives of individuals, making it an ideal method for studying the differences of human experiences in their natural contexts (Huberman & Miles, 1983).

Qualitative research is inherently oriented towards uncovering, describing, and interpreting the social settings from the viewpoints of those involved (Bloomberg, 2012). This approach allows for the exploration of relationships between causes and effects, offering insights into current conditions and their implications. Its flexibility makes it especially well-suited for investigating new or under-researched topics, encouraging reflection on participants' lived experiences within their environments (Bryman, 2012).

In this study, a qualitative approach was chosen to gather the perspectives of house owners and experts on the challenges associated with the conservation of the Kelantan Traditional Malay House (KTMH). Qualitative research is valuable in such contexts because it allows for diverse and in-depth findings, providing a detailed understanding of participants' views on their built and natural surroundings.

An inductive approach was used, enabling the generation of rich, detailed data that could be analysed from multiple perspectives, including interviews, observations, and document reviews. This approach allows the research questions to emerge from the data itself, rather than imposing predefined theories or hypotheses, which is a hallmark of positivist research approaches (Bloomberg, 2012). This flexibility is beneficial for exploring complex concepts that require multiple methods and diverse interpretive lenses (Bloomberg, 2012).

Qualitative research can align with various philosophical orientations, such as intuitivism, constructivism, or interpretivism. The study acknowledges that reality is socially, culturally, and historically constructed, shaped by the researcher's and participants' contexts (Lincoln & Guba, 1985).

Data collection in qualitative research is detailed, employing a range of methods including interviews, observations, document analysis, focus groups, and critical incident analysis (Tin, 2009). In this study, a multi-method approach was employed to explore the challenges in conserving the KTMH. On-site observations were conducted to examine changes in the form, fabric, and function of the houses, while a thorough review of relevant local, national, and international heritage legislation was carried out. By combining these methods, the study was able to triangulate data, developing a new framework of conservation principles for the KTMH that had not been explored before.

Figure 4.1 illustrates the research process, outlining the overall research methodology framework.



Figure 4.1: The Research Process in Establishing a Conservation Principles Framework for the KTMH-AoCF

4.3 Ethics Approval

This research received ethics approval from the Ethics Committee of The University of Sheffield in 2017 for the interviews to be conducted. Permission was obtained to identify and contact potential interviewees. Once the participants were confirmed, they were initially contacted via email or telephone. Additionally, ad-hoc interviews were conducted to supplement the primary data collection.

Before the interviews, all participants were provided with a participant information sheet and a consent form, which were also made available in Malay to ensure complete understanding. Participants were asked to read the information sheet carefully and sign the consent form before the interviews.

The interview sessions were recorded and transcribed; the transcripts were translated into English. All data collected were securely stored on an encrypted computer to ensure confidentiality and compliance with ethical standards in research.

4.4 Factors and Considerations for Selecting Kota Bharu, Kelantan as the Study Area

4.4.1 Cultural and Historical Significance

As the capital of Kelantan, Kota Bharu holds profound cultural and historical significance, making it a highly suitable location for studying traditional Malay architecture. Kelantan is widely recognised as a *cultural pot of Malay culture*, preserving both tangible and intangible heritage that reflects the deep-rooted traditions of the Malay community (Shuaib & Enoch, 2013). The region's strong cultural identity, attributed mainly to its predominantly Malay population, has played a crucial role in safeguarding its heritage. The continuity of cultural traditions reinforces Kelantan's reputation as the Cradle of Malay Culture, passed down across generations (Shuaib & Enoch, 2014). This enduring preservation of heritage has allowed both the physical and intangible aspects of traditional Malay architecture to thrive, serving as a valuable foundation for studying the evolution of house forms in the region.

4.4.2 Geographical Isolation and Development

Kelantan's geographic isolation from Malaysia's industrialised western corridor and major metropolitan centres such as Kuala Lumpur, Penang, and Singapore has contributed to its slower development pace than other states (Wan Ismail, 1996). This relative isolation has enabled Kelantan to retain much of its traditional architecture,
including distinctive forms of traditional Malay houses. The limited migration from other states and the high percentage of Malay inhabitants have further strengthened the preservation of the region's architectural identity. Consequently, Kota Bharu presents an opportunity to examine traditional Malay houses in an environment largely unaffected by external influences and rapid urbanisation, allowing for an authentic understanding of its architectural heritage.

4.4.3 Cultural Continuity and Population Demographics

Kelantan's demographic composition plays a significant role in maintaining cultural and architectural traditions. 2023 the state recorded a Malay population of 96.6% of its total inhabitants (Department of Statistics Malaysia, 2023). This high concentration of Malay communities has ensured that traditional cultural practices, including architectural customs, have been preserved over time. Kota Bharu, in particular, serves as a prime location for studying the continued existence of traditional Malay house forms, as these structures remain integral to the daily lives of local communities. The strong cultural identity of the population fosters an environment where traditional construction methods and design philosophies remain relevant, allowing for in-depth research on their continuity and adaptation.

4.4.4 Legal Protection and Land Ownership

A crucial factor in preserving traditional Malay houses in Kelantan is the legal framework governing land ownership and heritage conservation. The *Kelantan Malay Reserve Land Enactment (1930–40)* has ensured that a significant portion of the state's land—approximately 96%—remains designated as Malay reserve land (Osman, 2023). This legal protection has played a vital role in safeguarding traditional structures and the land rights of the native Malay Kelantanese population. The enactment has effectively limited encroachment and unsustainable development, preserving the cultural and historical integrity of Kota Bharu. This protection makes the city an ideal site for heritage conservation studies, particularly in understanding how legislative measures contribute to the long-term sustainability of architectural heritage.

4.4.5 Preservation of Traditional Architecture and Limited Urbanisation

Kelantan's relatively low rate of urbanisation, compared to other Malaysian states, has been instrumental in preserving the authenticity of its traditional architecture. The slower pace of development has minimised the pressures of modernisation that often lead to the demolition or alteration of heritage structures (Wan Ismail, 1996). In Kota Bharu, well-preserved traditional houses provide a unique opportunity to study Malay architectural heritage in an environment that has remained largely untouched by contemporary urban expansion. This setting allows researchers to examine traditional house forms in their original context, offering valuable insights into their evolution, adaptation, and sustainability over time.

4.4.6 Documented Architectural Data and Accessibility

The availability of existing documented architectural data is a key consideration when selecting Kota Bharu as a study area. The city has a rich collection of well-documented traditional houses, including architectural plans and historical records, facilitating indepth research. This accessibility to primary data ensures that studies can be conducted accurately and detailed. Daud (2017) identified 20 traditional houses in Kota Bharu with various KTMH's typologies. This research primarily focused on specific typologies, including *Rumah Tiang Dua Belas, Rumah Bujang Berselasar, Rumah Perabung Lima,* and *Rumah Perabung Pecah Lima.* Therefore, only 11 houses have been documented with measured architectural drawings by KALAM under these typologies, providing a strong foundation for further conservation research. The availability of such extensive documentation enhances the feasibility and reliability of conservation studies in Kota Bharu.

Kota Bharu's cultural and historical significance, geographical isolation, demographic composition, legal protections, and well-preserved traditional architecture collectively make it an ideal location for studying and conserving Kelantanese traditional Malay houses. The city's unique combination of historical depth, legislative support, and accessible architectural data ensures that it remains a crucial site for understanding the preservation and evolution of Malay vernacular architecture.

4.5 Utilisation of a Multi-Method Approach

4.5.1 Document Review of Existing Measured Drawings

The document review process in this research commenced with an detailed examination of measured drawings retrieved from the KALAM archives. This process involved identifying relevant *Kelantan Traditional Malay Houses* (KTMHs) within KALAM's repository from the 19th to early 20th centuries. As the principal archival institution documenting traditional Malay houses (TMHs), KALAM has been instrumental in preserving scholarly data on these structures. While these records serve as valuable references for academic study, they primarily provide initial documentation of the houses at the time of measurement and do not capture

subsequent modifications or deterioration. Consequently, this research aims to supplement and expand upon these existing materials, filling the identified gaps in preservation control and offering an updated perspective on conservation needs.

For this study, four key KTMH typologies were selected through purposive sampling: *Rumah Tiang Dua Belas, Rumah Bujang Berselasar, Rumah Perabung Lima*, and *Rumah Perabung Pecah Lima*. These house forms represent the architectural evolution of Kelantan, shaped by indigenous traditions and external influences. The *Rumah Tiang Dua Belas*, a symbol of elite Kelantanese society, is distinguished by its twelve supporting pillars and association with aristocratic status. The *Rumah Bujang Berselasar*, a simpler dwelling, embodies the everyday lifestyle of Kelantanese communities. The *Rumah Perabung Lima*, influenced by Western architectural elements, reflects a shift toward practicality but poses ventilation challenges due to its enclosed roof design. Meanwhile, the *Rumah Perabung Pecah Lima*, influenced by Bugis and Dutch architecture, was favoured by merchants and local leaders, incorporating distinctive elements such as the *Rumah Anjung* (Mamat et al., 2016; Nik Daud, 1987; Osman, 1980; Mubin Sheppard, 1971; Wan Hashim Wan Teh, 1996; Hilal Haji Osman, 1980). These vernacular house typologies provide insight into Kelantan's architectural adaptation to cultural, social, and environmental factors.

However, these traditional dwellings face significant threats due to rapid modernization, urban expansion, and shifting socio-economic conditions. Structural deterioration, material degradation, and modifications that compromise original design elements have further intensified conservation challenges. Additionally, abandonment and obsolescence have led to the demolition of many KTMHs, necessitating urgent conservation measures to protect the cultural identity of Kelantan's architectural heritage.

At the outset of this study, 20 KTMHs were identified in the KALAM database as potential case studies. From this selection, 11 houses were classified under the four chosen KTMH typologies. Given the limited number of existing measured drawings available for KTMHs in the KALAM archive, all 11 houses were included in the research scope despite seven having been abandoned and later demolished. For these demolished houses, archival documentation was supplemented with interviews conducted with former owners or their descendants, providing crucial insights into the historical transformations of these structures. This integrative approach allows for a detailed understanding of Kelantan's traditional Malay houses' conservation needs and historical significance.

During the second stage of the research, the existing heritage legislation and conservation principles related to timber structures were reviewed in the context of Malaysia and Kelantan. Local and national heritage legislation and guidelines were examined to assess whether Kelantan Traditional Malay Houses (KTMH) or Traditional Malay Houses (TMH) are generally protected. Moreover, international conservation charters and principles were also reviewed to provide a more detailed understanding of the protection and conservation of vernacular architecture, which is discussed elaborately in *Chapter 5*.

The documents reviewed were primarily sourced from online platforms. Further document analysis was undertaken in other facilities, such as the National Archive Centre of Kuala Lumpur, Heritage of Malaysia Trust, and Kelantan Museum, to source more information about TMH. Unfortunately, these relevant sources were either lacking or insufficiently provided. The outcome of this review did not provide enough evidence concerning the existence of data about the KTMH, the TMH, and the vernacular architecture generally.

The findings from this document review will be analysed using template analysis, as outlined in *Chapter 5.* The data gathered through this process will address the research's third and fourth objectives.

4.5.2 On-site Building Observation

On-site observation is a critical methodological approach in architectural heritage research, particularly in studies focusing on cultural and vernacular built environments. Similar to anthropological studies that seek to understand social relations and interactions within a society (Silverman, 1993), architectural observations provide a direct means of assessing changes in traditional dwellings over time. This research employed systematic in-situ assessments, supplemented by sketches and measured drawings, to document the evolving conditions of Kelantan Traditional Malay Houses (KTMHs). These observations facilitated a deeper understanding of the transformations that have shaped these houses in response to socio-cultural and environmental factors.

The observation process encompassed several key areas, including *site history and significant dates, architectural alterations, modern material interventions,* and *functional changes* linked to shifting lifestyle preferences. Visual documentation, including photographic records, played a crucial role in capturing critical details such as colour schemes, proportions, and the overall scale of the buildings. Additionally, measured drawings sourced from the KALAM archives provided an essential

foundation for evaluating the historical development of these houses. These records were instrumental in tracing ownership history, identifying chronological architectural changes, and analysing spatial organisation, construction techniques, and stylistic elements.

This study used existing architectural plans and elevation drawings published by KALAM as the initial reference materials. For fieldwork purposes, these drawings were reproduced in a manageable format, enabling researchers to document the current state of each house effectively. These measured drawings were valuable tools for determining modifications in spatial arrangements, material compositions, and structural elements. During site visits, observations were recorded by overlaying sketches onto existing architectural plans to delineate changes since the houses were initially documented (Giggio et al., 2015; Taussig, 2011)..

The primary focus of the fieldwork was to assess the *current condition* of the houses and the extent of alterations introduced after their original documentation by KALAM. Changes were systematically categorised based on key architectural authenticity components, including modifications in spatial configuration, construction materials, and functional adaptations. Special attention was given to *development patterns*, particularly how these modifications influenced the original architectural integrity of KTMHs. By analysing shifts in design, material usage, and function, this research contributes to a broader discussion on conservation strategies for traditional Malay houses. These findings and the critical assessment of challenges affecting the preservation of KTMHs are further explored in Chapter 6.

4.5.3 The Framework of On-Site Observations

A combination of field surveys, measured drawings, and qualitative interviews was employed as the primary data collection tool in this study. For houses still standing and accessible, direct on-site observations were conducted to document physical conditions, material usage, architectural changes, and functional modifications. This included using tools such as detailed measured drawings, photographic documentation, and field notes to capture and assess the existing state of the structures.

Data collection for houses that were abandoned or demolished/ collapsed posed significant challenges. Inaccessibility due to the deteriorated condition of some houses made on-site observations impossible. The reliance on secondary sources such as

KALAM reports was particularly evident in the cases of **KH01**, **KH02**, **KH05**, **KH07**, **KH08 KH09**, **KH10**, and **KH11** which were no longer standing or in a state of severe disrepair. For these houses, the primary data derived from interviews was cross-referenced with archival materials to ensure the accuracy and reliability of the analysis. This limitation emphasises the importance of employing supplementary strategies, such as drawing from existing documentation prepared by KALAM. Additionally, relying on archival records and interviews became the most important part of data collection for the demolished/ collapsed houses. However, this approach came with its challenges, including incomplete documentation and gaps in photographic records.

For houses that could not be directly accessed, archival documentation and oral histories played a pivotal role. Measured drawing reports and detailed textual descriptions by KALAM served as the primary data source, providing critical insights into the structural details, material use, and alterations over time. Unfortunately, some of these reports lacked comprehensive photographic documentation, introducing limitations in visually interpreting changes. To fill these gaps, interviews with descendants and caretakers were utilised to reconstruct missing details. Oral histories also brought subjective narratives to light, offering rich cultural and personal context. However, some interviewees struggled to recall specific details or were hesitant to speak about the house due to a lack of interest or painful memories tied to the property, further complicating data collection.

4.5.4 Comparative Methodology for Standing vs. Demolished/Collapsed Houses

The methodology for data collection varied significantly between houses that were still standing and those that were demolished/ collapsed or abandoned. Field surveys enabled the direct observation of changes, material conditions, and spatial layouts for standing houses. Photographs and measurements complemented these surveys to document current conditions. In contrast, the analysis depended entirely on archival records and interviews for demolished/ collapsed or inaccessible houses. While measured drawings offered technical details about the original design, these sources were sometimes limited in providing a complete picture of alterations. Comparisons between standing and demolished/ collapsed houses revealed not only patterns of change but also the vulnerabilities that lead to the loss of KTMHs over time.

Given the varied nature of data sources, ensuring accuracy required rigorous crossreferencing of information. Archival records were matched with oral accounts to confirm details about structural changes, material use, and ownership history. However, the validation process was hindered by several factors, including incomplete documentation, limited photographic records, and the reluctance of some house owners to allow interior photographs due to privacy concerns or the house's poor condition. Furthermore, some interviewees had limited knowledge of their ancestral homes or lacked interest in discussing the subject. Despite these challenges, integrating multiple data sources allowed for a more holistic understanding of the changes and continuity in KTMHs. However, it highlighted the need for more systematic documentation practices in the future.

In summary, the framework of on-site observations relied on a combination of direct surveys, archival research, and interviews to build a detailed understanding of Kelantan Traditional Malay Houses. While challenges in accessing certain houses and limitations in existing documentation posed obstacles, the methodology remained adaptable.

No	Code	Owner's Name/House	Year Built	Address House Typolog		KALAM Reference No	Year	Current House Condition
1	KH01	Nik Fatimah's house	1810 to 1820	Kg. Banggol, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU77.D/92/93	1992	Demolished/ Collapsed
2	KH02	Wan Sulong's house	1920	Jalan Sultanah Zainab, Kota Bharu, Kelantan	Rumah Bujang Berselasar	RU126.D/97/98	1997	Abandoned (not accessible)
3	KH03	Mahmud Dobah's house	1862	Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima		1999	Still standing
4	KH04	Mohamad Dobah's house	1900	1408, Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU129.D/98/99	1998	Demolished/ Collapsed
5	KH05	Hussein's house	1900	No 1409, Jln Post Office Lama, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU105.D/95/96	1995	Demolished/ Collapsed
6	KH06	Wan Muhammad's house	1900	No 199, Jalan Atas Banggol, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU84.D/93/94	1993	Still standing
7	KH07	Che Muhammad's house	1910	No 1519, Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Lima	RU70.D/90/91	1990	Still standing
8	KH08	Haji Abdullah's house	1917	875, Jln Sultanah Zainab, Kota Bharu, Kelantan	Rumah Bujang Berselasar	RU121.D/96/97	1996	Demolished/ Collapsed
9	KH09	Hassan's house	1920	Jalan Pengkalan Chepa, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU35.D/84/85	1984	Demolished/ Collapsed
10	KH10	Wan Aisyah's house	1926	1468, Jalan Sultanah Zainab, Kota Bharu, Kelantan	Rumah Perabung Lima	RU130.D/98/99	1998	Demolished/ Collapsed
11	KH11	Wan Ahmad's house	1926	Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU71.D/91/92	1991	Demolished/ Collapsed

Table 4.1: List of data coding obtained through Measured Drawings Documentation of traditional Malay house in Kota Bharu, Kelantan

4.5.5 Semi-Structured Interviews

The interview technique is a well-established method in qualitative research, particularly within the social sciences, as it enables direct interaction between the researcher and participants (King, 2004). This method captures individuals' experiences, perceptions, attitudes, and interpretations of their social and physical environments, providing valuable insights into human behaviours and meanings associated with cultural heritage (Elliot et al., 2011). Within qualitative research, data collection is fundamental as it serves as evidence that illuminates the complexities of human experiences, reinforcing the study's validity and depth (Polkinghorne, 2005).

This research adopted a semi-structured interview approach as the primary method for gathering qualitative data. Commonly referred to as an *interview guide*, this approach involves a series of predefined questions that address key aspects of the research while allowing for flexibility in response (Elliot et al., 2011). Although a structured framework guided the discussions, the researcher could introduce follow-up or spontaneous questions based on participants' responses. This adaptability was essential in capturing multifaceted insights and encouraging participants to elaborate on their lived experiences (Polkinghorne, 2005). The interview guide was developed in alignment with the research objectives, mainly to investigate the challenges house owners and experts face in conserving Kelantan Traditional Malay Houses (KTMH) (Lincoln & Guba, 1985).

The research employed a purposive sampling strategy to ensure the inclusion of two key respondent groups: KTMH house owners and experts actively engaged in conserving traditional Malay houses (TMH) and due to the study's focused scope, prioritising in-depth insights over broad statistical representation, a large and diverse sample was deemed impractical. Instead, the research sought to engage individuals with direct experience and knowledge of TMH conservation, ensuring that responses were contextually relevant and grounded in practice.

Snowball sampling was used to identify key participants, particularly experts in TMH conservation, and enhance the selection process. This method involves selecting an initial group of respondents who, based on their expertise, recommend additional individuals with relevant experience and knowledge (Lincoln & Guba, 1985). Given the niche field of vernacular KTMH conservation, this approach was particularly effective in reaching conservation professionals, academics, and practitioners involved in heritage architecture's planning, management, and research. Many of these experts

play indirect but significant roles in the policy-making, documentation, and restoration efforts that impact the conservation of KTMH.

By employing semi-structured interviews and leveraging snowball sampling, this research captured diverse yet specialised perspectives on KTMH's conservation challenges. This methodological approach ensured a detailed exploration of the factors influencing the preservation of traditional Malay houses, contributing to the broader discourse on architectural heritage conservation.

House Owners and Their Categorisation

The identification of house owners and occupants associated with the KH01 to KH11 properties was crucial to this research, particularly in understanding the lived experiences, conservation challenges, and cultural significance of Kelantan Traditional Malay Houses (KTMH). These individuals, embedded in their daily interactions with these heritage structures, provided invaluable insights into questions such as, *"How should one approach the conservation or expansion of a traditional Malay house?"* and *"Is preservation primarily a matter of maintenance?"* The responses to these inquiries extended beyond mere architectural considerations, shedding light on broader cultural and socio-economic challenges associated with the conservation of KTMH, including the increasing risk of abandonment.

House owners were selected as key respondents for each house to enable a detailed historical and cultural tracing of each property. Their perspectives offered a unique interaction with the heritage character of their homes, aligning with the local cultural landscape of Kelantan. While measured drawing documentation provided essential architectural data, the primary selection criterion for participants was their current occupancy and engagement with the house. However, fieldwork revealed that long-term occupation of KTMH is increasingly rare, with several houses either abandoned, demolished, or structurally compromised. Tracing ownership and potential interviewees was, therefore, a complex process.

The research methodology involved multiple steps to locate house owners. Initially, names from the measured drawing documentation were used to identify potential contacts. Following this, site visits were conducted using location data derived from the measured drawings, further aided by Google Maps. Upon arrival, researchers sought assistance from local neighbours to identify and establish contact with relevant individuals. Digital tools such as Facebook and mobile phone directories were sometimes used to trace family members or caretakers associated with the houses.

Through this cumulative process, 15 house owners and caretakers were identified and interviewed.

The study categorised house owners into four distinct groups based on the occupancy status and management of their properties:

- 1. **Category A: Resident House Owners** Owners who continue to reside in their traditional houses, maintaining direct engagement with the property.
- Category B: Non-Resident Owners with Non-Resident Caretakers Houses owned by individuals who do not live there but are managed by caretakers.
- 3. **Category C: Abandoned Houses** Properties left uninhabited, often leading to deterioration and structural degradation.
- 4. **Category D: Demolished Houses** Traditional houses that have been permanently lost due to demolition or collapse.

This categorisation provides a framework for understanding the different levels of engagement and challenges faced by house owners, offering critical insights into the broader discourse on the conservation and sustainability of Kelantan's vernacular architecture.

The primary objective of this research was to engage with the house owners of traditional Kelantan Malay houses (KTMHs), particularly those who still reside in them, as their first-hand experiences offer invaluable insights into the conservation and preservation of these heritage properties. However, it became apparent through the fieldwork that such house owners are becoming increasingly rare. The trend of urban migration, driven by the search for better employment opportunities, has caused many families to leave rural villages and abandon their traditional homes in favour of modern houses that better suit contemporary needs. The inherent challenges in maintaining KTMHs, due to their age and unique requirements, coupled with the evolving needs of modern families, have led to a diminished attachment to these heritage houses (Silverman, 1993).

Despite these challenges, it was essential to interview house owners who remain in residence. They provided valuable perspectives on the state of preservation, the difficulties of maintaining these buildings, and the cultural significance they attach to the houses. Interviews were conducted with the owners of 11 selected KTMHs, categorised according to their ownership status and occupancy. These houses were classified as follows: **Category A: Resident House Owners** (KH06 with owners from

the third and fourth generations), **Category B: Non-Resident Owners with Non-Resident Caretakers** (KH03, where a former caretaker manages the house but not occupied by the owner), **Category C: Abandoned Houses** (KH02, with two interviewees from the third generation), and **Category D: Demolished Houses** (KH04 and KH05, with interviewees from the third and fifth generations). Each interviewee's response was integral to understanding the house's historical, social, and architectural significance.

In particular, house owners and caretakers from Categories A, B, and C were identified as key participants. Interviews with these individuals were crucial in understanding how these houses were maintained, the challenges they faced in preserving the architectural integrity of the homes, and the cultural meanings attached to them. Category C and D houses, although no longer extant or abandoned, were also critical to the study, as former owners and those familiar with the properties provided important information regarding the historical context and changes made over time. Despite their current absence, these individuals helped the researcher trace the legacy and evolution of KTMH forms and functions.

Conducting these interviews was not without its challenges, as some house owners were hesitant to allow external researchers into their homes due to security concerns or embarrassment over the state of the property. To overcome these barriers, the researcher employed a trust-building strategy. A key facilitator in this process was the researcher's mother, who accompanied the researcher on on-site visits. Her presence, being approximately the same age as many house owners, helped establish rapport and gain their confidence. This approach effectively secured interviews, especially on weekends when the owners were more likely to be home. In total, this research interviewed 15 individuals, including both current occupants and former owners, whose perspectives helped to illuminate the complex process of maintaining and conserving these culturally significant houses.

Through this approach, the research was able to gather a wide range of data, combining direct interviews with on-site visual observations and analysis of measured drawings from the Centre for the Study of the Built Environment in the Malay World (KALAM). These documents, which include architectural plans and elevations, assisted in prompting interviewees to recall important milestones in the history of their houses and facilitated the exploration of architectural changes over time. For Category C and D houses, interviews were conducted at locations convenient for the participants, often involving visits to their current residences or relatives' homes. These

interviews, combined with historical documents and drawings, provided a detailed understanding of Kelantan's traditional Malay houses' evolving architectural forms, materials, and functions.

This approach underscores the importance of engaging with traditional building owners and caretakers. Their lived experiences and historical knowledge provide a unique and valuable perspective on the challenges of preserving and maintaining architectural heritage in the face of socio-economic and cultural changes.

	Category	House Name	House Code	Interviewee	Interviewee Code
	Resident	Wan Muhammad	KH06	3 rd generation	KH06-A
Α	House	Wan Muhammad	KH06	New Owner	KH06-B
	Owners	Che Muhammad	KH07	4 th generation	KH07-A
	Non-	Mahmud Dobah	KH03	3 rd generation	KH03-A
B	Resident Owners with	Mahmud Dobah	KH03	Former House Caretaker	KH03-B
	Non- Resident Caretakers	Mahmud Dobah	KH03	3 rd generation	KH03-C
С	Abandoned	Wan Sulong	KH02	3 rd generation	KH02-A
	Abanuoneu	Wan Sulong	KH02	3 rd generation	KH02-B
		Haji Mohamad Dobah	KH04	4 th generation	KH04-A
		Hussein	KH05	3 rd generation	KH05-A
п	Domoliahod	Wan Aisyah	KH10	4 th generation	KH10-A
	Demoiisneu	Nik Fatimah	KH01	5 th generation	KH01-A
		Wan Ahmad	KH11	3 rd generation	KH11-A
		Hassan	KH09	4 th generation	KH09-A
		Haji Abdullah	KH08	3 rd generation	KH08-A

Table 4.2: Classification of House Owners and Interviewees

The categorisation of participants, including residents, caretakers, and family members of individuals associated with either currently standing or previously demolished houses, enabled the study to gather diverse perspectives. Engaging with these individuals, whether through direct involvement with the house or familial ties, provided valuable insights into the historical, architectural, and cultural significance of the traditional Malay houses in Kelantan (KTMHs). The interaction with such a broad range of participants facilitated a deeper understanding of the evolving heritage and preservation challenges surrounding these structures.

To ensure a thorough and accurate capture of the interviews, digital voice recorders were used to document the conversations in detail, offering a more reliable record than traditional field notes alone. This method effectively preserved the discussions, providing a detailed archive of the participants' perspectives. Additionally, photographic documentation was undertaken, including general views of the houses

and close-up shots highlighting the architectural changes and modifications that occurred over time. These photographs were crucial for illustrating the physical transformations of the houses and served as visual evidence supporting the interview data. Furthermore, using a digital video camera helped augment the on-site documentation, reinforcing the research findings with visual materials that complemented the audio recordings and provided a well-rounded understanding of the houses' condition and the alterations they had undergone. Together, these methods created a robust documentation process that captured both the tangible and intangible aspects of the KTMHs, ensuring that the preservation of this heritage was recorded accurately and in-depth.

Experts Interview

The research incorporated semi-structured interviews with experts specialising in the conservation of traditional Malay houses (TMHs) and vernacular timber architecture. These interviews aimed to explore different dimensions of authenticity and the challenges associated with preserving TMHs. By engaging specialists from various disciplines, the study sought to provide a detailed and multidimensional understanding of the issues surrounding the conservation of these heritage structures.

The expert group included a conservation architect, who provided professional insights into conservation practices and their specific application to traditional Malay houses. This perspective was essential in understanding the technical and design considerations crucial to preservation efforts. A conservator/contractor contributed practical experiences restoring and maintaining traditional timber houses, offering valuable insights into the challenges of working with indigenous materials and traditional craftsmanship. Additionally, an academic from Universiti Teknologi MARA Malaysia (UiTM) shared theoretical perspectives on heritage conservation, enriching the study with a scholarly approach to the significance of traditional Malay architecture.

Two *Tukang* or Traditional Malay Master Builders, possessing extensive hands-on experience in constructing traditional Malay buildings, provided insights into construction techniques, materials, and the cultural values embedded in these structures. Their knowledge was vital in understanding the craftsmanship that defines TMHs. Institutional perspectives were gathered from the Director of the Kelantan State Museum Corporation, who discussed state-level heritage policies and ongoing conservation efforts in Kelantan. A Kota Bharu Municipal City Planning Department representative outlined local governance's role in preserving cultural heritage,

particularly in urban planning and regulatory frameworks related to TMH conservation. Lastly, the *Ketua Kampung* (Head of Kampung) of Kota Bharu contributed community perspectives, highlighting the cultural significance of TMHs within local traditions and the role of oral histories in shaping conservation practices.

Given the distinct nature of the information sought from experts compared to house owners, the interview guide for the expert group was tailored accordingly. The discussions focused on challenges in TMH conservation, expert experiences in heritage preservation, and the legislative framework governing conservation efforts. These conversations provided an in-depth understanding of the strategies, policies, and challenges involved in sustaining TMHs, with experts offering diverse viewpoints on how best to preserve this architectural heritage.

No.	Expert	Interviewee Code
1	Conservation Architect	E1
2	2 Conservator/Contractor	
3	Academic (Universiti Teknologi MARA Malaysia)	E3
4	Tukang / Traditional Malay Master Builder	E4
5	Tukang / Traditional Malay Master Builder	E5
6	Director of Kelantan State Museum Corporation	E6
7	Kota Bharu Municipal City – Planning Department	E7
8 Ketua Kampung, Kota Bharu (Head of Kampung)		E8

Table 4.3: The background of the experts.

Due to the limited number of experts actively involved in KTMH conservation and the constraints imposed by budget and time, selecting the most qualified and relevant experts was a critical aspect of the research. This careful selection ensured the study obtained high-quality, relevant data to effectively address the research objectives. Bryman (2016) emphasises that a well-structured selection process enhances the reliability and credibility of social research by ensuring that data collection methods, sample size, and analytical approaches align with the research goals.

Logistical challenges also influenced the research process, as data collection was conducted in Malaysia while the researcher was based in the United Kingdom. Additionally, constraints associated with the researcher's status as a governmentsponsored scholar further limited the available budget. Despite these limitations, the study engaged a diverse range of experts whose insights contributed significantly to understanding TMH conservation challenges and strategies.

4.5.6 Document Analysis

The document review process for this research began with collecting data from the Centre for the Study of Built Environment in the Malay World (KALAM), which has been a pivotal resource for understanding traditional Malay houses (TMHs). KALAM has been actively analysing and compiling information about historic houses, particularly those from the 19th century, and has provided a foundational database for academic reference. While these documents have been invaluable for historical research, it is important to note that they have not been updated, which limits their scope in addressing contemporary preservation challenges. The initial documentation, though comprehensive, lacks detailed information on preservation practices, particularly regarding the conservation of the Kelantan Traditional Malay House (KTMH). This gap necessitated an update, incorporating recent findings through interviews, site surveys, and the review of architectural reports and measured drawings. These updated documents aimed to provide more specific insights into the ongoing preservation needs and challenges of the KTMH, highlighting the role of house owners in maintaining these structures and the various modifications made over time.

In the second phase of the document review, the research turned to investigating local and international heritage legislation and conservation principles, focusing specifically on timber structures such as the KTMH. The aim was to assess whether these houses are adequately protected under current legal frameworks within Malaysia and internationally. This investigation involved reviewing national heritage legislation, guidelines, international charters, and conservation principles related to vernacular architecture. While valuable documents were identified, many resources, particularly regarding KTMH, were limited or insufficient. Additional document reviews were conducted at the National Archive Centre, Kuala Lumpur, *Badan Warisan Malaysia*, and the Kelantan State Museum to further inform the study. However, these efforts revealed a significant gap in the availability of documentation on traditional Malay houses, which impacted the depth of analysis. Despite these challenges, the documents reviewed contributed to the broader investigation of heritage conservation principles and will be used to support the achievement of Research Objective 2 (RO2).

4.6 Achieving Research Objectives

4.5.1 Research Objective 1 (RO1)

A detailed methodology was employed to address Research Objective 1 (RO1), which focuses on investigating the evolving patterns and transformations in Kelantan Traditional Malay Houses (KTMH) and identifying the key factors driving these changes. This methodology incorporated several interrelated research techniques and data sources, providing an in-depth understanding of the factors influencing the evolution of KTMH. The approach taken to achieve RO1 included the following key elements:

- i. Literature Review (Chapter 2): The research began with an detailed literature review, outlined in Chapter 2, to explore the historical development of Traditional Malay Houses (TMH) in Kelantan. This review traced the origins of these houses back to the 15th century, during the Malacca Sultanate, and examined the factors influencing their architectural evolution over the centuries. Factors such as Western colonisation, political shifts, geographical context, the spread of Islam across the Malay Peninsula, and the interactions between local and foreign cultures were explored. This historical context laid the foundation for understanding the factors contributing to changes in the architecture of KTMH, highlighting how historical events and external influences have shaped their design and authenticity over time.
- ii. **On-Site Observation and Existing Measured Drawing Review (Chapter 6)**: To capture the current state of KTMHs and observe changes in their physical structure, on-site observations were conducted. These field visits provided direct insights into these houses' transformations, particularly in form, materials, and functionality. Additionally, a review of existing measured drawings was carried out to analyse the evolution of the physical attributes of KTMH. This provided empirical data on alterations and additions to the houses, allowing the study to document the shifts in their design and layout while considering the impact these changes had on their authenticity.
- iii. Interviews with House Owners and Experts (Chapter 7): In-depth interviews were conducted with house owners and experts in heritage conservation to gather qualitative data on the reasons behind the changes in KTMH. These interviews allowed the research to capture personal insights from those directly involved with the houses, both as current occupants and experts in architectural conservation. The data gathered from these interviews, coupled with the observations and

measured drawings, helped identify the drivers of change, such as economic pressures, modernisation, and evolving family needs. The research also explored the issue of abandonment and the lack of preservation efforts, providing critical perspectives on the challenges owners and conservation professionals' face in maintaining the authenticity of KTMH.

iv. Triangulation of Data (Chapter 8): To strengthen the reliability and accuracy of the findings, a triangulation approach was used to integrate data from the literature review, on-site observations, measured drawing analysis, and interviews with house owners and experts. This method allowed the research to cross-check and validate the information, ensuring a more robust understanding of the factors affecting KTMH conservation. By combining multiple data sources, the study created a more detailed picture of the changes in KTMH, shedding light on the interplay of historical, cultural, economic, and social factors that have shaped the evolution of these traditional houses and their authenticity.

4.6.2 Research Objective 2 (RO2)

A detailed methodology was employed to address Research Objective 2 (RO2), which focuses on investigating the existing practices and legislation concerning the conservation of authenticity in traditional Malay houses (KTMH), both internationally and within Malaysia. The methodology aimed to provide a deep understanding of the current conservation frameworks and practices, both legal and theoretical that inform the preservation of authenticity in these culturally significant buildings. The approach to achieving this objective included the following steps:

i. Literature Review (Chapter 3): The research began with an extensive literature review to explore the theoretical foundations of cultural heritage conservation at various levels: international, national, and local. This review examined global conservation policies and frameworks, including international charters and guidelines developed by prominent heritage organisations. The review also focused on authenticity in cultural heritage conservation, drawing from Western and Eastern perspectives. By exploring these theoretical frameworks, the research provided insight into how authenticity is understood and preserved across different cultural contexts and the implications for conserving traditional Malay houses. ii. Document Analysis (Chapter 5): The next phase of the research involved an indepth document analysis to explore the legal and regulatory frameworks governing heritage conservation practices in Malaysia and internationally. The analysis covered a broad spectrum of documents, including international charters, conventions, and guidelines issued by global heritage and conservation bodies, as well as national policies and legislation specific to Malaysia. This analysis was focused on understanding how authenticity is defined and protected within these frameworks. In particular, the research looked at how authenticity is addressed in the conservation of traditional architecture, with an emphasis on traditional Malay houses, identifying strengths and gaps in existing conservation practices. The findings from this document analysis aimed to provide a clearer understanding of the mechanisms that influence the preservation of KTMH and how these align with broader heritage conservation principles.

4.6.3 Research Objective 3 (RO3)

A detailed approach was employed to address Research Objective 3 (RO3), which focuses on redefining the concept of authenticity in traditional Malay architecture. The research incorporated multiple methodologies and data sources to understand how cultural, historical, and architectural aspects of traditional Malay houses, alongside modernisation and the evolving needs of occupants, influence the definition of authenticity.

The study triangulated data gathered from the literature review (Chapter 2), onsite observation and existing measured drawing review (Chapter 6), interviews with house owners and experts (Chapter 7), and document analysis (Chapter 5). This integrated approach enabled a detailed understanding of how authenticity is perceived and preserved in traditional Malay houses, considering historical and contemporary perspectives. Through this process, the research aimed to capture a comprehensive definition of authenticity that reflects the cultural significance, architectural integrity, and adaptive changes house owners require.

4.6.4 Research Objective 4 (RO4)

A detailed methodology was applied to achieve Research Objective 4 (RO4), which focuses on developing an Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This

methodology built upon the previous research objectives, particularly RO1, RO2, and RO3, and integrated their findings. The key parameters identified through these objectives were triangulated, cross-referenced, and validated using multiple data sources and methods, ensuring the credibility and robustness of the findings. This triangulation formed the foundation for the development of the authenticity-oriented framework.

The methodologies applied in achieving RO1, RO2, and RO3 provided the essential data, context, and insights necessary for developing the KTMH-AoCF. The framework prioritises authenticity-focused conservation practices for Kelantan Traditional Malay Houses, drawing on the principles, protective measures, and practical approaches derived from the research findings. This approach ensures the preservation of authenticity in the conservation of traditional Malay houses while addressing the evolving needs of their users.

4.7 The Analysis Flow of the Research

The KTMH conservation framework was constructed through an analysis and triangulation of the findings obtained from the literature review and the multi-method research approach employed in this study. This approach also included interviews with house owners and experts, on-site observations, existing measured drawing analysis and document reviews. Hence, the research process and methodology are described in the flowchart presented in Figure 4.2.



Figure 4.2: The analysis of the research flow.

This research has meticulously applied a thematic matrix to illustrate and organise the critical research components necessary for developing the **Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)**. The matrix integrates multiple dimensions of the research, including data from **interviews** (with house owners and experts), **observations** on the evolving patterns of KTMHs, and the **review** of heritage documents (national/local) alongside international conservation charters. This detailed approach ensures that the framework captures the multifaceted interplay of cultural, structural, and regulatory factors influencing the conservation of KTMHs. The employment of this matrix was instrumental in achieving the study's objectives, offering a systematic way to manage and interpret large datasets.



Figure 4.3: Triangulation of data.

Figure 4.2 shows the concept of **Triangulation of Data**, a cornerstone of this research methodology. The diagram comprises three overlapping circles, each reflecting a distinct study component, with the central intersection signifying the triangulation process. Triangulation enhances the validity and depth of the research by synthesising findings from diverse sources.

i. Interviews with House Owners and Experts (Purple Circle)

This component involves qualitative data derived from interviews with two key groups: house owners and conservation experts.

• **House owners** contribute valuable insights into the lived experiences associated with KTMHs, detailing how these houses have evolved in response to changing socio-economic, cultural, and environmental conditions. Their perspectives shed light on the functional adaptations of these traditional structures while preserving their cultural significance.

• **Experts**, on the other hand, provide technical and theoretical perspectives, offering guidance on best practices for conservation, the challenges of preserving authenticity, and the application of international principles to local contexts. A detailed breakdown of these elements is provided in **Table 4.4**.

ii. Observations of Changing Patterns of KTMHs (Dark Blue Circle)

The observational data focuses on the physical transformations observed in KTMHs, including alterations in spatial configurations, materials, and decorative features. These observations provide a tangible basis for understanding how traditional houses adapt to modern needs while retaining their heritage value.

- By examining these patterns, the research identifies the tension between conservation and adaptation, offering insights into how these houses balance traditional aesthetics with contemporary functionality.
- The detailed components of this element are elaborated in Table 4.5.

iii. Heritage Documents and Conservation Principles/Charters (Light Blue Circle)

This component encompasses the analysis of heritage documents at the local, national, and international levels, alongside conservation principles derived from charters.

- These documents establish the theoretical and regulatory framework for practising KTMH conservation. They provide guidelines on preserving authenticity, ensuring sustainability, and aligning local conservation efforts with global standards.
- The specifics of this analysis are detailed in *Chapter 5.*

At the centre of Figure 2 lies the intersection of the three circles labelled *Triangulation of Data*. This central overlap underscores the integration of insights from interviews, observations, and document reviews. By synthesising these diverse data sources, the research achieves a holistic understanding of KTMH conservation, bridging theoretical frameworks, empirical observations, and community perspectives.

The methodological approach aligns with the framework proposed by Miles and Huberman (1994), which emphasises using matrices to organise and interpret large datasets. The matrix serves as a tool to identify patterns, enabling the study to navigate the complexity of multi-site research while maintaining clarity and coherence. As Nadin and Cassell (2004) noted, such matrices are particularly valuable in dense, multi-faceted research contexts, where the interplay of cultural, architectural, and regulatory factors demands careful examination.

The thematic matrix and triangulation approach are particularly relevant to the conservation of KTMHs and are emblematic of Kelantan's cultural and architectural heritage. By integrating the perspectives of house owners and experts, empirical observations, and the principles outlined in conservation charters, the study ensures that its framework respects both the tangible and intangible aspects of KTMHs.

- The interviews capture the human dimension, reflecting these houses' lived experiences and cultural significance.
- The observations provide a direct lens into the physical changes and adaptations occurring in KTMHs, highlighting the challenges of maintaining their authenticity in a rapidly changing environment.
- The heritage documents offer a regulatory and theoretical foundation, ensuring the proposed framework aligns with established conservation principles.

The thematic matrix and data triangulation are the backbone of this research, enabling a detailed analysis of KTMH conservation. By combining diverse data sources, the study captures the complexity of preserving these traditional houses while addressing the challenges of modernisation and changing societal needs. This integrative approach ensures that the Authenticity-Oriented Framework for the Conservation of KTMHs is both practical and respectful of these invaluable heritage structures' cultural, architectural, and historical significance.

	HOU					
	Category		House Name	House Code	Interviewee	Interviewee Code
		Desident House	Wan Muhammad	KH06	3 rd generation	KH06-A
	Α		Wan Muhammad	KH06	New Owner	KH06-B
		Owners	Che Muhammad	KH07	4 th generation	KH07-A
		Non-Resident	Mahmud Dobah	KH03	3 rd generation	KH03-A
	в	Owners with Non-Resident	Mahmud Dobah	KH03	Former House Caretaker	KH03-B
		Caretakers	Mahmud Dobah	KH03	3 rd generation	KH03-C
Ę		Abandonod	Wan Sulong	KH02	3 rd generation	KH02-A
Ш	C	Aballuolleu	Wan Sulong	KH02	3 rd generation	KH02-B
LEM			Haji Mohamad Dobah	KH04	4 th generation	KH04-A
Ш _	D	Demolished	Hussein	KH05	3 rd generation	KH05-A
5			Wan Aisyah	KH10	4 th generation	KH10-A
NI			Nik Fatimah	KH01	5 th generation	KH01-A
Ř			Wan Ahmad	KH11	3 rd generation	KH11-A
Ë			Hassan	KH09	4 th generation	KH09-A
Z	EXPERTS					
	Expert					Interviewee Code
	Cons	E1				
	Cons	E2				
	Academic (Universiti Teknologi MARA Malaysia) <i>Tukang /</i> Traditional Malay Master Builder <i>Tukang /</i> Traditional Malay Master Builder					E3
						E4
						E5
	Direc	tor of Kelantan Stat	e Museum Corporatio	n		E6
	Kota	Bharu Municipal Cit	ty – Planning Departm	nent		E7
	Ketua	E8				

Table 4.4: Classification of House Owners and Interviewees

Table 4.5: List of KTMH's for case studies.

9 UC	House		
GII	Nik Fatimah's house	KH01	
AN	Wan Sulong's house	KH02	
ΗŪ	Mahmud Dobah's house	KH03	
С Ц Ц	Mohamad Dobah's house	KH04	
	Hussein's house	KH05	
<u>i</u> S	Wan Muhammad's house	KH06	
AT	Che Muhammad's house	KH07	
RV A	Haji Abdullah's house	KH08	
SEI	Hassan's house	KH09	
BO	Wan Aisyah's house	KH10	
	Wan Ahmad's house	KH11	

 Table 4.6: Heritage and Conservation Documents Review.

	LOCAL / STATE				
	Acts/Guidelines	Code			
/IEW	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	S1			
	Johore Enactment 1988	S2			
	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	S3			
	Sarawak Cultural Heritage Ordinance 1993	S4			
REV	State of Penang Heritage Bill 2011 (<i>Warisan Kerajaan Negeri Pulau Pinang</i> 2011)	S5			
NTS	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	S6			
۳ ۳	NATIONAL (MALAYSIA)				
5	Enactments/Guidelines	Code			
8	National Heritage Act 2005 (Act 645)	M1			
ă	Local Government Act 1976 (Act 171)	M2			
Z	Town and Country Planning Act 1976 (Act 172)	M3			
ΑΤΙΟ	Federal Territory Act 1982 (Act 267), applicable only in Kuala Lumpur, Labuan, and Putrajaya	M4			
ERV	Guidelines Conservation of Heritage Buildings (2016) (Malaysia National Heritage Department)	M5			
NS N	INTERNATIONAL				
ō	Charters/Principles/Policy/Guidelines	Code			
C C	The Nara Document on Authenticity in 1994	W1			
AND	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	W2			
AGE	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	W3			
ERIT/	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	W4			
Ψ	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter	W5			
	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (2003),	W6			
	Charter on the Built Vernacular Heritage (1999)	W7			

The findings were organised into key elements to provide an overview of patterns across the data set, which was structured into five sections of the framework: *Preamble, Conservation Principles, Conservation Protection, Conservation Practice,* and *Key Components of Authenticity (Chapter 8).* The matrix contained data from interviews with homeowners (15), interviews with the experts (8), observations of the selected case studies (11 KTMH), and document analyses (18 documents), as presented in Table 4.7. More specific investigations of these findings can be found in chapters 5 (Interviews), 6 (Observations), and 7 (Document Reviews). These individual data sets were subsequently triangulated in Chapter 8, where an overall discussion of the key findings was presented. This discussion served as the basis for the development of the initial framework.

MAT	MATRIX THEMATIC					
1	Hous	se Owner Interviews				
	а	Resident House Owners	КН06-А, КН06-В, КН07-А			
	h	Non-Resident Owners with	КН03-А, КН03-В, КН03-С			
	D	Non-Resident Caretakers				
	С	Abandoned	КН02-А, КН02-В			
	d Demolished KH04-A, KH05-A, KH10-A, KH01-A, KH11-A		KH04-A, KH05-A, KH10-A, KH01-A, KH11-A, KH09-A			
2	Expe	ert Interviews				
			E1, E2, E3, E4, E5, E6, E7, E8			
3	Obse	Observation of KTMH Changing Patterns				
	E1, E2, E3, E4, E5, E6, E7, E8		E1, E2, E3, E4, E5, E6, E7, E8			
4	Docu	Document Reviews				
	а	Local/ state	S1, S2, S3, S4, S5, S6			
	b	National	M1, M2, M3, M4, M5			
	С	International	W1, W2, W3, W4, W5, W6, W7			

Table 4.7: Matrix Thematic for Establishing a Conservation Principles Framework for the KTMH-AoCF.

4.8 Overview Method of Analysis

In qualitative research, the analysis process can often become overwhelming, particularly when handling large volumes of data. As highlighted by Bloomberg and Volpe (2012), there is no definitive "right" or "wrong" method as long as the data is thoroughly analysed and directly aligned with the research questions. Qualitative data analysis aims to synthesise and summarise the collected data, bringing order and meaning to the findings.

In this study, the method of analysis, combining thematic analysis for the interview data, pattern analysis for observational data using Matero's (2006) concept model of cultural heritage, and template analysis for the review of documents. This integrated approach allowed for a detailed understanding of the phenomena within the specific social and historical context of the conservation challenges facing Kelantan Traditional Malay Houses (KTMHs). The research aimed to reflect the perspectives of house owners and experts, retaining their voices through carefully selected quotations to highlight key issues and contextual differences.

The analysis sought a sensitive and multifaceted understanding, mainly focusing on the changing architectural patterns of KTMHs, material interventions, shifts in the use and lifestyle preferences, and the ongoing challenges in preserving the authenticity of the house's architecture. In addition, the analysis involved reviewing heritage legislation at the local, national, and international levels to contextualise the conservation efforts and assess how these align with the principles of authenticity in vernacular architecture.

The initial phase of analysis involved transcribing all collected data from the interviews, followed by translation from Malay to English. This transcription and translation process proved to be more time-consuming than initially expected, a challenge commonly encountered in qualitative research supported by Bryman (2012) and King and Horrocks (2010). The

complexity of ensuring accurate translations while maintaining the integrity of the interviewees' original meaning necessitated a meticulous and iterative approach.

The coding process in this research adhered to a structured and sequential methodology consisting of three main phases: preliminary coding, final codes, and categorisation, as outlined by Saldaña (2013) and Silverman (1993). In this process, the researcher played an active role, as Silverman (2000) suggested, to enhance the findings' reliability. By rereading the transcribed data several times, the researcher sought to ensure the accuracy and consistency of the interpretations, refining the codes and categories as new insights emerged.

This approach was designed to facilitate a deeper understanding of the personal experiences of house owners and experts regarding the conservation challenges they face. By identifying common themes and patterns, the analysis highlighted critical areas such as the material changes made to the houses, the functional shifts in their use, and the ongoing efforts to preserve their authenticity amidst these transformations.

The thematic analysis approach employed allowed the researcher to identify broad patterns and recurring themes across the interview data. These themes provided valuable insights into the evolving conservation practices for KTMHs, with particular attention to the balance between maintaining traditional architecture and adapting to modern needs. Through this iterative process, the study aimed to illuminate how conservation practices are shaped by the lived experiences and perspectives of house owners and experts while drawing on the broader context of heritage documents and international conservation charters.

The process of thematic coding helped to ensure that the findings were robust and grounded in the data while also providing a flexible framework that could adapt to the complexity of the subject matter. By synthesising the qualitative data from multiple sources—interviews, observations, and heritage documents—the analysis supported the development of a detailed Authenticity-Oriented Framework for the Conservation of KTMHs. This framework, which considers the houses' physical and cultural dimensions, aims to provide practical guidelines for preserving the authenticity of KTMHs while accommodating their evolving needs.

4.8.1 Analysis Using the Conceptual Model of Cultural Heritage

The analysis of the changing patterns in the form, fabric, and function of Kelantan Traditional Malay Houses (KTMHs) was conducted using Matero's (2006) cultural heritage model, which emphasises the interrelationship of these three elements in defining architectural heritage. This study sought to examine these components in balance, considering how modifications to the *Serambi, Rumah Ibu, Rumah Dapur,* and supporting spaces such as *Jemuran* and *Anjung* have impacted the authenticity of

KTMHs. The study documented original architectural features, including walls, floors, roofs, openings, doors, and staircases, and assessed the extent and nature of alterations over time. The balance between these elements is shaped by cultural, social, technical, economic, and utilitarian factors, each influencing intervention decisions and their long-term effects on heritage integrity (Matero, 2006). By systematically analysing these factors, the research offers a means to assess how changes have affected the overall authenticity of KTMHs and whether interventions have been sympathetic to their heritage significance.

To ensure a thorough and authentic assessment, on-site observations were fundamental in documenting physical transformations and understanding how house owners perceive and adapt their traditional homes. These direct observations allowed for a comprehensive recording of changes in form, fabric, and function before developing findings inductively (Silverman, 2000). However, historical measured drawings were analysed for buildings that no longer exist to extract information on past modifications, following the same analytical process used for on-site observations. Data collected from site visits and archival sources were categorised and explained using interviews, photographs, and schematic representations of architectural plans and section alterations (figure4.4). These methods enabled the identification of broader patterns of change, reinforcing the importance of maintaining a balance between preservation and adaptation to ensure the authenticity and continuity of KTMHs within their evolving socio-cultural and environmental context.



RUMAH CHE MAT KH08						
CDACE C		CHANGES				
SPACES		Original	Measured Drawing record	Site observation	categorisatio	
SERAMBI		On stilt, a space with wall and without roof	Refurbished - metal @ Zinc sheet roof added	Maintained as recorded in		
	Function	Welcoming space for guest & where main staircase is located	Living area	measured drawing		
	Roof	-	Metal @ Zinc sheet roof added	-		
	Wall	Traditional timber wall	As original	Refurbished using new design timber wall	Form and	
	Floor	Traditional	As original	Maintained as recorded in measured drawing	Design, Materials and Substance,	
	Staircase	Traditional timber staircase	As original	Concrete timber staircase	Use and Function,	
	Window	Traditional timber window	Glass window with alumininum frame		Traditions and	
	Door	No door	Traditional timber door added	Maintained as recorded in	Techniques	
	Others - <i>Pelanta</i> r and staircases	Traditional (covered with special <i>Singgo</i> ra roof)	Zinc roof	measured drawing		
	Added spaces	-	Shower & washroom added - 2500mm x 2000mm, zinc (corrugated meta sheeting) with 1800mm height	Wall - zinc (corrugated meta sheeting) with 1800mm height		
RUMAH IBU		On stilt with height exceed head level and long roofed type	As original	Maintained as recorded in		
	Space	1 bedroom, & 1 living room - In between rooms divided with bamboo woven wall	Another 1 room added - Timber wall panel	measured drawing		
	Roof	Singgora tiles	Asbestos corrugated roof	Asbestos corrugated roof		
	Wall	Traditional timber wall panel	As original		Design	
	Ceiling	No ceiling	A original		Materials	
	Floor	Traditional timber floor	As original		Workmanship	
	Window	Traditional timber window	Timber & glass window with aluminium frame		Settings Function or	
	Door	Traditional timber door	As original		Use	
	Others	'Sisip angin' (ventilation panel @ lourves) - traditional	As original	Maintained as recorded in		
	Open space under the house or <i>kolong</i>	-	Concrete wall constructed and convert to bedrooms	measured drawing		
	Additional spaces	-	Roof awning at the right side of rumah ibu			

Figure 4.4: Example of the detailed observation on the changes in the form, fabric and function according to the key spaces of Kelantan TMHs (the *Serambi, Rumah Ibu* and *Rumah Dapur*). (Source: Author, 2020)

4.8.2 Thematic Analysis

Thematic analysis, as described by Bloomberg and Volpe (2012), is a qualitative research method primarily aimed at providing a rich, detailed description of the case under study rather than generalising findings beyond the specific context. This process seeks to uncover the underlying patterns and themes within the data, thus offering an in-depth understanding of the complexities inherent in the subject matter. In this research, thematic analysis is used to interpret the views and experiences of both house owners and experts regarding the conservation challenges Kelantan Traditional Malay Houses (KTMHs) face.

According to Saldaña (2013) and King and Horrocks (2010), thematic analysis involves identifying recurring patterns or themes within the data, which can be unique to an individual or shared across cases. The process requires a careful selection of data, deciding what should be included or discarded, and interpreting the data to align with the research questions. King and Horrocks (2010) emphasise that these identified themes must be relevant to the research questions and should not oversimplify the complexity of the data. This approach to thematic analysis allows the researcher to highlight important elements from the data while maintaining a multifaceted understanding of the context in which they arise.

In this research, thematic analysis was applied primarily to the interviews with house owners and experts. Thematic analysis is particularly effective in cross-case analysis, allowing for a comparison between the perspectives of different respondents. By identifying and analysing patterns in the experiences and perceptions of house owners and experts, the analysis provides a deeper understanding of the conservation challenges specific to KTMHs. This process helps illuminate how the conservation of these houses is shaped by cultural, social, and historical factors, as well as practical concerns related to architectural preservation.

Thematic analysis, as utilised in this study, was organised hierarchically. Following the approach suggested by Braun and Clarke (2006), the analysis was structured around a two-level hierarchy that distinguishes between main themes and sub-themes. This hierarchy allows for a detailed conceptualisation of how various themes are interrelated. This research categorised the themes into integrative themes, which emerged from the interviews with house owners and experts. Some of these themes did not require further sub-themes, reflecting their broad applicability across cases.

A central objective of thematic analysis is to aid in understanding the research problem by presenting the findings in a clear and comprehensible manner. As King and Horrocks (2010) suggest, thematic analysis should provide a well-organised data account without oversimplifying its complexity. In this study, a 'tree' diagram was employed to visually represent the relationships between themes, as suggested by Braun and Clarke (2006). This diagram-style representation helps clarify how individual themes are connected, offering a detailed view of the thematic structure.

Thematic analysis in this research also employed a 'cycle' concept involving a backand-forth process of redefining, reapplying, and clarifying the thinking surrounding the preliminary and final codes. This iterative process helped refine the themes by revisiting and reinterpreting the data, as suggested by Saldaña (2013) and King and Horrocks (2010). Through this process, the analysis moved from preliminary codes (descriptive) to final codes (interpretive), identifying overarching themes that encapsulate the challenges and opportunities in conserving KTMHs.

The themes identified in this study were derived directly from the interview data, with some being influenced by existing literature. It is important to note that this research did not follow a grounded theory approach, which typically seeks to generate theory inductively. Instead, the research offered an interpretive description based on exploring the house owners' and experts' perspectives on the conservation of KTMHs. As King and Horrocks (2010) note, thematic analysis is not about generating new theories but rather about identifying descriptive patterns that arise from the data.

Coding the interviews was essential for handling the large volumes of qualitative data gathered during the research. These data were organised and analysed systematically through thematic analysis, identifying key themes that reflect the real-world challenges of conserving traditional Malay houses. The thematic analysis enabled the research to distil complex data into meaningful categories, providing valuable insights into the nature of material changes, functional shifts in use, and the ongoing efforts to preserve the authenticity of the architecture.

4.8.3 Template Analysis in the Context of KTMH Conservation

Template analysis is a highly flexible and adaptable research method, particularly suited to studies that require examining refined, complex data sets with varying levels of detail. As King (2004) noted, template analysis is less rigid in its procedures, offering researchers the flexibility to tailor it to specific research needs and epistemological perspectives. This method employs a hierarchical structure that can be adjusted according to the particular requirements of the study, making it ideal for exploring the

aspects of authenticity in the conservation of Kelantan Traditional Malay Houses (KTMHs).

In the context of this research, template analysis is employed as part of a broader framework for the KTMH Conservation Principles Framework. This method is particularly well-suited for uncovering the underlying causes of human actions, which relate to the conservation practices and challenges those responsible for preserving KTMHs face. As King (2004) and Miles & Huberman (1994) explain, the method offers flexibility in coding, allowing for an analysis that can accommodate multiple perspectives and is adaptable to different data sources, including interviews, observations, and document reviews. Furthermore, template analysis is efficient when handling larger datasets, which is critical in the context of this research.

Phases of Template Analysis

Template analysis in this study follows a structured, three-phase approach:



Figure 4.5: Three main phases in template analysis. Source: Adapted from King (2004)

i. Creating an Initial Template

- The initial template serves as the foundational structure for the analysis. It is developed through several sources of information, including the interview topic guide, academic literature, informal evidence, exploratory research, and the researcher's personal experiences. As King and Horrocks (2010) suggest, these sources contribute pre-defined codes that inform the template's structure. In this research, these pre-defined codes are referred to as 'elements,' derived from the findings obtained through interviews, observations, and document reviews.
- The 'elements' in this study are organised into categories that align with the key sections of the KTMH Conservation Principles Framework:
 Preamble, Conservation Principles, Conservation Protection,
 Conservation Practice and Key Components of Authenticity. These five sections contain high-level 'key elements' relevant to the research objectives. These 'key elements' are further broken down into subcategories

or lower-order elements, which provide a more detailed view of the research themes. This hierarchical structure allows for a deeper understanding of the various components involved in conserving KTMHs, particularly concerning the preservation of authenticity.

ii. Revising the Initial Template

Once the initial template has been created, it is revisited and revised to
ensure it reflects the data accurately. This phase involves reviewing and
adjusting the categories and codes based on the insights gained from the
analysis. The revision process is iterative, allowing the template to evolve as
new patterns and themes emerge from the data. The researcher refines the
template to ensure that the codes are consistently applied and that the final
template is well-aligned with the research questions and objectives.

iii. Establishing the Final Template

• The final template is the outcome of a thorough review and refinement process. It represents the culmination of the thematic analysis, providing a coherent structure for interpreting the data. The final template incorporates all the key and lower-order elements central to the research, allowing for a refined analysis of the conservation practices and challenges those responsible for maintaining KTMHs face.

In the context of this research, the initial template is illustrated in Table 4.8, which depicts the five main sections—Preamble, Conservation Principles, Conservation Protection, Conservation Practice, Key Components of Authenticity—along with the corresponding key elements. The 'key elements' represent the main categories derived from the interviews, observations, and document reviews, which are critical to understanding the preservation of authenticity in KTMHs.

The template also includes one or two levels of lower-order elements under each key element, providing more granular insights into the subtopics within each category. For example, under Conservation Principles, elements may include themes such as authenticity and cultural significance, while under Conservation Practice, the focus could be on the methodologies employed in preserving or adapting traditional structures.

The process of categorising these elements and organising them into a hierarchical structure allows for an in-depth exploration of the themes related to the conservation

of KTMHs. It ensures that all aspects of the research are captured, from the cultural and historical context to the practical strategies employed in conservation. The final template provides a clear framework for understanding the broader principles of KTMH conservation, particularly emphasising the challenges of maintaining authenticity in modernisation and changing societal needs.



Figure 4.6: Example of the pre-defined codes are the 'elements' which derived from the findings of interviews, observation and document reviews. The emerged 'elements' called 'key elements' were then identified to fit into the five categories or sections under Preamble, Conservation Principles, Conservation Protection, Conservation Practice, and Key Components of Authenticity.

Table 4.8: The propose	ed sumr	nary of the initial KTMH-AoCF concept.
SECTION	KEY E	LEMENTS
PREAMBLE	4	The Malantan Tanditianal Malan Haves
	1	The Kelantan Traditional Malay House
	2	Significance of Kelantan Traditional Malay
	3	
	4	
	5	Scope of Application for KTMH-AoCE
	6	The Kelantan Traditional Malay House
CONSERVATION PRINCI	PLES	·····, ·····
	1	Heritage Appreciation
	2	Understanding
	3	The Importance of Setting/Place
	4	Involvement (Participation)
		Homeowner
	_	Ketua Kampung
	5	Traditional Skills, and Technique
	6	Value of Fabric, Form, and Function
		Changes
CONSERVATION PROTE		Shared Beenensibilities for Concentration
	1	
		State Government/Local Authority
		Academic
		Museum
		Industry
		Ketua Kampung
		Homeowner
	2	Registry
		Inventory
	3	Conservation Program and Management
	4	Fund and Incentive
	5	Planning Regulatory Pramework
	6	Estabishment of the Traditional Malay
		House Conservation Centre
CONSERVATION PRACT	ICE	
	1	Kampung Setting
		• Layout
		 Landscape
	2	Care
		Monitoring and Maintenance
		I raditional Building System
		Replacement Tirch on Transforment
	3	Imperireament Managing Changes
	5	
		Disturbance Fabric
		Cautious Approach
	4	Education, Training and Awareness
	5	Recording and Documentation
	6	Engaging House Owner
	7	Kampung Stay Program
KEY COMPONENTS OF	AUTHEN	TICITY
	1	Form and design;
	2	Materials and substance;
	3	Use and function;
	4	Traditions, techniques, and management
		systems;

- 6 Location and setting; Spirit and emotional resonance;

Revising the Template

The process of revising the template in template analysis plays a critical role in refining the framework to ensure it aligns more closely with the evolving research requirements. As King (2004) highlighted, this phase involves several key adjustments, including the insertion, deletion, or modification of elements within the template. Such flexibility allows for a more tailored approach, ensuring the framework remains dynamic and adaptable as new insights emerge during the research process.

For example, a predefined code that is irrelevant to the research context may be removed. Conversely, a new code can be introduced to capture this aspect if a theme or issue emerges during the data analysis that was not initially anticipated. Additionally, the scope of a code may need to be adjusted if it is initially defined too narrowly or fails to capture the full range of related issues. This step is integral to ensuring that the template evolves to reflect the complexities of the research subject—in this case, the conservation of Kelantan Traditional Malay Houses (KTMHs).

The flexibility inherent in the revising stage allows the researcher to continually refine and adjust the template, ensuring it remains relevant and detailed throughout the study. As King (2004) suggests, this iterative process is vital for developing a template that aligns with the research's goals and objectives while accommodating the data's complexities.

Final Template

After the revisions, the research reaches the stage where a final template is established. However, as King (2004) emphasises, producing a "perfect" or "ideal" template may not always be feasible due to the inherent limitations of research and external factors that influence the analysis. This is particularly true in qualitative research, where the fluidity of data can sometimes make it challenging to create a rigid, definitive template.

Nevertheless, the aim is to develop a satisfactory template that effectively captures the key themes and insights pertinent to the research. It should be regarded as unique to the research context and specific to the conservation challenges of KTMHs. While no template can indeed be considered "final" due to the iterative nature of research and the dynamic context of conservation practices, the final template is sufficiently refined to guide the analysis and interpretation of the data. It embodies the research's core findings and offers a structured approach to understanding the complexities of maintaining authenticity in the conservation of traditional Malay houses.
4.9 Chapter Summary

This chapter has provided an overview of the research methodology employed in this study. It has detailed the qualitative research approaches used to explore the conservation of Kelantan Traditional Malay Houses (KTMHs), focusing on preserving their authenticity in the face of modern challenges. The methodology integrates several key approaches, each designed to address specific research questions and objectives.

The matrix thematic approach has been highlighted as an effective tool for navigating the complexities of multi-method research. By organising data into themes and patterns, this approach facilitates the analysis of diverse data sources, including interviews, observations, and document reviews. Thematic analysis was employed to analyse the interviews with house owners and experts, where insights were drawn regarding the challenges of conserving KTMHs, including the tensions between preserving traditional architectural forms and accommodating modern needs.

Additionally, the on-site observations played a crucial role in assessing the changing architectural patterns of KTMHs. These observations helped document the material interventions and shifts in use and lifestyle preferences, revealing how the evolving needs of the residents influence the preservation of the houses' authenticity. Furthermore, reviewing legal documents through template analysis allowed the study to examine the regulatory frameworks that shape conservation practices, particularly in the context of local, national, and international heritage laws and charters.

Each method—interviews, observations, and document reviews—was chosen for its relevance to the research objectives, ensuring that the study could effectively address the complexities of KTMH conservation. The integration of these diverse methods facilitated an exploration of the issues at hand and ensured that the findings were grounded in theoretical and practical frameworks of architectural heritage conservation.

In summary, this chapter has outlined the methodological approach that underpins the research, emphasising the importance of each method in contributing to a multifaceted understanding of the conservation challenges facing Kelantan Traditional Malay Houses. Through this multi-method approach, the study provides valuable insights into how authenticity can be preserved within the context of evolving social and architectural dynamics.

Chapter 5

International and Malaysian Conservation Document for the Preservation of KTMH in Relation to Authenticity

5.1 Introduction

This chapter responds to Research Objective 2 (RO2), which examines the existing conservation philosophies, concerning authenticity in Malaysia and other countries. The chapter starts by reviewing international conservations documents and then presents the results. A similar approach is applied to national and local heritage documents. The chapter concludes with a discussion of the initial and revised templates derived from the analysis, alongside a summary of the key insights.

5.2 Overview of the Document Reviews

In the context of this research, a detailed document review was conducted to inform the development of an authenticity-oriented framework for the conservation of Kelantan Traditional Malay Houses (KTMHs). The process of gathering and reviewing relevant documents at the national, local, and international levels was an essential component of the study, providing contextual and regulatory insights into conserving traditional vernacular architecture. These documents were examined for their historical and technical relevance and their potential to fill gaps in the conservation framework for KTMHs.

It is important to distinguish between charters and policies when considering the documents reviewed for this study. While policies are generally formalised documents that define official courses of action and are typically enforceable by law, charters are non-mandatory documents that outline principles, guidelines, and best practices without having the force of law. According to the Cambridge Dictionary Online, a policy refers to a "set of ideas or a plan of what to do in particular situations that have been agreed to officially by a group of people, a business organisation, a government, or a political party." Policies usually have specific legal obligations and offer a detailed approach to governance and regulation.

In contrast, a charter serves as a written statement that helps define the most appropriate actions or courses of action but does not carry the same legal authority as a policy. The distinction between these two is crucial for this research, as charter principles were primarily used to guide the conservation of KTMHs. Although not legally binding, these principles offer

flexible frameworks for decision-making and practical strategies for conservation, helping to address gaps in existing conservation efforts.

The document review strategy was intentionally designed to identify and analyse information from both statutory documents and guidelines related to the conservation of KTMHs, traditional Malay houses, and timber buildings in Malaysia. The documents selected for review span various levels of governance and influence, including national and local documents and international charters that address the conservation of vernacular built heritage. This broad approach ensures that the research can integrate multiple perspectives and best practices, providing a more detailed framework for conservation.

The systematic review process focused on key aspects of administration, implementation, management, enforcement, and finance—factors that are integral to the successful conservation of heritage buildings. These considerations were used as criteria to identify the most relevant documents for inclusion in the study.

A total of 18 documents were reviewed in this research, comprising six national documents, five local documents, and seven international documents. The national documents provided insights into the overarching legal and regulatory frameworks at the federal level. In contrast, the local documents addressed state-specific guidelines and statutory requirements that pertain to conservation efforts within Kelantan and other regions of Malaysia. The international documents offered comparative perspectives on vernacular heritage conservation, especially those related to timber and traditional Malay architecture, offering a broader context for understanding global conservation principles.

The careful selection of these documents ensured that a diverse range of perspectives was considered. This approach facilitated an in-depth examination of conservation principles and enabled the identification of common points of interest and key issues that transcend local and national boundaries. The integration of international charters provided insight into best practices and methodologies for preserving traditional architecture, ensuring that local traditions and global standards inform the framework developed in this research.

Table 5.1: List of documents were reviewed in this research, comprising six national documents, five local documents, and seven international documents.

	LOCAL (STATE LEVEL)	
No	Acts/Guidelines	Code
1	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988	S1
2	Johore Enactment 1988	S2
3	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	S3
4	Sarawak Cultural Heritage Ordinance 1993	S4
5	State of Penang Heritage Bill 2011 (Warisan Kerajaan Negeri Pulau Pinang 2011)	S5
6	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	S6
_		
No	Enactments/Guidelines	Code
1	National Heritage Act 2005 (Act 645)	M1
2	Local Government Act 1976 (Act 171)	M2
3	Town and Country Planning Act 1976 (Act 172)	M3
4	Federal Territory Act 1982 (Act 267), applicable only in Kuala Lumpur, Labuan, and Putraiava	M4
5	Guidelines Conservation of Heritage Buildings (2012) (Malaysia National Heritage Department)	M5
	INTERNATIONAL RELEVANT CHARTER AND PRINCIPLES (UNESCO/ICOMOS)	
No	Charters/Principles/Policy/Guidelines	Code
1	The Nara Document on Authenticity in 1994	W1
2	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	W2
3	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	W3
4	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	W4
5	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter	W5
6	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (2003),	W6
7	Charter on the Built Vernacular Heritage (1999)	W7

In Malaysia, legal documents that are gazetted at the national level are referred to as Acts, while at the local level, they are termed Enactments. According to Idrus et al. (2010), several key legal instruments at both levels are central to the conservation of architectural heritage, particularly traditional timber houses (TMHs). At the national level, four Acts (M1, M2, M3, and M4) are directly related to conservation efforts in the country. These Acts provide the overarching framework for the protection and preservation of heritage buildings, including the Kelantan Traditional Malay Houses (KTMHs), ensuring that national policies are in place to safeguard traditional architecture.

At the local level, the focus shifts to the Enactments, which are more specific to individual states and provide localised legal frameworks for heritage conservation. In this study, five Enactments (S1, S2, S3, S4, S5, and S6) were identified as critical to conservation efforts in various Malaysian states, with a particular focus on the state of Kelantan. These Enactments define local policies and regulations necessary to protect heritage buildings within the state's jurisdiction.

In addition to the Acts and Enactments, a key guideline at the national level (M5) was reviewed, which provides additional recommendations and practical guidelines for the conservation of heritage buildings, particularly regarding the issue of authenticity in conservation practices but not specifically for timber building. While not legally binding in the same way as Acts and Enactments, these documents offer important guidance on how heritage structures should be treated to preserve their authenticity and historical significance.

Document Review and Template Analysis

The documents reviewed for this research were examined specifically to identify statements related to the protection and conservation of traditional Malay houses (TMHs), including those in Kelantan and other states. This review aimed to investigate how the legal and regulatory frameworks, both at the national and local levels, address the conservation of TMHs and whether these frameworks contain any provisions specifically related to the concept of authenticity in the preservation of such buildings.

The findings of this document review were used to address the third research question: What are the existing conservation principles regarding traditional timber houses within the Malaysian and international context concerning the authenticity? In order to answer this question, the study employed template analysis (as outlined in Chapter 4, Section 4.8.3). The template analysis method allowed for a systematic examination of the documents, focusing on extracting relevant statements and themes related to the conservation and authenticity of TMHs.

Through this analysis, elements from each document were identified and categorised. These elements served as the foundation for understanding the conservation principles laid out in both national and international contexts. The template analysis results, including key statements on conservation practices, were presented in Tables 5.4 to 5.10 in Chapter 5.

5.2.1 Local and National Heritage Legislation

Referring to Table 5.1, the research examines various heritage enactments across different states to identify how they relate to one another, particularly in the context of traditional Malay house (TMH) conservation. It is essential to clarify whether any of these documents directly address the conservation of TMHs. Through literature review and observations, it became evident that no state-specific legislation directly pertains to TMHs. While states like Melaka, Johor, Sarawak, Sabah, and Pulau Pinang have general heritage Acts, Kelantan lacks a dedicated heritage enactment (as discussed in interviews with E7).

The selection of relevant documents for this study depends on their applicability, particularly how they broadly frame heritage conservation. While none of the existing Acts specifically mention TMHs, they serve as valuable resources for understanding how heritage is recognised, what it represents, and the measures to protect it. By examining these documents, the research aims to establish principles for the conservation of TMHs within the specific social and cultural context of Kelantan. Understanding the approaches taken by other states, even when not directly related to traditional houses, provides valuable insights into potential strategies for protecting TMHs.

Additionally, this analysis explores the content and structure of these Acts to understand whether they prioritise particular types of heritage, propose visions for urban planning, or integrate well with local government policies. This process is crucial for developing a framework for TMH conservation in Kelantan, addressing the unique challenges faced in the region. Furthermore, the insights shared by the experts interviewed for the study validated the review of these heritage documents, reinforcing the relevance of the current issues highlighted in the conservation of TMHs, particularly in Kelantan.

5.2.2 Analysis and findings

This research section focuses on a detailed analysis of selected documents, specifically those addressing heritage building conservation with a particular emphasis on Traditional Malay Houses (TMH), as outlined in Table 5.2. The documents from various states were reviewed to identify common elements and unique differences. Table 5.3 highlights the different formats across states yet reveals several similarities in their provisions. Only the elements directly relevant to this study are discussed here.

While some provisions are unique to individual states, one of the most prominent common features across all states is the concept of "Interpretation," where the definitions of key terms related to heritage conservation vary significantly between the Acts. This variation in interpretation can be observed in Table 5.3, demonstrating how each state approaches the definition and scope of heritage conservation. These differences underline the complexities of conserving TMHs and the need for a cohesive understanding and approach to ensure the protection of this important architectural heritage.

Table 5.2: Analysis of identification elements and their application in the Local and National heritage legislation.

CODE	S1	S2	S3	S4	S5	S6	M1	M2	M3	M4	M5	
KEY COMPONENT OF AUTHENTICITY	Malacca State Cultural Heritage Conservation and Restoration Enactment, 1988	Enactment (No.7) of the Johor State Heritage Foundation 1988	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	Sarawak Cultural Heritage Ordinance 1993	State of Penang Heritage Bill 2011 (<i>Warisan Kerajaan</i> Negeri Pulau Pinang 2011)	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning Act 1976 (Act 172)	Federal Territory Act 1982 (Act 267), applicable only in Kuala Lumpur, Labuan, and Putrajaya	Guidelines Conservation of Heritage Buildings (2016)	
Purpose	1	/	/	/	/	/	/	/	/	/	1	11
Interpretation / Definitions	/	/	/	/	/		1	/	/	/	/	11
Administration							/	/	/			3
- Establishment of Council							/					1
- Establishment of Committee	/	/	/		/	1	/	/	/	/		9
State / Regional Planning Authorities									/	/		1
Power	/		/	/			/	/	/	/		8
- Function (Commissioner/Minister/Director/State Authority)	1	/				/	/	/	/	/		7
Establishment of a Register (Heritage)	/		/	/	/	/	/					6
Proposals and Programme for Preservation and Conservation	1											1
Restriction of Planning Permission	/				/	/	/					4
Care / Repair of Cultural Heritage	/		/	/	/	/	1				/	7
Establishment of Fund	/	/					/					3
Financial Incentives	/				/		1					3
Tax Relief	/											1
General Fund								/				1
Enforcement					/		/					2
- Penalty	/	/	/	/	/		/	/	/			8
Tree Preservation Order									/	/		2
Traditional Arts and Handicraft				/								1
Others: Application of NHA 2005					/							1

Table 5.3: Variations in interpretation (definition) of the same	terminology
Table 3.5. Valiations in interpretation (definition) of the same	s terminology.

Term	Definition	Act / Enactment
Building	"means a building or groups of separate or connected buildings which, because of their architecture, their bomogeneity or their place in the landscape, are of	National Heritage Act 2005 (Act 645), pg. 95
	outstanding universal value from the point of view of history, art or science;"	State of Penang Heritage Bill 2011 <i>(Warisan Kerajaan Negeri Pulau Pinang 2011),</i> pg. 49
	"means any building, structure or work (whether above or below the surface of the land or water), monument, commemorative statute or memorial;"	Sarawak Cultural Heritage Ordinance 1993, pg. 4
Conservation	"includes preservation, restoration, reconstruction, rehabilitation and adaptation or any combination;"	National Heritage Act 2005 (Act 645), pg. 99
	"means the process of looking after a cultural heritage or a conservation area so as to retain its significance, and includes maintenance, preservation, restoration, reconstruction, adaptation or a combination of two or more of these"	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988, pg. 15 and 16
	"includes preservation, restoration, reconstruction, rehabilitation and adaptation or any of its combination;"	State of Penang Heritage Bill 2011 <i>(Warisan Kerajaan Negeri Pulau Pinang 2011),</i> pg. 51
Cultural heritage	"includes tangible or intangible form of cultural property, structure or artefact and may include a heritage matter, object, item, artefact, formation structure, performance, dance, song, music that is pertinent to the historical or contemporary way of life of Malaysians, on or in land or underwater cultural heritage of tangible form but excluding natural heritage;"	National Heritage Act 2005 (Act 645), pg. 100
	"includes tangible or intangible form of cultural property, structure or artefact, and may include a heritage matter, object, item, artefact, formation structure, performance, dance, song, music which has aesthetic, archaeological, architectural, cultural, historical, scientific, social, spiritual, linguistic or technological value pertinent to the historical or contemporary way of life of the community of Penang, on or in land excluding natural heritage;"	State of Penang Heritage Bill 2011 <i>(Warisan Kerajaan Negeri Pulau Pinang 2011),</i> pg. 52
	"includes antiquity, historical object, historical site, site, fabric, building, structure, ethnographic matter, works of art, manuscript, coins, currency notes, medals, badges, scientific crest, flag, armour, vehicle, ship and trees which has a significant and special architectural aesthetic, historical, cultural, scientific, economic and any other interest or value;"	Malacca Preservation and Conservation of Cultural Heritage Enactment 1988, pg. 16

Most of the heritage legislation across the states share a common administrative framework, outlining the governance and operational responsibilities of the relevant bodies. These bodies are tasked with overseeing the Act's enforcement, with the power and functions of these authorities clearly defined. While some states, such as M1 and

S5, have established formal Heritage Councils, other states rely on a Commissioner, Minister, Director, or State Authority to fulfil these roles. This variation in institutional structures underscores the differing approaches to managing heritage conservation across the regions.

A key element found in most of the legislation is the Register, which is crucial for documenting tangible and intangible heritage. Legislation such as M1, S1, S3, S4, S5, and S6 emphasise the importance of maintaining a proper registry to improve control and facilitate monitoring of heritage sites and objects. While enforcement mechanisms are not consistently applied across all states, M1 and S5 are significant exceptions, including penalties for non-compliance. However, the establishment of a register remains a pivotal tool for conservation management, as it ensures that cultural heritage is formally recognised and tracked.

The Register also plays a significant role in the care and repair of cultural heritage. When a heritage site or structure is registered, any subsequent repair work can be more effectively monitored and managed. The care and repair guidelines ensure that restoration efforts align with preservation principles, minimising disruptions to the fabric of the heritage. For example, the Melaka Preservation and Conservation of Cultural Heritage Enactment (1988) provides provisions for urgent repairs needed for the preservation of a building, as stated in Section 12 (1):

"Whenever a building, declared to be subject to preservation or conservation, is in need of urgent work or repair, the Museum Corporation may make arrangements with the owner or occupier for the work to be executed and may contribute towards the cost thereof."

The proper care and management of designated heritage buildings are outlined in documents such as N5 and L6, which provide detailed technical and practical guidelines. This level of care is often paired with financial support to facilitate conservation efforts. However, not all legislation offers funding or incentives for heritage maintenance, with M1, S1, and S5 being notable exceptions. For example, under S1, the state government established a Preservation and Conservation Fund (Section 14, 1988) designed to support private owners in maintaining and conserving their heritage buildings. This fund is sourced from state and federal government allocations and donations from statutory bodies, private organisations, and individuals. With this financial assistance, owners of gazetted cultural heritage sites can apply for support in the upkeep of their properties. Furthermore, S1, Section 16, introduces tax relief provisions, allowing owners to reclaim some of the income from entrance charges

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and visitor donations, typically used for ongoing maintenance. This funding mechanism is valuable for integrating financial support within the conservation framework, particularly in Kelantan.

In addition to financial aid, conservation work on listed buildings is often subject to restrictions on planning permission. These guidelines are designed to safeguard the property's historical integrity by minimising the impact of new developments on the original fabric. While this may pose challenges for modern development, it strikes a necessary balance between preserving cultural heritage and meeting contemporary needs. Some enactments, such as S4, specifically address preserving traditional arts and handicrafts, promoting interest in traditional skills and providing incentives for their rehabilitation. This inclusion emphasises the cultural value of local craftsmanship, further strengthening the region's architectural heritage.

S5 stands out by incorporating M1's principles into its legislation, reinforcing a cohesive approach to heritage conservation aligned with national standards. Although M3 and M4 do not specifically address building preservation, M4 does include a provision for Tree Preservation Orders, which applies to urban areas. Overall, these legislative frameworks, particularly S1 and S5, offer a detailed approach to heritage conservation, providing the necessary legal structures, financial incentives, and cultural recognition to ensure the continued preservation of traditional Malay houses and other vernacular architecture.

M5 is the sole national guideline dedicated to the practical implementation of conservation works, mainly focusing on buildings constructed from brick, cement, or concrete materials. The technical guidance provided within M5 is detailed and well-developed, offering clear direction for conservation efforts in these building types. However, it is important to note that none of the guidelines or legislations reviewed in Tables 5.2, 5.4, and 5.5 contain specific provisions or focus areas dedicated to the traditional Malay house (KTMH).

Although M1 remains the primary heritage legislation in Malaysia, S1 and S5 emerge as significant references for the development of a more localised legislative framework or conservation principles for KTMHs. This is due to their better alignment with the local context, which is essential when addressing traditional Malay houses' unique characteristics and needs. The analysis presented in Tables 5.4 and 5.5 highlights the key interpretations and findings from local and national legislation, providing an overview of how they address conservation principles. Moreover, Table 5.6 reveals that none of the local or national documents specifically mention "authenticity" as a part of the component of conservation, except M5. This indicates a gap in the existing legislative framework regarding the explicit consideration of authenticity in the conservation of KTMHs. Recognising and integrating authenticity in conservation practices is critical for the preservation of cultural and architectural heritage, especially in the context of traditional buildings like the KTMH, which carry profound historical and cultural significance.

	<u>\$1</u>	82	63	84	85	32
	51	52	33	54	55	50
	Malacca State Cultural Heritage Conservation and Restoration Enactment, 1988	Enactment (No.7) of the Johor State Heritage Foundation 1988	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	Sarawak Cultural Heritage Ordinance 1993	State of Penang Heritage Bill 2011 (<i>Warisan Kerajaan</i> Negeri Pulau Pinang 2011)	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007
Content	This enactment is the provisions for the preservation, conservation and enhancement of cultural heritage of the Malacca State. Aimed more towards the protection of privately owned buildings and monuments over which the Government has no Jurisdiction. Comprises of administration, register, restriction on planning permission, repairs, fund, financial incentive, tax relief and conservation and preservation proposal and programme and etc. No section specific on enforcement but there is penalty charge.	Specific for the cultural and historical heritage of the Johore State. Little interpretation and more focus on the Yayasan's power and function, fund, penalty and estimated expenses. No section specific on enforcement.	Covers preservation and Historical monuments, Archaeological sites, antiquities, regulate matters connected with research, law relating to treasure trove in Sabah. It also covers register, care of historical monuments and sites, as well as penalty charge.	Preservation of antiquities, archaeological, architectural, religious, artistic or traditional interest, and value for the benefit of the State and as a heritage of the people. It covers register, care of historical monument and sites as well as penalty charge. It also highlighted the traditional arts and handicraft as one of the cultural heritage under specific section that need to be preserved.	Management, preservation and conservation of cultural heritage for the State of Penang. This enactment is the only one has a section on the application of NHA as it was billed in 2011. The content of this legislation is quite similar to NHA but suited to the local context. Besides having a register, financing and care of heritage site, they also have own Heritage Council and a form of Enforcement.	This guideline is specific on certain conservation areas in George town area. It is more planning system and application more specific to the certain type of building such as shop house. It has very detail explanation in term of conservation principles, listed building and control system.
Key Observation	The most comprehensive act with financial incentive, tax relief, and conservation and preservation proposal and programme *Interpretation *Register *Care *Conservation Program *Fund *Administration *Restriction Planning	The most comprehensive act with financial incentive, tax relief, and conservation proposal and programme *Interpretation *Register *Care *Conservation Program *Fund *Administration *Restriction Planning	*More to antiquity and treasure trove *Interpretation *Register *Care *Administration	The only specific Section on Traditional Arts and Handicraft is unique as it promote, stimulate interest and rehabilitate traditional manual skills, while preserve it, with incentives and establish centre for exhibition and workshop. *Interpretation *Register *Care *Administration	*Interpretation *Register *Care *Fund *Administration *Restriction Planning	More specific to conservation area particularly shop houses. Very detail conservation principles and control system. *Interpretation *Register *Care *Administration *Restriction Planning

Table 5.4: The findings of analysis for local document reviews.

Table 5.5:	The findings	of analysis	for national	document reviews.
		•••••••••••••••••••••••••••••••••••••••		

	M1	M2	М3	M4	M5
	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning Act 1976 (Act 172)	Federal Territory Act 1982 (Act 267), applicable only in Kuala Lumpur, Labuan, and Putrajaya	Guidelines Conservation of Heritage Buildings (2016)
Content	The main national heritage legislation, it covers most aspects, from interpretation, administration to the establishment of council and committee, fund, register, declaration and etc., tangible and intangible, underwater cultural heritage, or treasure trove.	More relevant to the workings of local government. Only Part XII Section 101, about maintenance (conversion) of historical buildings in town area.	This Act related to the regulation of town and country planning. Section 12 (viii) the preservation and enhancement of character and appearance of buildings Section 19 (2) (a) (i), (ii), (iii): no planning permission: Maintenance (alteration, conversion, material use) which affect interior only. Not involve external. Section 22 (i), (j), (k): compatibility to the existing architecture or historical interest, any addition or alteration, reerection/ demolition should be retained the façade and external	This Act related to the regulation in the Federal Territory. Section 20 (2) (a) (i), (ii), (iii) stated about no planning permission be necessary for maintenance which affect interior only (not involve any alteration, conversion, change of use and material use that affect external).	A guide for the implementation of heritage building conservation work in Malaysia. It is very detail explanation that covers: Part II (2.0) Principles and conservation process Part III (3.0) Documentation Guideline Part VI (4.0) Conservation Guidelines and Principles on Architectural elements.
Key Observation	Too general None of the section stated about the Traditional Malay house in particular *Interpretation *Register *Care *Fund *Administration *Restriction *Planning	Villages are also subject to get permission from Local Authority (LA) or Local Planning Authority (LPA) Unbalanced enforcement to this area by the LA or LPA *Interpretation *Administration	Highlighted in draft local plan and treatment of applications *Interpretation *Administration	*Interpretation *Administration	
Finding	Interpretation Register Proposal/program for Conservation	Care Fund and Incentive Restriction of Planning Submission	None of the legislation above (S1, S2 S3, conserving the Traditional Malay house in	S4, S5 S6, M1, M2, M3, M4, M5) s n particular	stated about protecting or

CODE	S1	S2	S3	S4	S5	S6	M1	M2	M3	M4	M5
KEY COMPONENT OF AUTHENTICITY * The attributes of Authenticity from Operational Guidelines for the Implementation of the World Heritage Convention as main references.	Malacca State Cultural Heritage Conservation and Restoration Enactment. 1988	Enactment (No.7) of the Johor State Heritage Foundation 1988	Antiquities and Treasure Trove Enactment 1977 (Sabah No.11 of 1977)	Sarawak Cultural Heritage Ordinance 1993	State of Penang Heritage Bill 2011 (Warisan Kerajaan Negeri Pulau Pinang 2011)	Guidelines for Conservation Areas and Heritage Buildings by the Municipal Council of Penang (MPPP) 2007	National Heritage Act 2005 (Act 645)	Local Government Act 1976 (Act 171)	Town and Country Planning Act 1976 (Act 172)	Federal Territory Act 1982 (Act 267), applicable only in Kuala Lumpur, Labuan, and Putrajaya	Guidelines Conservation of Guidelines Conservation of Heritage Buildings (2016), Malaysian National Heritage Department
Form and design;	x	х	х	х	х	х	х	х	x	х	Preserving the original structure, style, and relationship with its surroundings, despite changes made over time. It requires careful study to decide which period of the building should be preserved. (DESIGN)
Materials and substance;	x	х	х	х	х	х	х	х	x	×	Using original materials ensures better compatibility and response between materials, maintaining both functional and aesthetic integrity. <i>(MATERIAL)</i>
Use and function;	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х
Traditions, techniques, and management systems;	х	х	х	х	x	х	х	х	х	х	Using original materials and traditional techniques for repairs, ensuring that the restored parts blend smoothly with the original structure. (TRADITIONAL TECHNIQUE, WORKMANSHIP)
Location and setting;	х	Х	х	х	х	х	х	х	x	Х	Setting requires the preservation of the building's form, layout, and interior arrangement as originally designed. This ensures that the structure reflects its historical context. (SETTING)
Language and other manifestations of intangible heritage;	х	х	Х	х	х	х	х	х	х	Х	Х
Spirit and feeling;	Х	Х	Х	Х	Х	X	Х	Х	Х	Х	X
Other internal and external factors.	х	Х	Х	х	Х	х	Х	х	х	Х	Х

Table 5.6: The findings of analysis for Authenticity aspect/section for local and national document reviews

The spirit of the reviewed heritage documents is closely aligned with theoretical principles of protection, implementation, and practical strategies for conservation, which will be further explored in this study with regard to traditional Malay houses (TMHs). While several of these documents have been gazetted to safeguard specific historic environments, none explicitly identify the TMH as an important heritage asset requiring protection.

M1, often regarded as the foundational heritage legislation in Malaysia, serves as a broad framework for heritage conservation. However, as highlighted in interviews with experts, M1 is too general to address the unique needs of traditional Malay houses. While it functions as an overarching tool to protect Malaysia's historic environment, it falls short in providing specific guidance for the conservation of TMHs, one of the nation's significant heritage components. This gap becomes more evident when examining documents such as S4, which emphasises the protection of traditional arts and handicrafts but does not extend its protections to TMHs. Similarly, while M5 offers detailed technical guidance for the conservation of buildings, it does not include TMHs in its scope.

This lack of focused legislation for TMHs makes it increasingly difficult to protect and conserve these traditional structures, as no specific references or legal frameworks acknowledge their cultural and historical importance. Although some documents, particularly M2, M3, and M4, address elements like historical interest, character, and maintenance, these considerations mainly apply to urban building facades. They are not tailored to vernacular structures like the TMH, typically located in rural kampung areas.

S6, which focuses specifically on the preservation of shophouses in conservation areas, stands as a rare example of targeted heritage protection, but it remains an exception rather than the norm. While these legislative frameworks, even in their current form, are a step in the right direction, the absence of clear, specific legislation for TMHs reflects the ongoing challenge of safeguarding these vital components of Malaysia's heritage. More robust and context-specific protections must be developed to ensure the survival of TMHs before they are irreversibly lost. These houses are integral to the cultural identity of Malaysia, particularly in rural communities, and thus require immediate attention and protection.

5.2.3 International Charters and Principles

In addition to the national and local legislative frameworks, international documents were reviewed to assess their applicability to heritage conservation, particularly traditional Malay houses (TMHs). While primarily focused on World Heritage sites, these documents often contain guiding principles that can be applied to various types of heritage, including vernacular and timber architecture. Although these documents do not carry legal weight, they serve as valuable resources for best practices in conservation. They substitute for established conservation theories, providing structured frameworks that capture international consensus on conservation approaches.

One such document is the *Charter on Built Vernacular Heritage* (W7), promoted by the International Committee of Vernacular Architecture, which empahases the importance of vernacular heritage as a cultural expression. This document underscores how communities continuously adapt their built environment in response to their surroundings, making it highly relevant to the conservation of traditional Malay houses. By applying the same analytical method to international and local contexts, this research aims to distinguish between principles suited to the preservation of globally significant monuments and those more relevant to national and local heritage conservation efforts.

The proposed conservation principles outlined in this study align closely with those of the World Heritage Convention, to which Malaysia has been a signatory since 1988. This alignment has significantly influenced conservation practices within the country. The review of the seven international documents, as summarized in Table 5.7, provides further insight into the broader conservation framework within which the conservation of TMHs can be situated, contributing to the development of a more robust approach to preserving Malaysia's architectural heritage.

	INTERNATIONAL RELEVANT CHARTER AND PRINCIPLES (UNESCO/ICOMOS)	
No	Charters/Principles/Policy/Guidelines	Code
1	The Nara Document on Authenticity in 1994	W1
2	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	W2
3	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	W3
4	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	W4
5	The Principles for the Preservation of Historic Timber Structure (1999), or the ICOMOS International Wood Charter	W5
6	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (2003),	W6
7	Charter on the Built Vernacular Heritage (1999)	W7

Table 5.7: List of Documents for International Charters and Principles

5.2.4 Analysis of findings

The analysis of the international documents, as presented in Tables 5.8 and 5.9, reveals a detailed interpretation of their findings, highlighting key elements and statements relevant to heritage conservation. These findings offer insights into the guiding principles and practices that inform the preservation of cultural heritage, including traditional architecture like the Traditional Malay House (TMH). The documents reviewed—ranging from W1 to W7—offer valuable perspectives on conservation but do not explicitly address the concept of "Authenticity" within the context of these heritage assets, except for W1.

Table 5.10 further illustrates the components of authenticity referenced in the international documents. While the documents' focus is broader, addressing general heritage conservation, only W1 includes explicitly a discussion of authenticity. This emphasises the need for a more precise conceptualisation of authenticity in conserving traditional Malay houses and highlights an opportunity for further development of principles that more explicitly engage with authenticity in preserving such cultural heritage.

Table 5.8: The findings of analysis for international document reviews.

	W1	W2	W3	W4
	Nara Document on Authenticity (1994)	Australia ICOMOS Charter for Places of Cultural Significance (Burra Charter 2013)	ICOMOS Principles for the Recording of Monuments, Group of Buildings and Sites (1996)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)
Overall interpretation of the documents		The Charter guides the conservation and management of places of cultural significance (cultural heritage sites). It provides a more specific standard of practice for those who offer advice, make decisions, or undertake work on places of cultural significance, including owners, managers, and custodians. The Charter can be applied to all types of places of cultural significance, including natural, indigenous, and historic places with cultural values. The key concepts are included in the Conservation Principles, Conservation Processes, and Conservation Practice sections. Explanatory Notes also form part of the Charter.	This document outlines the main reasons, responsibilities, planning measures, content, management, and considerations for sharing the recording of cultural heritage.	This charter addresses conservation practices and approaches related to architecture and sites, in philosophical terms. It also empahases the development of a critical approach, especially conservation and restoration, based on the principles of authenticity, maintaining physical and historical context from different periods. The Venice Charter stresses the importance of setting, respect for original fabric, precise documentation of any intervention, the significance of contributions from all periods to the building's character, and the maintenance of historic buildings.
Key Observation	 Global Cultural and Heritage Context: The document highlights the generosity of the Japanese authorities in facilitating a forum for rethinking conservation and authenticity. It acknowledges the global challenges faced by cultural heritage in an age of globalization and homogenization, and the importance of respecting cultural identity. Cultural heritage diversity is identified as an irreplaceable source of intellectual and spiritual richness for humanity. The document stresses the need for respect for all cultures and belief systems, including instances where cultural values might conflict. UNESCO's Principle: A fundamental principle of UNESCO empahased is that the cultural heritage of each culture is the cultural heritage of all, highlighting the shared responsibility for heritage conservation. This principle underlines that cultural responsibility belongs first to the community that generates the heritage and second to the caretakers of that heritage. Values and Authenticity: The document discusses the value of cultural heritage as a core element of authenticity. The authenticity of cultural heritage properties must be understood through credible sources of information about their original and subsequent characteristics, meaning that these sources of information should be assessed carefully. Cultural Context: Authenticity judgments are not based on fixed criteria, but must be made within the cultural contexts of the heritage being evaluated. The document empahases the importance of cultural understanding when assessing authenticity. 	 Conservation and Management To retain the cultural significance of a place and safeguard it from a vulnerable state. Cautious Approach Respect the existing fabric, use, associations, and meanings as much as possible. Any changes to a place must be integrated with the physical evidence and not distorted. Knowledge, Skills, and Techniques Should make use of all the knowledge and skills which contribute to the care of the place. For significant fabric, conservation with traditional techniques and materials is preferable. Use The use of a place should be retained if it is of cultural significance. Setting includes visual, sensory, spiritual, and cultural relationships that contribute to the cultural significance of the place. It should be considered appropriately. Location The physical location of a building should remain within its historical context. Relocation is unacceptable unless it ensures the building's survival. Some buildings were designed to be readily removable, especially the TMH, or have a history of relocation. Removal may be acceptable if there are no significant links with their present location, although very rare. If any building is removed, it should be given an appropriate location and use. Contents Contents or loose architectural elements on site should be retained at that place. Their relocation is unacceptable unless for security, preservation, health, and safety purposes to ensure its survival. Participation Participation should involve people for whom the place has significant associations and meanings. Change may be necessary but is undesirable when it reduces cultural significance. It should be guided by its intervention.	Reasons for Recording Responsibility for Recording Planning for Recording Management, Dissemination, and Sharing of Records	Basic principles should be established on an international basis, while being tailored to fit each country's cultural framework and traditions. Publication There must always be precise documentation (including analytical and critical reports, drawings, illustrations, and photographs). The record should be stored in the archives of a public institution and made accessible to any researcher. It is recommended that the report be published.

	 Disturbance of Fabric Disturbance of significant fabric should be minimized. Direction, Supervision, and Implementation Competent supervision of interventions should be in place at all stages. Only people with appropriate knowledge and skills should handle any changes made to the original fabric. Records The records associated with the conservation of a site should be kept in a permanent archive and made publicly available, except for security and privacy reasons. Removed Fabric Significant fabric that has been removed from a place should be catalogued and kept at the site. 		
Form and design, Materials and substance, Use and function, Traditions and techniques, Location and setting, and Spirit and feeling.	Definitions Location Knowledge, Skills, and Techniques New Work Managing Changes Maintenance Participation Value Understand the place and its cultural significance, including its meaning to people, before making decisions about its future. Involve the communities associated with the place. Care for the culturally significant fabric and other significant attributes, taking account of all aspects of significance. Care for the place's setting. Provide an appropriate use. Provide security for the place. Use available expertise. Make records of the place and changes to it, and the reasons for decisions and actions. Interpret and present the place in a manner appropriate for its significance.	 To have proper recording management. Definitions The Reasons, Responsibility, and Planning Should be seen as a priority	Basic pr internati vernacu Definitic Publicat Replace

orinciples may not necessarily be laid down on an itional basis for local heritage, such as the ular TMH.

ions ation ement

Table 5.9: The findings of analysis for international document reviews.

	W4	W5	W6
	Principles for the Preservation of Historic Timber Structures (1999), ICOMOS	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (2003), ICOMOS	Charter on the Built Vernacular Heritage (1999)
Content	Inspection, recording, and documentation Monitoring and maintenance Intervention Intervention: Minimum intervention in the fabric of a historic timber structure. In the case of interventions, the historic structure should be considered as a whole; all material. Repair and replacement: New members or parts of members should be made of the same species of wood with the same, or, better. Craftsmanship and construction technology, including the use of dressing tools or machinery, should, where possible, correspond with those used originally. Contemporary materials and technology – should only be used when proven reliable over time, and utility installations must respect the historical and aesthetic value of the site.	The value and authenticity of architectural heritage should be assessed within its cultural context, as universal fixed criteria cannot account for the diversity and respect owed to all cultures. Choosing between traditional and innovative techniques poses no issue as long as they align with heritage values, ensure safety, and meet durability needs.	Research and Documentation: Before working on a vernacular structure, analyse it carefully and store the documentation in a public archive. Siting, Landscape, and Groups of Buildings: Any changes should respect the site's relationship with its surroundings and other buildings. Traditional Building Systems: Protect traditional building methods and skills, and pass them on through education and training. Replacement of Materials and Parts: Use materials that match the original structure's look and feel when making changes. Adaptation: Changes should respect the building's character and be suitable for modern living, guided by community ethics. Changes and Period Restoration: Changes over time should be appreciated, and restoration should not force a single historical period. Training: Provide education and training programs for conservators, communities, and the public to preserve vernacular architecture.
ervation ling	The importance and great diversity of species and qualities used to build timber structures. The high vulnerability of structures (decay, degradation caused by humidity, light, fungal and insect attacks, fire, as well as wear and tear). The increasing scarcity due to vulnerability, misuse, and the loss of skills and knowledge. The loss of traditional design and construction technology due to modernization. The historic structure and function should be considered as a whole (intervention) and/or reveal its cultural values (restoration).	Value and authenticity of architectural heritage cannot be based on fixed criteria. Physical heritage must be considered within the cultural context to which it belongs. The value and integrity of architectural heritage as a unique product of the specific building technology of its time should avoid focusing on its appearance only. A full understanding of the structural and material characteristics (its original construction techniques, alterations effects is important before making any decision, including the causes of damage, decay, and safety level of the structure.	"It is important to recognise the changes in all phases of development, though not all are worthy of conservation. Item 6: 'Changes over time should be appreciated and understood as important aspects of vernacular architecture' (pg. 28). Unless the changes are not harmonious with the existing character and compromise its original features. Item 6: 'Continuity of all parts of a building to a single period will not normally be the goal of work on vernacular architecture." "Vernacular architecture" (pg. 28). (Depends on the aims of the project. To retain the original design sometimes is impossible, and historical documentation is scarce or unavailable.) It is crucial to understand how the physical form, fabric, structures, and spaces are used, alongside the traditions and intangible values that connect to the cultural landscape.
Key Obser Findin	Inspection, Recording and Documentation Monitoring and Maintenance Repair and Replacement Education and Training	 Possible remedial measures and controls: Address root causes rather than symptoms Preventive maintenance Proportion safety and durability with the least harm to heritage values The choice between "traditional" and "innovative" techniques depends on the case. Least invasive and most compatible with heritage values are preferable. "Reversible" approach when new knowledge is acquired The characteristics of new materials used and their compatibility with existing materials should be fully established with long-term impacts consideration. Respect the concept, techniques, and historical value of the original structure and leave evidence that can be recognised in the future. Integrated plan of architecture, structure, service installations, and functionality. 	 Research and Documentation Training Traditional Building System Replacement of Materials and Parts Changes and Period Restoration
Findings	 Education, Training, and Awareness Recording and Documentation Location Knowledge, Traditional Skills, and Technique New Work and Intervention Managing Changes 	 7 Monitoring and Maintenance 8 Involvement (Participation) 9 Traditional Building System 10 Replacement 11 The Concept of Place 12 Values 	***The provided principles guide the appropriate responses to conservation challenges, such as conducting a detailed analysis of the place, ensuring minimal intervention, and emphasising precise documentation. Respect for contributions from all periods, along with maintaining authenticity, is central to the conservation process.

Table 5.10: The findings of analysis for Authenticity aspect/section for international document reviews

	W1	W2	W3	W4	W5	W6	W7
COMPONENT OF AUTHENTICITY * The attributes of Authenticity from Operational Guidelines for the Implementation of the World Heritage Convention as main references.	The Nara Documents on Authenticity in 1994	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013.	Principles for the Preservation of Historic Timber Structures (1999), ICOMOS	Charter on the Built Vernacular Heritage (1999)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	Principles For The Analysis, Conservation And Structural Restoration Of Architectural Heritage (<i>200</i> 3),	Principles for the analysis, conservation and Structural Restoration of Architectural Heritage
Form and design;	Form and design;	Form, scale and character	x	x	Addition not allowed except not detract from building interesting part	New work must respect and not distort the cultural significance of the place (siting, form, scale, texture, etc.	should respect the overall integrated plan considering architecture, structure, installations, and functionality.
Materials and substance;	Materials and substance;	Fabric	Minimal intervention on fabric and material	Replacement of materials and parts	Original material, replacement missing part harmonious	Retaining, modifying, or reintroducing significant uses may require changes to the fabric but should be minimized.	choice between "traditional" and "innovative" techniques should be based on compatibility with heritage value
Use and function;	Use and function;	Use	x	Adaptation	Not change the building's layout or decoration.	minimal changes to fabric and use	Change in use or function must be carefully considered with conservation requirements.
Traditions, techniques, and management systems;	Traditions and techniques	Traditional technique and materials	Follow traditional technique	Traditional building systems, training	Use all the sciences and techniques that contribute to safeguarding architectural heritage. respect for original material and historical evidence	Preference for traditional techniques and materials.	Preference for traditional techniques
Location and setting;	Location and setting;	Place and setting	Structure and cultural context	Siting, landscape and groups of buildings	historical context	remain in their historical location, Retaining an appropriate setting includes visual, sensory, and spiritual relationships	Interventions should not alter the historic or traditional setting, maintaining a balance.
Language and other manifestations of intangible heritage;	x	x	x	x	X	meanings of a place relate to intangible dimensions	The cultural context to which it belongs.
Spirit and feeling;	Spirit and feeling	Meanings	emotional resonance;	Changes and period restoration	connection to its historical context must be preserved	Cultural significance, including social and spiritual values.	Cultural and historical significance.
Other internal and external factors.	x	x	x	x	Excavations should adhere to scientific standards and UNESCO principles	Managing change requires assessing its impact on the cultural significance of a place,	Documentation of checks and monitoring should be kept as part of the building's history.
Remark	Specifically mention authenticity	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect	Not specifically mention the authenticity aspect

	W1	W2	W3	W4	W5	W6	W7	
Element	The Nara Documents on Authenticity in 1994	The Burra Charter: The Australia ICOMOS Charter for Places of Cultural	Principles for the Preservation of Historic Timber Structures (1999), ICOMOS	Charter on the Built Vernacular Heritage (1999)	International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter 1964)	Principles For The Analysis, Conservation And Structural Restoration Of Architectural	Principles for the analysis, conservation and Structural Restoration of Architectural Heritage	
Documentation and dissemination		/	/	/	/			4
Training			/	/				2
Traditional Building System	/			/				2
Replacement	/		/	/	/			4
Change	/	/		/				3
Monitoring and Maintenance	/	/	/		/	/	/	6
Education			/	/				2
Definitions		/			/			2
Location		1						1
Knowledge, Skill & Technique	/	1	/	/		/	/	6
New work		1	/					3
Managing Change	/	/						2
Participation		1						1
Value		1				/	1	3
Responsibility and planning		1						1
Protection and Management		1				/	1	3
Understanding and awareness		/	/	/		/	/	5

Table 5.11: Analysis of identification elements and their application in the Local and National heritage legislation.

The proposed framework for the conservation of Traditional Malay Houses (KTMH) aims to integrate both micro and macro perspectives on the issues surrounding their preservation. The documents listed in Tables 5.8 and 5.9 were thoroughly reviewed to develop this framework. Key elements identified across these documents are particularly relevant to this research, especially those focusing on the importance of setting, respect for original fabric, and the precise documentation needed to address conservation issues. While each document brings unique strengths, W5 and W7 are most closely aligned with this research due to their emphasis on vernacular architecture. Timber, being prone to decay, requires careful consideration of its characteristics and vulnerabilities before any intervention or replacement, as outlined in W5.

Furthermore, W2 was highlighted as a significant resource in developing the basic framework for this research, with its well-structured approach and focus on managing change. This principle of managing change is particularly valuable in contemporary conservation practices. The safety aspect, discussed in W6, was also noted, emphasising the need for a thorough understanding of structural techniques and their application in preserving traditional buildings. Additionally, W3 stresses the importance of recording and managing traditional building skills, knowledge, and techniques sustainably, ensuring that this information is adequately disseminated and shared for future generations.

Incorporating all the key elements from these documents, it is clear that the protection of built heritage environments, such as KTMH, should be managed by the relevant bodies, agencies, or individuals, taking full responsibility for the preservation process. The international documents reviewed provide guiding principles that address specific conservation challenges, offering detailed insights into the importance of setting, minimal intervention in the historic fabric, accurate documentation, and respect for contributions from all historical periods. These principles are crucial for adopting a holistic approach to the preservation of heritage environments.

Among the documents reviewed, the Burra Charter (2013) emerged as a particularly suitable reference for the proposed framework, serving as a fundamental guide for this study. The analysis summaries based on Tables 5.8 and 5.9 reflect the importance of various elements in conservation practices, while Table 5.10 shows that while most international documents do not specifically address authenticity, certain keywords related to authenticity have been considered in this research. These considerations

are essential for ensuring the integrity and preservation of KTMH and keeping it in line with established conservation principles.

Elements			Sections	Elements		
Interpretation	- - -	1	Preamble	1. Interpretation		
Register		2	Conservation Principles			
Conservation Program and Management		3	Conservation Protection	1. Register		
Funding and Incentive				2. Conservation Program and Management		
Planning Regulatory Framework				3. Funding and Incentive		
Administrative				4. Planning Regulatory Framework		
Care				5. Administrative		
Form and Design Component		4 5	Conservation Practice	1. Care		
Form and Design Component			Key Components of Authenticity	1. Form and Design Component		
Material and Substance Component				2. Material and Substance Component		
Traditions, Techniques, and Management Systems				3. Traditions, Techniques, and Management Systems		
Component	_			Component		
Use and Function Component				4. Use and Function Component		
Location and Setting Component				5. Location and Setting Component		

Figure 5.1: The initial and revised templates for local heritage legislation.



Figure 5.2: The initial and revised templates for international charters or principles.

Figures 5.1 and 5.2 present the initial templates derived from the findings discussed earlier. These templates encompass both local and national heritage legislation as well as international charters and principles. These templates serve as a foundational framework for understanding the key elements relevant to the conservation of Traditional Malay Houses (KTMH).

The next step in this research involves revising these templates by incorporating insights from the document review method alongside findings from the interview and observation methods. Once integrated, these elements will form the basis for developing a detailed Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This framework will offer a structured approach to preserving the authenticity of KTMH while addressing the unique cultural, historical, and architectural characteristics that define them.

5.3 Chapter Summary

This chapter has outlined the data collection, analysis, and key findings related to Research Objective 2 (RO2), focusing on understanding the existing conservation principles for vernacular timber structures in relation to authenticity, both locally and internationally. The review of various documents has highlighted the importance of identifying relevant elements that can be adopted and adapted to the specific context of Kelantan. Through this review, it became evident that neither national nor local legislation directly addresses the protection and conservation of Traditional Malay Houses (TMH), specifically the Kelantan Traditional Malay Houses (KTMH).

Despite this absence of direct legislative references, several key elements were identified from local and international documents that could form the foundation for a conservation framework. These elements include interpretation, registration, conservation programmes, care, funding and incentives, administration, and restrictions on planning submissions, all crucial to the conservation process. The analysis of international documents further reinforced these findings, revealing additional important considerations such as education, training, awareness, documentation, change management, traditional knowledge and skills, intervention strategies, and ongoing monitoring and maintenance.

The next chapter built upon these findings by integrating the insights from the three research methods—interviews, observations, and document reviews—to develop an initial Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This framework aims to address the unique cultural, historical, and architectural needs of Kelantan's traditional Malay houses while providing a structured approach for their preservation while retaining the authenticity.

The Changing Pattern and Evolution of Traditional Malay House Architecture in Kelantan (KTMH)

6.1 Introduction

This chapter critically analyses the changes observed in Kelantan Traditional Malay Houses (KTMHs) over time, emphasising their architectural form, materiality, functionality, construction, and cultural significance. The analysis examines how KTMHs have transformed to adapt to evolving functional and lifestyle needs, environmental changes, and pressures for modernisation. It seeks to understand the impact of these modifications on the authenticity and heritage value of these traditional structures while highlighting the balance between preserving heritage and accommodating contemporary demands.

The study is grounded in examining 11 case study houses, representing a range of conditions that include standing, abandoned, and demolished/ collapsed structures. Each house holds unique historical and cultural importance, reflecting the diverse traditions, techniques, and adaptations that have shaped KTMHs over the decades. These case studies collectively provide a detailed understanding of how KTMHs have evolved, both architecturally and functionally, within their respective social and environmental contexts.

This chapter is structured through several thematic sections.

The first section, The Framework of On-Site Observations, explains the methodology used to collect data for this study. It describes the tools and approaches employed, such as field surveys, measured drawings, archival research, and interviews with house owners, caretakers, and descendants. The section also acknowledges the challenges faced in accessing data from abandoned or demolished/ collapsed houses, outlining how these limitations were addressed through reliance on historical documentation and oral testimonies.

The second section, Classification of Measured Drawings for Traditional Malay House Typology in Kelantan, categorises the case study houses into distinct architectural typologies.

The third section, House Owners/Occupants' Insights into KTMH Change, presents findings from interviews with house owners and occupants. This section explores their perspectives on various aspects of change, including functional requirements, lifestyle preferences, emotional and cultural attachments, and challenges associated with modernisation. Individual

analyses are also provided for each of the 11 KTMHs, reflecting the unique circumstances and transformations experienced by each house.

The fourth section, Changes in the Kelantan Traditional Malay Houses, synthesises the findings from the case studies and provides a comparative analysis of the observed changes. This analysis is structured around five key components of authenticity: form and design, materials, function and use, construction techniques, and location and setting. By assessing the impact of these changes on each component, the section evaluates the overall effect on the heritage value of KTMHs.

This chapter offers a holistic understanding of how KTMHs have evolved and adapted as physical structures and cultural symbols over time. It highlights the interplay between tradition and modernity, emphasising the need for thoughtful conservation strategies that balance heritage preservation with the practical realities of contemporary life. By exploring these themes, the chapter underscores the enduring significance of KTMHs as historical artefacts and living spaces.

6.2 Early Architectural History of Kelantan

The early architectural history of Kelantan reveals two primary house designs that are central to the region's architectural identity: the *Rumah Bujang* and *Rumah Tiang Dua Belas*. According to historical studies initiated by architectural researchers, these two house types from the 18th century are strongly linked to houses found in Pattani, which, during this period, was a wealthy and independent Malay kingdom (Mamat et al., 2016). Subsequently, Patani became part of Siam. As a result, many scholars associate the design of Malay houses in Kelantan with the architectural style of houses in Siam. Additionally, it is suggested that Patani may have received architectural influences from neighbouring countries such as Cambodia and Laos (Nik Daud, 1987).



Figure 6.1: *Rumah Tiang Dua Belas.* (Source: Daud, 2017)





(Source: KALAM, 1998)

Osman (1980) notes that both the *Rumah Bujang* and *Rumah Tiang Dua Belas* are examples of the *Rumah Bumbung Panjang* (long-roofed houses) or *Perabung Panjang* style, which is the earliest type of house design found throughout Peninsular Malaysia. The *Rumah Bumbung Panjang* features a long, horizontal roof ridge. Traditionally, the roof was made from *nipah* palm thatch, although wealthier families would use imported clay tiles instead.

The *Rumah Tiang Dua Belas* is characterised by the use of twelve main supporting pillars in the central living area (*Rumah Ibu*). These pillars consist of six tall posts, and when viewed from the front, the arrangement of the pillars forms four rows, with three pillars in each row (figure 6.2). This distinctive structural arrangement underscores the significance of spatial organisation in traditional Malay architecture, reflecting both the household's social status and functional needs (Osman, 1980).

The *Rumah Bujang* is typically smaller than other traditional Malay houses, featuring three main supporting pillars in the central living area (*Rumah Ibu*) (figure 6.3). This pillar count excludes the additional support pillars, known as *tiang tongkat* or *tiang gantung*, which are shorter and only reach up to the floor level. The main pillars are arranged in two rows, each consisting of three pillars. In Kelantan and Terengganu, this style is also called *Rumah Bujang Selasar* (Osman, 1980).

The *Rumah Tiang Dua Belas* and *Rumah Bujang* are distinguished by the use of *papan pemeleh* at the roof's edge, on the gable end. These *papan pemeleh* are inverted V-shaped boards that serve as a decorative feature. The *Rumah Bujang* typically has a single pair of *pemeleh*, while the *Rumah Tiang Dua Belas* features two pairs of *pemeleh* connected beneath the roof (figure 6.1). These two types of houses represent some of the region's earliest and

oldest architectural designs. However, the intricate use of *Papan Kembung or Janda Berhias* timber wall and various decorative carvings, which once characterised these structures, are increasingly rare in Kelantan and other states (Mubin Sheppard, 1971).



Figure 6.3: *Rumah Bujang.* (Source: KALAM, 1996)

The *Rumah Tiang Dua Belas* has significant historical connections to the houses in Patani and the royal family of Kelantan. This house type was typically built for the noble or elite class, symbolising the high status of the ruling class in ancient Kelantan. These houses were often owned exclusively by royal family members, emphasising their social and political significance.

Among the *Rumah Tiang Dua Belas* recorded by KALAM is the house of Encik Hussein (KH05), built around 1900. The architectural form of this house is closely linked to the traditional houses found in Pattani, Laos, and Cambodia. Many scholars have associated the design of these Malay houses with that of houses in Siam, reflecting shared cultural and architectural influences across the region (Nik Azmi, 1987). According to Norazman (1991), these houses were often larger and featured spacious rooms due to the subsequent expansions to accommodate growing needs.

Another example of a *Rumah Tiang Dua Belas* is the Nik Fatimah Nik Abdullah (KH01) house in Kota Bharu, Kelantan, constructed around 1813. This house is a well-known example of traditional Malay architecture built after World War II, representing a significant part of the region's architectural heritage (Wan Hashim Wan Teh, 1996).

The *Rumah Bujang* and *Rumah Tiang Dua Belas* are among Kelantan's earliest traditional house types. These houses are characterised by their steep, single-pitched roofs, which derive from the long ridge covering the roof structure (Raja Kamarul Bahrin, 1988). The continued

presence of such architectural features highlights the enduring influence of early architectural styles in the region, contributing to the rich history and cultural identity of traditional Malay houses in Kelantan.

By the 19th century, the form of traditional Malay houses in Kelantan began to evolve under the influence of Western culture introduced from the south. A key transformation during this period was the shift from high, steeply pitched roofs to lower, single-pitched roofs. The new architectural style introduced during this time was known as *Perabung Lima*. This style is characterised by five roof ridges with an elongated rectangular shape and a low-pitched roof (figure 6.4). In this design, one straight ridge with four sloping ridges leading to the eaves creates a distinctive roof structure.



Figure 6.4:_*Rumah Perabung Lima.* (Source: KALAM, 1990)

Unlike previous house styles, the *Perabung Lima* does not feature *pemeleh* or decorative elements such as intricate carvings, making it simpler in design. Mubin Sheppard (1971) states that the *Perabung Lima* house was affordable and easy to construct, making it popular among the common people. Despite its simplicity, this architectural style was widely embraced due to its practicality. An example of this style can be seen in the house of Che Muhamad Che Harun (KH07), built in 1910, which represents the early development of the *Perabung Lima* design for ordinary people.

However, the *Perabung Lima* house design was not without its drawbacks. From a technical standpoint, it presented certain issues, particularly regarding ventilation. The tightly enclosed roof structure limited air circulation, creating an uncomfortable living environment. This issue can be observed in the Wan Aisyah (KH10) house, built in 1926, where the confined roof design resulted in restricted airflow, highlighting the challenges associated with this style.

Another typology of Kelantan traditional Malay house is *Rumah Perabung Pecah Lima* which became popular among the people of Kelantan by the late 19th century (Mubin Sheppard, 1971). This house type is characterised by a lower roof and lower floor design, reflecting the

influence of Bugis and Dutch architectural elements. One distinguishing feature of the *Rumah Perabung Pecah Lima* is its *Rumah Anjung* at the front area, which does not have the traditional *Serambi* (veranda). This design distinction sets it apart from other Malay house types (Hilal Haji Osman, 1980). One example of this architectural style is the house of Hj. Wan Muhammad Hj. Awang (KH06), constructed in 1900, exemplifies the typical features of the *Rumah Perabung Pecah Lima*.

The *Rumah Perabung Pecah Lima* floor plan incorporates semi-octagonal shapes into the front section, seamlessly connecting to the central living area (*Rumah Ibu*) (figure 6.5). The semi-octagonal plan is a prominent feature in traditional Kelantan Malay architecture, especially in structures associated with royal palaces and aristocratic residences. These houses, often referred to as *Rumah Telur* or *Rumah Anjung*, extend outward from the main body of the house, forming an architecturally striking and functionally significant component. The design is meticulously crafted with symmetry as a guiding principle, where the primary structural layout remains rectangular or elongated, but the front segment adopts a semi-octagonal form, enhancing the overall aesthetic appeal of the house.



Figure 6.5: *Rumah Perabung Pecah Lima.* (Source: Pauzi, 2017)

The *Rumah Perabung Pecah Lima* was commonly owned by merchants or local leaders who sought to demonstrate their power and prestige to the surrounding community. The design of these houses reflected the personal characteristics of their owners, with intricate and detailed decorative elements showcasing their social standing. This is exemplified in the house of Haji Mahmud Dobah (KH03), built in 1862 in Kota Bharu, Kelantan, which embodies the refined architectural style associated with the elite class in Kelantan.

6.3 Rationale for Selecting Kota Bharu, Kelantan as the Study Area

Kelantan is widely regarded as a "cultural pot of Malay culture," encompassing both tangible and intangible heritage that reflects the deep-rooted traditions of the Malay community (Shuaib & Enoch, 2013). The state's local culture is rich with diverse influences, yet it remains predominantly Malay, which has contributed significantly to the preservation of its cultural practices and heritage. Kelantan is often referred to as the "Cradle of Malay Culture" due to the strong cultural continuity upheld by its high Malay population (Shuaib & Enoch, 2014). This cultural dominance has enabled both tangible and intangible heritage to thrive and be passed down through generations.

The preservation of Kelantan's culture is strongly influenced by the Islamic inclinations of its people, their economic livelihood, the monarchy, and, importantly, their traditional leisure activities. Kelantan is often called "Serambi Mekah" (the balcony of Mecca), highlighting the deep-rooted Islamic background that shapes the social and political fabric of the state (Erasiah at al., 2023). The state's Islamic heritage has significantly influenced its architectural forms, social structures, and community practices.

Kelantan is geographically isolated from the industrial corridor on the west coast and significant metropolitan areas such as Kuala Lumpur, Penang, and Singapore (Wan Ismail, 1996). This isolation has contributed to slower development compared to other states in Malaysia. However, the high percentage of the Malay population and limited migration from other states have played a crucial role in controlling the physical and social fabric of the region, helping to maintain the identity and authenticity of Kelantan's cultural and historical sites.

The capital of Kelantan, Kota Bharu, is at the heart of this cultural preservation, where local practices are still upheld due to the predominance of the Malay population, which recorded 96.6% out of 1,792,501 Kelantan population in 2023 (Malaysian Department of Statistics Malaysia, 2023). According to the Minister of Natural Resources, Environment, and Climate Change, Nik Nazmi Nik Ahmad, Kelantan holds the country's highest percentage of Malay reserve land, which is 1,453,025.30 hectares (Osman, 2023). The Kelantan Malay Reserve Land Enactment and Land Rights (1930–40) has played a key role in protecting this land, ensuring that it remains under the control of the native Malay population (Hussain, 2010). With 96% of Kelantan's land classified as Malay reserve land, this contributes to the state's ability to maintain its cultural and historical identity. As one of the states with the highest percentage of the Malay population and the lowest rate of urbanisation in Peninsular Malaysia, Kelantan is able to control the physical and social development of Kota Bharu and its surrounding areas, preserving the authenticity of its architectural heritage.

The early Malay settlement in Kelantan is located in the Kota Bharu district (Abdullah et al., 2022). Given its status as the first settlement in Kota Bharu, along with its rich heritage and significant aesthetic value, Kota Bharu offers an ideal location for studying Kelantan's traditional Malay house architecture. The selection of this district as the focus of the case study is particularly relevant for exploring the historical development of traditional Kelantanese house forms.

Daud (2017), in her research, highlighted that traditional Malay houses in Kota Bharu exhibit distinct architectural characteristics that differentiate them from those in other districts, particularly in terms of their aesthetic intricacy. These houses are not only architecturally unique but also possess high aesthetic value. In her study, Daud identified 20 traditional houses within the district. However, the research primarily focused on specific typologies of traditional Malay houses, including *Rumah Tiang Dua Belas, Rumah Bujang, Rumah Perabung Lima*, and *Rumah Perabung Pecah Lima*. Of these, only 11 houses in Kota Bharu have been documented with measured architectural drawings by KALAM.

No	Code	Owner's Name/House	Year Built	Address	House Typology	KALAM Reference No	Year	Current House Condition
1	KH01	Nik Fatimah's house	1810 to 1820	Kg. Banggol, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU77.D/92/93	1992	Demolished/ Collapsed
2	KH02	Wan Sulong's house	1920	Jalan Sultanah Zainab, Kota Bharu, Kelantan	Rumah Bujang Berselasar	RU126.D/97/98	1997	Abandoned (not accessible)
3	KH03	Mahmud Dobah's house	1862	Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima		1999	Still standing
4	KH04	Mohamad Dobah's house	1900	1408, Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU129.D/98/99	1998	Demolished/ Collapsed
5	KH05	Hussein's house	1900	No 1409, Jln Post Office Lama, Kota Bharu, Kelantan	Rumah Tiang Dua Belas	RU105.D/95/96	1995	Demolished/ Collapsed
6	KH06	Wan Muhammad's house	1900	No 199, Jalan Atas Banggol, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU84.D/93/94	1993	Still standing
7	KH07	Che Muhammad's house	1910	No 1519, Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Lima	RU70.D/90/91	1990	Still standing
8	KH08	Haji Abdullah's house	1917	875, Jln Sultanah Zainab, Kota Bharu, Kelantan	Rumah Bujang Berselasar	RU121.D/96/97	1996	Demolished/ Collapsed
9	KH09	Hassan's house	1920	Jalan Pengkalan Chepa, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU35.D/84/85	1984	Demolished/ Collapsed
10	KH10	Wan Aisyah's house	1926	1468, Jalan Sultanah Zainab, Kota Bharu, Kelantan	Rumah Perabung Lima	RU130.D/98/99	1998	Demolished/ Collapsed
11	KH11	Wan Ahmad's house	1926	Jalan Post Office Lama, Kota Bharu, Kelantan	Rumah Perabung Pecah Lima	RU71.D/91/92	1991	Demolished/ Collapsed

Table 6.1: List of data coding obtained through Measured Drawings Documentation of traditional Malay house in Kota Bharu, Kelantan

6.4 The Framework of On-Site Observations

A combination of field surveys, measured drawings, and qualitative interviews was employed as the primary data collection tool in this study. For houses still standing and accessible, direct on-site observations were conducted to document physical conditions, material usage, architectural changes, and functional modifications. This included using tools such as detailed measured drawings, photographic documentation, and field notes to capture and assess the existing state of the structures.

Data collection for houses that were abandoned or demolished/ collapsed posed significant challenges. Inaccessibility due to the deteriorated condition of some houses made on-site observations impossible. The reliance on secondary sources such as KALAM reports was particularly evident in the cases of **KH01**, **KH02**, **KH05**, **KH07**, **KH08 KH09**, **KH10**, and **KH11** which were no longer standing or in a state of severe disrepair. For these houses, the primary data derived from interviews was cross-referenced with archival materials to ensure the accuracy and reliability of the analysis. This limitation emphasises the importance of employing supplementary strategies, such as drawing from existing documentation prepared by KALAM. Additionally, relying on archival records and interviews became the most important part of data collection for the demolished/ collapsed houses. However, this approach came with its challenges, including incomplete documentation and gaps in photographic records.

For houses that could not be directly accessed, archival documentation and oral histories played a pivotal role. Measured drawing reports and detailed textual descriptions by KALAM served as the primary data source, providing critical insights into the structural details, material use, and alterations over time. Unfortunately, some of these reports lacked comprehensive photographic documentation, introducing limitations in visually interpreting changes. To fill these gaps, interviews with descendants and caretakers were utilised to reconstruct missing details. Oral histories also brought subjective narratives to light, offering rich cultural and personal context. However, some interviewees struggled to recall specific details or were hesitant to speak about the house due to a lack of interest or painful memories tied to the property, further complicating data collection.

6.4.1 Comparative Methodology for Standing vs. Demolished/Collapsed Houses

The methodology for data collection varied significantly between houses that were still standing and those that were demolished/ collapsed or abandoned. Field surveys enabled the direct observation of changes, material conditions, and spatial layouts for standing houses. Photographs and measurements complemented these surveys to document current conditions. In contrast, the analysis depended entirely on archival

records and interviews for demolished/ collapsed or inaccessible houses. While measured drawings offered technical details about the original design, these sources were sometimes limited in providing a complete picture of alterations. Comparisons between standing and demolished/ collapsed houses revealed not only patterns of change but also the vulnerabilities that lead to the loss of KTMHs over time.

Given the varied nature of data sources, ensuring accuracy required rigorous crossreferencing of information. Archival records were matched with oral accounts to confirm details about structural changes, material use, and ownership history. However, the validation process was hindered by several factors, including incomplete documentation, limited photographic records, and the reluctance of some house owners to allow interior photographs due to privacy concerns or the house's poor condition. Furthermore, some interviewees had limited knowledge of their ancestral homes or lacked interest in discussing the subject. Despite these challenges, integrating multiple data sources allowed for a more holistic understanding of the changes and continuity in KTMHs. However, it highlighted the need for more systematic documentation practices in the future.

In summary, the framework of on-site observations relied on a combination of direct surveys, archival research, and interviews to build a detailed understanding of Kelantan Traditional Malay Houses. While challenges in accessing certain houses and limitations in existing documentation posed obstacles, the methodology remained adaptable.

6.4.2 Analysis Using the Conceptual Model of Cultural Heritage

The analysis of changes in the form, fabric, and function of Kelantan Traditional Malay Houses (KTMHs) was conducted using an adaptation of Matero's (2006) Cultural Heritage Construct Model, which emphasises the interconnectedness of these three core elements in defining architectural heritage. This model provides a structured framework to examine the modifications to the architectural components of KTMHs, such as the *Serambi* (veranda), *Rumah Ibu* (main house), *Rumah Dapur* (kitchen), and secondary spaces like *Jemuran* (intermediate space) and *Anjung* (entrance space), and the impact their authenticity and cultural significance.

The study systematically investigates how alterations in the physical form, materials, and functional aspects of these spaces influence the overall integrity of the houses. This approach considers how changes to key architectural elements—such as walls,
floors, roofs, openings, doors, and staircases—affect the tangible and intangible qualities that define the house's authenticity. By documenting the original architectural features of the KTMHs, the research provides a baseline for understanding how these elements have evolved and how they have been altered over time.

Matero's model also underscores the importance of balancing the three essential components—form, fabric, and function—while recognising that each element is subject to various cultural, social, technical, economic, and utilitarian influences. These factors play a significant role in shaping the decisions regarding intervention and conservation. The model acknowledges that the interventions must be sensitive to the building's broader cultural and heritage significance, ensuring that changes do not undermine the core values that define its authenticity.

In line with the principles outlined in UNESCO's 2017 Operational Guidelines for the Implementation of the World Heritage Convention, which identify the attributes of authenticity as including form, design, materials, substance, use, function, traditions, techniques, and setting, the research integrates these attributes into the analytical framework. The study thus evaluates how modifications to the KTMHs align with these authenticity criteria and considers the impact of changes on the house's cultural meaning and historical integrity.

6.5 House Owners/Occupants' Insights into Changes in Kelantan Traditional Malay Houses (KTMH)

A thematic analysis of the interviews conducted with house owners, caretakers, and descendants of the 11 Kelantan Traditional Malay Houses (KTMH) reveals critical insights into the transformations in these architectural heritage structures. These insights are categoried into three main themes: functional requirements and lifestyle preferences, emotional and cultural attachment, and challenges related to modernisation and adaptation. These themes are further contextualized by the current status of the houses, some of which remain standing, while others have been abandoned or demolished/ collapsed, reflecting broader socioeconomic and cultural changes.

Functional Requirements and Lifestyle Preferences

The functional requirements and lifestyle preferences associated with traditional Malay houses (TMH) are deeply intertwined with cultural norms, environmental adaptability, and social structures. Traditionally, the spatial organisation of Malay houses was designed to

accommodate communal living, religious practices, and daily activities that revolved around extended family interactions. Spaces such as the *Rumah Ibu* (main house) functioned as the core of domestic life, used for sleeping, social gatherings, and cultural rituals. At the same time, the *Serambi* (veranda) facilitated interactions with visitors, reinforcing the Malay ethos of hospitality. The *Rumah Dapur* (kitchen house) was often detached or semi-detached, allowing for efficient smoke ventilation while separating public and private spaces. These spatial arrangements reflected a lifestyle that prioritised communal values, respect for privacy, and adaptation to the tropical climate.

However, contemporary lifestyle preferences have shifted due to changing socio-economic conditions, urbanisation, and modern living standards, leading to modifications in the functional use of TMHs. Many homeowners now require enclosed spaces for privacy, a stark contrast to the open-plan nature of traditional houses, which emphasised natural ventilation and flexibility of use. Integrating new amenities, such as attached bathrooms and enclosed kitchens, has altered the spatial dynamics, replacing traditional features like the open *Jemuran* (drying area) with more functional yet less culturally authentic adaptations. Additionally, the increasing need for designated parking areas for vehicles has resulted in structural changes, such as the extension of car porches that often disrupt the visual and architectural integrity of TMHs.

This become of the most recurring themes among the interviewees was the necessity to adapt the houses to meet modern functional needs while maintaining their traditional integrity. **KH06**, for instance, is still standing and owned by two parties: the original descendants (**KH06-A**) and a new owner (**KH06-B**). Both emphasized the need for modern conveniences such as additional bathrooms and roofed spaces, which led to structural modifications like enclosing the *Jemuran* (intermediate spaces) and constructing covered car porches. These interventions were described as unavoidable due to evolving lifestyle demands, with **KH06-B** mentioning, "The house needed to be practical for daily living, but we tried to retain its traditional character wherever possible."

Similar sentiments were echoed by **KH07-A**, who represents the fourth generation of ownership in a still-standing KTMH. While acknowledging the importance of traditional layouts, they expressed that certain spaces like the *Serambi* (veranda) and *Jemuran* had to be enclosed for functional reasons, such as creating additional living spaces for a growing family. Houses like **KH02** and **KH03**, however, which are either abandoned or cared for by non-resident owners, have undergone limited or no functional adaptations due to a lack of regular occupancy. As stated by **KH03-B**, "The house is beautiful, but since no one lives here, it doesn't make sense to invest in modernising it."

In contrast, demolished/ collapsed houses like **KH04** highlight how unmet functional needs can lead to neglect and eventual loss. **KH04-A**, a fifth-generation descendant, recalled, "There was no way to maintain the house for modern living, so it was easier to let it go."

From a conservation perspective, balancing functional requirements with authenticity remains a significant challenge. The introduction of modern materials, such as concrete for flooring and zinc for roofing, has replaced traditional timber and *Singgora* tiles, impacting these houses' sensory experience and original aesthetics. While these adaptations cater to contemporary needs, they risk eroding the cultural and architectural identity of TMHs if not sensitively managed. Conservation efforts must, therefore, embrace an authenticity-oriented approach that accommodates modern living without compromising the heritage value of these structures.

Emotional and Cultural Attachment

Despite the practical challenges of maintaining and adapting KTMHs, most interviewees expressed strong emotional and cultural connections to their ancestral homes. **KH06-A**, for example, described their house as "a living reminder of our family's history and cultural identity." This sentiment underscores why parts of the house have been preserved, even as functional modifications were made. Similarly, **KH07-A** spoke about the importance of the house in hosting traditional family gatherings and rituals, saying, "It feels like a bridge connecting us to our past."

However, the degree of emotional attachment often correlated with the physical state of the house. Houses like **KH03** and **KH02**, which have been abandoned or minimally used, reflect a weakening of familial ties. **KH02-B** admitted, "We don't visit the house often because we are scattered in different places, and it's hard to maintain it." Similarly, **KH03-C**, a third-generation descendant of **Mahmud Dobah**, mentioned, "The house feels like a relic of the past, but it's hard to hold onto it when life has moved on."

For demolished/ collapsed houses like **KH04** and **KH05**, emotional detachment appeared to play a role in their loss. **KH05-A** noted, "We tried to preserve it, but without consistent use, it became more of a burden than a treasure." However, **KH04-A** described their regret, stating, "We didn't realise the cultural value of the house until it was gone."

Modernisation and Adaptation Challenges

A significant theme that emerged was the difficulty of balancing modernisation with the preservation of authenticity. Still-standing houses such as **KH11** and **KH09** have undergone changes like replacing *Singgora* tiles with corrugated metal roofs and enclosing open spaces

to create bedrooms or storage areas. **KH09-A** explained, "We had to make these changes to keep the house liveable, but we made sure to keep its core design intact."

However, modernisation efforts were not always seamless. **KH01-A** and **KH08-A**, both owners of houses that have been demolished/ collapsed or significantly altered, highlighted the lack of financial resources and technical expertise as barriers to sustainable adaptation. **KH08-A** remarked, "Traditional materials are expensive and hard to source, so we had to use cheaper alternatives." This reliance on modern, less durable materials often undermined the longevity and authenticity of the houses.

Abandoned houses like **KH02** and **KH03** reflect a broader challenge: the difficulty of maintaining traditional structures without active use or consistent funding. **KH03-B**, a former caretaker, stated, "It's hard to justify the cost of maintenance when no one lives here full-time." Similarly, **KH02-A** and **KH02-B** pointed out that urban migration has left the house isolated and neglected, further complicating efforts to conserve it.

Status of the Houses: Standing, Abandoned, or Demolished/ Collapsed

The status of the houses serves as a poignant indicator of how well functional, emotional, and modernisation needs have been addressed. Still-standing houses like **KH06**, **KH09**, and **KH07** demonstrate a delicate balance between adaptation and preservation, with active ownership playing a key role in their maintenance. For example, **KH06-B** stated, "Even though I'm not from the original family, I see it as my responsibility to maintain the house."

In contrast, abandoned houses like **KH02** and **KH03** highlight the consequences of urban migration and reduced emotional attachment. The absence of regular use and the lack of financial or institutional support have rendered these houses vulnerable to decay. **KH02-B** acknowledged, "The house is still there, but it feels more like a relic than a home."

Demolished/ collapsed houses such as **KH04**, **KH05**, and **KH08** represent the ultimate loss of heritage value. The decision to demolish was often driven by a combination of neglect, financial constraints, and the perceived impracticality of preserving the house. **KH04-A** lamented, "It was a painful decision, but we didn't have the means to save it."

The interviews reveal a complex interplay of functional, emotional, and modernisation factors shaping the fate of Kelantan Traditional Malay Houses. While houses like **KH06**, **KH09**, and **KH07** stand as testaments to the possibility of balancing tradition with contemporary needs, the abandonment and demolition of others like **KH02** and **KH04** highlight the fragility of heritage preservation. These insights underscore the urgent need for greater awareness, financial support, and institutional frameworks to ensure the sustainable conservation of these

culturally significant structures. By addressing these challenges, the legacy of Kelantan Traditional Malay Houses can be preserved for future generations.

6.6 Data Analysis for Changes in the 11 KTMHs

6.6.1 Case Study 1: Nik Fatimah's House (KH01)

Background: Site History and Significant Dates

Nik Fatimah's house, one of Kelantan's oldest documented traditional Malay houses, was built from 1810 to 1820 (exact year unknown). The original owner was Nik Wan Timah, who was married to Long Jenal in 1801. Long Jenal, the fifth son of Long Yunus and the brother of Sultan Muhammad I, held the title *Yang Di-Pertuan Muda Kelantan*, reflecting his high-ranking status within the Kelantan Sultanate. The house was later inherited by Nik Wan Timah's brother, Nik Ibrahim, following Long Jenal's appointment as Acting Chief of the Sultanate after the death of Sultan Muhammad II. During the measured drawing documentation process conducted in 1992, the house was owned by Nik Fatimah, the granddaughter of Nik Ibrahim. As a wealthy family member, Nik Fatimah never engaged in employment but sustained her livelihood through land rentals, allowing farmers to cultivate her land for agricultural purposes.



Figure 6.6: The site plan of Nik Fatimah's house. (Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)



(Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

Architecturally, the house embodied traditional Malay craftsmanship, featuring *Janda Berhias* wall panels for the front facade, *Tindih Kasih* wall panels along the sides, and *Kelarai* woven bamboo wall panels for the *Rumah Dapur* (kitchen area). These elements reflected the intricate timber craftsmanship characteristic of traditional Kelantanese houses, emphasising both aesthetic and functional considerations.



Figure 6.8: The original front elevation Nik Fatimah's house. (Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)



The bathroom, which was originally an elevated structure with *lantai jarang* (spaced timber floorboards) for water drainage, was later relocated to the ground level

Figure 6.9: The original rear elevation Nik Fatimah's house. (Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

Architectural Changes

Due to the passage of time, retrieving detailed information about the house's earliest modifications proved challenging, as those who could provide historical accounts had either passed away or were too old to recall details—the earliest available descriptions of changes provided by Nik Fatimah date back to the 1920s.



Figure 6.10: The house retains its original form, with changes made without altering the building's perimeter plan.



(Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

Figure 6.11: The front elevation retains all original features, except for the replacement of the *Tebar Layar* wall with a *Tindih Kasih* wall and timber staircase replaced with a concrete staircase that imitates the original design.

(Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

The core structure of the house, consisting of *Rumah Ibu*, *Rumah Tengah*, and *Rumah Dapur*, remained intact throughout its existence. The main entrance was preserved, maintaining its original function. However, modifications were made to the back entrance, initially designated for women, which was relocated from the southern elevation to the western elevation to accommodate changes in household accessibility. Initially, the house had an open-plan layout with no internal partitions. Over time, walls were introduced in the *Rumah Tengah* to create distinct living and dining areas.



Figure 6.12 (on the left): The front elevation retains all original features, except for the replacement of the *Tebar Layar* wall with a *Tindih Kasih* wall and timber staircase replaced with a concrete staircase that imitates the original design. Figure 6.13 (on the right): Modifications to the back entrance, involved relocating it from the southern

elevation to the western elevation to accommodate changes in household accessibility. (Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

To accommodate the evolving needs of the household, two additional bedrooms were constructed, bringinfngg the total to three at *Rumah Ibu*. Roofing materials also underwent alterations; while the house was originally roofed entirely with Singgora tiles, subsequent extensions and additions incorporated corrugated metal sheets (zinc roofing), likely due to the availability and affordability of modern materials.

The *Kelarai* woven bamboo walls in the *Rumah Dapur*, which were susceptible to decay, were replaced with zinc sheets due to the difficulty in sourcing traditional materials. Additionally, the original *tebar layar* (gable end wall), which featured 33 hand-carved timber planks arranged in a fan-like motif, was replaced with *Tindih Kasih* wall panels, marking a significant change from its original craftsmanship.



Figure 6.14 (on the left): The origina *Tebar Layar's* wall design. Figure 6.15 (on the right): The *Tebar Layar's* wall replaced with *Tindih Kasih* wall panels. (Source: RU77.D/92/93, Measured Drawing Documentation by KALAM, 1991)

The bathroom, which was originally an elevated structure with *lantai jarang* (spaced timber floorboards) for water drainage, was later relocated to the ground level. This change was likely influenced by the need for a more enclosed and structurally stable bathing area, accommodating modern plumbing system.

Material and Design: Modern Interventions

Several modern interventions have been made in the house over the years, particularly in response to material deterioration and changing functional needs. One of the most prominent modifications was the replacement of the original timber main entrance staircase with a concrete staircase, reflecting a shift towards more durable and lowmaintenance materials. This change likely resulted from concerns about structural longevity and safety, as timber staircases are more susceptible to weathering and termite infestations.

Additionally, while the original sections of the house retained traditional timber construction, later expansions and repairs increasingly incorporated modern materials such as corrugated metal sheets for roofing and walls. This trend highlights the practical challenges homeowners face in maintaining traditional building materials, particularly when sourcing the same materials as existing became difficult or economically unfeasible.

Functional Changes: Shifts in Use and Lifestyle Preferences

The evolution of Nik Fatimah's house over time reflects broader shifts in lifestyle preferences and spatial organisation. The introduction of partitions within the *Rumah Tengah* indicates a move towards a more segmented and functional interior layout, departing from the traditional open-plan concept. This adaptation suggests that privacy

and specialised living areas became increasingly important as household dynamics changed.

Additionally, the relocation of the back entrance, initially designated for women, indicates an adjustment in the gendered use of space within the household. This change may have been driven by evolving social norms, household restructuring, or practical considerations related to accessibility and movement within the property.

The shift in bathroom placement from an elevated timber-floored structure to a grounded, enclosed space reflects the influence of modern sanitation practices. The use of *lantai jarang* in traditional Malay bathrooms was a culturally significant feature that allowed water to drain directly through floor gaps, aligning with the stilted house structure. However, as contemporary plumbing systems became more common, the transition to a grounded bathroom with sealed flooring became a necessary adaptation.

Table 6.2: Summary of the changes to Nik Fatimah's house based on measured drawings from 1991. No site visits were possible, as the house had been demolished during the research. The changes are categorised by key component of authenticity components.

NIK FATIMAH'S HOUSE					
SD/	SPACES				
SFACES		Original	Measured Drawing record	categorisation	
RUI	MAH TENGAH	Second highest floor level			
	Function	Living area to entertain male guest, relatives, sleeping area for men, reciting Quran for men, ceremony events.	Living area for men at front side of the house, living area for women at back side of the house		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber planks	As original	Minimal	
	Staircase	Traditional timber staircase	As original	changes of	
	Window	Traditional timber window	As original	Form and	
	Door	Traditional timber door	As original	Design, Materials and Substance, Use and Function	
	Furniture	Bendul (raised platform 18 inches highest from Intermediate spaces floor level as seating)	Sofa, TV cabinet,		
	Ornamentation	<i>'Sisip angin'</i> (ventilation timber panel @ lourves) - traditional, <i>Pemeleh</i> (timber pieces at the end of fascia's gable end)	As original		
INT.	ERMEDIATE SPACE - NTAI BASAH	Connecting space between Rumah Tengah and Rumah Dapur; main access to the house	As original		
	Function	Clothes and food drying area, common area	Reception area for guests	Minimal	
	Jemuran	Timber platform & staircase	Concrete staircases - due too	changes of	
	Roof	No roof	maintenance issues Roof extended from <i>Rumah Ibu</i> and	Materials and Substance,	
)A/- II	The different finds a small manual	Rumah Dapur creating gutter at Lantai	Use and	
	VVall	Traditional timber wall panel		FUNCTION	
	Floor	Traditional timber licorboards	As original		
DII		Highest floor level - above head height	As original		
	Function	Sleeping area for women praver area, reciting	2 Bedrooms added		
	Space	Cleeping area for women, prayer area, rectung	2 rooms added (new internal wall added)		
	Roof	Singgora roof tiles, Pemeleh	As original		
	Wall	Traditional timber wall panel (Janda Berhias)	Front wall maintained Janda Berhias, the side and rear area change to Tindib	Minimal changes of Materials and	
	Floor	Traditional timber floor	As original		
	Window	Traditional timber window	As original		
	Door	Traditional timber door	As original	Substance,	
	Ornmentation	<i>'Sisip angin'</i> (ventilation timber panel @ lourves) - traditional, <i>Pemeleh</i> (timber pieces at the end of fascia's gable end)	As original	Use and Function	
	Open space under the house or kolong	No wall	Chainlink fence to avoid animal tresspass		
	Additional spaces	-	Bedroom added		
RU	MAH DAPUR	Single tier Long roof house	Double tier long roof - natural lighting and ventilation		
	Roof	Singgora roof tiles	As original + Zinc roof		
	Wall	Traditional timber wall panel and bamboo woven wall	Zinc @ corrugated metal sheeting and woven bamboo wall		
	Floor	Traditional timber floorboards; <i>Lantai Jarang</i> (gap between floorboards)	No gap between floorboards	Minimal	
	Door	Traditional timber door	Zinc door	changes of	
	Window	Traditional timber window	Gable end wall removed to become opening - original window were removed due to bad condition	changes of Materials and Substance, Use and Function	
	Others	Space under the house or <i>kolong</i> exceed the head level – raised on stilt	As original		
1	Furniture	-	Kitchenware traditional racks		
	Kitchen equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges		
	Jemuran (back entrance platform)	No roof, washing area	Washing area		
	Bathroom	(Water well inside the house) & raised timber log floor & no roof	Water well outside the house - bring down to ground level		

6.6.2 Case Study 2: Wan Sulong's House (KH02)

Background: Site History and Significant Dates

Wan Sulong's house, constructed in the 1920s, was a distinguished example of the *Rumah Bujang Berserambi Dua Beradik* typology. The house was masterfully built by Syed Hassan Syed Ibrahim, a renowned *tukang* (master builder) originally from Pattani, a district in southern Thailand bordering the Kelantan state. Known for his expertise in traditional Malay woodcarving, Syed Hassan's craftsmanship was reflected in the intricate carvings found throughout the house.



Figure 6.16: The site plan of Wan Sulong's house. (Source: RU126.D/97/98, Measured Drawing Documentation by KALAM, 1998)

Wan Sulong, a prosperous cloth merchant, was successful in his trade and closely connected to the Kelantan royal family. He owned rice cultivation lands and frequently travelled between Kelantan and Pattani by boat for his fabric business. After his passing, the house was inherited by his eldest son, Wan Ahmad, who followed in his father's entrepreneurial footsteps as a batik cloth producer. Upon Wan Ahmad's death in the 1940s, the ownership was transferred to Wan Halimah, the second child of Wan Sulong. In the 1970s, the house was sold to a Kelantanese Chinese owner for unclear reasons.



Figure 6.17: The original floor plan of Wan Sulong's house. (Source: RU126.D/97/98, Measured Drawing Documentation by KALAM, 1998)



Figure 6.18: The original front elevation of Wan Sulong's house. (Source: RU126.D/97/98, Measured Drawing Documentation by KALAM, 1998)

When the measured drawing documentation was conducted in 1997, the house had deteriorated significantly. Structural decay was evident in various components, including severely rotted flooring, tilted walls, and termite infestation in the *kelarai* (woven bamboo wall panels). At the time of documentation, the house was partially collapsed, with only the *Jemuran Dapur*, *Rumah Dapur*, and *Jemuran Hadapan* still being occupied. It was confirmed that the house was scheduled for demolition within a few months, as the land had been earmarked for commercial development.



Figure 6.19: The original rear elevation of Wan Sulong's house. (Source: RU126.D/97/98, Measured Drawing Documentation by KALAM, 1998)



Figure 6.20 (on the left): *Janda Berhias* timber wall panel at the front wall (from outside). Figure 6.21 (on the right): *Janda Berhias* timber wall panel at the front wall (from inside). (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.22: Fan-like motif at *Tebar Layar.* (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.23: The right rear elevation of Wan Sulong's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.24: The original left elevation of Wan Sulong's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)

Architectural Changes

According to the recorded information in the measured drawing documentation produced by KALAM in 1997, several architectural changes had been made to Wan Sulong's house over the years, reflecting both functional adaptations and material interventions.

During the tenure of the second-generation owner, Wan Ahmad, woodcarvings and ornamentations were painted in a yellow-gold hue, enhancing their visual prominence. Additionally, a ceiling was added to the *Serambi* space, likely to provide insulation and protection, while bamboo woven walls were introduced in the *Jemuran* area.

Further modifications occurred during Wan Halimah's ownership. The original partitions in the main *Jemuran* and *Jemuran Dapur* were replaced with *kelarai*, demonstrating an effort to retain traditional materials while accommodating new functional requirements. Additionally, the *lantai jarang* (spaced bamboo flooring) in the

Jemuran was replaced with solid floorboards, a change possibly motivated by maintenance concerns and the need for enhanced durability.

Following its sale to a Kelantanese Chinese owner, additional modifications were made to the *Rumah Dapur*. The original *kelarai* wall panels, which were susceptible to decay and termite infestation, were replaced with timber boards and zinc sheets, reflecting a shift towards modern, readily available materials. While these changes extended the structure's usability, they also gradually lost the house's traditional architectural authenticity.

Additionally, under the occupancy of Wan Mahmud, a tenant residing in the house before its demolition, further adaptations were observed. A roof was added over the *kitchen Jemuran*, possibly to provide additional protection against the elements, ensuring that this frequently used space remained functional.

Material and Design: Modern Interventions

Practical needs, maintenance challenges, and the changing availability of traditional building resources drove the transition from traditional to modern materials in Wan Sulong's house. One of the most significant material interventions was the replacement of *kelarai* woven bamboo wall panels with timber boards and zinc sheets, particularly in the *Rumah Dapur*. This shift illustrates the growing difficulty in sourcing traditional materials and the inclination towards cost-effective, durable alternatives.

Similarly, applying paint to the original woodcarvings departed from the traditional untreated timber aesthetic. Although this modification did not alter the house's structural integrity, it represented a change in the approach to traditional ornamentation. The introduction of a ceiling in the *Serambi* further reflects an adaptation to modern living preferences, as it provided better insulation while potentially altering the space's original open-air quality.

Other modifications, such as replacing the *lantai jarang* in the *Jemuran* with solid floorboards, highlight an ongoing effort to balance traditional design elements with structural longevity. While these interventions ensured continued usability, they also signified a gradual departure from the house's original material authenticity.

Functional Changes: Shifts in Use and Lifestyle Preferences

Over time, Wan Sulong's house experienced shifts in functionality that aligned with changing household needs and social dynamics. The modifications introduced during Wan Ahmad's ownership, particularly the addition of a ceiling in the *Serambi* and

bamboo woven walls in the *Jemuran*, suggest a move towards better enclosure and comfort, likely influenced by evolving lifestyle preferences.

During Wan Halimah's tenure, the conversion of the *Jemuran* into a more enclosed space, the shift from bamboo flooring to floorboards, and the rearrangement of interior partitions indicate an adaptation to contemporary household needs. The original openplan configuration was altered to create more distinct and defined spaces, reflecting a shift from communal, multi-functional areas to a more structured spatial hierarchy.

The eventual sale of the house to a non-Malay owner marked a significant turning point in its function and cultural context. While no substantial alterations were recorded during this period, the shift in ownership likely influenced its eventual decline. By the time of the measured drawing documentation in 1997, the house was already in severe disrepair, occupied only in limited sections. The degradation of structural elements, including rotted flooring and termite-damaged walls, rendered many house areas unsafe for habitation.

Ultimately, the decision to demolish the house was driven by its deteriorating condition and the commercial development plans for the land. This outcome underscores the challenges traditional Malay houses face in the face of urbanisation, shifting ownership dynamics and the increasing difficulty of maintaining historical structures without dedicated conservation efforts. Table 6.3: Summary of the changes to Wan Sulong's house based on measured drawings from 1991. No site visits were possible, as the house had been demolished during the research. The changes are categorised by key authenticity components

WAN SULONG'S HOUSE						
SPACES		CHANGES		changes		
IEM		Originai	Measured Drawing record	categorisation		
	Eurotion	Becontion area for guest				
	Mall	3ft wall beight used Kelarai	As original			
	Floor	Traditional timber floor	As original	Minimal changes of		
	F1001	Traditional timber staircase with	As original	Materials and		
	Staircase	Pelantar	As original	Substance		
	Door	Traditional timber door with gerbang	As original			
	Additonal spaces	-	-			
	Ornamentation	Decorative gerbang	-			
SER	Ambi	Connecting space from main access to the house				
		Open area to entertain male guest,	Living area for men at front side of the house,	Minimal changes of		
	Function	relatives, reciting Quran for men,	living area for women at back side of the	Motorials and		
		ceremony events.	house	Substance		
	Roof	No roof	Roof extended from rumah ibu and rumah	Use and Function		
		Janda Berhias at the front side the	dapar orealing gatter at Earnar Basarrarea	Traditions and		
	Wall	other side used Kelarai	As original	Techniques		
	Floor	Traditional timber floorbords	As original			
	Door	Traditional timber door	As original			
RUM		Highest floor level - above head height	As original			
	Function	sleeping area for women, prayer area,	2 Bedrooms added			
	0	reciting Quran		Minimal abangoo of		
	Space	Cinggory tilog	2 rooms added (new internal wall installed)	Form and Docian		
	RUUI	Singgora titles	As Uriginal Front well maintained, landa Parhiae, the aide	Materials and		
	Wall	other side used Kelarai	and rear area change dto Tindih Kasih	Substance,		
	Floor	Traditional timber floor	As original	Use and Function,		
	Window	Traditional timber window	As original	Traditions and		
	Door	Traditional timber door	As original	Techniques		
	Open space under the house	No wall	Spaces created - wall constructed			
	or kolong					
JEI						
	Roof	No Roof	As original	Minimal changes of		
	Wall	Kelarai	Kelarai & Zinc @ corrugated metal sheeting	Materials and		
	Floor	Spaced floorboards	As original	Substance.		
Roof		Singgora roof tiles	Roof added - Zinc @ corrugated metal sheeting	Use and Function,		
	Staircase	Traditional timber staircase connected	As original	Techniques		
	Pelantar Dapur	Timber floor with no roof				
RUM		Entertainig women guest				
	Roof	Singgora tiles	As original			
		Janda Berhias at the front side, the	Zinc @ corrugated metal sheeting and woven			
	wall	other side used Kelarai	bamboo wall	Minimal changes of		
	Floor	(gap between floor planks)	As original	Form and Design, Materials and		
1	Door	Traditional timber door	Zinc door	Substance		
	Window	Traditional timber window	Glass louvers windows	Use and Function		
	Others	Kolong exceed the head level – raised	Converted into closed spaces and being	Traditions and		
1	Furniture	-	Kitchenware traditional racks	Techniques,		
	Kitchen			Location and Setting		
	equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges			
	Pelantar (back		Washing area			
	platform)					

6.6.3 Case Study 3: Mahmud Dobah's House (KH03)

Background: Site History and Significant Dates

Mahmud Dobah's house, located on Jalan Post Office Lama in Kota Bharu, Kelantan, was built around 1862. The original owner, Haji Mahmud Dobah, was a prominent merchant who settled in Kelantan while frequently travelling abroad for trade. The house was a family residence and a gathering place for religious and communal activities.



Figure 6.25: The front view of Mahmud Dobah's house. (Source: Pauzi, 2017)



Figure 6.26: The original floor plan of Mahmud Dobah's house. (Source: Measured Drawing Documentation by KALAM, 1999)



Figure 6.27: The original front elevation of Mahmud Dobah's house. (Drawing source: Measured Drawing Documentation by KALAM, 1999; Photos source: Author, 2017 & 2018)

In a 2017 interview, his granddaughter (Mohd Zain's daughter) recounted the history of the house, she was born there before moving out for privacy reasons. The house faced inheritance disputes, as Mohd Zain had not designated a specific heir, leading all descendants to be entitled to a share under *Faraid*, the Islamic law of inheritance. Attempts to sell the house were complicated due to a lack of unanimous agreement among family members. The Sultan of Kelantan had offered MYR 500,000 to acquire the house for relocation in between 2012 to 2015, but the sale did not materialise due to family disagreements. The eldest granddaughter currently maintains the house and continues to function as an Islamic teaching centre for the local community. During festive occasions, members of Haji Dobah's family return to the house for reunions.

Architectural Changes

The house has undergone several architectural modifications over the years. The *Rumah Balai* (or *Rumah Anjung*) remains well preserved in its original form but suffers from maintenance and deterioration issues. Additionally, several carved panels have been stolen, further impacting the house's structural integrity and historical authenticity.



Figure 6.28: The house changes.

(Drawing source: Measured Drawing Documentation by KALAM, 1999; Photos source: Author, 2017 & 2018)

The *Jemuran* area, originally an open platform without a roof, has been converted into a dining and shared space. The timber staircase that once provided access to this area has been replaced with a concrete staircase to enhance durability and safety.

A bathroom facility was added, featuring a concrete structure with zinc (corrugated metal sheets) for the walls. The flooring was replaced with concrete to withstand environmental wear and provide a more permanent solution. Additionally, a rear exit was constructed with a concrete walkway and staircase to improve accessibility.

Furthermore, some portions of *Rumah Dapur* (the kitchen) have been modified with zinc and corrugated metal sheets, replacing traditional timber materials. These

changes were made mainly for practical and economic reasons, though they have altered the house's original aesthetic and material authenticity.



Figure 6.29: The original left elevation of Mahmud Dobah's house. (Drawing source: Measured Drawing Documentation by KALAM, 1999; Photos source: Author, 2017 & 2018)



Figure 6.30: The right view of the house shows the addition of a bathroom. (Photo source: Author, 2017)

Material and Design: Modern Interventions

Several modern interventions have been introduced to the house to accommodate contemporary needs and address maintenance concerns. The most significant changes include replacing traditional timber elements with concrete and zinc in various house parts. While these materials provide better durability and weather resistance, they contrast with the traditional Malay architectural aesthetic.

Additionally, modifications such as enclosed spaces and modern roofing in the *Jemuran* and kitchen area have contributed to shifts in the house's spatial layout and design integrity. The loss of original carved panels, whether due to theft or neglect, has also impacted the house's visual and cultural authenticity.

Functional Changes: Shifts in Use and Lifestyle Preferences

The role of the house has evolved, shifting from a private family residence to a communal learning centre. Originally designed to accommodate a large family, the house has become a focal point for religious education and gatherings. The conversion of the *Jemuran* into a dining and communal space reflects a shift in usage, prioritising social and educational functions over traditional domestic arrangements.



Figure 6.31 (on the left): The view at the *Rumah Anjung.* Figure 6.32 (on the right): The view at the *Rumah Tengah* towards *Rumah Anjung.* (Photo source: Author, 2017)

Despite the structural changes, the house continues to serve as a gathering place for the descendants of Haji Dobah, particularly during festive occasions. However, its long-term preservation remains uncertain with ongoing maintenance challenges and inheritance disputes. Without formal conservation efforts, further modifications and material substitutions may continue, gradually diminishing the house's architectural authenticity and historical significance. Table 6.4: The summary of modifications and changes to Mahmud Dobah's house assessed in two different periods: 1999 through measured drawing documentation and during site observation in 2017 by the author. The changes are categorised based on key components of authenticity

	MAHMUD DOBAH'S HOUSE				
		KHO)4		<u></u>
SPACES		Original	JES Measured Drawing record	Site observation	Changes
RUN	AH ANJUNG/	Original	Measured Drawing record	Site observation	categorisation
BAL	Al	Symmetrical layout	As original		
	Function	Entertain male guest	As original		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber plank	As original		
	Window	Traditional timber window	As original	Maintained as recorded	No changes
	Door	Traditional timber door	As original	in measured drawing	
	Staircase	2 concrete staircases on both sides	As original		
	Sisip angin (Air ventilation panel top of wall)	Traditional timber lattice panel	As original		
	Kolong (space underneath house)	Concerete wall	As original		
RUN	IAH IBU	Symmetrical layout	As original		
	Function	Entertain Fernale guest, sleeping area	As original		
	Space	Living area, common area, bedrooms	As original		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber floor	As original	Maintained as recorded	
	Window	Traditional timber window	As original	in measured drawing	No changes
	Door	Traditional - 2 main doors (louvers timber door)	As original		
	'Sisip angin' (ventilation panel)	Traditional - carved & lattice	As original		
	Kolong (space underneath house)	Concrete wall	As original		
INTERMEDIATE SPACE (JEMURAN DALAMAN)		Traditional - no roof	Roof was added - zinc @ corrugated metal sheet		Only affected new
	Function	Open platform without roof	Convert to dining area and		
	Floor	Raised timber floor	As original		Form and Design,
	Staircase	Traditional timber staircase	Concrete staircases	Maintained as recorded	Materials and
	Additional spaces	-	Bathroom was constructed - concrete costruction with zinc @ corrugated metal sheet with concrete flooring walkway and concrete staircase at the end of space as rear exit.	in measured drawing	Substance, Use and Function, Traditions and Techniques
RUN	IAH DAPUR			Maintained as recorded	
	Function	Cooking and dining	As original	in measured drawing	
	Roof	Singgore tiles	As original		
	Wall	Traditional timber wall panel	As original	Some part was changed to zinc @	Affected minimal part of the wall
	Floor	Traditional timber floor	As original		1
	Window	Traditional timber window	As original]	Materials and
	Door	Traditional timber door	As original	Maintained as recorded	Substance,
	Kolong (space underneath house)	Traditional - open	As original	in measured drawing	

6.6.4 Case Study 4: Mohamad Dobah's House (KH04)

Background: Site History and Significant Dates

Located at 1408, Jalan Post Office Lama, Kota Bharu, Kelantan, this house was constructed in the early 1900s and categorised as a *Rumah Bujang Berserambi Dua Beradik*. It comprised three main components: *Rumah Ibu*, *Rumah Serambi*, and *Rumah Dapur*. During the measured drawing documentation produced by KALAM in 1991, the owner was Mohamad Zin, the fourth-generation descendant of the original owner, a Siamese man from Pattani. The original owner converted to Islam and married a Muslim woman named Dobah, after whom he adopted the name "Mohamad Dobah." Passionate about traditional woodcarving, he was a trader who frequently travelled to Mecca and China. The house reflected Pattani architectural influences, such as *Singgora* tiles, a long roof with *tebar layar* (gable ends) adorned with *papan pemeleh* (sword-like fascia boards), and timber wall panels called *Janda Berhias*.



Figure 6.33: Site plan of Mohamad Dobah's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.34: The original floor plan of Mohamad Dobah's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.35: The original front elevation of Mohamad Dobah's house featuring a timber fence and gateway. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.36: The original front elevation of Mohamad Dobah's house without timber fence and gateway. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)

Architectural Changes

As documented by KALAM, the house underwent minimal modifications during the second generation. However, during the third generation, significant changes were introduced. The *Rumah Dapur* (kitchen) and *Jemuran* (drying area) were expanded. Bamboo-woven walls were replaced with timber walls, and bamboo-woven panels were repurposed for ceiling installations.

Major transformations occurred under Mohamad Zin's ownership, including adding new spaces at the front of the house for bedrooms and at the rear and *Serambi* areas. The roof underwent structural changes, removing the *pemeleh* and the gable roof design. The traditional *Singgora* tiles were replaced with corrugated metal sheeting, significantly departing from the original roofing material.



Figure 6.37: Right view of the house captured during the measured drawing documentation in 1998. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.38: The original right elevation of Mohamad Dobah's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.39 and 6.40 : Both photos show the *Serambi* area, which has been modified with full-height walls using *Janda Berhias* timber wall panels. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.41 (on the left): The changes and condition of the house in 1998. Figure 6.42 (on the right): The original left elevation of Mohamad Dobah's house. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.43 (on the left): The original section drawing of Mohamad Dobah's house. Figure 6.44 (on the right): The condition of the space in 1998. (Source: RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.45: The latest changes made to the house, as recorded in 1998. (Source: Adopted from RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.46: The the latest changes made to the house, as recorded in 1998. (Source: Adopted from RU129.D/98/99, Measured Drawing Documentation by KALAM, 1998)

Material and Design

Modern interventions included the extensive use of corrugated metal sheets for the roof and walls in newly added sections. This replacement of traditional materials with contemporary ones significantly altered the house's aesthetic and functional aspects.

Functional Changes

Although site observation was not conducted during this research, as the house no longer existed by 2017, earlier documentation indicates a functional shift over generations. Additional spaces were incorporated to accommodate evolving lifestyles, reflecting a transition from traditional to modern living requirements. This includes the creation of bedrooms and expanded kitchen and drying areas, accommodating larger households and changing domestic activities.

The disappearance of the house highlights the pressing challenges in preserving heritage structures amid modernisation and changing socio-economic contexts.

Table 6.5: Summary of the changes to Wan Sulong's house based on measured drawings from 1991. No site visits were possible, as the house had been demolished during the research. The changes are categorised by key components of authenticity.

MOHAMAD DOBAH'S HOUSE KH04				
SPACES	CHANGES	Changes		
	Original	Measured Drawing record	categorisation	
SERAMBI	On stilt, open space without wall and roof	Refurbished – timber wall and Zinc corrugated roof added		
Function	Welcoming space for male guest	Living rooms to entertain male and female	Form and Design, Materials and Substance,	
Roof	No roof	Zinc @ corrugated metal sheeting		
Wall	Half height wall	Full height wall with roof		
Floor	Traditional	As original	Use and Function,	
Staircase	Traditional timber staircase	As original	Traditions and	
Window	-	Glass lourves window with alumininum	Techniques,	
Door	-	Timber door added as main access		
Furniture	-	Sofa, display cabinet		
Others	-	-		
SERAMBI	On stilt and long rooted type, attached to Rumah Ibu	As original	Materials and	
Function	Entertain male guest	Gathering place for relatives and guest		
Roof	Singgora tiles	Some part changed to zinc @ corrugated metal sheeting	Substance,	
Wall	Traditional timber wall panel	As original	Traditions and	
Floor	Traditional timber planks	As original	Technique	
Window	Traditional timber window	As original	roomiquo	
Door	Traditional timber door	As original		
RUMAH IBU	On stilt with height exceed head level and long roofed type	As original		
Function	Spaces divided : bedrooms and entertaining male guests	Bedrooms and secondary living rooms		
Space	2 rooms (In between rooms divided with bamboo woven wall)	Rooms added (changed to timber wall		
Roof	Singgora tiles ekor itik ornamentations	As original		
Wall	Traditional timber wall panel	As original		
Ceiling	No ceiling	Ceiling using bamboo woven panel	Materials and	
Floor	Traditional timber planks	As original	Substance, Traditions and	
Window	Traditional timber window	As original		
Door	Traditional timber door	As original	l ecnniques	
Ornmentation	'Sisip angin' (ventilation timber panel @ lourves) - traditional	As original		
Open space under the house or <i>kolong</i>	No wall	timber wall added		
Additional	-	Front area of <i>Rumah Ibu</i> was extended on		
spaces	Connecting space between Rumah Ibu and Rumah	the ground level - storage and car porch	Form and Docign	
INTERMEDIATE SPACE (JEMURAN)	Dapur	Full height wall with roof	Materials and	
Function	Drying food and clothes & collect rainwater for daily use	Convert to kitchen area	Use and Function,	
RUMAH DAPUR	Long roof with double tiered roof at cooking area	As original		
	(bumbung asap) to allow smoke from wood-fire stove			
Root	Singgora roof tiles	∠inc @ corrugated metal sheeting	4	
Wall	Traditional timber wall panel	Zinc @ corrugated metal sheeting	F 1 D	
Floor	I raditional timber planks; Lantai Jarang (gap between floor planks)	No gap between floor planks	Materials and	
Staircase	Two timber staircases; at Jemuran and kitchen	-	Substance,	
Window	Traditional timber window	Glass lourves window with alumininum	Use and Function,	
Door	Traditional timber door	As original	Traditions and	
Others	Space under the house or <i>kolong</i> exceed the head	Refurbished – constructied walls and	Techniques	
	level – raised on stilt	convert into additional space		
Furniture	-	Kitchenware racks	4	
Additional	(Water well outside of the house)	New water well next to Rumah Dapur and		
JEMURAN DAPUR	Partially covered with roof and no wall	toilet was built.	Form and Design, Materials and Substance, Use and Function, Traditions and Techniques,	
		l	Location and Setting	

6.6.5 Case Study 5: Hussein's House (KH05)

Background: Site History and Significant Dates

Hussein's house, originally owned by Puan Esah, has a significant history that reflects generational inheritance and spatial evolution. Puan Esah passed a section of the house to her daughter, Zainab, who later transferred ownership to her own daughter, Fatimah. Fatimah's marriage to Hussein, a merchant initially involved in cloth selling before transitioning into batik production and importation from Indonesia. Hussein's second wife, who was 66 years old during the 1995 measured drawing documentation by KALAM, provided significant insights into the history and transformation of the house.



Figure 6.47: Site plan of Hussein's house. (Source: RU105.D/95/96, Measured Drawing Documentation by KALAM, 1995)

The house originally began as a *Rumah Bujang Serambi* in Pantai Cahaya Bulan, Kota Bharu, before later additions expanded it into a *Rumah Ibu* and *Rumah Dapur*. The entire house was eventually relocated to Jalan Post Office Lama, Kota Bharu, signifying a significant transformation in its spatial organisation and use. The relocation allowed for additional modifications reflecting cultural traditions and modern adaptations.



Figure 6.48: Original floor plan of Hussein's house. (Source: RU105.D/95/96, Measured Drawing Documentation by KALAM, 1995)



Figure 6.49 (on the left): Original left elevation of Hussein's house. Figure 6.50 (on the left): Original right elevation of Hussein's house. (Source: RU105.D/95/96, Measured Drawing Documentation by KALAM, 1995)

Architectural Changes

The *Rumah Ibu* was initially constructed as an open-plan space without internal walls. However, over time, partition walls were introduced, first to create a single bedroom, and later, an additional bedroom was added. This resulted in the division of the *Rumah Ibu* into two separate living areas—one designated for men and another for women, by traditional Malay spatial hierarchy and gender-based separation norms.
Significant changes were also made to bathroom facilities. Initially, the bathroom was an open structure, but later, it was fully enclosed with walls and a roof to cater to privacy and functionality. The original bamboo fencing surrounding the property was replaced with a brick wall fence, reflecting a shift towards permanence and increased security. The *Jemuran* (drying area) floor, originally made of timber floorboards, was replaced with concrete flooring. This modification improved durability and facilitated better maintenance.



Figure 6.51: Original front elevation of Hussein's house. (Source: RU105.D/95/96, Measured Drawing Documentation by KALAM, 1995)

Another substantial transformation was the replacement of the main staircase. The original timber staircase was replaced with a concrete staircase, a common intervention to improve structural stability. The staircase leading to the bathroom was similarly upgraded to concrete. The *Jemuran*, which was initially an open space, was later enclosed with a roof, making it a more functional and weather-protected area. Furthermore, additional windows were introduced on the front façade, improving natural ventilation and lighting.

Material and Design: Modern Interventions

The modernisation of Hussein's house introduced new materials that replaced the original construction elements. The most significant intervention was the use of concrete in place of timber components, particularly for staircases, fencing, and flooring. The transition from bamboo fencing to brick walls reflects a broader trend in heritage house conservation, where homeowners prioritize durability over traditional aesthetics.

Additionally, the replacement of timber floorboards with concrete in the *Jemuran* was an effort to improve structural longevity while adapting to modern preferences for lowmaintenance materials. The enclosure of previously open areas, such as the bathroom and *Jemuran*, with modern construction materials, signals a shift toward privacy, convenience, and adaptation to contemporary living standards.

While these modifications improved the house's resilience, they also altered its material authenticity. While functionally beneficial, the addition of windows on the front façade introduced aesthetic changes that slightly diverged from the traditional Malay house design principles.

Functional Changes: Shifts in Use and Lifestyle Preferences

Hussein's house's spatial and material modifications reflect changes in household dynamics and evolving lifestyle needs. The introduction of internal walls in the *Rumah Ibu* marked a departure from the open-plan concept of traditional Malay houses, aligning with modern preferences for defined spaces and greater privacy. This was particularly evident in creating separate male and female living areas, reinforcing the continued influence of cultural traditions while integrating contemporary spatial requirements.

The modification of the Jemuran illustrates the functional evolution of spaces in response to modern needs. Originally an open-air area for drying clothes and food processing, it was later roofed and enclosed, transforming into a multi-purpose utility space. This change signifies a shift from communal, open-air activities to more enclosed, private functions, reflecting broader lifestyle adaptations.

Furthermore, renovating the bathroom from an open structure to an enclosed, roofed space highlights a shift towards modern sanitation and convenience. Similarly, replacing bamboo fencing with brick walls aligns with contemporary preferences for security and permanence, contrasting with traditional Malay houses' more permeable, flexible boundaries.

Table 6.6: Summary of modifications and changes to Hussein's house, assessed through measured drawing documentation produced in 1995. No site observations were conducted as the house no longer existed during the research period. The assessment categorises changes based on key components of authenticity

HUSSEIN'S HOUSE KH05					
SPACES		CHAN	GES	Changes	
JF A	623	Original	Measured Drawing record	categorisation	
RUMAH TENGAH		On stilt and long roofed type, attached to Rumah Ibu	As original	Materials and	
	Function	Entertain male guest	Gathering place for relatives and guest	Substance.	
	Roof	Singgora tiles	Some part changed to zinc @ corrugated metal sheeting	Use and Function,	
	Wall	Traditional timber wall panel	As original	Techniques	
	Floor	Traditional timber planks	As original	r con inqueo,	
	Window	Traditional timber window	As original		
DUM	Door	l raditional timber door	As original		
RUMAH IBU		1 slooping bodroom and optortaining male	Poturbished into 2 rooms & 2 living area (1 for		
	Function	guests	female guest & 1 for male guest		
	Space	1 sleeping bedroom and living area	Rooms added (changed to timber wall panel)		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Ceiling	No ceiling	Ceiling using bamboo woven panel		
	Floor	Traditional timber planks	As original	Materials and	
	Window	Traditional timber window	As original	Substance,	
	Door	No door (main access at Jemuran)	-	Use and Function,	
	Ornmentation	<i>"Sisip angin"</i> (ventilation timber panel @ lourves) - traditional	As original	Traditions and Techniques	
	Open space under the house or kolong	No wall	Drainage system was added & ground is cemented into a floor		
	Additional spaces	-	Front area of Rumah Ibu was extended and transformed into 2 bedrooms (concrete stucture, zinc roof, timber wall and timber		
			floor		
INTERMEDIATE SPACE (JEMURAN)		Connecting space between Rumah Ibu and Rumah Dapur (no roof)	Zinc roof added and timber floor area was reduced	Materials and Substance.	
	Function	Main access to the house		Use and Function,	
	Floor	Traditional timber floor - <i>Lantai Jarang</i> (gap between floor planks)	Concrete slab partially added	Traditions and Techniques	
	Staircase	traditional timber staircase	Concrete staircases	looninguoo	
RUM	AH BUJANG	Long roof	As original		
	Function	Family and occasion event	Main space as Rumah Ibu		
	Roof	Traditional	As original		
	Wall	Traditional	As original		
	Ceiling	-	-		
	Floor	Traditional (gap floor planks)	As original	No changes	
	Staircase	Traditional	Refurbished		
1	Window	Traditional	A original		
1	Door	Traditional	As original		
	Others	Traditionl	As original		
RUM		Long roof - built separately	Refurbished - integrate with Jemuran		
	Function	Cooking and dining	As original		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber planks; Lantai Jarang (gap	As original		
	<u>.</u>	between floor planks)		Materiala and	
	Staircase	I raditional timber staircase		Iviaterials and	
	vv indow	I raditional timber window	As original	Substance,	
	Euroituro		As original Kitobopuoro rocko	Traditions and	
1	Kitchon	-		Techniques	
	equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges, rice cooker	recrimques	
	Additional spaces	(Water well outside of the house)	vvater well was tilled and leveled, bathroom is constructed, Brick and concrete for wall, cement screed for floor - open shower and washing area (with roof)		
HOU	SE COMPOUND	Traditional bamboo fences	Concrete fences		

6.6.6 Case Study 6: Wan Muhammad's House (KH06)

Background and Historical Significance

Wan Muhammad's House (KH06), according to documentation by KALAM in 1993, the house was built in the early 1900s by Wan Muhammad Haji Awang, a wealthy merchant. He resided in the house with his family of eight children. Upon his passing, the children relied on their inheritance but eventually faced conflicts and financial difficulties, gradually depleting their wealth.



Figure 6.52: The site plan of Wan Muhammad's house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)

The house was subsequently inherited by one of his sons, Wan Taib, who experienced financial hardship. In 1965, Wan Taib sold a section of the house to a relative to alleviate his economic struggles. Later, in 1981, the government acquired a 3-fathom-wide (approximately 5.4 meters) strip of land at the front of the house for road expansion, altering the spatial context of the site.



Figure 6.53: The plan illustrates the original layout of the house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)



Figure 6.54: The original front elevation of Wan Muhammad's house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)



Figure 6.55: The original rear elevation of Wan Muhammad's house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)



Figure 6.56: The original right elevation of Wan Muhammad's house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)



Figure 6.57: The original left elevation of Wan Muhammad's house. (Source: RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)

Architectural Changes

The architectural changes to KH06 were assessed during two stages: using the measured drawing documentation prepared by KALAM in 1993 and subsequent site observations during this research.



Figure 6.58: The plan illustrates the original layout of the house, with modifications highlighted: new additions in purple. (Source: Adopted from RU1.D/934.1/LK, Measured Drawing Documentation by KALAM, 1993)

In 1993, the *Rumah Ibu* (main living area) and *Rumah Anjung* (front veranda) retained much of their original form, with minor modifications. The *Rumah Anjung*, originally designed for hosting female guests, had its function altered to accommodate gatherings for relatives and female guests alike. The lattice timber panels remained intact at the time but were later covered with transparent PVC plastic sheets to prevent dust, debris, and mosquitoes from entering.



Figure 6.59: The lattice on the upper part of the wall, originally designed for natural ventilation and lighting, has been covered with transparent PVC sheets to prevent dust, debris, and mosquitoes from entering, due to the house's proximity to the road. (Photo source: Author, 2017)

During the site observation, significant changes were noted. The front section of the original owner's and the new owner's sections of the house had extended roofs at the *Rumah Anjung*, which were converted into car porches with corrugated metal roofs and cement screed flooring.



Figure 6.60: The front sections of the original and new owners' sections were modified, extending the roof at *Sorong Tengah, Sorong Kiri* and *Sorong* Kanan into car porches with corrugated metal roofs and cement screed flooring. (Photos source: Author, 2017)

The *Kolong* (the space beneath the house) was initially open at the front, but by 1993, it had been enclosed with corrugated metal sheets and brick wall.



Figure 6.61 (on the left): The *Kolong* (space beneath the house) was originally open but enclosed with corrugated metal sheets. Figure 6.62 (on the right): The *Kolong* on the other section of the house enclosed with corrugated metal sheets and brick walls. (Photos source: Author, 2017)

The *Sorongs (sleeping area)* originally divided from the living area by curtains, underwent different transformations. In the original owner's section, timber walls were constructed to create proper bedrooms. However, in the new owner's section, the curtains were removed, and the space was repurposed as a resting area.



Figure 6.63 (on the left): The sleeping area in the *Sorong* of the original owner's section, where timber walls were added to create proper bedrooms. Figure 6.64 (on the right): The sleeping area in the *Sorong* of the new owner's section, repurposed as a

Figure 6.64 (on the right): The sleeping area in the *Sorong* of the new owner's section, repurposed as a resting area.

(Photos source: Author, 2017)

The *Jemuran* (intermediate space), originally an open area used for female guest access, was converted into a covered bathroom with cement screed flooring, as recorded in the 1993 measured drawing documentation. However, between 1993 and 2017, the spatial function of this area underwent further transformation. The bathroom was relocated to a different part of the house to accommodate an expansion of the house. This modification marks a significant shift in the traditional use and function of the space, reflecting both practical needs and the evolving architectural requirements of the house.



Figure 6.65: The addition of a kitchen and bathroom at the back of the house, part of the new owner's section, to accommodate the occupants' activities. (Photo source: Author, 2017)

Material and Design Interventions

Modern interventions in materials and design reflect a balance between practicality and the preservation of traditional elements. The original timber staircase, located in the *Jemuran* area for female access, was replaced with a concrete staircase, thus discontinuing its traditional function. Similarly, the staircase at the *Rumah Dapur* (kitchen area) was converted into concrete.

While the roof of the *Rumah Dapur* remained covered with traditional Singgora tiles, sections of the kitchen roof were replaced with corrugated metal sheeting, highlighting the integration of modern materials for durability and cost efficiency.

The *Jemuran Belakang* (rear drying area), originally an open transitional space, had already been converted into a bathroom by 1993, further illustrating the adaptation of traditional spaces to meet contemporary needs.

Functional Changes and Lifestyle Preferences

The functional evolution of KH06 mirrors the changing lifestyle preferences of its occupants. The *Jemuran*, once used as an open transitional space for female guests, was transformed into a private, covered bathroom. This change emphasises the shift from a communal, gendered use of space to a more practical and individualised design, aligning with modern preferences for privacy.

The addition of car porches to the *Rumah Anjung* reflects the increasing importance of accommodating modern transportation. Furthermore, the repurposing of the *Sorong* area in both sections of the house demonstrates a departure from traditional sleeping arrangements to more flexible living spaces tailored to contemporary family dynamics.

Table 6.7: The summary of modifications and changes to Wan Muhammad's house assessed in two different periods: 1993 through measured drawing documentation and during site observation in 2017 by the author. The changes are categorised based on key components of authenticity

WAN MUHAMMAD'S HOUSE KH06						
CHANGES					Channes	
SPACES		Original	Measured Drawing record	Site observation	categorisation	
RUMAH ANJUNG		Symmetrical layout	As original			
(30	KONG TENGAH)		House 1 : Cothoring place	Maintained as recorded in measured		
	Function	Entertain male quest	for relatives and quest			
		Entertainmale guest	(female and male)			
	Roof	Singgora tiles	As original			
	Wall	Traditional timber wall panel	As original	drawing	Form and Design,	
	Floor	Traditional timber plank	As original	_	Materials and	
	Staircase	Concrete staircase	As original	-	Substance,	
	Window	Traditional timber window	As original	Usea	Use and Function, Traditions and	
	Door	I raditional timber door	As original	As ariginal but as variad with alast DVC	Techniques	
	Sisip angin (Air ventilation panel top of wall)	Traditional timber lattice panel	As original	plastic sheet to avoid dust/ debris an mosquitoes	Location and Setting - (car porch)	
	Kolong (space underneath house)	No wall	Brick wall and corrugated metal sheet at the front area	Maintained as recorded in measured drawing		
	Additional spaces	-	-	Extend roof at the <i>Anjung</i> and <i>Kolong</i> area as car porch using corrugated metal roof		
RU	MAHIBU	Symmetrical layout	Divided space into two			
		Welcoming space for male	House 2: Guest recention	4		
	Function	quest to Aniuna and function	area			
		also for living area	House 1 : Living area -			
	Space	Living area	entertaining guests and			
	Roof	Singgora tiles	As original	Meinteined on recorded in measured		
	Wall	Traditional timber wall panel	As original	drawing		
	Floor	Traditional timber floor	As original	urawing		
	Staircase	2 concrete staircases on both	As original			
		sides Traditional Stained glass		-	Use and Function	
	Window	window with timber frame	As original			
	Door	Traditional - 2 main doors (louvers timber door)	As original			
		(As original but covered with clear PVC		
	Sisip angin' (ventilation	Traditional - carved & lattice	As original	plastic sheet to avoid dust/ debris an		
	panely			mosquitoes	-	
	Sorong	Sleeping area - divided with curtain	House 1 : Resting area House 2 :Sleeping area (timber wall added)	Maintained as recorded in measured		
	Kolong (space underneath	No wall	As original	Grawing		
RU	MAHTENGAH					
	Space	Sleeping area - divided with	House 1 area - bedrooms	Partially converted into dining area	Function or Use	
		curtain	was added	Farially converted into diffing area		
		Traditional - no roof	Roof added			
(JE	Eunction	Open platform without roof	Eamily area for bouse 2	-	Materials and	
-			Cement screed for	Roof was added	Substance	
	Floor	No floor	bathroom		Use and Function.	
	Staircase	Traditional timber staircase	Concrete staircases	1		
RU	MAH DAPUR					
	Function	Cooking and dining	As original		4	
	Roof	Singgore tiles	As original	Some part of the roof's tiles changed to		
	Wall	i raditional timber wall panel	As original	zinc e corrugated metal sheeting - poor		
	Floor	Traditional timber floor	As original	Singgora tilos	1	
	Staircase	Timber staircases	Concrete staircases	Timher	1	
	Window	Traditional timber window	As original	-		
	Door	Traditional timber door	As original	Timber	Materials and	
	Furniture	-	Kitchenware racks		Substance	
	Kitchen equipments	Cooking using woof-fire stove	Cooking using gas stove,	Maintained as recorded in measured		
	Kolong (space underneath	Traditional - opon	As original	drawing		
<u> </u>	house)	Water well outside of the			{	
	Additional spaces	house	No longer use	-		
MAJOR HOUSE MODIFICATION TO THE HOUSE 2		-	Major spaces addition to house house 2	Bedrooms, Family area, Kitchen, Bathroom	Form and Design, Materials and Substance, Use and Function, Traditions and Techniques, Location and Setting	
			Convertie all	Mointoined on recorded in more t	Design	
JE	MURAN BELAKANG	Open platform without roof	bathroom for House 2	drawing - poor condition	Materials Function or Use	

6.6.7 Case Study 7: Che Muhammad's House (KH07)

Background: Site History and Significant Dates

The original owner, Tok Aki Haji Harun, had passed the house down to his only son, Haji Ibrahim, who subsequently bequeathed it to his son, Che Muhammad, also known as Che Mat. The house, constructed in 1910, was located approximately 100 meters from the Kelantan River, reflecting the traditional preference for proximity to water bodies for transportation and resource accessibility. The house was primarily constructed using *Chengal* hardwood, a durable tropical timber widely utilised in traditional Malay architecture. By 1990, when measured drawing documentation was conducted, the house was owned by Che Muhammad, the fourth generation of the family lineage.



Figure 6.66: The site location of Che Muhammad's house. (Source: RU70.D/90/91, Measured Drawing Documentation by KALAM, 1990)



Figure 6.67: The original floor plan of Che Muhammad's house. (Source: RU70.D/90/91, Measured Drawing Documentation by KALAM, 1990)



Figure 6.68 (on the left): Front view of the house. Figure 6.69 (on the right): The gateway to the main entrance of the house. (Source: RU70.D/90/91, Measured Drawing Documentation by KALAM, 1990)



Figure 6.70: The current condition of the house. (Source: Author, 2017)

Architectural Changes

Over the years, significant modifications were made to the house, largely in response to environmental conditions, structural deterioration, and the evolving needs of its occupants. By the time of the measured drawing documentation in 1990, it was recorded that approximately 40% of the original house had undergone alterations due to the replacement of decayed materials and changes in spatial functionality. The architectural changes can be categorised into two phases: (i) additions to the existing sections of the house and (ii) new extensions connected to the original structure.

During the second generation, Haji Ibrahim introduced a bathroom adjacent to the *Jemuran*, next to the *Rumah Dapur* (kitchen). This bathroom was enclosed using corrugated metal sheet walls, reaching a height of approximately 1,800 mm. The inclusion of this space served multiple household purposes, including bathing, washing clothes, and dishwashing. Additionally, the living room was subdivided into two sections—one part was converted into a bedroom, while the other retained its original function as a living area. This alteration effectively reduced the size of the living space.

Another significant change occurred in response to material deterioration. The *kelarai* (woven bamboo wall panels) on both the right and left elevations of the house suffered from natural decay and were subsequently replaced with timber wall panels, reflecting a shift towards more durable materials. Furthermore, the house was significantly impacted by the major flood of 1967, which caused severe structural damage. The floodwaters swept the front portion of the house, resulting in the loss of the original timber staircase, which was later reconstructed in concrete. The exposure of the lower structure to frequent flooding led to the rotting of the timber columns, prompting the reinforcement of the *Jemuran* area with concrete columns.

Additional structural expansions were undertaken to accommodate the growing family of Che Mat, who had ten children. A new block, matching the width of the original house, was constructed at the rear to serve as additional bedrooms and a resting area. A secondary staircase was also installed to provide an alternative entrance. Following the introduction of a piped water supply system in 1935, bathing and washing activities were relocated to an internal bathroom within the house, marking a shift in household practices.

In 1982, further renovations were made to the bathroom and toilet areas. The floor was elevated to nearly the same height as the *Rumah Ibu* to mitigate the impact of frequent flooding. These changes reflect an ongoing effort to preserve the house's functionality while adapting to environmental challenges.

By the time of the 1990 documentation, additional modifications were recorded. The original timber fencing surrounding the house had been demolished, although the entrance gateway remained intact. The *Serambi* (verandah) had been partially enclosed using corrugated metal sheet walls, but it remained roofless. Despite these changes, the roof of the main house continued to feature *Singgora* tiles, preserving a key element of traditional Malay architecture. Additionally, the *Kolong* (space beneath the house) remained open, with no walls or specific enclosures built for additional usage.

Material and Design: Modern Interventions

During a site observation conducted in 2017, further alterations were evident, reflecting continued adaptation to contemporary needs and maintenance concerns. A covered car porch with a cement screed floor was added on the left side of the house, signifying an increased emphasis on accommodating modern transportation needs. The original timber gateway at the entrance was removed and replaced with a metal sheet gate, signifying a shift toward materials requiring less maintenance.

The roofing material also underwent a significant transition. The original *Singgora* tiles, known for their traditional significance and thermal properties, were replaced with asbestos corrugated roofing sheets, a common modern substitute in Kelantan. Additionally, the *Kolong* was enclosed with brick walls, transforming the once open space into enclosed rooms. New functional spaces were introduced within this area, further altering the original spatial configuration.

Another significant modification observed was the replacement of traditional timber windows with modern aluminium-framed glass louvred windows. While improving

ventilation and maintenance efficiency, this change marked a departure from the traditional Malay house aesthetic. Only a single timber window at the front elevation was retained, providing a remnant of the house's original architectural character. Furthermore, a mono-pitch roof structure was installed over the *Serambi* area, ensuring better protection against the elements.

Functional Changes: Shifts in Use and Lifestyle Preferences

The functional evolution of *Che Mat's house* over multiple generations underscores a broader transition in traditional Malay homes from open-plan, multipurpose spaces to more compartmentalised and specialised areas. Initially, the house adhered to the traditional open-plan concept, where communal areas were used flexibly for various activities. However, as family dynamics evolved and privacy considerations became more pronounced, internal partitions were introduced, altering the spatial experience.

The conversion of the *Jemuran* from an open space into an enclosed bathroom and service area highlights a shift from traditional bathing practices, which were previously conducted in external spaces, to an enclosed and more private arrangement. This transition reflects infrastructure advancements, such as introduction of piped water and changing cultural attitudes toward domestic hygiene and convenience.

Similarly, the transformation of the *Kolong* from an open-air space into enclosed rooms demonstrates a move toward maximising usable indoor space, particularly in response to increased family sizes. While this adaptation provided additional functional areas, it also resulted in the loss of the original stilted house aesthetic, which traditionally facilitated ventilation and protection against floods.

The replacement of *kelarai* walls with timber planks and later with metal sheeting further illustrates a pragmatic shift towards durability and ease of maintenance. Although these material changes improved structural longevity, they gradually eroded the house's traditional character.

The enclosure of the *Serambi* and the replacement of timber fencing with metal gates also reflect changing lifestyle preferences, where security and weather protection have become key considerations. These changes demonstrate an increasing emphasis on privacy and protection from external environmental factors, contrasting with the traditional openness that once characterised Malay houses.



Figure 6.71: The house changes. (Drawing source: RU70.D/90/91, Measured Drawing Documentation by KALAM, 1990; Photos source: Author, 2017 & 2018)



Decayed bamboo woven walls (*kelarai*) on the right and left elevations were replaced with timber wall panels.

Figure 6.72: The house changes on the left side and at the back of the house. (Drawing source: RU70.D/90/91, Measured Drawing Documentation by KALAM, 1990; Photos source: Author, 2017 & 2018)

Table 6.8: The summary of modifications and changes to Che Muhammad's house assessed in two different periods: 1993 through measured drawing documentation and during site observation in 2017 by the author. The changes are categorised based on key components of authenticity

КН08					
SPACES	Original	CHANGES	Cite choosy of ion	Changes	
0504404	Original On stilt, a space with wall and without	Measured Drawing record	Site observation	categorisatio	
SERAMBI	roof	Refurbished - metai @ Zinc sheet roof added	Maintained as recorded in		
Function	main staircase is located	Living area	measured drawing		
Roof	-	Metal @ Zinc sheet roof added		-	
Wall	Traditional timber wall	As original	Refurbished using new design timber wall	Form and	
Floor	Traditional	As original	Maintained as recorded in measured drawing	Design, Materials and Substance.	
Staircase	Traditional timber staircase	As original	Concrete timber staircase	Use and Function,	
Window	Traditional timber window	Glass window with alumininum frame		Traditions an	
Others -			Maintained as recorded in	recriniques	
Pelantar and staircases	Singgora roof)	Zinc roof	measured drawing		
Added spaces	-	Shower & washroom added - 2500mm x 2000mm, zinc (corrugated meta sheeting) with 1800mm height	Wall - zinc (corrugated meta sheeting) with 1800mm height		
RUMAH IBU	On stilt with height exceed head level and long roofed type	As original			
Space	1 bedroom, & 1 living room - In between rooms divided with bamboo woven wall	Another 1 room added - Timber wall panel	Maintained as recorded in measured drawing		
Roof	Singgora tiles	Asbestos corrugated roof	Asbestos corrugated roof		
Wall	Traditional timber wall papel	As original		Design	
Ceiling	No ceiling	A original		Materials	
Floor	Traditional timber floor	As original		Workmanship	
Window	Traditional timber window	Timber & glass window with aluminium frame		Function or	
Door	Traditional timber door	As original		Use	
Others	'Sisip angin' (ventilation panel @ lourves) - traditional	As original	Maintained as recorded in		
Open space under the house or <i>kolong</i>	-	Concrete wall constructed and convert to bedrooms	measured drawing		
Additional spaces	-	Roof awning at the right side of rumah ibu			
RUMAH DAPUR - ORIGINAL RUMAH DAPUR	Traditional pitch roof	As original			
Function	Kitchen	Converted into bedrooms		Materials and Substance, Use and Function, Traditions and	
Roof	Traditional - Singgora tiles	Asbestos corrugated roof			
Ceiling	-	As original			
Floor	Traditional	As original	Maintained as recorded in		
Staircase	Traditional located at the back entrance	Demolished	measured drawing		
Window	Traditional	Refurbished - Glass lourves window with		lechniques	
Door	Traditional	As original			
Others	Space under the house or <i>kolong</i> exceed the head level – raised on stilt	Refurbished – concrete walls was constructed and convert into additional space			
RUMAH DAPUR		Narra adultida a			
NEW ADDITION	-	New addition			
Function	-	Cooking and dining		Form and	
Wall		Timber wall		Design,	
Floor	-	Timber floor		Substance	
Staircase	-	Timber staircases	Maintained as recorded in	Use and	
window	-		measured drawing	Function, Traditions and Techniques, Location and Setting	
Door	-	Glass lourves window with alumininum frame			
Furniture	-	Kitchenware racks			
equipments	-	Cooking using gas stove, fridges, rice cooker			
Additional spaces	(Water well outside of the house)	New water well next to Rumah Dapur and toilet was built.			
HOUSE COMPOUNI	Traditional fence	Demolished	Concrete fence	Form and Design, Materials and Substance, Traditions and Techniques, Location and	

6.5.8 Case Study 8: Haji Abdullah's House (KH08)

Background: Site History and Significant Dates

Haji Abdullah's House, constructed in the early 1900s, exemplifies the traditional Malay architectural style known as *Rumah Tiang Dua Belas* (Twelve-Pillared House). Originally owned by Haji Abdullah, a respected religious teacher, the house was built using high-quality *Chengal* wood, which is known for its durability and resilience. By 1996, when KALAM conducted measured drawing documentation, the house was owned by Ahmad Jenah, a third-generation descendant of Haji Abdullah.



Figure 6.73: The site location Haji Abdullah's house. (Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)

The house featured intricate *papan pemeleh* at its gable ends, highlighting traditional Malay architecture's fine craftsmanship and symbolic artistry. Unfortunately, as of 2017, the house no longer existed, making direct observations for this research impossible. However, historical documentation provides valuable insight into its architectural evolution and adaptive changes.



Figure 6.74: The plan illustrates the original layout of the house. (Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)



Figure 6.75: The drawing illustrates the original front elevation of the Haji's Abdullah's house and the changes recorded in 1996.

(Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)

Architectural Changes

Over the decades, the house underwent several modifications to accommodate the growing needs of its occupants while preserving its core structural integrity.

• Expansion for Family Growth: As the family expanded, additional spaces were introduced, including modifications to the *kolong* (the open space beneath the house), which was later repurposed into bedrooms and a family area, reflecting the adaptability of traditional Malay houses to meet evolving functional needs.

- Wall Material Changes: The original *kelarai* (woven bamboo) walls at the front of the house were replaced with timber walls, enhancing durability and security. Similarly, the *rumah dapur* (kitchen), originally constructed with corrugated metal sheet walls, was later replaced with timber panels, preventing material decay and improving insulation.
- *Jemuran* and Roof Alterations: The *jemuran* (drying area), initially designed as an open space with full-height walls but no roof, was later modified by adding a roof and walls, transforming it into an enclosed functional space. The *Jemuran Dapur* was also enclosed and converted into an extended kitchen.
- Staircase Modification: The house originally had four staircases, but over time, only two remained functional—one at the main entrance and another leading to the *jemuran dapur*. Traditionally constructed from timber, the main entrance staircase was later replaced with concrete, reflecting modernisation trends while improving structural longevity.
- Ceiling Installation: In the 1970s, ceilings were installed throughout the house, significantly enhancing thermal comfort and modernising the internal ambiance. Previously, traditional Malay houses often featured open roof structures to facilitate natural ventilation, but ceiling additions reflected a shift towards contemporary preferences for enclosed spaces.





(Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)



Figure 6.77: The drawing illustrates the original left elevation of the Haji's Abdullah's house and the changes recorded in 1996. (Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)

Material and Design: Modern Interventions

Despite its strong adherence to traditional construction techniques, modern interventions were gradually introduced to improve durability and functionality. The replacement of woven bamboo walls with timber, the substitution of concrete staircases, and the installation of a full roof over formerly open areas indicate a progressive shift towards materials that require less maintenance and provide greater structural stability.

However, these changes also signify a departure from the house's original material authenticity, as modern materials, while practical, do not always retain the craftsmanship and thermal efficiency inherent in traditional Malay architecture. The shift from corrugated metal sheets to timber walls in the kitchen also illustrates a conscious effort to restore traditional aesthetics while integrating better insulation properties.



Figure 6.78: The drawing illustrates the original rear elevation of the Haji's Abdullah's house and the changes recorded in 1996.

(Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)



Figure 6.79: The drawing illustrates the section of the Haji's Abdullah's house. (Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)



Figure 6.80: The drawing illustrates the floor plan of the Haji's Abdullah's house and the changes recorded in 1996. (Source: RU121.D/96/97, Measured Drawing Documentation by KALAM, 1984)

Table 6.9: Summary of modifications and changes to Hassan's house, assessed through measured drawing documentation produced in 1996. No site observations were conducted as the house no longer existed during the research period. The assessment categorises changes based on key components of authenticity

HAJI ABDULLAH'S HOUSE					
	KH08				
SPACES	CHANGES	Changes			
	Original	Measured Drawing record	categorisation		
SERAMBI	On stilt, full-height wall without roof	Refurbished – Singgora roof tiles was added			
Function	Welcoming space for male quest	Living rooms to entertain male and female			
	Welcoming space for male guest	guest	Form and Design,		
Roof	No roof	Singgora roof tiles was added	Materials and		
Wall	full-height wall	Full height wall with root	Substance,		
Floor		As original	Use and Function,		
Staircase	I raditional timber staircase	Concrete staircase	Traditions and		
Window	-	frame	rechniques,		
Door	Timber door	As original			
Furniture	-	Sofa, display cabinet			
Others	-	-			
SERAMBI	On stilt and long roofed type, attached to Rumah Ibu	As original			
SAMANAIK			Materials and		
Function	Entertain guest	Converted into bedrooms	Substance,		
Root	Singgora tiles	As original	Use and Function,		
Wall	front side was Kolarai	Front wall replced with timber wall	Traditions and		
Floor	Traditional timber planks		Technique		
Window	Traditional timber window				
	On stilt with height exceed head level and long roofed				
RUMAH IBU	type	As original			
Function	Spaces divided : bedrooms and entertaining male	Bedrooms and secondary living rooms			
Roof	Singgora tiles, Pemelahornamentations	As original			
Wall	Traditional timber wall panel at the side elevation, in the	Front wall repleed with timber wall			
	front side was Kelarai		Materials and		
Ceiling	No ceiling	Ceiling using bamboo woven panel	Substance,		
Floor	Traditional timber planks	As original	Traditions and		
Window	I raditional timber window	As original	recnniques		
Door	Praditional timber door	As original			
Ornmentation	traditional	As original			
Open space					
under the house	No wall	timber wall added			
or kolong					
INTERMEDIATE	Connecting space between Rumah Ibu and Rumah		Form and Design,		
SPACE (JEMURAN)	Dapur	Full height wall with roof	Materials and		
er //e_ (eer a)	(no roof with full height wall)		Substance,		
Function	Drying food and clothes & collect rainwater for daily use	Convert to kitchen area	Use and Function,		
	and side entrance for female guest		Traditions and		
RUMAH DAPUR	Singgoro roof tiloo	As original			
K00I	Singgora toot tiles	Zinc @ corrugated metal sheeting			
vvaii	Traditional timber planka: Lantai Jarang (app betwaan	Zinc @ corrugated metal sheeting			
Floor	floor planks)	No gap between floor planks	Form and Design.		
Staircase	Timber staircases: at Jemuran D apur	-	Materials and		
	The fifth of the first section is the	Glass lourves window with alumininum	Substance,		
VV INDOW	I raditional timber window	frame	Use and Function,		
Door	Traditional timber door	As original	Traditions and		
Others	Space under the house or kolong exceed the head	Refurbished – constructied walls and	Techniques		
Others	level – raised on stilt	convert into additional space			
Furniture	-	Kitchenware racks			
Additional	(Water well outside of the house)	New water well next to Rumah Dapur and			
spaces	(toilet was built.			
JEMURAN DAPUR	Open; no roof and no wall	Fully enclosed and roofed	Form and Design, Materials and Substance, Use and Function, Traditions and		
			Techniques, Location and Setting		

6.5.9 Case Study 9: Hassan's House (KH09)

Background and Historical Significance

Hassan's House, also known as PLH3, has a rich historical background that spans multiple generations and significant historical events. Originally built at a different location in Kota Bharu, the house was purchased in 1922 by Datuk Awang Kecik, the grandfather of the current owner, Hassan. Following the acquisition, the house was dismantled and reassembled at Jalan Pengkalan Chepa, reflecting the common practice of relocating traditional Malay houses.



Figure 6.81: The site plan of Hassan's house. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)

After Datuk Awang Kecik's passing, his youngest daughter, Embun Awang Kecik, inherited the house. However, during the Japanese occupation of Malaya (1941–1945), the house was taken over and used by Japanese military officers. Following Japan's surrender in 1945, ownership was restored to Embun, who lived there until her passing. Hassan then inherited the house, marking a continuity of familial legacy.

By 1984, when KALAM documented the house, Hassan was already considering demolishing it to make way for new commercial project. This consideration reflects the growing pressures of urbanisation and economic development, threatening the survival of many traditional Malay houses.



Figure 6.82: The plan illustrates the original layout of the house. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)



Figure 6.83: The original front elevation of Hassan's house. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)



Figure 6.84 & 6.85: View of *Rumah Anjung.* (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)

Architectural Changes

Over the decades, Hassan's House underwent multiple architectural modifications to accommodate evolving needs and modern conveniences. One of the most significant changes was the replacement of the original timber staircase with a concrete staircase, which enhanced durability and safety. Additionally, the timber floor in the *'Jemuran'* area—previously a raised platform for drying clothes—was replaced with concrete flooring, transforming the space into a car porch.



Figure 6.86: The front elevation of Hassan's house with the view of interior view at *Rumah Anjung* and *Jemuran* area was converted into a car porch. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)

Water-related infrastructure also saw considerable changes. The house originally had a traditional water well, a common feature in early Malay homes. However, following the introduction of a centralised water supply system in 1957, the well was sealed and covered with concrete, and the area was repurposed into a concrete bathroom. Similarly, the house's original *'tandas angkut'* (detached pit latrine) was upgraded to a flush toilet, improving sanitation and hygiene.

A major structural alteration involved levelling the floors of different spaces within the house. Traditionally, Malay houses had a distinct hierarchical floor system, where the *Rumah Ibu* (main house), *Serambi* (veranda), and *Rumah Dapur* (kitchen section) were set at different elevations. This differentiation symbolised the spatial and functional hierarchy of the house. However, to improve accessibility and ensure the safety of young children, the three levels were restructured into a single, continuous floor level.

The door configurations also saw modifications. While most of the original timber door leaves were retained, some doors were relocated, permanently closed, or newly built to accommodate evolving spatial functions. Furthermore, the original timber-strip

ceiling—an elegant feature of the house—was replaced with asbestos panels, a common material choice at the time, as the timber had suffered from termite damage and rot.

Material and Design Interventions

The introduction of modern materials and construction techniques significantly altered certain aspects of Hassan's House. The transition from timber to concrete staircases and flooring represents a shift towards more durable and low-maintenance building solutions. Similarly, the use of asbestos for ceiling panels was a pragmatic intervention despite its environmental and health risks, as it provided cost-effective resistance to humidity and termite infestation.

While these changes reflect necessary adaptations, they also highlight a departure from traditional craftsmanship and materials that defined the house's authenticity. The introduction of modern plumbing and sanitation facilities represents a broader trend of functional modernisation at the expense of original material authenticity.



Figure 6.87: The original rear elevation of Hassan's house and the photos shows the condition and changes to the house in 1984. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)

Functional Changes and Lifestyle Adaptations

The functional use of Hassan's House evolved significantly over time, reflecting broader socio-cultural transformations in Kelantan. Initially, the house was a traditional family dwelling, embodying communal living arrangements typical of early Malay households. The *Jemuran* area, for instance, was originally used for drying clothes and food processing. However, with the shift towards urban living, it was repurposed into a car porch, reflecting the increased reliance on automobiles.

Similarly, the spatial adaptation of the bathroom and toilet facilities illustrates a shift in daily living practices. The traditional detached toilet, placed far from the house for hygiene reasons, was eventually replaced with a proper indoor bathroom, aligning with contemporary standards of convenience and sanitation.

Another key change was the modification of the floor levels, which originally symbolised social hierarchy and traditional functionality. The house adapted to modern safety concerns by unifying the different floor levels, particularly for children and elderly residents. This change, while practical, also diminished the symbolic spatial differentiation that once defined the traditional Malay house.

Despite these modern adaptations, efforts were made to retain the house's traditional essence. Many of the original timber elements, including doors and structural beams, were preserved where possible. However, with changing lifestyle preferences, modernisation pressures, and economic factors, maintaining the house's complete authenticity proved increasingly challenging.



Figure 6.88: The original section drawing of the house and the accompanying photos show the family area, which was traditionally designated for hosting female guests. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984)



Figure 6.89: The original right elevation of Hassan's house. (Source: RU35.D/84/85, Measured Drawing Documentation by KALAM, 1984) Table 6.10: Summary of modifications and changes to Hassan's house, assessed through measured drawing documentation produced in 1984. No site observations were conducted as the house no longer existed during the research period. The assessment categorises changes based on key components of authenticity

	HASSAN'S HOUSE				
KH09					
SPACES		CHAN	Changes		
DUM		Original	Measured Drawing record	categorisation	
RUN	Function	Symmetrical layout	As original		
	Function	Entertain male guest	Entertain relatives and guest		
		Singgora tiles	As original		
	VVall	i raditional timber wall panel	As original		
	Celling	-	Vientein the timber fleer relevaled to		
	FIOOI	Traditional timber plank	Ivitantalin the timber noor - releveled to	Motoriale and	
			same neight with all the spaces in the	Substance	
	M/indow		Nouse	Jubsiance,	
	vvindow	Traditional timber window	Wany windows destroyed due to fire,	Use and Function,	
	Deer		replaced with adjustable lourve windows.		
	Dool	Traditional timber door	selaed	rechniques	
	Sisip angin (Air				
	ventilation panel top	Traditional timber carved panel	As original		
	of wall)				
	Kolong (space	Open	As original		
	underneath house)	Open			
RUN	IAH IBU	Symmetrical layout	As original		
	Function	Welcoming space for male guest to Anjung	As original		
	Space	2 guestrooms, 1 living room - In between rooms divided with bamboo woven wall	As original - wall changed to timber wall		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Ceiling	No ceiling	Ceiling added		
	Floor	Traditional timber planks	As original		
	Staircase	2 concrete staircases	As original	Minimal changes	
		Traditional Stained glass window with timber		0	
	vvindow	frame	As original		
	Deer	Traditional - 2 main doors (louvers timber			
	DOOI	door)	As original		
	'Sisip angin'	Traditional convod & lattica			
	(ventilation panel)		As original		
	Kolong (space	Concerete wall			
	underneath house)	Concerete wali As original			
RUM	AH TENGAH	Traditional - integrated with Rumah Ibu	As original		
	Space	2 bedrooms, 1 living area for female guest	As original	Minimal changes	
	Door	2 doors access from Rumah Ibu	As original		
INTERMEDIATE SPACE (JEMURAN)		Traditional - no roof	Refurbished and converted into car porch – Zinc roof and cement screed for flooring	Form and Design, Materials and Substance.	
	Function	Open area with access for female quest	Bathroom and toilet	Use and Function,	
	Floor	No floor	Cement screed for bathroom	Traditions and	
RUN	IAH DAPUR				
	Function		As original		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber floor	Concrete timber floor		
	Staircase	2 concrete staircases	As original		
	Window	Traditional timber window	As original		
	Door	Traditional timber door	As original	Minimal changes	
	Furniture	-	Kitchenware racks	inin initial orial igoo	
	Kitchen equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges, rice		
	Kolong (space	Traditional - open	Brick wall added to Kolong		
	underneath house)				
	Additional spaces	Water well outside of the house	No longer use		

6.5.10 Case Study 10: Wan Aisyah's House (KH10)

Background: Site History and Significant Dates

Wan Aisyah's house, built around 1926, is a significant example of traditional Malay architecture in Kelantan. Due to discrepancies in oral and documented sources, the exact construction year remains uncertain. However, Nik Rogayah, the granddaughter of Wan Aisyah, recalled that the house was constructed around the time of the *Bah Merah* (Great Red Flood of 1926-1927), a catastrophic event in Kelantan's history. An inscription in the Islamic calendar (Hijri 1332) was carved into the gateway of the house, indicating that the entrance was added a few years after the main house was completed. The land was originally a royal grant from the Sultan of Kelantan to Tuan Tabal, a respected Kelantanese *ulama* (Islamic scholar), who later gifted the land to his daughter, Wan Aisyah, as a wedding present. The house remained within the family for generations, and as of 1998, it was owned by Nik Rogayah, who participated in the house's documentation through measured drawings.



Figure 6.90: The site plan of Wan Aisyah's house. (Source: RU130.D/98/99, Measured Drawing Documentation by KALAM, 1998)

Architectural Changes

Over the years, Wan Aisyah's house has undergone several modifications to enhance functionality and accommodate modern living needs. One of the most significanchanges was the addition of a *bumbung asap* (smoke roof) to the kitchen area (*Rumah Dapur*), improving ventilation for traditional cooking methods that involve wood fires. The original timber staircase leading to the house was removed, and a platform (*Anjung*) was added, along with a new concrete staircase.





Figure 6.91: The original plan of Wan Aisyah's house and its changes. (Source: RU130.D/98/99, Measured Drawing Documentation by KALAM,

Additionally, internal walls were introduced to partition spaces within the *Rumah Ibu* and *Rumah Serambi*, creating dedicated bedrooms and a formal living area, a departure from the traditional open-plan concept of Malay houses. The *Jemuran* was originally built without walls or a roof, but later it was covered with a zinc roof and gutter, extending from the *Rumah Dapur*. The space was then converted into a dining area.The *Jemuran* (drying area) was also leveled to match the floor height of the
Rumah Ibu and Rumah *Dapur*, improving movement and accessibility within the house. A significant modification was the replacement of the original timber wall with zinc panels at the rear of the house, with *kekisi angin* (ventilation lattice) installed at the top of the zinc wall to allow for airflow.



Figure 6.92: The original front elevation of Wan Aisyah's house. (Source: RU130.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.93: The original right elevation of Wan Aisyah's house. (Source: RU130.D/98/99, Measured Drawing Documentation by KALAM, 1998)



Figure 6.94: The original left elevation of Wan Aisyah's house. (Source: RU130.D/98/99, Measured Drawing Documentation by KALAM, 1998)

Material and Design: Modern Interventions

The integration of modern materials into the house's structure reflects the adaptation of traditional architecture to contemporary needs. The transition from timber to concrete in staircases and platforms is indicative of durability concerns, as timber components are prone to deterioration due to exposure to humidity and termites. The replacement of timber walls with zinc panels at the rear elevation demonstrates an economic and practical approach to maintenance, as zinc is more readily available and cost-effective than high-quality timber. The *bumbung asap*, although a traditional feature in Malay houses, was introduced later in the house's timeline, indicating a continued emphasis on improving functionality while maintaining vernacular elements. These interventions, while enhancing durability, have also altered the material authenticity of the house, raising considerations about the balance between conservation and modernisation.

Functional Changes: Evolution of Use and Lifestyle Preferences

The original layout of Wan Aisyah's house reflected the traditional Malay living style, characterised by open-plan spaces, gender-based spatial segregation, and multifunctional areas. However, shifting lifestyle preferences and modern expectations have led to functional modifications. The introduction of internal walls in the *Rumah Ibu* and *Rumah Serambi* marked a significant change from the traditional open and flexible spaces, instead defining permanent living areas and bedrooms for privacy and convenience. The *Jemuran*, originally an open-air space for drying clothes and food processing, was leveled and enclosed, transforming it into a more structured part of the house, aligning with modern preferences for secure and sheltered spaces. The addition of the concrete staircase and *Anjung* reflects a shift towards greater durability and aesthetics, accommodating a more contemporary household structure.

Table 6.11: This summary outlines the changes to Wan Aisyah's house based on measured drawings from 1998. No site visits were possible, as the house had been demolished during the research. The changes are categorised by key components of authenticity.

WAN AISYAH'S HOUSE KH10					
SPACES		CHANGES		Changes	
		Original	Measured Drawing record	categorisation	
SEF	RAMBI				
	Function	Welcoming space for male quest	Living area to entertain male and female quest		
	Roof	Singgora tiles	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber planks	As original	Form and Design,	
	Staircase	Traditional timber staircase	As original	Materials and	
	Window	Traditional timber window	As original	Substance,	
	Door	Traditional timber door	As original	Use and Function,	
	Euroiture			Traditions and	
	Ornmentation	'Sisip angin' (ventilation timber panel @ lourves) - traditional, Ekor itik	As original	 Techniques, 	
	Additional spaces	-	Front area of Serambi was added at the staircase location as Anjung - entertaining guest area		
INT	ERMEDIATE SPACE	Connecting space between Rumah Ibu and Serambi			
	Function	Dining area, common area	Dining area changed into bedroom		
	Roof	Extended roof of Serambi and Rumah Ibu, Singgora tiles	Some part changed to zinc @ corrugated metal sheeting	1	
	Wall	Traditional timber wall panel	As original	Use and Function	
	Floor	Traditional timber planks	As original		
	Window	Traditional timber window	As original		
	Furniture				
	Door	Traditional timber door	As original		
RUI	MAH IBU				
	Function	sleeping area and praver area	Bedrooms added		
	Space	Spaces divided : 1bedroom and praver area	Rooms added (new internal wall added)		
	Roof	Singgora tiles, ekor itik ornamentations	As original		
	Wall	Traditional timber wall panel	As original		
	Floor	Traditional timber floor	As original		
	Window	Traditional timber window	As original		
	Door	Traditional timber door	As original	Use and Eunction	
	Ornmentation	<i>'Sisip angin'</i> (ventilation timber panel @ lourves) - traditional, <i>Ekor itik</i>	As original		
	Open space under the house or kolong	No wall	As original		
	Furniture				
	Additional spaces	-	Bedroom added		
INT	ERMEDIATE SPACE	Connecting space between Rumah Ibu and	Covered with zinc roof and gutter (extended roof from		
(JEI	MURAN)	Rumah Dapur (no roof) -	Rumah Dapur)		
<u> </u>	Wall	-	Zinc wall	Materials and	
			2 staircase only used, main staircase replaced with concrete	Substance,	
	Staircase	4 traditional timber staircases	staircases - due too maintenance issues	Use and Function,	
	Floor	Elevated timber floor	Leveled up the floor into same level with Rumah Ibu and Rumah Dapur	Traditions and Techniques.	
	Function	Drying food and clothes & collect rainwater for daily use and side entrance for female quest	Converted into dining area.		
RU	MAH DAPUR	Single tier Lona roof house	Smoke roof added		
	Roof	Singgora tiles	Partially Singgora tiles and the rest used Zinc @ corrugated		
	Wall	Traditional timber wall panel	Zinc @ corrugated metal sheeting and original	1	
	Floor	Traditional timber planks; Lantai Jarang (gap	No gap between floor planks	Form and Design, Materials and	
	Window	Traditional timber window	Inproper opening to become window - original window were removed due to bad condition	Substance, Use and Function, Traditions and Techniques	
	Others	Space under the house or kolong exceed the head level – raised on stilt	As original		
	Furniture	-	Kitchenware traditional racks	1	
	Kitchen equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges, rice cooker	1	
	Additional spaces	(Water well outside of the house)	Location remained, wall added without roof	1	
	HOUSE COMPOUND	· · · · · · · · · · · · · · · · · · ·			
	Gerbang	Carved head gerbang panel	As original	1	

6.5.11 Case Study 11: Wan Ahmad's House (KH11)

Background and Historical Significance

As documented in the measured drawing report by KALAM, Wan Ahmad's house is a historically significant structure built in the early 1900s. The exact construction year is not recorded, but the house was initially owned by Haji Nik Abdul Rahman, a prosperous district officer, in Pasir Mas, Kelantan. A renowned traditional master builder, Che Mat Hassan—who also designed several Kelantanese palaces—was commissioned to construct the house.



Figure 6.95: The site plan of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)

The house served a dual function, not only as a residence but also as an informal office, reflecting the practices of early governance in the area where official office spaces were often unavailable. It was a venue for meetings, discussions, and communal prayers *(solah)* involving the local villagers.

In 1931, the main structure (*Rumah Ibu*) was sold to Haji Nik Abdul Rahman's cousin, Wan Ahmad, who relocated it to Jalan Post Office Lama, Kota Bharu. The house was carefully dismantled and reassembled at its new site, with additional spaces, such as a kitchen (*Rumah Dapur*), incorporated during the rebuilding process. Unlike its original orientation facing the river—a primary transportation route during its early years in Pasir Mas—the relocated structure in Kota Bharu faced a street, reflecting the evolving urban context.

Wan Ahmad's youngest son inherited the house, but after his passing, it was abandoned as the family dispersed due to marriage and employment opportunities outside Kelantan. In the early 1980s, an offer to purchase the house for MYR250k was declined, with the family valuing the property at MYR350,000 instead. This lack of agreement meant the house remained unsold. Subsequently 1986, it was rented out and used as an Islamic kindergarten. By 1992, during the documentation process, the house was in disrepair, and its future remained uncertain, with potential plans for demolition and replacement with a modern building. At the time of this research, it was found that the house had already been demolished/ collapsed in the early 2000s.



Figure 6.96: Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.97: The original plan of Wan Ahmad's house after its first reconstruction in Kota Bharu following relocation from Pasir Mas.

(Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.98: The original front elevation of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.99: The original rear elevation of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.100: The original X-X section of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.101: The right elevation of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.102: The left elevation of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.103: The original Y-Y section drawing of Wan Ahmad's house. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)

Architectural Modifications

Significant changes to the house occurred during its relocation in 1931. Several extensions were added as part of its reassembly in Kota Bharu, including additional bedrooms, a kitchen, and a porch. A water well area was constructed separately at the back of the house to accommodate bathing and cleaning activities. The house's reorientation in Kota Bharu from its initial river-facing position in Pasir Mas to facing the street highlights functional priorities and contextual alignment transitions.



Figure 6.104: The view of the *Rumah Anjung's* interior. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)

Minimal alterations were recorded during subsequent years. By 1992, the primary changes included replacing sections of the original *Singgora* roof tiles with corrugated metal sheeting—a common adaptation for durability and maintenance purposes. A jack roof was also introduced above the kitchen area to improve ventilation, particularly for smoke release during cooking activities. A garage was also added to house Wan

Ahmad's car. Despite these interventions, the structure retained much of its original architectural character.



Figure 6.105 (on the left): The view from the *Rumah Tengah* towards *Jemuran 1*. Figure 6.106 (on the right): The secondary access at the *Jemuran 1*. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)



Figure 6.107 (on the right): The staircase from *Jemuran 1* into *Rumah Tengah*. (Source: RU71.D/91/92, Measured Drawing Documentation by KALAM, 1991)

Table 6.12: This summary outlines the changes to Wan Ahmad's house based on measured drawings from 1991. No site visits were possible, as the house had been demolished during the research. The changes are categorised by key components of authenticity.

	WAN AHMAD					
			1	Changes		
SPACES		Original	Measured Drawing record	categorisation		
RUI	AH ANJUNG	Symmetrical layout	As original	outogonioution		
	Function	Entertain male guest	Gathering place for relatives and guest			
	Roof	Singgora tiles	As original			
	Wall	Traditional timber wall panel	As original			
	Ceiling	-	Celing added			
	Floor	Traditional timber plank	As original			
	Window	Traditional timber window	As original	Minimal changes		
	Door	Traditional timber door	As original			
	ventilation panel top of wall)	Traditional timber carved panel	As original			
	Kolong (space underneath bouse)	Concerete wall	As original			
RUI	IAH IBU	Symmetrical layout	As original			
		Oymmotriodi layout				
	Function	Welcoming space for male guest to Anjung				
	Space	2 guestrooms, 1 living room - In between rooms divided with bamboo woven wall	As original - wall changed to timber wall			
	Roof	Singgora tiles	As original			
	Wall	Traditional timber wall panel	As original			
	Ceiling	No celling Traditional timber planka	Ceiling added			
	Staircase		As original	Minimal changes		
	Window	Traditional Stained glass window with timber frame	As original			
	Door	Traditional - 2 main doors (louvers timber door)	As original			
	'Sisip angin'					
	(ventilation panel)	Traditional - carved & lattice	As original			
	Kolong (space underneath house)	Concerete wall	As original			
RUI	IAH TENGAH	Traditional - integrated with Rumah Ibu	As original			
	Space	2 bedrooms, 1 living area for female guest	As original	Minimal changes		
	Door	2 doors access from Rumah Ibu	As original			
INTERMEDIATE SPACE (JEMURAN		Traditional - no roof	Refurbished – bathroom added & cement screed for flooring	Form and Design, Materials and Substance,		
	Function	Open area with access for female guest	Bathroom and toilet	Use and Function,		
	Floor	No floor	Cement screed for bathroom	Traditions and Techniques,		
_	Staircase	traditional timber staircase	Concrete staircases	Location and Setting		
RUI	IAH DAPUR	Cooking and dining				
	Roof	Singgora tiles	As original			
	Wall	Traditional timber wall panel	As original			
	Floor	Traditional timber floor	Concrete timber floor			
	Staircase	2 concrete staircases	As original			
	Window	Traditional timber window	As original	Minimal changes		
	Door	Traditional timber door	As original			
1	Furniture	-	Kitchenware racks			
	Kitchen equipments	Cooking using woof-fire stove	Cooking using gas stove, fridges, rice cooker			
	<i>Kolong</i> (space underneath house)	Traditional - open	As original			
	Additional spaces	Water well outside of the house	No longer use			

6.6 Changes in the Kelantan Traditional Malay House

The Kelantan Traditional Malay House (KTMH) embodies Malay cultural heritage, reflecting unique architectural forms, material practices, and socio-cultural traditions. Analysing changes in these houses offers valuable insights into the evolution of vernacular architecture amid shifting socio-economic conditions, environmental challenges, and modern lifestyle preferences. Through the comparative study of 11 case studies—spanning variations in form and design, material usage, functional adaptation, traditional techniques, and contextual settings—patterns and trends emerge that illuminate the balance between heritage preservation and modernisation. These findings demonstrate how KTMHs have retained their core cultural identity while accommodating contemporary needs, offering a detailed understanding of the impact of changes on authenticity and the cultural significance of these heritage in the face of urbanisation and changing community dynamics, providing a foundation for more informed conservation strategies.

6.6.1 Form and Design

The comparative analysis of the form and design changes in the 11 KTMH case studies reveals shared trends and unique transformations shaped by family needs, environmental factors, and economic constraints. While most houses retained key architectural elements such as gabled roofs, stilted bases, and traditional layouts, modifications were frequently made to adapt the structures to modern requirements.

One commonality observed in several houses, such as **KH11**, **KH06**, and **KH07**, was the adaptation of *Jemuran* (intermediate spaces) and *Serambi* (verandahs) to more enclosed, functional spaces. For instance, the *Serambi* in **KH11** was converted into an enclosed area for additional living space. This trend is similar to **KH08**, where corrugated metal sheets replaced open timber features to provide more privacy and protection. Likewise, the *Jemuran* in **KH07**, originally open for ventilation and social interaction, was enclosed to serve as a kitchen or bathroom, illustrating a shift from communal functionality to more private, modernised uses.

Despite these shared modifications, the extent of changes varied based on individual circumstances. For example, while **KH03** and **KH10** maintained much of their traditional layout, including features like the *Pemeleh* (fascia board) and *Singgora* roof tiles, other houses like **KH04** experienced significant alterations. **KH04** saw the removal of traditional roof structures and the introduction of corrugated metal sheets, drastically altering its external appearance and reducing its authenticity. In contrast,

houses like **KH05** underwent minimal changes, preserving key features like the open *Serambi* and *Rumah Ibu* while adding only minor updates, such as covered porches.

The interplay between preservation and modernisation is evident in how secondary spaces were adapted. In **KH09** and **KH06**, the *Kolong* (space beneath the house), traditionally left open for ventilation and flood protection, was enclosed to create bedrooms, kitchens, or garages. This trend reflects a broader shift in spatial priorities as families sought to maximise the utility of their homes while balancing traditional design principles.

However, not all houses followed the same trajectory. **KH07** faced natural disasters like flooding, which necessitated changes to its structural form. The flood in 1967 caused the replacement of the original timber staircase with a concrete structure and required reinforcement of the house's foundation. Similarly, environmental factors influenced the use of more durable materials in houses like **KH01**, where bamboo woven walls were replaced with timber panels to combat decay.

Despite these changes, the overarching commitment to preserving traditional features is evident in most case studies. While houses like **KH11** and **KH08** integrated modern materials for functionality, efforts were made to retain core design elements, such as the stilted bases and distinctive rooflines. Even in cases like **KH02** (Wan Sulong's house), where ownership changed hands and modern interventions were introduced, key features like the *Rumah Ibu* were preserved, demonstrating the enduring cultural value of these heritage structures.

In conclusion, the form and design of KTMH showcase a dynamic relationship between tradition and modernisation. While the shared patterns of enclosing open spaces and updating materials reflect broader trends of functional adaptation, the variations across the 11 case studies highlight the influence of individual family needs, environmental challenges, and economic factors. These findings show the importance of balancing heritage conservation with practical considerations to ensure the longevity of traditional Malay architecture and cultural significance.

6.6.2 Materials and Substance

The comparative analysis of materials used in the 11 case studies of KTMH reflects a dynamic interplay between traditional elements, environmental constraints, and

modern adaptations. Across all cases, there is a common pattern of balancing the preservation of heritage materials with the practicality of modern substitutes.

In **KH11**, traditional materials like *Singgora* tiles and timber dominated the original structure. However, as the house aged, decayed elements were replaced with corrugated metal sheets for the roof and brick walls for specific areas. These modifications reflect a pragmatic shift to more durable and cost-effective materials but less authentic. Similarly, **KH06** shows a combination of retained traditional materials, such as timber walls, and the introduction of modern elements like concrete staircases and metal roofing. The *Jemuran* area, initially constructed with timber, was modified with corrugated sheets for improved durability.

KH09 highlights the tension between preservation and modernisation. The original timber windows and walls, which had deteriorated over time, were replaced with aluminium-framed glass windows and timber panels. While the essence of the original material choice remains, the replacement with contemporary equivalents indicates a compromise driven by cost and availability. On the other hand, **KH03** reflects a stronger adherence to traditional materials, with timber retained for most structural elements. However, the roof of the *Rumah Dapur* was updated with corrugated metal sheets, showing minor modernisation.

In the case of **KH04**, significant changes were noted, including replacing the *Singgora* tiles with corrugated metal roofing and transitioning from bamboo woven walls to timber and corrugated sheets. These changes, driven by material decay and functionality needs, illustrate a shift from the traditional aesthetic. Similarly, **KH05** experienced alterations where timber walls were replaced with cement-rendered walls in select areas, although some original elements, such as the *Pemeleh*, were preserved to retain authenticity.

KH07 demonstrates how environmental factors, such as flooding, influenced material choices. After the 1967 flood, the timber staircase was replaced with concrete, and the house's foundation was reinforced. Once adorned with *Singgora* tiles, the roof was replaced with corrugated sheets, reflecting practical concerns over heritage preservation. In **KH10**, while the original *Rumah Ibu* maintained its timber walls and roof tiles, extensions to the house, such as additional rooms, were constructed with cement and corrugated sheets, creating a visual contrast between old and new materials.

For **KH01**, traditional bamboo woven walls were replaced with timber panels to combat decay, and the roof was updated with modern materials for increased longevity. These changes are mirrored in **KH08**, where open spaces like the *Jemuran* were enclosed with corrugated sheets and timber panels, reflecting a trend towards privacy and protection. Meanwhile, **KH02** retained its timber structure but incorporated corrugated metal sheets for new additions like the car porch, highlighting a pragmatic response to modern living needs.

Overall, the comparative analysis reveals that while timber and *Singgora* tiles are central to the identity of KTMH, their replacement with modern materials such as corrugated metal sheets, aluminium, and concrete is a recurring theme across the case studies. These changes are driven by material decay, environmental challenges, and economic considerations. However, efforts to retain key heritage elements, where possible, reflect the ongoing commitment to preserving the cultural identity of these traditional houses.

6.6.3 Function and Use

The comparative analysis of function and use across the 11 KTMH reveals a dynamic evolution of spatial utilisation driven by changing lifestyles, family expansion, and modern necessities. While the original functions of spaces were rooted in traditional Malay customs, many houses adapted over time to accommodate contemporary needs, reflecting a balance between preserving cultural heritage and embracing modern conveniences.

KH11 demonstrated a shift in function where the *Rumah Ibu* originally served as a multi-functional communal space but was later partitioned to create additional bedrooms. Similarly, the *Serambi*, once an open space for receiving guests, was enclosed and repurposed as an extended living area. **KH06** followed a similar trajectory, with the *Jemuran*, previously used as an open space for female guests, transformed into a covered bathroom, reflecting a move toward privacy and modern hygiene needs.

In **KH09**, the function of the *Kolong* (space beneath the house) evolved from an open, ventilated area for storage and livestock to an enclosed space for bedrooms and a secondary kitchen. This adaptation maximised spatial efficiency while meeting the family's growing needs. **KH03**, however, retained much of its traditional use, with

minimal changes to the *Rumah Ibu* and *Serambi*, preserving its communal and guest reception functions. This contrast illustrates variations in functional adaptation based on family priorities and financial capacity.

KH04 highlights a different narrative, with significant changes to its spatial use. The *Jemuran*, traditionally an open area for drying clothes, was converted into a kitchen and bathroom, while the *Serambi* was enclosed to create additional living spaces. In **KH05**, the *Rumah Dapur* was expanded to meet the demands of a larger family, while the *Serambi* retained its original function, reflecting a partial preservation of traditional use. The case of **KH07** shows similar modifications, with open spaces like the *Jemuran* and *Serambi* enclosed to enhance privacy and functionality, particularly for modern living needs.

KH10 retained much of its original functional zoning, with the *Rumah Ibu* continuing to serve as the central family space. However, minor adaptations were made, such as the addition of bathrooms to meet contemporary hygiene standards. In **KH01**, the *Rumah Dapur* and *Jemuran* were expanded and enclosed to provide additional cooking and storage areas, reflecting changes driven by family expansion and modern convenience. Similarly, **KH08** showcased a significant transformation in functional use, with traditional spaces like the *Serambi* and *Jemuran* enclosed and integrated into the main living area to accommodate larger families.

Finally, **KH02** (Wan Sulong's house) highlights the impact of ownership changes on functional use. Under Malay ownership, the house retained its traditional spatial functions, but after being sold to a non-Malay owner, modifications were limited to maintaining basic usability without significant cultural adherence. Despite these changes, certain spaces like the *Rumah Ibu* remained functional and aligned with their original purposes.

In conclusion, the evolution of function and use in the KTMH underscores the tension between preserving traditional spatial arrangements and adapting to modern lifestyles. While some houses like **KH03** and **KH05** retained much of their traditional functions, others like **KH11** and **KH07** underwent significant transformations. These adaptations reflect the changing needs of families, environmental challenges, and socio-economic factors, illustrating the resilience and adaptability of traditional Malay architecture in the face of modernisation.

6.6.4 Traditions and Techniques

The comparative analysis of traditions, techniques, and management systems in the 11 KTMH provides an insightful understanding of the construction methods, craftsmanship, and cultural practices embedded within these heritage structures. Each case study highlights distinct elements of traditional knowledge systems and the evolution of management practices over time.

KH11 demonstrates the use of traditional timber joinery techniques, which eliminated the need for nails, showcasing the craftsmanship of the original builders. However, over time, modern techniques were introduced, such as using concrete to replace deteriorated timber components. Despite these changes, efforts were made to maintain traditional practices during renovations.

In **KH06**, the traditions of maintaining the *Rumah Ibu* and *Serambi* as central gathering spaces have been preserved. However, the reliance on traditional techniques diminished with the addition of modern materials like concrete and corrugated metal. Traditional knowledge systems remain limited to older generations, indicating a gap in the transfer of skills to younger family members.

KH09 is for preserving traditional construction techniques in the *Kolong*, where timber columns were designed to withstand environmental conditions. The house also retained original craftsmanship in its wall panels, although later changes included using modern materials for repairs, reflecting a shift from traditional to contemporary management practices.

In **KH03**, the use of high-quality timber and intricate carvings reflected the mastery of traditional Malay craftsmanship. However, as the house expanded, traditional methods were gradually replaced with more straightforward, cost-effective techniques like concrete staircases and metal roofing. These changes illustrate the tension between traditional authenticity and economic constraints.

KH04 showcased the mastery of intricate wood carving, particularly in the *Pemeleh* and gabled roof designs. Despite this, significant changes were made later, with modern materials replacing traditional elements. The absence of younger generations' involvement in traditional craftsmanship highlights the decline in knowledge transmission.

KH05 retained traditional management systems in maintaining the *Rumah Ibu* and *Rumah Dapur*, emphasising the preservation of spatial hierarchy and craftsmanship. However, the introduction of modern systems for water supply and electricity altered some traditional construction methods, reflecting a blend of old and new practices.

KH07 highlighted the adaptation of traditional construction methods in response to environmental challenges. Using elevated structures and timber columns to combat flooding demonstrated the ingenuity of traditional systems. However, later modifications with concrete undermined the traditional techniques, showing a shift in priorities.

KH10 preserved its traditional techniques, particularly in timber joinery and wall panelling. The house's management system involved periodic maintenance using local materials, ensuring the longevity of traditional craftsmanship. However, modern interventions in areas like roofing introduced non-traditional elements.

KH01 experienced significant changes in its management system, where timber and later metal replaced traditional materials like bamboo. These changes were driven by practical concerns, such as durability and availability, highlighting the challenges in sustaining traditional practices.

KH08 reflected the importance of traditional construction techniques in its initial design. However, as management systems evolved, the house adopted modern materials for repairs, such as corrugated metal sheets, demonstrating the gradual decline of traditional craftsmanship.

Finally, **KH02** exhibited a strong connection to Pattani influences in its traditional techniques, particularly in the use of *Singgora* tiles and intricate carvings. However, changes in ownership led to the gradual replacement of traditional management practices with more modern approaches, compromising the original techniques.

In summary, the findings from the case studies highlight the intricate balance between preserving traditional techniques and adapting to modern needs. While some houses, like **KH10** and **KH09**, retained significant elements of traditional craftsmanship, others, such as **KH04** and **KH02**, experienced extensive modifications that altered their original construction techniques. This comparative analysis underscores the importance of sustainable management systems that prioritise preserving traditional knowledge while addressing contemporary challenges in conservation.

6.6.5 Location and Setting

The comparative analysis of location and setting across the 11 KTMH highlights the strong relationship between the placement of these houses and their surrounding environments. Each case study shows how the house's original location influenced its function, cultural significance, and eventual modifications.

KH11 was positioned initially with a strong connection to its rural surroundings, using its stilted design to combat flooding. Over time, urbanisation and environmental changes led to the enclosure of the *Kolong* for functional purposes, such as storage and additional rooms. This adaptation, while practical, diluted the house's traditional connection to the environment.

KH06 faced significant changes in its setting due to the government acquisition of the land for road expansion in 1981, reducing the house's spatial buffer and altering its traditional orientation. Originally facing the street, the house retained its sense of community connection but was modified to fit urban development demands, such as the addition of a car porch.

Similarly, **KH09** remained in its original location but experienced environmental challenges, including seasonal floods. The house's elevated design initially helped withstand these conditions, but the lower structure's eventual decay required modern materials for reinforcement. The house's placement retained its cultural significance, yet changes to its immediate environment influenced how the space was used.

In **KH03**, the house's proximity to the community allowed it to remain a central gathering space. Its original setting was largely preserved, though some modern interventions, such as boundary walls, were added for privacy. This case study demonstrates minimal disruption to the house's cultural and functional relationship with its setting.

KH04 reflects a different trajectory, as its traditional rural surroundings were completely transformed by urban encroachment. The house's original connection to agricultural land was lost, and the structure was significantly altered, with many traditional elements replaced by modern materials. These changes eroded its link to the original cultural and environmental context.

KH05 retained its rural location, preserving its cultural authenticity. The house's placement within its original agricultural setting continued to reflect the traditional

Malay lifestyle, with minimal modern interventions beyond the introduction of basic amenities. This case highlights the importance of maintaining traditional houses' cultural and environmental harmony.

KH07 was strongly connected to its riverside location, essential for transportation and community interaction. However, the devastating flood of 1967 necessitated structural changes, including replacing timber with concrete elements. These changes reflect how environmental factors can dictate adaptations while altering the house's relationship with its setting.

KH10 maintained its traditional rural setting, allowing it to preserve its cultural significance. While minor modifications were made to the house, its location remained unchanged, reflecting the traditional Malay emphasis on harmonious integration with the environment.

In contrast, **KH01** experienced significant environmental changes, leading to shifts in its function and design. Urban development encroached upon the house's surroundings, disrupting its original context. These external factors forced the owners to modernise the house to align with the changing environment, impacting its heritage value.

KH08 highlights the challenges of balancing heritage preservation with urban pressures. Its original placement emphasized accessibility and integration within the community, but subsequent changes, such as enclosing open spaces and adding modern materials, reduced its connection to the traditional setting.

Finally, **KH02** (Wan Sulong's house) illustrates the loss of heritage value due to a complete change in ownership and use. Once a significant cultural and social landmark, the house's sale and subsequent rental use disrupted its traditional connection to the setting. Despite retaining some original features, the house no longer serves its original cultural and functional role within the community.

In summary, the location and setting of the KTMH significantly influenced their form, function, and authenticity. The comparative analysis reveals a spectrum of preservation and transformation shaped by environmental factors, urban development, and changes in ownership. While some houses, such as **KH05** and **KH10**, retained their cultural and environmental harmony, others, like **KH04** and **KH02**, faced significant alterations that diminished their heritage value. These findings underscore

the critical importance of preserving the physical structure and the cultural and environmental context of traditional Malay houses.

6.7 Key Components of Authenticity: Analyse changes based on these components to assess the overall impact on heritage value.

Analysing changes in the five key components of authenticity—form and design, materials and substance, use and function, traditions and techniques, and location and setting—reveals critical insights into the heritage value of Kelantan Traditional Malay Houses. Each component highlights the tension between preserving historical integrity and adapting to modern needs, shaping the overall impact on cultural and architectural significance.

Form and Design: Changes in form and design often reflect functional adaptations to modern lifestyles while attempting to retain traditional aesthetics. Many case studies revealed that essential elements, such as gabled roofs, stilted bases, and the open layout of *rumah ibu*, remained largely intact. However, interventions like enclosing the Serambi or Jemuran with full-height walls, often with modern materials, disrupted the architectural harmony of the original design. The introduction of features such as car porches or additional spaces demonstrated attempts to modernise without necessarily adhering to traditional design principles, thus diluting the houses' authentic forms.

Materials and Substance: The use of materials showcases the interplay between preservation and practicality. Traditional materials like *Chengal* timber, bamboo, and *Singgora* tiles were often replaced with corrugated metal sheets, concrete, and modern glass due to cost, availability, or durability concerns. While such substitutions addressed maintenance challenges and prolonged usability, they undermined the authenticity of the original structures. For example, houses that replaced *Kelarai* bamboo walls with timber or corrugated metal experienced significant shifts in material integrity, compromising their heritage character.

Use and Function: The houses' evolving functionality demonstrates their adaptability but also challenges their cultural significance. Spaces originally designed for communal purposes, such as the *Jemuran* or *Serambi*, were often repurposed for private use, such as bathrooms, kitchens, or bedrooms. These functional shifts reflected changing family structures, increased privacy demands, and modern lifestyles, particularly in urbanised areas. While these changes ensured continued occupation, they frequently resulted in losing the houses' traditional social and cultural roles.

Traditions and Techniques: Traditional construction techniques, such as timber joinery and raised stilted bases, were critical markers of authenticity. However, many houses displayed a decline in these practices, with modern interventions replacing traditional craftsmanship. The introduction of concrete columns, cement flooring, and pre-fabricated materials reduced reliance on traditional techniques, leading to a disconnect between the structures and the artisanal knowledge they once embodied. This erosion of craftsmanship also diminished the houses' status as living examples of Malay construction heritage.

Location and Setting: The contextual relationship between the houses and their environments significantly impacts authenticity. Many houses were originally sited in rural settings, integrated with agricultural landscapes and natural surroundings. However, urbanisation, road expansions, and changing land use disrupted this relationship. For instance, some houses lost their rural context, reducing their connection to traditional village life. Despite these shifts, efforts to preserve some semblance of the original orientation and surrounding features were observed in certain cases.

In conclusion, while the Kelantan Traditional Malay Houses exhibit resilience in adapting to contemporary needs, changes across these five components often gradually erode authenticity. The loss of traditional materials, techniques, and functional roles, combined with the impact of urbanisation, diminishes the heritage value of these structures. Nonetheless, understanding these dynamics provides a foundation for developing conservation strategies that balance authenticity with the realities of modern living, ensuring the sustainable preservation of traditional Malay architectural heritage.

House Code	Form and Design	Materials	Function and Use	Traditions, Techniques, and Management Systems	Location and Setting
KH11	Maintained stilted base; minor roof changes	Timber staircase replaced with concrete	Converted <i>Kolong</i> into bedrooms and bathrooms	Traditional techniques preserved in major areas	Urban development encroached on original setting
KH06	Added covered car porch; roof changes	Timber wall partially replaced with corrugated metal	Intermediate spaces repurposed for modern needs	Integrated modern repairs while retaining heritage	Road expansion changed immediate surroundings
KH09	Enclosed <i>Kolong;</i> updated roof materials	Kolong enclosed with brick walls; modern windows	Added spaces for family growth; retained heritage features	Preserved key timber techniques despite changes	Urbanisation altered context but retained rural essence
KH03	Preserved traditional features; minimal alterations	Mostly preserved traditional timber and <i>Singgora</i> tiles	Adapted spaces for better usability with minimal changes	Minimal traditional technique alterations	Preserved rural setting; minimal external changes
KH04	Modified roof structure; added walls to open spaces	Replaced <i>Singgora</i> tiles with corrugated metal sheets	Significant functional shifts; open spaces enclosed	Lost some traditional elements in roof changes	Urban encroachment significantly altered context
KH05	Retained original layout; minor modifications	Preserved <i>Singgora</i> tiles; minor replacements	Maintained traditional use; modern additions for convenience	Traditional methods largely retained	Maintained traditional village surroundings
KH07	Flood damage repairs; reinforced foundation	Replaced decayed materials post-flood	Modified spaces for flood adaptation and new uses	Traditional craftsmanship used in flood repairs	Flood-prone area influenced setting adaptation
KH10	Preserved <i>Pemeleh;</i> updated wall materials	Timber panels added; some original materials replaced	Integrated traditional use with minor modern updates	Original techniques preserved in most parts	Rural context largely preserved
KH01	Replaced bamboo woven walls with timber panels	Corrugated metal sheets used for repairs	Functional updates to accommodate family needs	Some loss of traditional techniques in repairs	Surroundings partially urbanised over time
KH08	Added concrete flooring; minor structural changes	Converted to asbestos roof; brick for structural support	Reconfigured layout for modern living	Adopted hybrid techniques for modern repairs	Urban development significantly impacted location
KH02	Added corrugated roof; enclosed <i>Serambi</i>	Corrugated metal roof and walls added in parts	Significant functional changes; sold and rented out	Majority of traditional techniques retained by renters	Ownership change led to altered external settings

Table 6.13: Comparative Analysis of the Key Components of Authenticity across 11 Case Studies of Kelantan Traditional Malay Houses

6.8 Chapter Summary

This chapter has highlighted the significant changes observed in Kelantan Traditional Malay Houses (KTMHs) based on the comparative analysis of 11 case studies. The findings reveal recurring patterns and diverse approaches to modifications in form, design, materials, function, techniques, and location settings. While many KTMHs retain their fundamental architectural features—such as gabled roofs, stilted bases, and multifunctional spaces—these elements have often been altered to accommodate modern needs and respond to environmental challenges. Changes such as the enclosure of open spaces, the use of modern materials like corrugated metal sheets, and the reconfiguration of spatial layouts demonstrate a dynamic balance between preserving cultural heritage and meeting contemporary functional requirements.

The KTMHs remain a profound representation of Malay cultural heritage, serving as tangible markers of traditional values, craftsmanship, and socio-cultural practices. However, their evolving role in the modern context underscores the interplay between continuity and change. As these houses adapt to contemporary needs, they simultaneously risk losing some elements of authenticity, particularly in their materials, construction techniques, and spatial arrangements. Despite these challenges, KTMHs continue symbolising a living heritage, fostering a deep sense of identity and belonging among their owners and communities. This resilience is a testament to their enduring cultural and architectural significance amidst shifting societal and environmental landscapes.

Nonetheless, the preservation of KTMHs is fraught with challenges. The effort to balance the retention of authentic architectural elements with the demands of modernisation often results in compromises that dilute their heritage value. Limited awareness of conservation guidelines, economic constraints, and the introduction of modern materials contribute to the erosion of traditional features. Moreover, rapid urbanisation and family structure shifts further complicate the sustainability of these traditional houses. It is crucial to adopt holistic conservation strategies that respect the authenticity of KTMHs while embracing their potential to adapt and thrive in the modern era.

Chapter 7

Key issues in the conservation of Kelantan Traditional Malay Houses (KTMH) through the insights of house owners and experts

7.1 Introduction

This chapter presents the findings related to Research Objective 1 (RO1), which aims to identify the changing pattern **of** in Kelantan traditional Malay houses (KTMH) with the key issues and considerations in the conservation of Kelantan Traditional Malay Houses (KTMHs) from the perspectives of both house owners and experts. The chapter is structured into two main sections. The first section focuses on the interviews with house owners, providing an overview of their background and categorisation, followed by a thematic analysis of their responses. The second section examines the interviews with experts, also employing a thematic analysis to highlight the professional insights gathered. The chapter concludes with a summary that synthesises the key findings from both groups, offering a detailed understanding of the challenges and perspectives surrounding the conservation of KTMHs.

7.2 House Owners and Their Categorisation

The identification of house owners and occupants associated with the KH01 to KH11 properties was crucial to this research, particularly in understanding the lived experiences, conservation challenges, and cultural significance of Kelantan Traditional Malay Houses (KTMH). The responses to these inquiries extended beyond mere architectural considerations, shedding light on broader cultural and socio-economic challenges associated with the conservation of KTMH, including the increasing risk of abandonment.

House owners were selected as key respondents for each house to enable a detailed historical and cultural tracing of each property. Their perspectives offered a unique interaction with the heritage character of their homes, aligning with the local cultural landscape of Kelantan. While measured drawing documentation provided essential architectural data, the primary selection criterion for participants was their current occupancy and engagement with the house. However, fieldwork revealed that long-term occupation of KTMH is increasingly rare, with several houses either abandoned, demolished, or structurally compromised. Tracing ownership and potential interviewees was, therefore, a complex process.

The research methodology involved multiple steps to locate house owners. Initially, names from the measured drawing documentation were used to identify potential contacts. Following this, site visits were conducted using location data derived from the measured drawings, further aided by Google Maps. Upon arrival, researchers sought assistance from local neighbours to identify and establish contact with relevant individuals. Digital tools such as Facebook and mobile phone directories were sometimes used to trace family members or caretakers associated with the houses. Through this cumulative process, 15 house owners and caretakers were successfully identified and interviewed.

The study categorised house owners into four distinct groups based on the occupancy status and management of their properties:

- i. **Category A: Resident House Owners** Owners who continue to reside in their traditional houses, maintaining direct engagement with the property.
- ii. **Category B: Non-Resident Owners with Non-Resident Caretakers** Houses owned by individuals who do not live there but are managed by caretakers.
- iii. **Category C: Abandoned Houses** Properties left uninhabited, often leading to deterioration and structural degradation.
- iv. **Category D: Demolished Houses** Traditional houses that have been permanently lost due to demolition or collapse.

This categorisation provides a framework for understanding the different levels of engagement and challenges faced by house owners, offering critical insights into the broader discourse on the conservation and sustainability of Kelantan's vernacular architecture.

The primary objective of this research was to engage with the house owners of traditional Kelantan Malay houses (KTMHs), particularly those who still reside in them, as their first-hand experiences offer invaluable insights into the conservation and preservation of these heritage properties. However, it became apparent through the fieldwork that such house owners are becoming increasingly rare. The trend of urban migration, driven by the search for better employment opportunities, has caused many families to leave rural villages and abandon their traditional homes in favour of modern houses that better suit contemporary needs. The inherent challenges in maintaining KTMHs, due to their age and unique requirements, coupled with the evolving needs of modern families, have led to a diminished attachment to these heritage houses (Silverman, 1993).

Despite these challenges, it was essential to interview house owners who remain in residence. They provided valuable perspectives on the state of preservation, the difficulties of maintaining these buildings, and the cultural significance they attach to the houses. Interviews were conducted with the owners of 11 selected KTMHs, categorised according to their ownership status and occupancy. These houses were classified as follows: **Category A: Resident House Owners** (KH06 with owners from the third and fourth generations), **Category B: Non-Resident Owners with Non-Resident Caretakers** (KH03, where a former caretaker manages the house but not occupied by the owner), **Category C: Abandoned Houses** (KH02, with two interviewees from the third generation), and **Category D: Demolished Houses** (KH04 and KH05, with interviewees from the third and fifth generations). Each interviewee's response was integral to understanding the house's historical, social, and architectural significance.

In particular, house owners and caretakers from Categories A, B, and C were identified as key participants. Interviews with these individuals were crucial in understanding how these houses were maintained, the challenges they faced in preserving the architectural integrity of the homes, and the cultural meanings attached to them. Category C and D houses, although no longer extant or abandoned, were also to the study, as former owners and those familiar with the properties provided important information regarding the historical context and changes made over time. Despite their current absence, these individuals helped the researcher trace the legacy and evolution of KTMH forms and functions.

Conducting these interviews was not without its challenges, as some house owners were hesitant to allow external researchers into their homes due to security concerns or embarrassment over the state of the property. To overcome these barriers, the researcher employed a trust-building strategy. A key facilitator in this process was the researcher's mother, who accompanied the researcher on on-site visits. Her presence, being approximately the same age as many house owners, helped establish rapport and gain their confidence. This approach effectively secured interviews, especially on weekends when the owners were more likely to be home. In total, this research successfully interviewed 15 individuals, including both current occupants and former owners, whose perspectives helped to illuminate the complex process of maintaining and conserving these culturally significant houses.

Through this approach, the research was able to gather a wide range of data, combining direct interviews with on-site visual observations and analysis of measured drawings from the Centre for the Study of the Built Environment in the Malay World (KALAM). These documents, which include architectural plans and elevations, assisted in prompting interviewees to recall important milestones in the history of their houses and facilitated the exploration of architectural changes over time. For Category C and D houses, interviews were conducted at locations convenient for the participants, often involving visits to their current residences or

relatives' homes. These interviews, combined with historical documents and drawings, provided a detailed understanding of Kelantan's traditional Malay houses' evolving architectural forms, materials, and functions.

This approach underscores the importance of engaging with traditional building owners and caretakers. Their lived experiences and historical knowledge provide a unique and valuable perspective on the challenges of preserving and maintaining architectural heritage in the face of socio-economic and cultural changes.

Category		House Name	House Code	Interviewee	Interviewee Code
	Resident	Wan Muhammad	KH06	3 rd generation	KH06-A
Α	House	Wan Muhammad	KH06	New Owner	KH06-B
	Owners	Che Muhammad	KH07	4 th generation	KH07-A
	Non-	Mahmud Dobah	KH03	3 rd generation	KH03-A
в	Resident Owners with	Mahmud Dobah	KH03	Former House Caretaker	KH03-B
	Non- Resident Caretakers	Mahmud Dobah	КН03	3 rd generation	KH03-C
C	Abandoned	Wan Sulong	KH02	3 rd generation	KH02-A
C		Wan Sulong	KH02	3 rd generation	KH02-B
		Haji Mohamad Dobah	KH04	4 th generation	KH04-A
		Hussein	KH05	3 rd generation	KH06-A KH06-B KH07-A KH03-A KH03-B KH03-C KH02-A KH02-B KH05-A KH04-A KH05-A KH05-A KH05-A KH01-A KH01-A KH01-A KH03-A
Б	Demolished	Wan Aisyah	KH10	4 th generation	KH10-A
U		Nik Fatimah	KH01	5 th generation	KH01-A
		Wan Ahmad	KH11	3 rd generation	KH11-A
		Hassan	KH09	4 th generation	KH09-A
		Haji Abdullah	KH08	3 rd generation	KH08-A

Table 7.1: Classification of House Owners and Interviewees

The houses were grouped into four categories: Resident House Owners, Non-Resident Owners with Non-Resident Caretakers, Abandoned Houses, and Demolished Houses. As detailed below, each category reflects different occupancy levels, care, and historical significance.

Category A: Resident House Owners

The Resident House Owners category includes houses currently inhabited by their owners or descendants, allowing direct access to the lived experiences and insights of the current inhabitants. These individuals can provide valuable information about their houses' preservation challenges and cultural significance.

i. Wan Muhammad (House Code: KH06)—The house of Wan Muhammad is classified under this category. It has been in the family for generations. The current owners of this house include both the third generation (KH06-A) and the new owner (KH06-B). The third-generation owner shares knowledge about the continuity of traditional practices and the challenges faced in maintaining the house. In contrast, the new owner brings a fresh perspective on conservation practices and potential renovations.

ii. Che Muhammad (House Code: KH07)—Che Muhammad's house is also in this category. The fourth-generation (KH07-A) owner continues to reside in the house, offering firsthand insight into the family's long-standing connection to the property and the evolving needs for its maintenance and preservation.

Category B: Non-Resident Owners with Non-Resident Caretakers

In this category, the owners of the houses do not live in the houses themselves but have appointed caretakers to maintain the properties. These houses, though owned by local families, are not actively occupied.

i. Mahmud Dobah (House Code: KH03) – The house of Mahmud Dobah has been passed down through generations, with the 3rd generation (KH03-A) owner still holding legal ownership but not residing in the property. The former house caretaker (KH03-B) and 3rd generation (KH03-C) owner contributed their perspectives on how the house has been maintained over the years, particularly focusing on the role of caretakers and how the property has been preserved without active occupancy.

Category C: Abandoned Houses

Abandoned houses were once occupied but have since been left vacant and neglected. These houses are typically in a state of disrepair and require urgent attention to prevent further deterioration.

i. Wan Sulong (House Code: KH02)—The house of Wan Sulong falls under this category. Both the 3rd generation (KH02-A) and 3rd generation (KH02-B) interviewees shared their memories of the house, offering valuable historical context and insight into why the house was abandoned and the challenges of preserving such a property in its current state.

Category D: Demolished Houses

Houses in this category have been demolished and no longer exist in their original form. These properties may have been lost due to urbanization or neglect. Interviews with former owners and those with knowledge of these homes provide information on their original state and the impact of their loss.

- Haji Mohamad Dobah (House Code: KH04) The house of Haji Mohamad Dobah, a 4th generation (KH04-A) owner, was demolished, and the loss of this property is noted as part of the more significant issue of urban development encroaching on traditional Malay houses.
- Hussein (House Code: KH05)—Similarly, Hussein's house was demolished. The 3rd generation (KH05-A) interviewee reflected on the house's historical significance and the broader trend of disappearing traditional houses in the region.
- iii. Wan Aisyah (House Code: KH10)—The house of Wan Aisyah, demolished in recent in early 2000s, was a 4th-generation (KH10-A) residence. The interviewee provided context on the house's history and the challenges involved in its demolition.
- Nik Fatimah (House Code: KH01)—Nik Fatimah's house, a 5th-generation (KH01-A) home, also no longer exists. The interviewee discussed the house's legacy and the family's connection to traditional Malay house architecture.
- v. Wan Ahmad (House Code: KH11)—The house of Wan Ahmad, demolished years ago, had strong family ties, with the third-generation (KH11-A) owner providing insight into the structure and the family's deep-rooted connection to the property.
- vi. Hassan (House Code: KH09)—The house of Hassan, demolished along with other significant structures, had its 4th generation (KH09-A) owner sharing reflections on its loss and the cultural implications of such demolitions.
- vii. Haji Abdullah (House Code: KH08) Similarly, the house of Haji Abdullah was demolished. The 3rd generation (KH08-A) interviewee elaborated on the house's role in the family's history and the societal impact of its destruction.

7.3 Interview Data with House Owner

This section presents part of the findings from Research Objective 1 (RO1), which aimed to explore the issues, factors, and considerations surrounding the evolution of Kelantan Traditional Malay Houses (KTMHs) from the perspective of house owners. The second part of the findings was gathered later from expert interviews. The data collected from these interviews were manually analysed using a generic thematic analysis approach, where raw data were examined and categorized into themes based on the transcribed interview content (Saldaña, 2013).

The analysis began with the identification of preliminary codes (first cycle), which were extracted from the interview transcripts. These preliminary codes were then grouped and refined into final (second cycle) codes. This iterative process allowed for identifying key themes that encapsulated the essence of the respondents' perspectives. The themes were continuously refined and represented to provide a coherent narrative reflecting the respondents' views on the evolution and conservation of traditional Malay houses in Kelantan.

The analysis focused on the key components of authenticity, which served as a framework for understanding the responses from the house owner interviews. The findings presented below discuss these components in relation to the house owners' perceptions, highlighting the essential factors that influence the conservation and preservation of KTMHs.

7.3.1 Form and design

Traditional Malay houses' original design and layout play a vital role in preserving their cultural integrity. **[KH06-A]** and **[KH06-B]** emphasised the significance of elements such as the gabled roof, stilted base, and open verandas in maintaining the house's relationship with the tropical climate. These features provide natural ventilation, crucial in hot and humid regions. At the same time, the open layout fosters a strong connection between the house and its surrounding environment, enhancing comfort, social interaction, and community. The importance of these architectural elements as a functional adaptation to the environment was a consistent theme in the interviews, highlighting their essential role in maintaining the house's cultural significance.

Many interviewees stressed the importance of preserving the traditional form of the Malay house as a reflection of cultural and historical identity. **[KH04-A]** firmly believed that the original design should be preserved entirely, stating that the roof shape and stilted foundation are integral representations of Malay traditions and customs. **[KH04-A]** noted, "Any alteration to these key features would undermine the house's value as a cultural artifact, diminishing its historical authenticity." This viewpoint was echoed by **[KH09-A]**, who expressed concern that even minor modern interventions, such as changing the roof design, could compromise the house's traditional significance. For many respondents, preserving the traditional form of the house is inseparable from protecting the cultural heritage it represents.

However, some interviewees acknowledged the inevitability of specific changes to the form of traditional houses to meet modern needs, especially regarding functionality. **[KH05-A]** noted, *"While I agree that the original design should be respected, some*

adjustments are necessary to accommodate modern living, such as adding space for a car porch or enclosed Jemuran." This perspective reflects a more flexible stance, suggesting that some modifications may be essential to meet contemporary lifestyle requirements without losing sight of the house's core identity. For example, **[KH05-A]** emphasised that additional sections or internal alterations, such as creating a more enclosed layout for added privacy or adding a bathroom, could enhance the house's usability while preserving its symbolic elements, like the roof and stilted foundation.

[KH03-C] shared similar sentiments, arguing that traditional houses were designed for a different way of life and adapting them for future generations requires some modifications. "The stilted base and open layout are important, but new internal partitions or extensions could be designed to suit the current generation's needs," **[KH03-C]** explained. This stance suggests a middle ground between complete preservation and adaptive reuse, where key features of the original design are maintained while minimal changes are made to ensure the house remains functional. This approach is particularly relevant for houses facing the demands of modern living while respecting their cultural and historical roots.

Many houses have already undergone changes, often driven by necessity rather than intent. **[KH02-A]** and **[KH02-B]** noted that their houses had undergone alterations, such as adding new rooms or installing modern amenities like electricity and plumbing. These changes were seen as essential for ensuring the houses' functionality but were carried out carefully to preserve the original design. **[KH02-A]** remarked, *"We did not want to change the traditional roof form or the elevated platform, but some adjustments were necessary to make the house livable with modern conveniences."* This careful approach reflects a common theme among interviewees who, while embracing the necessity of change, underscored the importance of maintaining the integrity of the core architectural features.

In conclusion, while most interviewees agreed on the importance of preserving the traditional form and layout of Malay houses, there was also recognition of the need to adapt to modern life. **[KH04-A]** and **[KH09-A]** emphasised the balance between cultural preservation and the practical needs of contemporary inhabitants, suggesting that changes to the interior or the addition of spaces such as a car porch or bathroom might be necessary. **[KH05-A]** noted, "As long as the original design elements like the roof and platform remain intact, modern modifications can enhance the house's functionality without compromising its identity." This dialogue highlights the ongoing challenge of maintaining authenticity while addressing the evolving needs of modern

life. The perspectives of former owners and those familiar with abandoned or demolished houses in Categories C and D, based on houses no longer extant, were instrumental in tracing the legacy and changes in the traditional house forms. Despite the absence of these physical structures, their input provides valuable insight into the evolution and cultural importance of the traditional Malay house form.

7.3.2 Materials and Substance

The use of traditional materials in heritage building conservation plays a vital role in maintaining the authenticity of a structure. For example, **[KH06-A]** and **[KH06-B]**, both of whom are familiar with the historical significance of Wan Muhammad's house, noted that retaining the original materials was essential for preserving its traditional character. Both sections of the house—one still owned by Wan Muhammad's descendants and the other sold in the 1980s—have maintained the original materials, underscoring a conscious effort to preserve its cultural integrity. However, as **[KH06-B]** mentioned, adding modern materials, such as the corrugated metal sheet used for the car porch, complicates the notion of material authenticity. This case illustrates the tension between preserving the original materials and introducing modern elements to cater to contemporary living.

Several interviewees highlighted the importance of traditional materials in maintaining the authenticity of Malay houses. **[KH03-A]** emphasised that materials like timber, bamboo, and *atap* roofs are not only integral to the aesthetic appeal of the house but also vital to its functionality, particularly in maintaining the cool, well-ventilated environment necessary for the tropical climate. **[KH03-A]** stated, *"The timber keeps the house breathable, while the atap roof helps with cooling, making these materials key to the house's comfort and authenticity." These materials embody cultural values deeply tied to the region's heritage, reinforcing the belief that their preservation is essential to conserving both the physical structure and its cultural significance.*

While the use of traditional materials is emphasised by many, the necessity of modern substitutes is sometimes acknowledged due to practical constraints. **[KH04-C]** shared that some areas of the house had been repaired using modern materials, such as cement and metal, primarily due to availability and affordability. He explained, *"It is not always easy to find traditional materials, especially when they are so costly, so we used what is available."* These modern interventions were carefully considered to ensure minimal disruption to the house's original aesthetic, balancing the need to preserve traditional materials with the reality of limited resources.

In contrast, **[KH09-A]** argued that modern materials should be avoided wherever possible, as they can detract from the house's authenticity. *"Traditional materials may be harder to come by, but they carry the essence of the past and ensure the continuity of heritage,"* **[KH09-A]** asserted. This viewpoint was shared by **[KH05-A]**, who firmly believed that replacing original materials with modern alternatives would erase the house's historical value. She stated, *"If we use modern materials, we lose the essence of what makes the house a heritage building."* This stance underscores the importance of authenticity, even when modern materials might be more accessible or cost-effective.

[KH04-A] presented a more flexible perspective, acknowledging that while traditional materials are crucial, some modern materials might be necessary to ensure the house is functional for contemporary use. For example, **[KH04-A]** accepted using a corrugated metal sheet roof in the car porch, suggesting that *"modern materials should be integrated thoughtfully so they do not overpower the original structure."* This viewpoint aligns with the conservation philosophy of minimal intervention, advocating for adaptations when required, provided they do not compromise the house's heritage value.

In conclusion, the interviewees expressed diverse views on using traditional materials in conservation, reflecting the complex balance between authenticity and modernity. While many stressed the importance of retaining traditional materials to preserve the house's cultural and historical significance, others recognised the practical necessity of using modern materials to meet contemporary needs. **[KH05-A]** summed up this tension, stating, *"We must respect the original materials, but sometimes it is about making the house liveable while still holding on to its authenticity."* The case of Wan Muhammad's house illustrates this balance—where the original materials are largely retained, but modern elements like the car porch are introduced when necessary. Ultimately, the challenge lies in finding a middle ground between tradition and functionality, ensuring that the house remains a cultural artefact while accommodating modern life. This delicate balance is central to conserving traditional Malay houses, where cultural heritage and practical requirements must be carefully weighed.

7.3.3 Use and Function

The traditional layout of the Malay house plays a critical role in its functionality, particularly in supporting daily activities by promoting ventilation, cooling, and open space for social interactions. As seen in the case of **[KH06-A]** and **[KH06-B]**, the

house's elevated structure and open-plan layout are essential in promoting natural airflow, which is beneficial in Malaysia's hot and humid climate. The house's design facilitates family interactions, with common areas encouraging social gatherings, while private spaces ensure rest. This traditional arrangement allows multiple generations to live together comfortably, preserving the core value of familial cohesion. **[KH06-A]** emphasised, "*The openness of the space ensures that everyone can gather together, yet still have their private corners, which is key to our family's harmony.*"

In interviews with several respondents, including **[KH03-A]** and **[KH03-B]**, maintaining the original layout was emphasised, particularly the functional separation between areas such as the kitchen, living room, and sleeping spaces. These zones allow different activities to co-occur without interference. Unlike modern homes that tend to consolidate these functions into one open space, the traditional layout offers efficiency, privacy, and natural ventilation. **[KH03-A]** noted, "*The kitchen is always separated from the living area, keeping cooking smells away from where we rest. This is important to keep everything comfortable.*" Despite modern additions like plumbing and electricity, the core arrangement of these spaces remains highly functional, serving the same purposes as it originally did.

However, some interviewees acknowledged that modifications to the original layout were necessary to accommodate contemporary lifestyles. For instance, **[KH01-A]** explained how new rooms were added to provide more space for larger families, and internal partitions were adjusted to create additional privacy. These modifications reflect the increasing demand for more space and modern amenities while retaining traditional features like the raised platform and iconic roof design. **[KH01-A]** stated, "We added rooms to make space for our growing family, but we ensured the roof and the platform stayed the same." According to **[KH01-A]**, the original design's core principles have been maintained, ensuring that the house still embodies its original function and cultural significance.

Similarly, **[KH05-A]** discussed how the layout had been modified to make room for modern functions such as additional storage spaces and privacy. She noted, "*The traditional layout was great for large family gatherings, but now we need more bedroom and private spaces for everyone.*" She expressed some concern, however, about the potential impact of these changes on the house's traditional functionality if not carefully managed. The flexibility of the traditional Malay house layout allows for these modifications, yet it remains essential to balance the preservation of cultural significance with the need for modern living. This concern underscores the importance

of thoughtful intervention when making changes to the layout, ensuring that the house continues to serve its original functions while meeting contemporary needs.

Despite these modifications, most respondents, including **[KH04-A]** and **[KH04-C]**, believed the house's layout still fulfilled its original purpose. The key elements, such as large open spaces, separation of activities, and the elevated structure, continue to serve their intended function effectively. **[KH04-A]** suggested that while changes have been necessary, the traditional layout remains relevant to modern life. He stated, "*We made changes, but the house still works for us as it did for previous generations, maintaining that connection to the past while adapting to the present.*" This reflects a balance between preserving the house's authenticity and accommodating the practical needs of contemporary life.

In conclusion, while many interviewees noted modifications to the layout of traditional Malay houses, particularly in response to modern needs such as more private spaces or additional rooms, the core functional elements and the arrangement of space largely remain intact. The ability to adapt the layout to modern life, while respecting its traditional design, highlights the resilience of the traditional Malay house. As **[KH01-A]** stated, "*We've changed the inside, but the soul of the house remains the same.*" This balance between authenticity and functionality is crucial for the continued relevance and preservation of traditional Malay houses in the modern era.

7.3.4 Traditions and Techniques

Some interviewees quite recognise the importance of preserving traditional construction techniques in Malay houses. **[KH06-A]** and **[KH06-B]** emphasised that maintaining the craftsmanship and techniques used to construct traditional Malay houses is essential. **[KH06-A]** highlighted that traditional methods contribute significantly to the durability and flexibility of the structure, making it more resilient to environmental factors. **[KH06-A]** noted, "*The timber joints offer flexibility, which is crucial for adapting to environmental changes. It is something modern materials often lack.*" This opinion was similar to **[KH02-A]** and **[KH02-B]**, who expressed that these methods are not just integral to the cultural identity of the house but also enhance its functionality and long-term sustainability.

However, there is a growing concern regarding the younger generation's diminishing awareness and interest in these traditional techniques. **[KH03-A]** and **[KH03-B]** observed that while there is increasing interest in the history and heritage of these houses, modern construction methods are more appealing to younger people. **[KH03-A]** pointed out that the rise of urbanisation and the availability of modern materials have led to a decline in the appreciation of traditional construction methods. As a result, there is a risk that the knowledge surrounding these techniques may be lost over time. **[KH03-A]** mentioned, "*We see fewer younger people learning the old ways, and with the availability of modern materials, the traditional methods are slowly fading away.*"

Regarding repairs and renovations, **[KH04-A]** and **[KH04-C]** highlighted the challenges faced when implementing traditional techniques in modern contexts. Although both believed preserving traditional methods was vital, they acknowledged that sourcing the appropriate materials, such as certain timber or bamboo, had become increasingly difficult. **[KH04-C]** explained, "*It is hard to find the right kind of timber now. We have to rely on alternatives that are not as authentic but more accessible.*" Introducing modern materials, such as concrete or zinc, has often been seen as necessary to ensure the house's continued functionality. However, these interventions sometimes compromise the authenticity of the house's original design.

Despite these challenges, **[KH03-A]** and **[KH03-B]** stressed that traditional construction methods, such as timber for walls and roofs, are essential in managing the region's environmental conditions. The open space and ventilation facilitated by these techniques are far more effective than modern air conditioning. **[KH03-B]** stated, "*The house cools naturally thanks to the traditional design. We do not need air conditioning if the house is built right.*" This emphasis on sustainability and environmental responsiveness underscores the importance of preserving these techniques as part of the house's functional heritage.

There is a consensus that while modern construction methods are necessary for certain repairs or alterations, they should not entirely replace traditional methods if the house's authenticity is to be preserved. **[KH05-A]** and **[KH05-B]** argued that incorporating modern materials, such as zinc roofing or brick walls, in place of traditional timber or bamboo could change the house's character. **[KH05-A]** commented, "*Modern materials are practical, but when we replace timber with zinc, we lose part of the charm and character of the house.*" However, others, such as **[KH06-B]**, recognised that some modern interventions were necessary to improve the house's structural integrity and cater to modern needs, provided they were done thoughtfully.

In conclusion, the interviewees expressed a deep concern for preserving traditional construction techniques while also acknowledging the practical need for modern interventions. While many emphasised the cultural and functional importance of
traditional methods, they also recognised that changes to the house's structure, such as the introduction of zinc roofing or the addition of brick walls, may sometimes be necessary. However, **[KH06-A]** noted, "*It is crucial to respect the house's original identity while making changes that allow it to function for modern families.*" Thus, the challenge lies in balancing the preservation of authenticity with the practical needs of contemporary living, ensuring that the house remains a functional and culturally significant part of the community's heritage.

7.3.5 Location and Setting

The location and setting of traditional Malay houses are integral to their authenticity, as highlighted by many interviewees. **[KH06-A]** and **[KH06-B]** emphasised that the placement of the house within its natural environment is a key aspect of its cultural identity. Traditional Malay houses are often designed to harmonise with their surroundings, utilising natural materials and layouts that reflect the local climate and culture. **[KH06-A]** mentioned, "*The house was built to blend with nature, and its location is essential to maintain its authenticity. It reflects the way of life and traditions of the community.*" Such positioning ensures that the house remains relevant to the community, reinforcing its connection to the traditions it represents, particularly in rural areas where nature and community life are intertwined with the dwelling's authenticity.

However, the rapid spread of urbanisation has significantly altered the authenticity of many traditional houses. **[KH03-A]** observed that as cities expand, traditional houses, once isolated in rural settings, are now surrounded by modern developments, such as highways and commercial buildings. **[KH03-A]** pointed out, "*We are now living in a modern landscape, and the house, once surrounded by nature, is now choked by concrete.*" This shift from rural to urban environments compromises the house's connection to its original context, losing its cultural landscape and affecting its heritage value.

[KH04-A] shared similar concerns, noting that urbanisation has disrupted the historical context of traditional houses. Once surrounded by agricultural land and forests, modern infrastructure increasingly encroaches upon these houses. **[KH04-A]** mentioned, "*What was once a peaceful setting with rice fields and open space is now filled with buildings and roads. The house no longer fits into the landscape as it once did.*" This encroachment disrupts the spatial and cultural significance of the house, diminishing its authenticity. The visual and emotional connections to the surrounding environment are lost, eroding its historical value.

Regarding the house's heritage value, **[KH03-A]** argued that the location and setting are pivotal in preserving its cultural and historical significance. He stated, "When the house is surrounded by rice fields or close to family compounds, it represents the essence of our ancestors' lifestyle. Urban development destroys that connection and weakens the house's importance as a cultural symbol." The loss of this connection makes it difficult for younger generations to fully understand the house's historical relevance, as the physical environment that once contextualised the house is no longer intact.

Interestingly, some interviewees suggested adaptive approaches to preserving the house's authenticity despite changes in its surroundings. **[KH05-A]** mentioned that although urbanisation may change the surrounding area, the house's authenticity can still be maintained through careful intervention. **[KH05-A]** explained, "*While the neighbourhood may change, the house can still stand strong if we maintain the traditional structure and materials. We need to create buffer zones to protect it from further encroachment.*" This approach advocates for safeguarding the house's core elements while allowing for necessary adjustments to adapt to changing environments.

In conclusion, the location and setting of traditional Malay houses are essential to preserving their authenticity. Urban development, especially in areas close to the city, has significantly affected the heritage value of these houses, often leading to their demolition to make way for new developments. **[KH06-B]** commented, "*Many houses were demolished simply because they were no longer in a suitable environment to be preserved. The city is expanding, and there is no space for old traditions anymore.*" Despite these challenges, efforts to adapt and preserve the house's core features, such as traditional materials and design, can maintain its cultural and historical significance as long as the house's connection to its original context is carefully managed. The balance between preserving authenticity and accommodating modern development remains critical in maintaining the historical relevance of these traditional houses. **[KH06-A]**, **[KH04-A]**, **[KH05-A]**.

7.3.6 Language and other manifestations of intangible heritage

The intangible heritage associated with traditional Malay houses, particularly the language, customs, and other cultural expressions, plays a vital role in preserving the community's identity. **[KH06-B]** recalled that the house served as a space for intergenerational communication, where elders would pass on their experiences and the Malay language and its rich expressions, which had been spoken for generations.

[KH06-B] stated, "*The house was a place where the younger generation learned not just how to live, but how to speak our language, to understand our customs, and to appreciate the richness of our culture.*" These interactions within the home environment were an important aspect of the cultural transmission, helping the community to maintain its linguistic heritage and practices. As the house was a physical manifestation of cultural continuity, it hosted these practices, ensuring the language and traditions lived on.

However, urbanisation and modern lifestyles have significantly impacted the continuation of these practices. **[KH03-A]** explained that many younger family members, having moved to cities for work or study, no longer participate in family gatherings where the language is traditionally spoken. **[KH03-A]** remarked, "*I notice that when we gather now, it is rare to hear the younger generation speaking the old dialect or engaging in our traditions. The city life has led them to speak differently, often in a more globalised way.*" This shift in language use is not just a result of geographical movement but also of the influence of technology and media, which have made the Malay language less central to everyday life, particularly for younger generations.

The physical alterations to the house also reflect changes in how language and cultural practices are expressed. **[KH04-A]** noted that modifications such as installing air conditioning or converting spaces, such as enclosing the *jemuran* to serve as a kitchen, have altered the house's environment. These changes have subtly shifted the focus away from traditional activities, including those involving using Malay for cultural rituals and storytelling. **[KH04-A]** stated, "*The house used to be full of life with stories being told and language being passed down. With the new additions, that sense of tradition is slowly slipping away.*" The transformation of the house environment mirrors the broader shift in the community's engagement with traditional language and practices.

Despite these challenges, some interviewees highlighted the continued importance of maintaining language and other expressions of intangible heritage. **[KH05-A]** emphasised the need to protect and celebrate the use of the Malay language within the house, even if the space and how it is used have changed. **[KH05-A]** argued, "*Even though we may have modernised the house, we cannot forget our language. It is essential to keep speaking it, passing it on to the next generation, no matter how small the effort may be.*" This underscores the sentiment that while the environment and the way the house is used may evolve, cultural and linguistic heritage should be preserved as an essential part of the house's role in community life.

7.3.7 Spirit and feeling

Traditional Malay houses' emotional and symbolic significance extends beyond their physical structure, forming a deep connection between their inhabitants and their cultural identity. **[KH06-B]** expressed a profound nostalgia when recalling his family home, describing it as "*more than just a house; it is a place where my ancestors lived, where stories were told, and where traditions were nurtured.*" In this sense, the house serves as a vessel of family history, each space holding memories of past generations. This emotional attachment reinforces the house's role as a symbol of continuity and heritage.

For many interviewees, the house represents an enduring link between generations, maintaining a tangible connection to their forebears. **[KH03-A]** shared how the house had been passed down for generations, with each successor leaving a mark on the structure through maintenance, expansion, or adaptation. This evolving history creates an emotional bond, with the house as a living chronicle of the family's experiences. The architectural elements, such as the elevated structure and carved panels, evoke potent emotions tied to familial pride and legacy. **[KH03-A]** noted, "*Every corner of the house tells a story—of perseverance, family unity, and traditions that we strive to uphold*."

The house also plays a central role in familial traditions and cultural rituals, fostering a strong emotional connection among its inhabitants. **[KH04-A]** explained that returning to the family house for festivities or reunions rekindles a deep sense of belonging. The communal spaces, once filled with children's laughter and the aroma of traditional dishes, now stand as reminders of past gatherings. However, with many younger family members migrating to urban centres, these once-frequent gatherings have become rare, contributing to a gradual erosion of the house's role in cultural and familial life. Despite this, the house remains a powerful symbol of unity for those who continue to visit and cherish it.

While some interviewees maintained a strong emotional attachment to their ancestral homes, others expressed a diminishing connection due to shifting family dynamics and changing lifestyles. **[KH05-A]**, whose family house was demolished for modern development, lamented the loss, stating, "*It felt like losing a part of my identity. Without the house, a chapter of our history has been erased.*" The demolition of traditional houses due to urbanisation and economic pressures has severed many families' ties to their heritage, leading to a disconnection among younger generations. In cases

where houses still stand, some family members view them merely as physical structures rather than as symbols of cultural identity.

Despite these challenges, a few interviewees stressed preserving the emotional and spiritual connection to their heritage through the house. **[KH10-A]** acknowledged that while modernisation is inevitable, the essence of the traditional Malay house must be safeguarded. She advocated for continued storytelling and engagement with younger generations to reinforce these homes' cultural and emotional significance. "*Even if we no longer live there, we must keep returning, keep telling the stories, and keep reminding ourselves of where we come from,*" she remarked. This perspective underscores the role of the house as not just a dwelling but a repository of cultural memory.

The emotional and spiritual resonance of traditional Malay houses remains a defining aspect of their significance. For many, the house symbolises continuity, cultural pride, and familial unity, while for others, its relevance has waned due to urbanisation and changing family structures. Nevertheless, preserving these emotional connections through storytelling, cultural engagement, and continued use of the house for gatherings remains vital in ensuring that these heritage homes continue to serve as enduring symbols of Malay identity. **[KH06-B, KH03-A, KH04-A, KH05-A, KH10-A]**.

7.3.8 Other internal and external factors

The conservation of traditional Malay houses faces significant challenges due to external and internal factors. One of the primary issues highlighted by the interviewees is the lack of formal governmental involvement in preserving these houses. Several house owners, including **[KH06-B]** and **[TPH3-A]**, noted that they had never received any support or guidance from authorities regarding the maintenance or preservation of the authenticity of their houses. **[TPH3-A]** stated, "*We have never heard from any government body about how to preserve the house properly; we just manage as best as we can.*" This lack of awareness reflects the minimal role that governmental bodies play in conserving these traditional structures, leaving house owners to rely mainly on personal effort and traditional knowledge.

In contrast, the case of **[PLH4-A]** presented a unique scenario where external factors became relevant in the conservation discussion. **[PLH4-A]** shared that the Sultan of Kelantan had offered to purchase the house for MYR500,000. This external financial offer triggered a family debate about the fate of the house. While some family members

were tempted by the monetary offer, others, like **[PLH4-C]**, expressed concern that selling the house would result in the loss of an irreplaceable piece of their heritage. **[PLH4-C]** remarked, "*Selling the house for money would be like selling our soul. This house carries too many memories and is more than just a building to us.*" This situation illustrates how external financial or cultural pressures can complicate the decision-making process concerning heritage conservation.

Despite such offers, the primary challenge that house owners face in preserving the authenticity of traditional Malay houses is the absence of formal institutional support. **[PLH4-C]** and **[TPH5-A]** noted the difficulty of maintaining the houses' traditional materials and design elements without any government guidance or funding. **[TPH5-A]** expressed, "*It is hard to find the right materials now, and when we try to repair the house, we often do not know if we are doing the right thing.*" This lack of expertise and resources, combined with the absence of conservation programs specifically targeting traditional Malay houses, exacerbates the difficulty of restoring these homes to their original form.

Furthermore, the lack of clear regulatory guidelines for conservation also makes it challenging for house owners to preserve their homes' authenticity while adapting them to modern needs. **[PLH3-A]**, who had been involved in some renovation work, explained the difficulty of balancing preserving the original design with the need for modern repairs. He said, "*Sometimes we have no choice but to change things, but it is always a struggle to keep the house looking the same while still making it liveable.*" Without expert advice or external oversight, house owners are often left to make subjective decisions, which can unintentionally affect the long-term integrity of the house.

Despite these challenges, many houseowners have a strong responsibility to preserve their traditional homes. **[PLH1-A]** emphasised that even small modifications to the house should be carefully considered to ensure authenticity is not compromised. He noted, "*Every change we make, no matter how small, has to be done with respect to the original design.*" However, the absence of a standardised framework for repairs and restoration means no uniform approach exists. Some interviewees, like **[TPH3-A]**, argued that using modern materials and techniques could help prolong the life of the house without losing its authenticity. In contrast, others were concerned that such changes could erode the cultural value of the structure.

In conclusion, the lack of awareness regarding formal regulatory involvement and the absence of external support present significant obstacles to preserving the authenticity

of traditional Malay houses. The case of **[PLH4-A]** and the Sultan of Kelantan's offer for the house demonstrates the complex relationship between heritage value and external pressures. Without government intervention, house owners continue to navigate conservation efforts on their own, relying on personal values and family discussions to make decisions about the future of these traditional homes. **[KH06-B, PLH4-C, TPH5-A, PLH3-A, PLH1-A, TPH3-A]**.

Table 2: Analysis of finding house owners' interviews.

No	Interviewee	Form and Design Preservation	Traditional Material Authenticity	Use and Function Adaptation	Traditional Techniques Preservation	Location and Setting Preservation	Language and Intangible Heritage	 Spirit and Feeling 	External/Internal Factors (Gov't Support)
1	KH01-A	/	/	1	1	/	/	/	/
2	KH02-A	/		/	1				
3	KH02-B		/	/	/		/	/	/
4	KH03-A	/	/	/	/	/	/		
5	KH03-B	/	/	/	/		/	/	
6	KH03-C	/	/	/	/	/	/	/	
7	KH04-A	/	/	/	/				
8	KH05-A	/		/	/	/	/	/	/
9	KH06-A		/	/	/			/	/
10	KH06-B	/		/	/	/	/	/	
11	KH07-A	/	/	/	/			/	/
12	KH08-A	/	/	/	/		/	/	/
13	KH09-A			/	/				
14	KH10-A	/	/	/	/	/		/	
15	KH11-A	/	/	/	/			/	
		12	11	15	15	6	8	11	6

7.2.9 Demolition and abandoned house

The issue of demolished and abandoned houses is a complex matter that reflects the socio-economic challenges many traditional Malay house owners face. For several interviewees, the migration of younger generations to city centres for better employment opportunities is a key reason for houses being left vacant. Wan Hassan (KH09-A) shared that his family, like many others, moved to urban areas for work and educational prospects, leading to the abandonment of their family house. *"After my parents passed away, there was no one left to stay in the house, and it became too*

expensive to maintain." This migration, driven by economic necessity, led to the gradual neglect of the traditional home, with no one left to care for it.

The financial constraints faced by house owners also play a significant role in the abandonment of these houses. Many respondents, including Nik Fatimah (KH05-A), highlighted that the cost of upgrading or repairing old houses is beyond their means. *"The house was in poor condition, and with the high cost of materials and labour, it was impossible to restore it,"* she explained. Without adequate financial resources, many traditional houses have been left to deteriorate, further accelerating their decline. This lack of funding makes it difficult for owners to undertake necessary renovations or to maintain the original form and materials, thus contributing to the eventual abandonment or demolition of the house.

Complicated inheritance issues have also been cited for abandoning traditional houses. Hassan (KH11-A) mentioned that the unclear ownership of some properties led to disputes among family members, preventing them from agreeing on the future of the house. *"We are unsure who the rightful owner is now, and there has been no consensus on what to do with the house."* These inheritance disputes and the lack of legal clarity have left some houses empty. As a result, no one can take responsibility for the house, leading to further neglect and eventual abandonment.

In some cases, families have shared houses, but no one resides in them due to a lack of interest or the impracticality of maintaining them. Mahmud Dobah (KH04-A) noted that in his family's case, while multiple heirs held rights to the property, no one had the desire or resources to live there. *"We all have our own house, and the house just sat empty. No one wants to return, which is too much to handle alone."* This situation often leads to detachment from the house, with no individual responsible for its upkeep. Such shared but uninhabited houses contribute to the growing number of abandoned traditional Malay houses, making their preservation increasingly tricky.

In conclusion, the demolition and abandonment of traditional Malay houses are influenced by economic, social, and familial factors. Family members' migration, financial limitations, inheritance issues, and the shared but uninhabited nature of some homes all contribute to the neglect and eventual loss of these cultural heritage sites. The absence of a clear plan for their preservation, coupled with the challenges faced by house owners, means that many of these traditional houses will continue to deteriorate or be demolished without sufficient intervention. (KH09-A, KH05-A, KH11-A, KH04-A).

7.4 Interview Data with Expert

The human factor emerged as the most crucial aspect influencing the conservation of traditional Malay houses (KTMH), reflecting several key themes. This factor centres on people's attitudes towards their heritage and how they engage with it. While experts in the field highlighted this issue, it was further supported by findings from fieldwork conducted in Kelantan. The challenge is not unique to Kelantan; other states in Malaysia face similar issues, with a noticeable lack of care for preserving heritage. As E3 pointed out, the problem extends beyond Kelantan, making it essential to conduct research to better understand and address these challenges, particularly in saving Kelantan's heritage and, by extension, Malaysia's cultural legacy. The expert views were gathered to explore the conservation challenges of KTMH, with findings categorised into themes such as Conservation Challenges, Practical Experiences, Understanding the Importance of Preservation, and Legislation Context. These themes highlight the complexity of maintaining authenticity in these challenges.

No.	Expert	nterviewee Code	
1	Conservation Architect	E1	
2	Conservator/Contractor	E2	
3	Academic (Universiti Teknologi MARA Malaysia)	E3	
4	Tukang / Traditional Malay Master Builder	E4	
5	Tukang / Traditional Malay Master Builder	E5	
6	Director of Kelantan State Museum Corporation	E6	
7	Kota Bharu Municipal City – Planning Department	E7	
8	Ketua Kampung, Kota Bharu (Head of Kampung)	E8	

Table 7.3: The background of the experts.

The experts consulted in this study represent a diverse range of professionals. **E1**, a conservation architect, has extensive experience in timber building conservation, specialising in the restoration and adaptive reuse of traditional structures. Their work integrates modern conservation techniques with traditional construction methods, ensuring the historical integrity of traditional timber structures is maintained. Similarly, **E2**, a conservator and contractor, has worked on various timber projects, including the conservation of the Kampung Laut Mosque, demonstrating expertise in both technical and practical aspects of timber building restoration. In the academic sphere, **E3**, a researcher in heritage and conservation at Universiti Teknologi MARA Malaysia, provides a theoretical perspective on cultural and architectural preservation. Their research is crucial in developing strategies for safeguarding traditional Malay houses by bridging academic discourse with practical conservation efforts.

The role of skilled craftsmen in TMH conservation is exemplified by **E4** and **E5**, who are traditional Malay master builders (*Tukang*) with over fifty years of experience in timber

construction. Their deep knowledge of traditional craftsmanship, though increasingly rare due to declining demand for timber construction, remains invaluable in preserving the authenticity of TMHs. From an institutional perspective, **E6**, as the Director of the Kelantan State Museum Corporation, is responsible for managing heritage sites and advocating for cultural and architectural heritage protection. At the municipal level, **E7**, a representative from the Kota Bharu Planning Department, plays a crucial role in balancing urban development with heritage conservation, ensuring that new projects respect the city's historical identity. Lastly, **E8**, as the *Ketua Kampung* (Head of Village) in Jalan Post Office Lama, provides a local community perspective on conservation, highlighting the socio-cultural challenges in preserving TMHs amidst modernisation. Collectively, these experts offer a detailed view of the multifaceted challenges and opportunities in TMH conservation, underscoring the need for a holistic and collaborative approach that integrates professional expertise, institutional support, and community engagement.

7.4.1 Conservation Challenges

Lack of Awareness, Appreciation of Heritage and Changes

The lack of awareness and appreciation for heritage, particularly about the traditional Malay house (TMH), emerged as a key theme in expert interviews. This phenomenon, reflecting the disinterest of younger generations in preserving cultural heritage, has significantly contributed to the abandonment and deterioration of these structures, particularly in rural areas. As noted in *Towards National Identity in Architecture* (1981), over a century old traditional Malay buildings have often been dismantled, with very few efforts to safeguard these invaluable pieces of architectural history. Over the past 25 years, the demolition of historical timber buildings has accelerated, exacerbating the loss of heritage. As a result, the country faces considerable cultural and historical losses.

The interviews conducted during fieldwork revealed that many experts agree on the central role of societal attitudes in the decline of TMH preservation. **E4** emphasised that the problem lies in the mindset of the Malay community, particularly the younger generation, who show little regard for their cultural and historical roots. As **E4** observed, there is a lack of strong sentiment toward the past, leading to abandoning traditional houses without any concern for their future impact. This perspective was echoed by **E1**, **E3**, and **E8**, who highlighted that fostering awareness and appreciation for heritage is the greatest challenge. According to these experts, the younger generation has little passion for heritage conservation, lacking an understanding of the significance of the

unique architectural styles and craftsmanship passed down through generations. **E7** pointed out that these houses are vital historical testimonies of Malay civilisation, yet they are largely unappreciated by those inheriting them.

This neglect of heritage is particularly evident in the transition from generation to generation. The children of traditional house owners, who typically inherit the properties after the death of the original owners, often have little interest in preserving these buildings. As **E2** noted, the younger generation shows little value for these houses' historical and cultural significance. The shift in attitudes is closely tied to societal changes, with younger Malays choosing urban careers and lifestyles, resulting in the abandonment of rural TMH. Many have migrated to cities, leaving their ancestral homes to decay. **E2** further emphasised that this apathy towards heritage preservation is deeply rooted in cultural attitudes, where the prevailing sentiment is indifference. Even when a house is at risk of collapse, many adopt a passive attitude that they do not have any choice and fully embrace modern ways of living without regard for conserving the old.

This issue is also reflected in the attitudes of some practitioners in the architectural profession. **E1** argued that many architects lack sensitivity to the importance of conservation, often overlooking the value of preserving old buildings and prioritising the construction of new ones.

According to **E4** and **E8**, the younger generation finds it increasingly difficult to sustain a livelihood in rural areas, particularly within the *kampung*. The desire for a modern lifestyle, where all necessary resources are readily available within urban environments, has led to a shift in migration patterns. Unlike their predecessors, who were integrated into the *kampung's* social and economic fabric, the younger generation often seeks urban living to secure better employment opportunities that provide higher wages than those offered in the rural setting. Traditional rural work, which once allowed people to live within the *kampung*, no longer offers sufficient income to support modern aspirations. In contrast, previous generations were immersed in an environment that supported all aspects of daily life—where resources were close and essential materials, such as those required to construct a Traditional Malay House (TMH), were readily available at low cost. This environment provided practical benefits and reinforced social, cultural, and economic practices, offering a unique opportunity for individuals to learn directly from nature and their surroundings. However, the rapid pace of modernisation has spurred significant migration from rural to urban areas, driven partly by better economic prospects in cities. In some cases, this shift has been further accelerated by the need to sacrifice rural spaces for new development projects.

E2 emphasised that raising awareness about the preservation of TMH should be a shared responsibility for the house owners, architects, other professionals, and the government. He underscored that without immediate and concerted action, TMHs may soon be lost, stressing the urgency of this challenge. **E2** further asserted that it is unjust to expect others to be responsible for conserving or maintaining these buildings; instead, the owners must manage and safeguard their heritage without waiting for government intervention. **E9** echoed this sentiment, noting that house owners often lack the motivation to preserve their traditional homes if they fail to perceive any tangible benefits or personal relevance. The issue, as **E9** explained, the issue ultimately hinges on the human factor—the attitudes and priorities of the individuals involved—before any meaningful architectural conservation can occur.

i) Erosion of Traditional Values

It is widely acknowledged that modifications to the original structure of a building often result in the loss or dilution of its inherent character. E5 observed that one of the key attributes of Traditional Malay Houses (TMH) is how seamlessly the design reflects and integrates with the lifestyle of its inhabitants. This harmony between architecture and culture is integral to the house's identity. However, as **E4** pointed out, changes to the house, mainly through extensions, are a common occurrence in the evolution of the house. The core challenge arises when the original design must be altered to meet the contemporary needs of the owners, leading to compromises in the structure's authenticity. This is particularly evident in the case of the *Rumah Dapur* (kitchen houses), which were often demolished and replaced with new structures on the ground floor to accommodate modern conveniences, such as bathrooms, for ease of access. According to E4, such transformations stem from a lack of understanding among houseowners regarding what is beneficial or detrimental to the preservation of their homes. Further erosion of the house's integrity is caused by adding new features, such as modern porches, which distort the original aesthetic and ambience of the house. E2 emphasised that this transformation process—shifting from traditional to modern design—often occurs without prior assessment or consideration of the long-term impact, further weakening the house's historical and architectural values.

ii) The Value of Maintaining Traditional Houses

Whether it is worthwhile to maintain the original form of a house is often complicated by the financial constraints many owners face. In reality, most homeowners lack the resources required to properly maintain their houses in their original state. As **E5** highlighted, the preservation of the original form is crucial not only for the architectural integrity of the house but also for safeguarding the cultural history it represents. The house serves as a tangible link to the past, and altering its original structure risks severing this connection. E5 emphasised that if the house's original order is disrupted, the cultural history embedded within it may be lost. Maintaining the house in its authentic form demands significant effort in terms of labour and financial investment. For some owners, the cost of complete preservation may be prohibitive, leading them to retain only some aspects of the house, which are then adapted for modern use, as E3 noted. These alterations may result in the retention of some aspects of the traditional house, but they often compromise the overall integrity of the building and its cultural significance. Ultimately, the decision to maintain or alter a TMH is influenced by a complex interplay of cultural, financial, and practical considerations, highlighting the challenges of balancing preservation with contemporary needs.

ii) Architectural Impact of Alterations

According to **E4** and **E5**, the traditional Malay house (TMH) was initially designed with flexibility, employing a modular approach that allowed for future expansion. This design was intended to accommodate changing needs over time. However, the reality of modern extensions has deviated significantly from this intention. **E4** and **E5** observed that many house owners lack an understanding of how to properly extend the house to respect the existing space, layout, form, and architectural style. Instead, these owners often proceed with alterations without consideration for the spatial order and architectural coherence of the original structure. As **E5** pointed out, many recent extensions have failed to align with the house's architectural integrity, resulting from the owners' limited knowledge of traditional design principles. Faced with the need to accommodate various modern requirements, owners often make changes incompatible with the original architecture.

From **E5**'s experience, most extensions he has encountered lack sensitivity to the original design, often involving significant structural changes. These alterations

are typically driven by the owner's desire for more space without regard for the architectural harmony of the house. In many cases, house owners do not prioritise preserving the structure's authenticity. **E5** noted that while some owners may remain sympathetic to the original house by using similar materials and technologies, others disregard this in favour of more modern or practical solutions, such as using concrete, which disrupts the traditional aesthetic. Ultimately, these architectural changes often compromise the cultural and historical value of the house, reflecting the challenges faced in balancing modern needs with heritage conservation.

iii) Routine Maintenance of Traditional Malay Houses

According to **E4** and **E5**, maintaining a Traditional Malay House (TMH) in Malaysia's tropical climate, characterised by high heat and humidity, presents significant challenges. Successful maintenance requires owners who are committed to the house's upkeep and actively reside in it. If the house is passed on to someone with no genuine interest or whose needs do not align with the house's characteristics, the structure may become neglected, risking abandonment. As **E8** noted, a responsible and sympathetic owner will seek the best materials suited to the house's needs for repair work. Major restoration work may be required if the house is in a deteriorating state, such as with rotting timbers. In contrast, well-maintained houses typically require only minimal upkeep.

The preservation of timber, especially in the context of traditional houses, depends heavily on protecting it from natural threats, such as insects and water. **E2** emphasised that the most effective method to preserve timber is to shield it from termites and moisture. If these two factors are controlled, timber can remain in good condition over time. Experts generally agree on using recycled engine oil to protect the timber from termites, as this solution is both cost-effective and practical in preserving the wood's integrity. Additionally, ensuring the house remains dry and preventing water leakage, particularly from the roof, are vital maintenance practices. **E2** also highlighted that regular inspection of the contact points between the house and the ground is essential to prevent termite infestation. If any replacements are necessary, **E2** stressed the importance of using dry timber to maintain the house's durability and authenticity. Proper maintenance of these elements ensures that the TMH remains a sustainable and resilient structure, preserving its cultural and architectural value for future generations.

Scarcity of Traditional Materials and Skills

i) Declining Availability of Local Materials

Many respondents noted that the issue of diminishing resources was not a significant concern, as over half of Malaysia's land area remains covered by forests. However, the difficulty in acquiring traditional materials is not due to their scarcity, but rather to increasing costs. Timber was relatively easy to obtain in the past, but today it is often prohibitively expensive. **E1** pointed out that Malaysia is the world's largest producer of processed timber, with *Chengal* timber—an essential material in constructing Traditional Malay Houses (TMHs)—being exclusive to Malaysia. Despite its availability, the cost of *Chengal* has risen substantially, making it less accessible for house owners or builders. The dwindling availability of this once-abundant material is becoming a significant challenge in maintaining the authentic construction methods of TMHs.

ii) Loss of Traditional Carpentry Skills

Another critical factor contributing to the decline in the construction of TMHs is the diminishing pool of skilled traditional carpenters or *Tukang*. **E1** emphasised that finding qualified *Tukang* has become increasingly difficult, mainly as traditional carpentry skills have not been passed down to younger generations. This sentiment was echoed by **E7** and **E8**, who acknowledged that the number of skilled *Tukang* is steadily declining, and those who remain are often elderly, particularly in states like Kelantan and Terengganu. Moreover, these craftsmen have not transferred their expertise to their children; many have opted for modern construction careers or other forms of woodworking, such as wood carving, rather than continuing the legacy of traditional carpentry. **E7** further noted little interest in promoting these skills as younger generations are preoccupied with other pursuits. Additionally, the influx of unskilled labour from countries like Indonesia and Bangladesh in modern construction and timber work has exacerbated the problem. Local people are often reluctant to engage in carpentry due to the low wages, further diminishing the availability of skilled workers for traditional building methods.

iii) Shift to Modern Materials

The transition to modern materials in the construction and renovation of TMHs can largely be attributed to the difficulty of finding skilled *Tukang* and the relative ease and affordability of modern materials. **E5** highlighted that modern materials, readily available and often cheaper than traditional materials, offer a practical solution when

the necessary skills to use traditional materials are unavailable. For many house owners, modern materials present the only viable option for repairs, as they are easier to obtain and require less specialised labour. As a result, traditional elements of the house are often replaced with modern materials, significantly altering the house's character. Limited guidance from skilled professionals during repairs often leads to these changes, with owners prioritising functionality and budget over maintaining the original design and materials. Even when owners have sufficient funds, the desire for more affordable and convenient solutions can lead to the complete replacement of original materials. **E5** observed that the widespread use of modern materials, such as zinc roofing, is often justified because of its maintenance-free properties and insulating qualities, even though such materials may not be in keeping with the house's traditional aesthetic or cultural significance. This shift in material use reflects the broader challenge of balancing modern needs with preserving cultural and architectural heritage.

Insufficient Documentation

A significant challenge in the conservation of Traditional Malay Houses (TMHs) is the lack of detailed documentation. E6 and E7 both emphasised that insufficient records are maintained regarding these buildings, hindering effective conservation efforts. They highlighted the necessity of ensuring that proper documentation is not only created but regularly updated. Such records should be made accessible to students, researchers, academics, and professionals, contributing to informed projects and studies. One of the key suggestions from these experts was the establishment of a centralised database dedicated to TMHs, which would facilitate easier access to information. Even when a building is listed, it is not uncommon for the owner to not receive a copy of the survey data, which would be invaluable for future extensions or modifications to the house. E3 also pointed out that much of the available information is not systematically organised, making it challenging to locate. The information that does exist is often found only in books, which are primarily visual aids and not comprehensive sources. Moreover, the availability of reference books focused specifically on the intricate details of TMH construction is limited, further exacerbating the lack of accessible, detailed knowledge of these buildings.

7.4.2 Key Observations

The challenges surrounding the conservation of Traditional Malay Houses (TMHs), particularly the Kelantan-style TMHs (KTMHs), are multi-faceted, as discussed in the expert interviews. A combination of factors—including lack of awareness, inadequate appreciation of heritage, insufficient government support, poor maintenance practices, scarcity of materials, diminishing traditional skills, and insufficient documentation—has led to the current difficulties faced in preserving this unique form of architecture. The findings suggest that a balanced and holistic solution is required, involving both governmental responsibility and the commitment of house owners to protect and preserve their heritage. As **E6** and **E7** pointed out, without proper documentation, even the most valuable heritage is at risk of being lost, as there will be no solid foundation upon which to build conservation efforts. Thus, without a comprehensive initiative to document and protect TMHs, discussions about their conservation are mainly futile.

One of the fundamental steps towards preservation is fostering a basic understanding of the vernacular architecture of the KTMH and its setting. This knowledge would reduce the likelihood of drastic, irreparable changes to these houses and help protect them from abandonment. Although the shortage of materials and the decline in traditional skills do not necessarily condemn a house to disrepair, preservation efforts would fail if protective measures were not implemented first. Given the wide range of approaches attempted by various experts, it is clear that a more integrated, holistic approach is necessary—one that addresses care and maintenance, funding, documentation, and management. Such an approach would provide a practical framework for protecting these structures at the local (state and district) or national level.

7.5 Chapter Summary

This chapter has presented the findings from the data collection and analysis related to the first research objective (RO1), which aimed to identify the challenges associated with the conservation of the KTMH from the perspectives of both house owners and experts. A total of 15 house owners and 8 experts were interviewed, and their views were analysed using thematic analysis to address the key issues identified in RO1. The findings highlight the complex interplay of factors that hinder practical preservation, emphasising the need for an approach to heritage conservation that incorporates government action, proper documentation, and a sustained commitment from house owners.

Chapter 8

Developing the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)

8.1 Introduction

This chapter presents a detailed discussion on the development of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). The structure of this chapter is guided by an in-depth analysis of key findings obtained through multiple research methods, including interviews with house owners and experts, on-site observations, and document reviews. These diverse sources of information were systematically examined to inform the formulation of the Initial Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). The integration of these findings offers a holistic understanding of the challenges and potential strategies for conserving KTMHs while maintaining their authenticity.

8.2 Discussion on Key Findings

The three methodological approaches—interviews, observations, and document reviews played a critical role in shaping the development of the KTMH-AoCF. The key findings from these methods were synthesised to establish the Initial Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF), as detailed in Section 8.3. The integration of these findings was conducted on a theoretical basis, ensuring that the proposed framework reflects the cultural and social contexts of the KTMH. This includes considerations of community well-being, sense of place, and environmental benefits, which are central to the broader understanding of conservation challenges.

The discussion is structured into four key sections, each addressing a specific research component: **House Owner Interviews, Expert Interviews, On-Site Observations, and Document Reviews**. These sections provide a detailed examination of the diverse perspectives and empirical evidence contributing to conceptualising the KTMH-AoCF. By systematically analysing these findings, this chapter offers a foundation for the proposed framework, ensuring it aligns with theoretical insights and practical conservation needs.

8.2.1 Discussion of Interviews

This section discusses the key findings related to the conservation issues and challenges of Kelantan Traditional Malay Houses (KTMHs) as perceived by house owners and experts. The discussion directly addresses the first research objective (RO1), which seeks to investigate the changing pattern of in Kelantan traditional Malay houses (KTMH). This section highlights the complex interplay between heritage preservation, societal attitudes, and modernisation by examining the insights gathered from interviews.

House Owners

Historic environments worldwide face numerous challenges, particularly in adapting to the demands of contemporary lifestyles. Urbanisation and rapid modernisation have significantly impacted social, economic, and built environments, influencing how heritage buildings are perceived and maintained (Yung et al., 2012; Bullen & Love, 2010). Within this context, house owners play a crucial role in the conservation of KTMHs. However, a prevalent issue among many owners is a lack of awareness and appreciation of their ancestral homes' heritage value. This limited understanding often results in the neglect of the unique architectural qualities and indigenous construction techniques that characterise KTMHs (Lim, 1987; Yaakub, 1996). Consequently, these attitudes present significant obstacles to conservation efforts.

The challenge of protecting KTMHs is not unique to Kelantan but is also evident in other states where traditional Malay houses are similarly at risk. As noted by **E3**, the broader issue extends beyond individual ownership to encompass a wider societal trend where traditional architecture is often overlooked in favour of modern building practices. This shift highlights the pressing need for increased heritage awareness and a more structured approach to conservation that actively involves house owners in preserving the architectural and cultural authenticity of KTMHs.

Understanding, Appreciation, Engagement, Maintenance, and Education

A fundamental step in the conservation of Kelantan Traditional Malay Houses (KTMH) is developing a deep understanding of their values, significance, and the preservation of their original fabric and form. This perspective aligns with Effendi (2014), who emphasised that:

"Only by truly understanding the deeper meanings behind the symbols and nuances so lovingly crafted into its surface can we appreciate the house as a timeless, living home." To effectively manage and care for KTMHs, it is essential to have a foundational understanding of traditional Malay house typologies, including *Rumah Tiang Dua Belas, Rumah Bujang Berselasar, Rumah Perabung Lima*, and *Rumah Perabung Pecah Lima*, along with their respective architectural characteristics (Chapter 6). These typologies exhibit distinctive spatial and structural features, such as the *Serambi* (veranda), *Rumah Ibu* (main living space), and *Rumah Dapur* (kitchen area). Other defining elements include the raised floor system, hierarchical floor levels, breathable walls, full-height windows, steeply pitched roofs with wide eaves, internal multipurpose spaces, and the *Tanggam* system—a prefabricated and modular construction technique. Additionally, KTMHs feature intricate ornamentation, natural building materials, a *Tiang Seri* (main structural pillar), and an open landscape setting commonly adorned with fruit and coconut trees, reinforcing the house's connection to its natural environment.

However, the conservation of KTMHs should extend beyond merely preserving these architectural principles. It must also emphasise the critical role of the *Tukang*, the traditional master builders whose craftsmanship is evident in every aspect of these houses (Lim, 1987; Yaakub, 1996). Ensuring the continuity of traditional skills among *Tukang* is vital for future conservation efforts, particularly in encouraging younger generations to take up the trade. Rather than perceiving the decline of *Tukang* as an obstacle, their knowledge and techniques should be actively supported and transmitted to ensure the sustainability of KTMH conservation. Vellinga (2014) highlighted that vernacular architecture is not static but continuously shaped by cultural traditions that evolve through adaptation, borrowing, transformation, and diffusion. This reinforces the necessity of integrating the human element into the cultural theory of design, construction, and use in vernacular architecture.

Furthermore, the appreciation and awareness of heritage must extend beyond individual efforts to encompass broader responsibilities for house owners, the *kampung* community, and society at large. Vellinga (2015) further asserted that several socio-economic and cultural factors—including labour costs, resource availability, social needs, aspirations of house owners, cultural values associated with materials and technologies, household composition, and the everyday behaviour of inhabitants—play equally crucial roles in determining the sustainability of an architectural form. These considerations are fundamental in

ensuring that KTMHs remain a living and relevant part of Malaysia's cultural heritage

. Heritage appreciation extends beyond architectural aesthetics to encompass how people's daily lives influence their homes' design, layout, and spatial organisation. The scale and proportion of a house, along with its functional adaptability, reflect its inhabitants' social and cultural values. In the case of Kelantan Traditional Malay Houses (KTMHs), these aspects were meticulously incorporated into their design, ensuring that the built form not only accommodated the practical needs of the household but also symbolised the owner's social status, daily routines, and movement patterns. The younger generation should recognise and value such qualities, which embody the richness of Malay architectural heritage (Chapter 2). This perspective is supported by Rapoport (1969), who identified five critical aspects of genre de vie (kind of life) that influence the built form: basic human needs, family structure, the position of women, privacy considerations, and social interactions. KTMHs were explicitly designed to accommodate family life, incorporating spatial divisions between private and public areas, as well as gender-based segregation, particularly within spaces such as the Serambi, Rumah Ibu, and Rumah Dapur (Lim, 1987; Yaakub, 1996). These spaces played an essential role in daily life. They were carefully planned to ensure harmony between cultural traditions and functional living arrangements, as further discussed in Chapter 2. Consequently, the KTMH serves as a physical manifestation of its owners' lifestyle patterns and behaviours, reinforcing the symbiotic relationship between architecture and cultural practice (Rapoport, 1969).

Findings from the site observation and existing measured drawing review (Chapter 6) further indicate that house owners traditionally acted as the architects of their homes, making design decisions based on their unique needs and local construction knowledge. This aligns with Levi-Strauss's concept of house societies, which emphasises a distinct form of social organisation wherein the house becomes a central structure through which identity, lineage, and kinship are reinforced. Such elements remain fundamental in Malay society, as the *kampung* setting fosters a deep sense of community and intergenerational relationships. The close-knit social fabric found in these traditional environments is not only reflected in the shared architectural language of KTMHs but also in the collective identity and strong familial ties

that define rural Malay communities. These factors underscore the importance of maintaining and conserving KTMHs, as they embody more than just physical structures; they represent the living heritage and social continuity of the communities that inhabit them.

Changes in the form, fabric, and function of Kelantan Traditional Malay Houses (KTMHs) reflect a shift in attitudes towards heritage, particularly due to a lack of understanding and appreciation among owners (Wan Ismail & Shamsuddin, 2005). Vellinga (2015) emphasised that vernacular architecture is deeply interconnected with social, economic, political, and environmental factors, which must be considered to develop a holistic and sustainable conservation approach. While many scholars acknowledge the valuable lessons that vernacular architecture can offer contemporary architectural practices, Vellinga (2015) noted that mainstream architectural discourse often overlooks the importance of traditional architectural forms. This issue highlights the need for alternative approaches to sustainability that incorporate vernacular wisdom. Despite the challenges in conserving KTMHs, understanding their significance should be seen as an ongoing process that evolves and informs decision-making related to the management and preservation of these houses.

The traditional social structure of *kampung* life has also weakened, contributing to the neglect of KTMHs. Many younger generations show little interest in maintaining their inherited homes, leading to a decline in the sense of belonging and attachment to these houses. The loss of personal and collective memories associated with KTMHs has increased their abandonment. This was evident in the case of Wan Sulong's house **(KH02)**, where a neighbour living in the same *kampung* expressed his past connection to the house. During fieldwork, when approached about the study, he recalled fond childhood memories of playing at the house and described how it was once a lively space filled with celebrations. Despite being an outsider to the ownership of the house, he demonstrated a more profound appreciation for its history than the owners themselves. This interaction raises an important question about why those outside the household sometimes show greater sensitivity towards heritage than the owners, highlighting the need for greater awareness and engagement in conservation efforts.

Another example is Che Muhammad's house **(KH06)**, where **KH07-A** recalled fond childhood memories of playing under the raised floor area, known as the

Kolong. He reminisced about how his parents would sit on the *pangkin* (raised platform) (figure 8.1) chatting while he and his siblings played nearby.

He recalled, "I used to play with chickens and ducks, collect eggs from their nests, and pick fruits from the trees in front of the house."

These activities were once an integral part of daily life in the *kampung*, reflecting the close relationship between the house, its inhabitants, and the surrounding environment. However, these memories have lost their significance in contemporary times. The *Kolong*, which was once an open and multifunctional space, has now been partially enclosed and repurposed into bedrooms, bathrooms, and a car garage. Although the traditional *kampung* house may no longer align with the modern/contemporary lifestyle needs of its owners, any modifications should be carried out to ensure sustainability and respect the house's architectural integrity. Proper conservation management is essential to balancing adaptation and heritage preservation.

Beyond individual choices, broader environmental pressures also contribute to social, cultural, and economic changes, shaping how heritage is perceived and managed. Factors such as population growth, urbanisation, and rapid technological advancements have altered traditional ways of living. In some cases, houses are deliberately designed or modified to resemble traditional architecture for commercial or political purposes, yet these structures often lose their original cultural significance (Vellinga, 2015). Additionally, heritage appreciation is often influenced by the materials used in construction and the integration of modern amenities. While contemporary conveniences such as electricity, refrigerators, and bathrooms are essential for daily living, their inclusion in KTMHs raises questions about authenticity (Vellinga, 2015). This ongoing tension between modernisation and heritage preservation highlights the importance of thoughtful conservation strategies that allow traditional Malay houses to evolve while retaining their cultural and architectural identity.



Figure 8.1: *Pangkin* beneath the house. (Source: Wan Alias, 2016)

Direct engagement with house owners is essential in fostering an understanding of the significance of their homes and the responsibilities associated with their preservation. As KTMHs are privately owned properties, the owners ultimately hold full decision-making authority over the future of their houses. Thus, they must be actively involved in the conservation process. Their continued engagement is a fundamental principle in vernacular architecture, as it acknowledges their intrinsic connection to their homes and the surrounding environment. This relationship is vital for traditional heritage sustainability (Charter on the Vernacular Built Heritage, 1999). A clear understanding of the cultural and architectural value of KTMHs allows owners to make informed decisions that balance modern/ contemporary living needs with heritage preservation. Additionally, misconceptions about KTMH typology and its key characteristics can be minimised through greater awareness and education (Masri, 2012), as discussed in Chapter 7, Section 7.3.1. By understanding what makes KTMHs unique, house owners will be better equipped to protect the defining features of their homes, including traditional construction techniques, site-specific performance, and appropriate maintenance practices.

Hills and Worthing (2006) highlighted that while property owners have a statutory and moral obligation to protect their cultural heritage, they often do not prioritize maintenance and may lack awareness of fundamental conservation principles. Many owners are unfamiliar with the philosophical aspects of conservation, particularly the importance of retaining the original building fabric through preventive maintenance and minimal intervention. Hills and Worthing (2006) further emphasised that encouraging owners to undertake

regular maintenance requires targeted motivation strategies, including financial incentives and practical support, to alleviate concerns over maintenance costs while simultaneously instilling a sense of personal satisfaction in preserving their homes. The affordability and availability of building materials also play a crucial role in shaping owners' decisions, particularly regarding home modifications. For instance, zinc has frequently been used as a replacement for traditional timber walls due to its lower cost. Given that high-quality timber such as *Chengal* has become increasingly expensive, alternative solutions should be explored to support owners who cannot afford premium materials. One potential option is using treated timber, such as *Kempas*, a more cost-effective medium-heavy hardwood (Wong, 2008). Encouraging the adoption of such alternatives could provide a viable solution for house owners, allowing them to maintain the integrity of their KTMHs while addressing economic constraints.

While preventive maintenance is crucial for the long-term protection and conservation of Kelantan Traditional Malay Houses (KTMHs), the extent to which maintenance work is carried out often depends on the perceived urgency of repairs and the overall condition of the house. In some cases, even when owners recognise existing issues, they may delay action, allowing time to dictate the outcome. This passive approach often leads to further deterioration, particularly affecting timber components, which are highly susceptible to decay and termite infestations. A more proactive attitude towards maintenance, particularly from an early stage, could mitigate these problems and reduce the need for extensive repairs in the future. However, many house owners tend to deprioritise conservation efforts, resulting in neglected structures. Water leaks, for instance, are a common issue that, if left unaddressed, can lead to timber decay and termite infestation (Ridout, 2000). A well-maintained house, on the other hand, not only ensures the structure's longevity but also serves as an example that can inspire and encourage others to undertake similar efforts in preservation.

Maintenance is also closely linked to the level of engagement that house owners have with their homes. An example of this can be seen in *Mahmud Dobah's house (KH03)*, which faced inheritance disputes due to the absence of a designated heir. Under *Faraid*, the Islamic law of inheritance, all descendants were entitled to a share of the property, complicating efforts to sell the house due to the lack of unanimous agreement among family members. Despite these legal complexities, the eldest granddaughter took the initiative to maintain the house with the help of a caretaker. The house remains in use as an Islamic teaching centre, and family members continue to return during festive occasions for reunions. This case highlights the importance of maintaining the physical structure and the cultural and social functions of the house within the *kampung* setting. In a broader context, education and awareness are critical in fostering a culture of maintenance and heritage conservation (ICOMOS-Guideline on Education and Training in the Conservation of Monuments, Ensembles and Sites, 1993). Jokilehto (1995) emphasised that keeping cultural heritage in a good state of repair is essential in preventing the loss of historic buildings. Thus, raising awareness of the need for regular maintenance remains a fundamental aspect of sustainable conservation efforts, ensuring that KTMHs remain preserved for future generations.

From a broader perspective, the Kelantan Traditional Malay House (KTMH) holds significance not only for the house owner but also for the entire kampung community and the wider Kelantan region. As part of the more significant Traditional Malay House (TMH) heritage, its cultural and architectural value extends beyond local boundaries, potentially attracting interest from visitors outside the region and even internationally. However, one of the fundamental challenges in fostering appreciation for KTMHs is the absence of welldocumented case studies or showcase examples within the community. The concept of "seeing is believing" highlights the importance of exposure to successful conservation efforts, which could serve as practical references for house owners. Ideally, house owners should have access to good conservation examples within their kampung, allowing them to observe first-hand how traditional Malay houses can be preserved while remaining functional. Exposure could help cultivate a deeper understanding of conservation principles and provide insights into the practical aspects of heritage preservation.

Although various conservation approaches have been implemented by individuals, organisations, and government bodies at both national and international levels, it is crucial to establish at least one showcase example within the same *kampung* or a nearby area. If such examples are located too far away, they may be inaccessible to the local community due to travel costs and logistical challenges. The practicality of conserving KTMHs is ensuring that

knowledge and resources are readily available within the local context. Establishing a conservation showcase could serve as an indirect educational tool, enabling house owners to better understand the processes involved in preserving KTMHs and adapting them to contemporary needs. This exposure would encourage creative thinking and inspire owners to explore the potential of heritage conservation by presenting viable solutions, challenges, and opportunities. Additionally, promoting free educational initiatives at the local level could engage the younger generation, allowing them to witness first-hand the value of protecting these houses. By fostering awareness and appreciation, such efforts could help prevent the gradual disappearance of KTMHs and instead position them as integral elements of Kelantan's cultural heritage.

As discussed in Chapter 7, Section 7.2.9, many KTMHs have fallen into disrepair due to the financial constraints of house owners and their reliance on government support. Despite owning the houses, most owners emphasised the importance of government aid and incentives in ensuring proper maintenance and conservation efforts. Whether top-down or bottom-up, government intervention is crucial in safeguarding this architectural heritage. The principles outlined in The Venice Charter (1964) emphasise that heritage preservation is a public responsibility, stating that the government, as the designated guardian of public interest, must be accountable for the protection and stewardship of historic structures. In the case of KTMHs, a structured and sustainable approach to conservation requires more significant governmental commitment, particularly in facilitating funding, technical expertise, and awareness programs to assist house owners in preserving their homes.

In addition to government involvement, the role of the *Ketua Kampung* (village head) could be strengthened to bridge the gap between authorities and local communities. As a respected leader within the *kampung*, the *Ketua Kampung* has the potential to act as an intermediary, advocating for conservation issues and encouraging collective action among villagers. His role could be instrumental in setting a positive example, promoting heritage awareness, and assisting in establishing local conservation showcases. A well-maintained KTMH within the community could serve as a model, demonstrating practical approaches to preservation and inspiring other house owners to engage in similar efforts. A more effective and sustainable conservation strategy for KTMHs can be developed by fostering closer collaboration between the

government and local stakeholders, ensuring their continued existence as part of Kelantan's cultural heritage.

Conservation Experts

Due to the limited availability of experts directly involved in conserving Kelantan Traditional Malay Houses (KTMHs), this study also surveyed broader perspectives on heritage conservation in Malaysia. The challenges associated with preserving Traditional Malay Houses (TMHs) are not confined to Kelantan but are evident throughout the country. As highlighted in Chapter 7, Section 7.3, the experts identified numerous issues related to conservation efforts, particularly those encountered in practical fieldwork. The key insights provided by these experts contribute to the development of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF).

The Importance of Place and Sense of Belonging

A common concern raised by most experts was the diminishing connection between house owners and their historical backgrounds, traditions, and heritage. While many owners retain a sense of belonging to their ancestral homes, this attachment is often weak and does not translate into active efforts to maintain or conserve their properties. The gradual loss of *sense of place*, or what Relph (1976) describes as *placelessness*, has become increasingly apparent among the younger generation in Kelantanese *kampungs*. The weakening of this connection may lead to a more remarkable disregard for heritage conservation, accelerating the transformation of KTMHs and their surrounding environments. Relph (1976) further emphasised that a *sense of place* is a fundamental aspect of human existence, serving as a source of identity for individuals and communities. Ensuring that significant places are experienced and preserved is crucial to maintaining cultural continuity.

Scholars have interpreted *the sense of place* through various lenses, including its physical setting, human engagement with the environment (Relph, 1976), interpretations of spatial meaning (Jorgensen & Stedman, 2001), and emotional connections (Tuan, 1979). Other perspectives suggest that *the sense of place* is shaped by overlapping factors, such as social interactions and cultural identity (Altman & Low, 1992). When related to heritage conservation, *a sense*

of place can enhance an owner's appreciation of their home by reinforcing feelings of distinctiveness and continuity (Hawke, 2010). This awareness becomes particularly relevant when house owners recognise the significance of their KTMHs and understand how they should be preserved through informed heritage knowledge and conservation practices.

According to Relph (1976), attachment to a place is strengthened by its distinctive characteristics, which change experiences can reinforce. However, any modifications should be carefully considered to ensure they do not compromise the fundamental architectural typology of the KTMH. Changes should be thoughtfully integrated, blending harmoniously with the house's original design and material fabric. Hawke (2010) further argued that placereferent continuity—the emotional connection to a place—can persist even when physical alterations occur, provided that the site's cultural significance is acknowledged and respected. This concept applies to KTMH owners who, despite continuing to live on the original sites of their ancestral homes, have allowed modern influences to alter the fundamental character of their houses beyond recognition. The rapid modernisation of Kelantanese society has led to a shift away from ancestral traditions, particularly among younger generations. Many now perceive traditional house forms as outdated and unsuitable for contemporary living, favouring modern architectural styles that align more closely with current lifestyle preferences. This shift presents a significant challenge to conservation efforts, underscoring the need for greater awareness and education on the cultural and architectural significance of KTMHs.

Protecting a *sense of place* can be valuable in encouraging house owners to appreciate and take responsibility for their KTMHs. This approach aligns with broader planning strategies, including regulations on architectural styles and urban heritage management (Williams & Stewart, 1998). A long-term engagement with a place strengthens this connection, allowing individuals to better understand their surroundings and heritage. Relph (1976) emphasised that such continuous interaction contributes to creating *a sense of place*, which, in the context of the KTMH, is reflected in its vernacular architectural layout and setting within the *kampung* environment. Williams and Stewart (1998) further highlighted that *sense of place* is actively shaped through personal experiences, shared cultural values, and social practices. It is also influenced by an individual's awareness of a locality's historical, cultural, and spatial significance. This concept is particularly relevant to heritage settings, such as

Kelantan, where local identity and architectural traditions have been firmly maintained over generations.

However, as Williams and Stewart (1998) noted, at the local level, place meanings are less stable than they once were, as external social and economic forces increasingly influence communities. This phenomenon is evident in kampung areas, where KTMHs were once deeply rooted in their local context but are now subjected to uncontrolled development pressures. Modernisation has altered the landscape of traditional settlements, diminishing these heritage settings' visual and cultural integrity. This aligns with the argument that contemporary place meanings have become more individualised and boundaries more permeable (Williams & Stewart, 1998, p. 20). In the past, the sense of place was primarily shaped by long-established local communities, but today, external market and political forces play an increasingly dominant role (Williams & Stewart, 1998, p. 20). McCool and Martin (1994) observed that newcomers, or in this case, younger generations who inherit KTMHs, may develop strong attachments to these places without being socially or historically embedded in the community. However, the findings of this study suggest a contrasting reality in Kelantan's kampungs. Here, many house owners and their heirs are detached from their KTMHs, often disregarding their significance and considering them an inconvenience rather than a cultural asset (Chapter 7, Section 7.3.1). This lack of attachment is further reinforced by the fact that many heirs no longer reside in their ancestral homes, leading to neglect and eventual abandonment.

Ultimately, *a sense of place* remains a critical element in preserving KTMHs, as it reflects individual and communal identity and influences human behaviour and psychological well-being. Its role in shaping attitudes toward environmental and heritage conservation cannot be overlooked (Najafi et al., 2011). Strengthening this connection among house owners and their descendants is essential to ensuring the continued survival of KTMHs as part of Kelantan's cultural heritage.

The *sense of place* is closely linked to people's attitudes toward conservation, and expert perspectives on preserving Traditional Malay Houses (TMHs) vary. Not all conservation professionals feel that their work is fully appreciated, as public expectations towards heritage conservation differ. For many experts, the preservation of TMHs is essential in addressing contemporary needs while maintaining cultural identity. They emphasise that these houses serve as tangible representations of Malay heritage and traditional craftsmanship. However, some experts, such as **E1**, a conservation architect, perceive conservation as more focused on preserving an *idea* rather than the physical form of the house. This distinction sometimes leads to contradictions in conservation efforts, mainly when introducing house extensions and modifications without considering the original design and material integrity.

A common trend observed among KTMH owners is the expansion or alteration of their homes with little regard for the original fabric (Chapter 6). Many traditional design principles employed by master builders (Tukang) in the past are no longer adhered to in contemporary renovations. Instead of preserving and adapting their houses, many owners entirely demolished KTMHs and replaced them with modern structures on the same site. While some elements of traditional house layouts may be retained, major transformations often occur—such as shifting from a stilted house structure to one with ground-level concrete foundations. Although the functional aspects of the house may remain consistent, the spatial arrangement is frequently adjusted to suit the owner's evolving needs and financial capacity. However, as Vellinga (2015) noted, if the fundamental aspects of a house-its plan, design, meaning, and usageremain rooted in localised traditions, then such changes can still be considered part of an acceptable continuum in architectural evolution. This underscores the need for a balanced approach, where modernisation is harmonised with the retention of traditional design principles, ensuring that KTMHs continue to reflect their cultural heritage while adapting to contemporary living requirements.

Although house owners may express an intention to retain the Kelantan Traditional Malay House (KTMH) idea, they often do not apply the fundamental principles of the original fabric when modifying their homes to meet contemporary needs. Instead, they adopt a simplified approach based on affordability, often referred to as *budget architecture*, prioritising cost over authenticity. While this method may provide an economical solution, it does not always result in a successful adaptation of traditional architectural elements. A prevalent trend in modern conservation efforts is reinterpreting TMH principles in new constructions rather than preserving the original structures. For example, specific traditional construction techniques, such as the *tanggam*

(traditional jointing system), could be adapted and integrated into modern buildings to maintain continuity with traditional craftsmanship.

To ensure that such adaptations remain sensitive to the cultural and architectural heritage of KTMHs, professionals involved in conservation must develop a deeper understanding of heritage principles. A strong foundation in heritage education would enable architects, builders, and policymakers to make informed decisions that balance preservation with modernisation. By equipping professionals with the necessary knowledge, conservation efforts can be more effectively guided towards approaches that respect traditional building techniques while accommodating contemporary needs. This, in turn, would support the sustainable preservation of KTMHs, ensuring that their historical and architectural significance continues to be recognised in both traditional and modern contexts.

The lack of heritage knowledge and education is not limited to house owners but also extends to building professionals, as evident from the changes observed in many KTMHs. Modifications to these houses often reflect a limited understanding of traditional Malay house forms, spatial arrangements, and construction principles. Without professional guidance, house owners tend to make alterations based on their immediate needs, constrained by financial limitations, the availability of materials, and the absence of skilled traditional carpenters. As a result, many renovations fail to maintain the architectural integrity of KTMHs, leading to irreversible transformations that diminish their historical and cultural significance.

There are various ways in which heritage education can be enhanced and promoted. **E3**, an academic specialising in heritage and conservation, noted that architectural schools in Malaysia now incorporate heritage education through measured drawings of historic buildings. This method allows students to engage directly with traditional architecture, fostering an initial interest in heritage preservation. However, while such exposure is beneficial, it is not always sufficient to instil a deep and lasting commitment to conservation, particularly as students' transition into professional architectural practice. To effectively manage conservation efforts, a strong foundation in heritage knowledge is essential, ensuring that modifications to KTMHs are made sensitive to their historical context.

Heritage education is particularly crucial in addressing the demographic changes affecting traditional houses. As Araoz (2013) highlighted, rapid demographic shifts, particularly the transition between older generations and younger heirs, play a critical role in the fate of heritage properties. In the *kampung* context of Kelantan, inheritance-related transitions often lead to KTMH abandonment, as discussed in Chapter 7, Section 7.2.9. Without a proper understanding of their cultural significance, many heirs neglect or sell these houses, accelerating their deterioration. As KTMHs represent *architecture of the people* (Oliver, 1997) and *architecture without architects* (Rudofsky, 1970), it is essential to cultivate a deeper appreciation for their value, not only among current owners but also among future generations.

However, conservation efforts cannot rely solely on heritage knowledge; effective management strategies are equally important. A significant challenge in KTMH conservation is the lack of systematic documentation and recording, which hampers long-term preservation efforts. Without proper records, even well-intended conservation initiatives may fall short of maintaining the authenticity of these houses. Therefore, integrating education, documentation, and active conservation management is crucial to ensuring the sustainable protection of KTMHs as a vital part of Kelantan's cultural heritage.

Poor recording and documentation

Poor recording and documentation have been identified as significant challenges in the conservation of Kelantan Traditional Malay Houses (KTMHs). Documentation processes are often inadequately conducted or remain inaccessible, as no centralised repository or *one-stop database centre* is dedicated to KTMHs. A proposed solution to this issue would be the establishment of a KTMH heritage centre, ideally managed as part of the Kelantan Museum. Such an initiative would ensure that vital information on traditional Malay houses is systematically archived and readily available for research and conservation purposes. The best location for preserving measured drawings and technical documentation would be KALAM (Centre for the Study of Built Environment in the Malay World), which is housed within an academic institution. However, access to these records is currently restricted, with limited availability to professionals and the public due to imposed access fees and strict regulations.

Experts strongly advocate for improved data sharing and easier accessibility to documentation, ensuring that conservation knowledge is not confined solely to academic circles. The availability of fundamental data at the time of need would significantly enhance conservation efforts, reducing redundancy in research and minimising the necessity for repeated measured surveys. Documentation should be recognised as a critical element in heritage preservation, serving as a valuable resource for more effective conservation projects. While the loss of traditional skills remains a significant challenge, the absence of proper records further threatens the survival of KTMH's heritage. Without comprehensive documentation-including detailed records, photographs, and architectural drawings-valuable construction knowledge and craftsmanship techniques may be permanently lost. Measured drawing documentation by KALAM serves as an important reference, but there has been little to no follow-up in assessing the condition of these buildings over time. Unfortunately, many of the documented houses have since been abandoned, left to deteriorate, or entirely demolished. This highlights the urgent need for a structured documentation and monitoring system to ensure that KTMHs are recorded and actively maintained as part of Kelantan's architectural heritage.

Challenges in Preserving Traditional Skills

Historically, timber heritage conservation has received limited attention within the heritage profession, contributing to the gradual loss of traditional craftsmanship (Chan & Vic, 2011). The scarcity of skilled artisans and the increasing difficulty of sourcing quality timber further exacerbate the challenges of preserving timber structures such as the Kelantan Traditional Malay House (KTMH). Ensuring the survival of these irreplaceable architectural elements requires conserving the physical fabric and continuing the specialised skills needed to maintain and restore them. In countries like Japan, significant efforts have been made to preserve traditional building techniques as part of national cultural heritage (Jokilehto, 1995). As a result, many vernacular structures in Japan have been safeguarded through strategies that prioritise authenticity and relocation, such as those seen at Hilda Folk Village and Nihon Minkaen.

A key issue in preserving traditional skills lies in the difficulty of integrating them into contemporary conservation practices. Watson (2013) highlighted that many modern professionals lack exposure to traditional building techniques, as their training often follows a different school of thought. The survival of these skills is influenced by local decision-making, knowledge transmission, and market demand for conservation projects. This challenge is not unique to KTMHs but extends to other Traditional Malay Houses (TMHs) across Malaysia, where the number of skilled *Tukang* has significantly declined over the years (Lim, 1987; Yaakub, 1996). These skills, however, remain integral to Malay cultural identity, and without proactive measures to sustain them, they risk being lost entirely.

A critical step in addressing this issue is the systematic identification and documentation of skilled *Tukang* across Malaysia. Creating an inventory of traditional craftsmen would help recognise their expertise and serve as a means of knowledge transfer before these skills disappear. Skilled artisans could be provided stable employment opportunities at local and national levels, ensuring that their expertise remains relevant in contemporary conservation efforts. Ideally, demand for traditional carpentry work should be met by local craftsmen rather than relying heavily on foreign labour. However, due to the affordability and accessibility of foreign workers, many KTMH owners prefer to hire them, often resulting in unsympathetic alterations to the original designs of these heritage homes.

To safeguard the traditional skills of *Tukang*, continuous efforts must be made to facilitate intergenerational knowledge transfer. Without proper guidance, misinterpreting traditional construction techniques may compromise the integrity of KTMHs. Beyond the issue of declining craftsmanship, the lack of awareness and responsibility among house owners further threatens the sustainability of KTMHs. Araoz (2013) pointed out that vernacular architecture, including KTMHs, often receives significantly less attention than high-design architecture in conservation efforts and architectural education. As a result, traditional craftsmanship remains marginalised within professional discourse. The responsibility for protecting KTMHs should not rest solely on individual artisans or conservation professionals. However, it should instead be a collective effort involving all stakeholders, including house owners, heritage authorities, and policymakers.

Responsibilities in the Conservation of TMHs

A significant challenge in conserving Kelantan Traditional Malay Houses (KTMHs) is the issue of responsibility, particularly regarding government support and intervention. Many house owners expect government assistance

to maintain their homes due to financial constraints. However, the government faces limitations in terms of policy and funding for built heritage, particularly in Kelantan (Wan Ismail & Shamsuddin, 2005). Despite enacting the *National Heritage Act* in 2005, which has led to the gazetting of selected heritage properties, KTMHs remain primarily unrecognised at the national level. This lack of recognition leaves their conservation in an uncertain state. At all levels—federal, state, district, and local—heritage protection remains inadequate, as discussed in Chapter 5.3.2. Only exceptional cases are considered for official heritage status, and even then, successful designation remains rare, especially for local heritage structures.

When implementing conservation work, heritage professionals and government officials are bound by gazetting regulations. However, as highlighted by experts in Chapter 5, there has been limited effort to proactively safeguard Malaysia's built heritage. A well-structured conservation management approach—whether top-down or bottom-up-requires coordinated efforts from federal, state, and district authorities and engagement from local communities. Despite the uniqueness of KTMHs, they have not been prioritised for conservation at the national level. Striking a balance between preserving the physical fabric of these houses and meeting the needs of house owners remains challenging, mainly when heritage knowledge is not widely understood or valued (Watson, 2013). Even when educational efforts are undertaken, meaningful conservation remains challenging to achieve without a shift in mindset and awareness among house owners. Increasing heritage consciousness through media campaigns could be an initial step in raising awareness among the public, policymakers, and professionals. However, a more integrated approach is required—one that operates at strategic, tactical, and operational levels. Fostering a strong appreciation for heritage should be encouraged in individuals while simultaneously ensuring that government agencies actively fulfil their roles in heritage protection.

Although the *National Heritage Department* has operated since 2006, it lacks the necessary staffing and resources to oversee the thousands of heritage properties across Malaysia. Establishing a dedicated agency tasked explicitly with preserving traditional local architecture could provide a more effective solution before these heritage structures are lost. Moreover, experts and professionals have largely failed to engage meaningfully with house owners. As conservation practitioners, it is their responsibility to involve homeowners in
the process, ensuring that they understand the cultural significance of their houses and their role in safeguarding them for future generations. Engaging with house owners in an informed and respectful manner can lead to a greater willingness to participate in conservation efforts.

Araoz (2013) emphasised that heritage professionals must recognise and manage change rather than resist it as new techniques and approaches in conservation continue to evolve. Understanding historic buildings' full cultural and aesthetic significance requires well-trained professionals capable of carrying out scholarly assessments and ethical conservation practices. Conservation work is complex, and experts must remain committed to their professional responsibilities, regardless of the project scale or type.

Ultimately, there remains ongoing debate regarding who is responsible for protecting KTMHs. The research findings indicate that government officials, conservation experts, and house owners often avoid assuming full responsibility, each placing the burden on the other. While conservation challenges have been explored at both macro and micro levels, prioritising heritage preservation is often determined by individual interests and the perceived benefits for different stakeholders. Responsibility extends beyond preservation—it also encompasses civic duty, community identity, safety, and financial incentives. Although certain officials hold the authority to enforce conservation policies, they have often failed to fully utilise their roles, instead opting to remain within their bureaucratic safety zones. This passive approach must be reconsidered, and a proactive conservation framework should be developed to encourage greater stakeholder accountability. The Stockholm Declaration (1998) underscores that the radical transformation of the built environment threatens future generations, making heritage conservation a professional responsibility and a fundamental human right. As highlighted by ICOMOS, ensuring the sustainable preservation of cultural heritage requires a collective commitment to understanding and respecting individual and shared responsibilities in safeguarding the world's architectural legacy

Various approaches and implementations

The diverse experiences shared by conservation experts reveal a variety of approaches to preserving Kelantan Traditional Malay Houses (KTMHs). Some experts integrate academic research and practical conservation efforts, allowing theoretical principles to be applied in real-world restoration projects. However, many also recognise the limitations of such approaches, particularly in cases where conservation efforts are constrained by financial, policy, or technical challenges. While only a limited number of Traditional Malay Houses (TMHs) have undergone conservation, those that have been preserved share commonalities, primarily when the projects are federally funded through the National Heritage Department (NHD). These projects typically follow a standardised approach to conservation, reflecting national-level policies rather than locally driven initiatives.

One of the most widely accepted conservation strategies is *adaptive reuse*, where traditional houses are repurposed as galleries, museums, or cultural spaces. However, experts hold differing views on this approach, particularly in cases where houses are relocated rather than preserved in their original setting. A house that is conserved in situ retains its historical and cultural context, whereas a relocated house, despite being physically preserved, loses its connection to its original environment. This detachment from its historical surroundings raises questions about authenticity, yet relocation is often seen as an acceptable solution if it ensures the survival and continued appreciation of the structure. Despite the existence of the National Heritage Act 2005, awareness of KTMHs remains low among the general public. Many people only take notice of these houses once they have been conserved, assuming they have always been in good condition without recognising the historical challenges they have faced. Suppose greater public awareness were fostered earlier in the conservation process. In that case, house owners might be encouraged to take preventive measures rather than waiting for their homes to deteriorate before seeking intervention.

No notable repair project has been initiated by house owners and formally supervised by the state or conservation experts. Although some conservation projects have been completed, their successes have not been widely publicised or recognised as contributions to the historic environment. Whether funded by federal or state governments, these projects are rarely promoted as exemplary models for preserving vernacular architecture. More significant efforts should be made to highlight these conservation successes, ensuring that the public understands their significance and is encouraged to undertake similar initiatives. According to **E1**, the most effective conservation approach would be to preserve KTMHs within their original *kampung* setting rather than relocating

them. However, this is not always feasible due to various constraints, including time, site conditions, and the pressures of modern development. As noted by **E3**, contemporary urban expansion often disregards historical structures, making conservation efforts more challenging. Nevertheless, all experts agreed that house owners must ultimately take responsibility for protecting their heritage properties.

The effectiveness of conservation work is influenced by the perspectives of those involved, including experts, government officials, house owners, and policymakers. Each stakeholder views heritage preservation differently, shaped by their priorities and responsibilities. In Kelantan, the **Kelantan State Museum** has not actively engaged in KTMH conservation, primarily due to the absence of a specific legal framework mandating the protection of this heritage, as highlighted by **E3** and **E6**.

Legislative Context in the Conservation of KTMHs

The presence of strong heritage legislation is crucial for the protection and safeguarding of historic buildings. Enforcing conservation efforts becomes challenging without clear legal frameworks, particularly for Traditional Malay Houses (TMHs) in Kelantan. Experts have consistently highlighted the absence of dedicated historic environment legislation at the state level, despite the establishment of the *National Heritage Act (NHA)* in 2005. Rahman et al. (2015) and Mohammad (2011) similarly pointed out that no specific guidelines exist for conserving timber heritage buildings in Malaysia, increasing the risk of abandonment and deterioration. This legislative gap has contributed significantly to the difficulties in preserving TMHs, as Kelantan's vernacular architecture is not explicitly mentioned in any clause of the *NHA*.

From a conservation policy perspective, experts recognise that the *NHA* alone is insufficient in addressing the unique challenges KTMHs face, particularly within Kelantan. However, the act remains a valuable reference, particularly when supplemented by the *Guideline for the Conservation of Heritage Buildings* (2012). Additionally, the *Burra Charter* provides further guidance in ensuring best practices for heritage conservation. Despite these existing references, enforcement by the *National Heritage Department (NHD)* has been inconsistent. For instance, there is no clear delineation of responsibilities within heritage management structures, resulting in a lack of coordination between federal, state, and district authorities. This issue is particularly evident in states like Kelantan, where no dedicated heritage unit conserves TMHs. Addressing these gaps requires a more structured and holistic approach to conservation planning, incorporating coordinated efforts at local, state, and federal levels.

Vernacular architecture is a source of cultural identity and inspiration for contemporary sustainable design (Vellinga, 2011). It offers valuable lessons in resource efficiency and a sustainable alternative to modern construction practices contributing to excessive energy consumption and environmental degradation (Vellinga, 2013, p. 571). As highlighted in Chapter 2, the architectural significance of KTMHs warrants the development of enhanced conservation strategies. One possible approach is to empower *Ketua Kampung* (village heads) with an official mandate to oversee the protection of KTMHs within their communities. Under this system, *Ketua Kampung* would work directly with district governments or local state museums, facilitating a structured reporting system to bridge federal, state, and local conservation efforts.

Another potential strategy is incentivising house owners to actively participate in conservation efforts. Providing financial or policy-based incentives could encourage owners to maintain their houses in good condition, ensuring their longevity. Adaptive reuse initiatives—such as integrating KTMHs into homestay programs (Ramele et al., 2013)—could offer a sustainable conservation solution. By promoting heritage-based tourism, owners could generate income while preserving their homes, making conservation efforts more economically viable. As suggested by **E1**, clear explanations of such programs should be shared among house owners to encourage participation. Experts unanimously agreed that the conservation of KTMHs should prioritise the retention of the house as a whole, preserving its form, fabric, and function. Simply maintaining select architectural features is insufficient in safeguarding its historical integrity.

Ultimately, the distinction between *genuinely traditional* and *modernised* KTMHs is determined by material choices, construction technologies, and evolving social contexts. However, questions of authenticity remain central to these discussions, as outlined in the *Nara Document on Authenticity (1994)*. While modern materials may not always be suitable for Malaysia's climatic conditions, house owners often prefer them due to affordability and convenience (Vellinga, 2007). Findings from expert and house owner

interviews have reinforced the theoretical underpinnings of conservation about cultural identity, community well-being, and *sense of place* (Vellinga, 2007; Yung et al., 2012; Bullen & Love, 2010). By integrating an understanding of heritage knowledge, appreciation, skills, documentation, and legislative considerations, these insights contribute to developing a more structured conservation framework. Ultimately, establishing specialised conservation principles for KTMHs would be beneficial, provided that they remain adaptable and reflective of the realities on the ground.

8.2.2 Discussion of On-Site Observations and Existing Measured Drawing Review

Systematic and direct on-site observation is one of the most effective methods for examining the evolving characteristics of Kelantan Traditional Malay Houses (KTMHs). This approach allows for a detailed assessment of changes in form and design, materials and substance, use and function, traditions and techniques, and the intangible aspects of *spirit* and *feeling*. However, given that some case study houses have been demolished or are inaccessible due to severe deterioration, alternative methods were necessary to supplement the observational study.

In such cases, historical records from measured drawing documentation served as a primary reference, providing detailed architectural data on KTMHs that no longer exist. These measured drawings offer precise details regarding structural composition, spatial organisation, and construction techniques, making them invaluable for conservation analysis. Additionally, insights from former owners and their family members were gathered through interviews to reconstruct the historical context, personal narratives, and lived experiences associated with these houses. This combination of archival documentation and oral history helped bridge the gaps left by physical loss, ensuring that the study retained a holistic perspective on the transformation and conservation challenges of KTMHs.

Data Analysis 1

Consistent Changing Patterns

- 1. Form and Design:
 - **Roof Changes**: A consistent trend across the case studies is the alteration of roofing materials. The traditional *Singgora* tiles were often replaced with **zinc or corrugated metal sheets**, as seen in houses like KH01, KH02, and KH03. This change is largely driven by the availability of more durable, low-maintenance materials, but it diminishes the houses' aesthetic authenticity.
 - Open Spaces to Enclosed: Once open, ventilated spaces, such as Jemuran and Serambi, were increasingly enclosed to accommodate modern living needs, especially in houses like KH06 and KH07. This trend reflects the shift towards more private, enclosed living areas, which contrast with the traditional open layout.
- 2. Materials and Substance:
 - Material Substitutions: Traditional materials like timber, bamboo, and palm were replaced by modern materials such as zinc and concrete in several houses, especially in areas prone to wear, such as the *Rumah Dapur* (kitchen area). For example, KH01 saw *kelarai* bamboo walls replaced by zinc, reducing the connection to the original building materials.
 - Impact on Authenticity: These material shifts are considered minor or moderate in terms of their effect on authenticity. While they maintain the house's functionality, they compromise its visual and cultural integrity. For instance, the shift from timber to concrete or zinc in the roof and wall structures compromises the house's connection to traditional Malay craftsmanship and aesthetics.
- 3. Use and Function:
 - Change in Spatial Use: In some houses, the use of spaces evolved from traditional communal functions to more private, modern needs. For instance, the *Jemuran* (drying area) in KH04 and KH03 was converted into dining and communal spaces. This change is a direct response to contemporary lifestyle demands but diminishes the space's traditional social function.
 - Addition of Modern Amenities: A common modification is the inclusion of modern bathrooms, kitchens, and other utilities. These additions

often result in structural changes that affect the house's original spatial design. These modifications are usually considered **minor** but lead to significant alterations in the house's original use, affecting its authenticity as a reflection of traditional domestic practices.

- 4. Traditions, Techniques, and Management Systems:
 - **Traditional Techniques**: Traditional construction techniques, such as **timber joinery**, were increasingly replaced with more **modern methods**. This shift is most evident in replacing traditional timber elements with concrete and metal materials, as seen in KH02 and KH03.
 - **Craftsmanship Erosion**: The loss of **intricate timber carvings**, like *Janda Berhias* panels, reflects the erosion of traditional craftsmanship in many of the case studies. This shift towards more straightforward, more easily maintained materials affects the aesthetic and cultural authenticity of the houses.

Inconsistent Changes

- 1. Location and Setting:
 - In some cases, urban expansion has affected the location and setting of the houses. For instance, once in rural settings, houses like KH02 and KH03 have been surrounded by modern developments, changing their contextual relationship with the environment. This relocation or shift in setting can significantly impact **authenticity**, as the historical significance of the original location is diminished.

2. Spirit and Feeling:

Emotional and cultural connections to the houses are often cited as a reason for preservation, as seen in houses like KH06 and KH07. However, for abandoned houses like KH02 and KH03, the detachment of emotional ties has contributed to neglect and eventual decay. The spirit and feeling of a house, which is integral to its cultural significance, can be deeply affected by the lack of continued use or the loss of familial connections.

The consistent pattern of change in Kelantan Traditional Malay Houses reflects the evolving needs of modern lifestyles, economic constraints, and environmental factors. While many changes are **minor** and accommodate contemporary living, such as adding new rooms or replacing materials, they gradually undermine the **authenticity** of the houses. The loss of traditional materials, designs, and

craftsmanship, coupled with the shift from communal to private spaces, diminishes these houses' original cultural and historical significance.

However, some houses, particularly those that remain in use and have active ownership, such as KH06 and KH07, have balanced tradition and modernity. These examples show that careful interventions, guided by an understanding of cultural significance, can preserve the **house's authenticity** while accommodating modern needs.

Data Analysis 2

Based on the detailed analysis of the changes and evolution of Kelantan Traditional Malay Houses (KTMH) in the provided data, the following discussion focuses on the specific spaces of the houses, with attention to how their typologies, structural and non-structural components have changed over time. The analysis uses 11 case studies (KH01-KH11), from standing and occupied to abandoned or demolished.

- 1. Serambi (Veranda)
 - Consistent Changes: Across most case studies (KH06, KH07, KH09), the Serambi traditionally served as a semi-public space for social interaction, hospitality, and religious practices and has undergone consistent alterations. Common changes involve the enclosure of the Serambi to provide additional living space. For example, in KH06, the Serambi was partially enclosed to adapt to contemporary needs for privacy and comfort. Similarly, in KH07, the Serambi was altered to include more defined spaces for various functions like sleeping and dining.
 - Inconsistent Changes: Some houses, such as KH03 (Mahmud Dobah's house), have maintained the traditional open Serambi design, reflecting its continued use for cultural and communal activities. This persistence of traditional use contributes positively to its authenticity, maintaining a strong link to the original design.
 - Impact on Authenticity: The enclosures and modern alterations reduce the authenticity of the Serambi's role and appearance, shifting from a traditional open, airy space to a more private, enclosed area. In some instances, this shift is considered a minor change, yet it disrupts the original functionality and spatial organization.
- 2. Rumah Ibu (Main House)

- Consistent Changes: The Rumah Ibu (the central family living area) has experienced minor and significant changes in many case studies. In KH01, alterations included the replacement of the original timber staircase with a concrete one, symbolizing a shift from traditional wooden materials to more durable, low-maintenance solutions. This change is indicative of the overall move from traditional craftsmanship to modern construction materials, notably seen in KH02, where the original bamboo walls were replaced by zinc sheeting.
- Inconsistent Changes: In KH06 and KH07, the core layout and design of the Rumah Ibu remained largely intact. However, adding modern amenities such as enclosed bathrooms and bedrooms reflects the growing demand for comfort and privacy.
- Impact on Authenticity: While these changes make the houses more livable for contemporary needs, they often diminish the authenticity of the original design. The shift towards concrete and zinc materials reduces the original cultural and aesthetic value of the Rumah Ibu, and these changes are typically considered moderate to significant alterations.
- 3. Rumah Dapur (Kitchen)
 - Consistent Changes: The *Rumah Dapur* (kitchen) space, historically a separate, functionally distinct area, has seen minor to moderate changes. For example, in KH01, the bamboo walls of the Rumah Dapur were replaced with zinc sheeting. Similarly, KH02 and KH03 incorporated new materials for the roofing and walls. These changes reflect a broader trend of substituting traditional materials with modern, more durable alternatives driven by practicality and availability.
 - Inconsistent Changes: Some houses, like KH06, have managed to retain more traditional features in the kitchen, though these, too, have been altered slightly with modern interventions such as adding gas stoves instead of wood-fired stoves.
 - Impact on Authenticity: The switch from traditional woven bamboo and timber to zinc sheeting and concrete in the kitchen areas reflects a shift in material culture, which detracts from the authenticity of the space. These changes, while necessary for practicality, are seen as moderate alterations that reduce the historical and cultural integrity of the house.
- 4. Jemuran (Drying Area)

- Consistent Changes: In several houses, the Jemuran, traditionally an open, uncovered space used for drying clothes and other domestic tasks, has been enclosed. This change is standard in KH06 and KH07, where the Jemuran was transformed into a more functional room for daily living, such as a storage area or additional bedroom.
- Inconsistent Changes: However, in KH03, the Jemuran area remained relatively intact and continued to serve its traditional purpose. The area was even converted into a shared communal space, thus retaining much of its original functionality.
- Impact on Authenticity: The closure of the Jemuran to serve new functions, such as additional rooms or storage, is considered a significant alteration, as it moves away from the original purpose and diminishes the space's authenticity as a traditional Malay household feature.

5. Structural and Non-Structural Components (Walls, Roofs, Floors, Stairs, Windows, and Doors)

- Consistent Changes: The walls, roofs, floors, and staircases of the traditional houses have experienced consistent modifications. In KH01 and KH02, replacing traditional timber walls with zinc panels and corrugated metal roofing has been a recurring change, often driven by the need for more durable and easily maintained materials.
- Inconsistent Changes: In some cases, such as KH06, traditional wooden structures were preserved, including the staircases and window frames, though certain parts were altered with concrete and zinc materials.
- Impact on Authenticity: These structural and material changes represent a significant shift away from traditional craftsmanship, particularly timber and other natural materials. While these alterations improve the homes' functionality, they compromise their authentic aesthetic and cultural integrity. The loss of original materials and craftsmanship is significant in terms of authenticity, though the functional changes allow the houses to remain livable for contemporary needs.

The analysis of the *Serambi, Rumah Ibu, Rumah Dapur*, and *Jemuran* and their respective structural and non-structural components reveals **consistent** and **inconsistent changes** across the case studies. While the **consistent changes**, such as the use of modern materials and the enclosure of traditional spaces, reflect the evolving needs of the homeowners, they often result in **moderate to significant losses of authenticity**. The **inconsistent changes**, where traditional elements like

timber joinery and open spaces have been preserved, provide some hope for maintaining these houses' cultural and historical integrity. Nevertheless, as houses like **KH01**, **KH02**, and **KH04** demonstrate, the balance between preserving heritage and meeting contemporary needs remains delicate, with the **authenticity** of these homes increasingly at risk due to material substitutions and functional adaptations.

8.2.3 Discussion of Document Reviews

As discussed in Chapter 5, the key findings from the review of existing conservation principles for vernacular timber structures, both locally and internationally, provide valuable insights into the preservation of Kelantan Traditional Malay Houses (KTMHs). The significance of reviewing these documents lies in identifying potential conservation elements that can be adapted to the Kelantan context. The analysis of these documents was conducted with the primary objective of establishing a foundational framework that would contribute to the development of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). The process involved triangulating and integrating key conservation elements, ensuring a structured approach towards formulating the initial framework. It is important to highlight that this research did not involve expert validation of the final framework. As a result, the framework development remained at the second phase of template analysis, which concentrated on revising the initial framework as an academic exercise.

Local Context

The review of local legislation revealed significant gaps in the protection of traditional Malay houses, particularly TMHs, within Malaysia's heritage conservation framework. As shown in Tables 5.4, 5.5, and 5.6, the absence of targeted conservation policies poses a serious threat to the survival of these heritage structures if no immediate action is taken. Even at the national level, key legislative documents such as the *National Heritage Act (NHA) (M1)* and the *Garis Panduan Pemuliharaan Bangunan Warisan (Guideline for the Conservation of Heritage Buildings*, 2012) (M5) fail to provide explicit protection for TMHs. Similarly, at the state and municipal levels, documents such as the *Guideline for Conservation Areas and Heritage Buildings* by the *Municipal Council of Penang* (2007) (S6) do not emphasise the importance of safeguarding this vernacular heritage.

The situation is even more critical in Kelantan, where no state-level heritage legislation exists to protect KTMHs. This gap in legal protection is particularly concerning, as KTMHs hold significant cultural and historical value at the local level, even if they are not formally recognised at the national level. The lack of specific policies tailored to the conservation of KTMHs highlights the urgent need for a structured framework that integrates both legal and community-driven efforts to ensure their preservation. Without decisive action, the future of these heritage structures remains uncertain, reinforcing the necessity for a more proactive and localized approach to their conservation.

International Context

International charters were reviewed to provide a broader perspective on conservation practices, offering insights into approaches relevant to the preservation of Kelantan Traditional Malay Houses (KTMHs). These charters, ranging from specific vernacular heritage documents to broader historic environmental policies, provided structured frameworks that could be adapted to conserve KTMHs. The review of international documents helped identify key principles that could be incorporated into the development of the *Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)*.

A fundamental principle in international heritage conservation is protecting, conserving, and managing historic character without restricting development.

Key elements identified from international charters were integrated into the proposed framework based on their relevance to protecting KTMHs. These include education, training, and awareness; record-keeping and documentation; site location considerations; traditional skills and construction techniques; stakeholder involvement; material replacement strategies; monitoring and maintenance; and the *sense of place* and value-based conservation principles discussed in Chapter 7.

The insights gained from international conservation policies were triangulated with data collected from interviews (Chapter 7) and on-site building observations (Chapter 6). Any conservation approach must be carefully assessed against the specific heritage values of KTMHs while aligning with internationally accepted conservation principles to ensure the sustainability and authenticity of their preservation efforts.

8.3 Triangulation of Data to Identify Key Components of Authenticity in Kelantan Traditional Malay House (KTMH)

The process of triangulating data in heritage studies involves the integration of multiple data sources to cross-check and validate findings, ensuring a robust and comprehensive understanding of the subject. In this Kelantan Traditional Malay Houses (KTMHs) study, triangulation was applied to integrate case study data, interviews with house owners and experts, and documentary analysis of international and national policies, guidelines, and charters. The aim was to identify and critically assess the key components of authenticity that shape the preservation and transformation of these houses. This method allowed for the synthesis of different perspectives, shedding light on the interplay between cultural values, architectural integrity, and modern adaptations in conserving these traditional houses.

1. Case Study Data: Understanding the Built Fabric

The case study data provided detailed, site-specific insights into how various Kelantan Traditional Malay House components have evolved over time. This included the structural and non-structural changes in key spaces such as the *Serambi* (veranda), *Rumah Ibu* (main house), *Rumah Dapur* (kitchen), and *Jemuran* (drying area), along with their walls, roof, floors, stairs, windows, and doors. Through the analysis of these physical changes, patterns of transformation were observed, with consistent trends such as the replacement of traditional materials (e.g., timber, bamboo) with modern alternatives (e.g., zinc, concrete), as well as the enclosure of open spaces to meet the demands of privacy and modern living.

The shift in materials and functionality was particularly significant in altering the authenticity of these houses. As noted in the case studies of KH01 and KH02, changes to the roofing, walls, and the internal layout of spaces such as the *Rumah Ibu* and *Serambi* indicated a move away from traditional construction techniques and spatial organisation. These physical changes were critical in understanding how the houses' authenticity evolved.

2. Expert and Owner Interviews: Perceptions of Authenticity

The interviews with house owners and experts provided valuable qualitative data that complemented the physical observations from the case studies. These personal accounts revealed how cultural values, family traditions, and practical needs influenced the decisions to alter or maintain the traditional forms and materials of the houses. Owners often expressed their attachment to the spirit and feeling of the house, highlighting the emotional and cultural significance of preserving the house's original

features, such as the *Serambi*, where family gatherings and community rituals took place.

However, experts in heritage conservation emphasised the challenges of preserving these elements amidst modernisation pressures, such as the need for better privacy and comfort in the form of enclosed rooms and bathrooms. These insights were crucial in understanding the contextualisation of authenticity, as they demonstrated the tension between cultural preservation and functional adaptation. For example, some saw the closure of traditional open spaces like the *Jemuran* (drying area) as necessary for modern living but viewed by others as a compromise to the house's authenticity. Thus, expert opinions provided a broader, more contextual understanding of how authenticity is negotiated in the face of modern interventions.

3. Documentary Analysis: International and National Guidelines

The documentary analysis of international charters and guidelines, such as the Nara Document on Authenticity (1994), Venice Charter 1964; Burra Charter 2013, and national guidelines like the Softcopy Buku Garis Panduan Pemuliharaan Bangunan Warisan (GPPBW) (2020), further informed the triangulation process by providing established frameworks for understanding authenticity in heritage conservation. These documents stress that authenticity should be seen in terms of material integrity and relation to the cultural values and social functions that a heritage site embodies.

The Nara Document on Authenticity (1994) emphasises that authenticity should be assessed context-specific, acknowledging that cultural heritage evolves over time and that alterations may be acceptable if they respect the integrity of cultural practices and the spirit of the place. This concept aligns with the findings from the case studies, where houses like KH06 and KH07 could adapt to modern needs without significantly diminishing their authenticity because the changes were minor and respected the original cultural context. In contrast, houses like KH02 and KH03, which experienced significant material and spatial changes, demonstrated a loss of authenticity, as the new interventions were not sufficiently integrated into the original cultural fabric of the house.

The Burra Charter 2013 advocates for a cautious approach to change, recommending that interventions respect a place's physical fabric and cultural significance. The interviews mirrored this perspective, where experts emphasised the importance of maintaining traditional craftsmanship and materiality in conservation efforts. The Charter on the Built Vernacular Heritage (1999) also stresses the need for preserving traditional techniques and construction systems, and its principles were echoed in the

case studies, where the loss of traditional joinery and the substitution of timber with more modern materials were seen as significant threats to authenticity.

4. Synthesis: Key Components of Authenticity

Through triangulating the data from the case studies, interviews, and documentary analysis, key components of authenticity in the context of Kelantan Traditional Malay Houses have emerged:

- Form and Design: Authenticity is deeply tied to the house's spatial organisation and open design. The shift from open to enclosed spaces, particularly in the *Serambi* and *Jemuran*, undermines these areas' original communal and social functions. However, minor adaptations for privacy do not necessarily detract from the authenticity if they respect the original layout.
- **Materials and Substance**: Replacing traditional materials such as timber and woven bamboo with modern substitutes like zinc and concrete is one of the most critical factors affecting authenticity. These material shifts represent a significant alteration, reducing the cultural and aesthetic authenticity of the houses.
- Use and Function: The adaptation of spaces for contemporary uses, such as the addition of bathrooms and enclosed rooms, while necessary for modern living, compromises the original functional roles of spaces like the *Jemuran* and *Serambi*, affecting the authenticity of the house's cultural narrative.
- **Traditions, Techniques, and Management Systems**: The loss of traditional craftsmanship, particularly in timber joinery and decorative carvings, is a significant concern regarding authenticity. Efforts to preserve traditional building techniques are essential to maintaining the authenticity of the houses.
- **Spirit and Feeling**: The spirit and feeling of the house are affected by the changes in functional layout and materials, as well as the loss of communal use. However, houses that maintain traditional social functions, such as KH06 and KH07, retain much of their cultural spirit.

The triangulation of data from case studies, expert interviews, and policy documents has provided a comprehensive framework for understanding the authenticity of Kelantan Traditional Malay Houses. The findings underscore the multi-dimensional nature of authenticity, which encompasses material integrity, spatial organisation, functional usage, and cultural significance. As highlighted in international charters and guidelines, the preservation of authenticity requires a balanced approach that respects both the original fabric of the house

and the cultural context in which it exists. Triangulation has thus allowed for a nuanced understanding of how authenticity is negotiated in the face of modern pressures and functional needs, providing a foundation for future conservation efforts that can preserve both the material and intangible aspects of these important cultural heritage sites.

8.4 Triangulating Data on Authenticity in the Context of Kelantan Traditional Malay Houses (KTMH)

The concept of authenticity in conserving Kelantan Traditional Malay Houses (KTMHs) involves a delicate balance between preserving their cultural, historical, and architectural integrity and accommodating the demands of modern life. In this analysis, the findings from the case study data, the interviews with house owners and experts, and the insights from international and national policies, guidelines, and charters are triangulated to critically assess the key components of authenticity in traditional Malay house architecture.

1. Authenticity in Form and Design

The form and design of KTMHs have undergone significant alterations, notably with the shift from traditional to modern materials and the enclosure of once-open spaces. In the case of houses like KH06 and KH07, the *Serambi* (veranda) traditionally served as a space for social interaction, but its transformation into more private living areas reflects changing lifestyle needs. These changes are consistent with the broader trend of adapting traditional houses to meet modern demands. KH01 and KH03, on the other hand, maintained their traditional design to a more significant extent, preserving open spaces that allowed for better ventilation and communal interaction, which is central to the original design of traditional Malay houses.

The Nara Document on Authenticity emphasises that authenticity should be understood in the context of cultural values and the evolution of the place over time (ICOMOS, 1994). This is in line with the findings in the case studies where the shifting functional and spatial needs of the homeowners lead to changes in the layout and design of the houses. For example, the shift from open to enclosed spaces in houses like KH02 and KH06 may be seen as minor alterations. However, they compromise the house's original role as a space for social interaction, which was central to its design.

According to the Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO, 2023), preserving the form and design is critical for maintaining a heritage site's outstanding universal value. The consistency of these changes in the case studies reflects a broader pattern of transforming traditional design to better accommodate modern living while still trying to respect the space's original intent.

2. Materials and Substance

The materiality of the houses, notably the use of timber, bamboo, and woven bamboo walls *(kelarai)*, is another crucial component of their authenticity. In KH01 and KH02, replacing traditional timber and woven bamboo with modern materials such as zinc and corrugated metal sheets is a consistent alteration seen across multiple case studies. These changes stem from the challenges of sourcing traditional materials and the desire for durable, low-maintenance alternatives. For example, replacing traditional roofing materials such as *Singgora* tiles with zinc roofing in KH06 and KH03 represents a significant shift in the house's material substance.

As the Venice Charter 1964 asserts, restoration efforts should prioritise maintaining the authenticity of the materials used in the construction, and replacements should harmonise with the original without compromising the structure's historical integrity (ICOMOS, 1964). The shift to modern materials in these case studies reflects the practicality and economic constraints homeowners face. However, these alterations significantly affect the authenticity of the houses' original material culture. This is especially evident in KH02, where the introduction of concrete and zinc sheeting disturbs the visual and tactile authenticity of the original timber and bamboo structures.

The Charter on the Built Vernacular Heritage (1999) also emphasises the importance of preserving traditional materials as they are integral to understanding the cultural significance of a building. The loss of traditional craftsmanship—as seen in replacing woven bamboo with more readily available but less culturally significant materials reduces the house's historical value, aligning with concerns raised by experts during interviews about the loss of local craftsmanship and material integrity.

3. Use and Function

The functional changes in the houses are particularly notable in how spaces have been adapted to meet contemporary needs. The Rumah Ibu, traditionally the central family space for communal living and ceremonial practices, has been altered in several houses to accommodate more private spaces, such as bedrooms and bathrooms, in response to modern lifestyle preferences. For instance, in KH01, the introduction of partitioned walls within the Rumah Tengah (central living area) represents a shift from the original open-plan layout, which was central to its function as a space for communal activities.

The Burra Charter 2013 underscores the importance of maintaining heritage places' traditional use and function, noting that adaptations should not detract from their cultural significance (Australia ICOMOS, 2013). This perspective is echoed in the interviews with house owners, where several mentioned the necessity of adapting the house for contemporary use, including adding bathrooms and enclosing the Jemuran (drying area). However, while functional, these changes contribute to a minor to major loss of authenticity regarding how the spaces were initially utilised.

As stated in the Principles for the Preservation of Historic Timber Structures (1999), any changes to the use of a building should respect its original function and not compromise the cultural context in which it was initially conceived. The shift in the use of spaces like Jemuran, from a traditional drying area to storage or auxiliary rooms, reflects how modernity often clashes with traditional functionality. This results in a dilution of authenticity, as these spaces no longer fulfil their original role in the household, affecting the broader cultural narrative of the house.

4. Traditions, Techniques, and Management Systems

Traditional techniques used in the construction of KTMHs, such as timber joinery, woven bamboo, and hand-carved wood panels (*Janda Berhias*), have largely been replaced with modern building methods and materials. In KH01, timber joinery and intricate woodcarving have been replaced with more straightforward construction methods, particularly in later modifications. This loss of traditional craftsmanship is one of the most significant threats to the authenticity of the houses, as it diminishes the cultural value embodied in the original building techniques.

The Principles for the Preservation of Historic Timber Structures (1999) emphasise the importance of reversible interventions and preserving the integrity of craftsmanship. This principle is particularly relevant to the case studies, where interventions such as concrete staircases and zinc roofing compromise the traditional methods that once defined these houses. The increasing reliance on modern techniques, including the widespread use of zinc and concrete, not only reduces the cultural integrity of the houses but also results in the loss of knowledge and craftsmanship tied to traditional building practices.

5. Location and Setting

The location and setting of the houses, once integral to their authenticity, have also been altered in many cases due to urban development. Houses like KH01, located in more rural settings, were often surrounded by gardens and open spaces, contributing to their cultural and environmental context. However, as urbanisation encroaches on these rural areas, traditional houses like KH02 are now surrounded by modern buildings, which significantly alter the authenticity of their setting.

The Burra Charter (2013) stresses that location and setting are crucial to understanding the full cultural significance of a place. The disruption of the setting, caused by urban sprawl or changes in land use, negatively impacts the house's authenticity, making it harder to understand its original role within its environment. Similarly, the Nara Document on Authenticity (1994) highlights that authenticity is not only related to the material aspects of a building but also to its context, which includes the setting and environment in which the house is situated.

6. Spirit and Feeling

In many case studies, the spirit of the house has been altered through structural and non-structural changes. For instance, in KH02, the open-plan layout of the *Rumah Ibu* (main house) was replaced by more partitioned rooms to allow for privacy, resulting in a shift from the communal atmosphere that was traditionally central to the house's spirit. The Serambi, originally a space for interaction and community gatherings, was also enclosed in some houses like KH06 to provide privacy for the family. This physical alteration impacts the emotional connection that the house had with the local community and the feeling of openness and hospitality traditionally associated with the space.

The spirit and feeling of a traditional Malay house are intrinsically linked to the cultural values it represents. As The Nara Document on Authenticity (1994) outlines, authenticity is not just about preserving the tangible fabric of a building but also about maintaining the intangibles, such as the feelings and experiences associated with the place. The Burra Charter 2013 further supports this notion by stating that conservation should reveal culturally significant aspects of a place that evoke a sense of place and cultural continuity (Australia ICOMOS, 2013). In KH07, the *Serambi's* role in creating a space for collective interaction and spiritual connection was maintained longer, preserving the spirit of the house, which is tied to its social function and communal use.

The spirit of a house, as reflected in its intangible heritage, is closely connected to its location and setting. For example, KH06, situated in a more rural area, retains a sense of peace and connection to nature, which adds to the house's authenticity. In contrast, houses like KH02, now surrounded by urban developments, lose this connection and, therefore, the feeling of being part of a larger cultural landscape.

The feeling associated with a traditional house is also influenced by the interactions within the house, particularly in spaces like the *Rumah Ibu* and *Serambi*. The open layout and the lack of internal partitions historically facilitated interaction, thus enhancing the spirit of the house. The introduction of modern partitions and closed rooms, as seen in houses like KH01, while making the houses more practical, has diminished these spaces' communal feeling and spiritual significance.

In the context of the Principles for the Preservation of Historic Timber Structures (1999), it is emphasised that preservation should consider not only the physical materiality but also the intangible values that contribute to the spirit of a place. This view aligns with the Guideline of Conservation of Heritage Building (GCHB) (2020), which states that the cultural significance of a building is not just in its form or materials but also in the memories and experiences that it holds for the community.

By triangulating the findings from case studies, interviews, and international charters and guidelines, it is evident that modernisation, material substitutions, and functional changes have compromised the authenticity of Kelantan Traditional Malay Houses (KTMHs). However, carefully preserving traditional spaces, materials, and craftsmanship—as outlined in various international charters such as the Venice Charter, Burra Charter, and the Nara Document on Authenticity—offers valuable guidance for future conservation efforts. These charters emphasise that authenticity should not merely be seen as the retention of original materials but as a broader, context-dependent concept encompassing these structures' cultural significance, traditional practices, and functional roles. In balancing tradition and modernity, conservation efforts must be guided by these principles to ensure that the cultural heritage of KTMHs is preserved for future generations.

8.5 Overall Interpretation

The findings from this study were integrated based on the theoretical foundations outlined in Chapters 2 and 6, emphasising the significance of Kelantan Traditional Malay Houses (KTMHs) within the broader context of cultural heritage, community well-being, *sense of place*, and environmental sustainability (Vellinga, 2015; Yung et al., 2012; Bullen & Love, 2010). These aspects were analysed from the perspectives of house owners, conservation experts, and relevant stakeholders in the built heritage environment in Kelantan. The findings were systematically categorised in the conceptual development of the initial framework for the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF), as illustrated in figures 8.3 and 8.4.

On-site surveys played a crucial role in documenting how KTMH owners interact with and value their houses' form, fabric, and function, as discussed in Chapter 6 and Section 8.2.2. The pattern of alterations observed in these houses was largely unpredictable, reflecting the varying levels of awareness, appreciation, and understanding among house owners. Many modifications were made without sensitivity to the original architectural integrity, resulting in unsympathetic changes that compromised the houses' traditional form, materials, and functionality.

Community well-being is another essential consideration in KTMH conservation. A sustainable approach, such as adaptive reuse, offers long-term benefits by allowing traditional houses to be repurposed and continuously used rather than being left to deteriorate. Adaptive reuse minimises the environmental, social, and economic costs of urban expansion and new construction (Vellinga, 2007; Yung et al., 2012; Bullen & Love, 2010). This strategy contributes to the *liveability* and sustainability of *kampung* communities while simultaneously addressing issues of abandonment and redundancy in KTMHs.

The research findings also revealed an erosion of *sense of place*, leading to what Glassie (1990) described as *placelessness*. He argued that modern society has lost its sense of place, participation, and engagement, resulting in cultural decline and a weakening of personal identity. Orbasli (2008) noted that in some cultures, the sense of place must be greater than the material value of the built form. He emphasised that authenticity in heritage conservation extends beyond physical structures to include design, spatial context, and cultural spirituality. The Nara Document on Authenticity (1994) also supports this perspective, stating that cultural heritage must be assessed within its specific cultural and geographical context. In the case of KTMHs, this means recognising the *kampung* environment's unique social and architectural traditions. Architectural features of KTMHs are deeply influenced by local cultural elements, including rituals, traditions, philosophies, customs, and social roles (Bahauddin et al., 2012).

Orbasli (2008) also stressed the importance of working with on-site physical evidence, acknowledging the layers of change that have shaped historic buildings. Each unique conservation case should be assessed individually while adhering to internationally accepted conservation principles. Change is inevitable, and as generations interpret and modify their built environment, conservation efforts must strive to manage these transformations in a way that respects historical integrity while accommodating contemporary needs.

As discussed in Section 8.2.1, the lack of engagement and participation from KTMH owners reflects a diminishing *sense of place*, leading to a broader decline in heritage appreciation, awareness, and education. This threatens the survival of KTMHs, reinforcing the need for a holistic conservation management approach that integrates expert contributions, legal

enforcement, and change management. Rahman et al. (2015) suggested that by formally recognising TMHs as heritage buildings, house owners may be more inclined to maintain them, mainly if they can be utilised for ecotourism initiatives such as homestay programs. Preserving TMHs safeguards architectural heritage and protects the cultural integrity of entire *kampung* communities. Consequently, there is an urgent need to develop specific conservation policies for TMHs that protect intangible Malay cultural practices (Rahman et al., 2015).

Analysing local, national, and international heritage documents was crucial in shaping the KTMH-AoCF. The framework was structured to align with Malay cultural contexts while adapting to existing local and national heritage policies. As discussed in Section 5.2.4, the Burra Charter influenced the foundation of the framework.

Understanding local motivations is essential in determining the lessons that can be applied to sustainable architectural design (Foruzanmehr & Vellinga, 2011). More importantly, the focus should be on building traditions' transmission, development, and adaptation. Rather than resisting or attempting to halt change, conservation efforts should seek to understand how and why modifications occur, ensuring that any alterations are well-informed, contextually appropriate, and, most importantly, sustainable (Vellinga, 2007, p. 126).

This research also applied template analysis to the development of both the initial and final frameworks (Chapter 4, Section 4.5), serving as the foundation for the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF), which represents this study's primary contribution. Figure 8.14 illustrates the conceptual development of the initial framework.

BASIC FRAMEWORK (Document Review Elements)

TRIANGULATION (Observation and Measured Drawing Analysis Elements) INITIAL FRAMEWORK (Merged key elements)

Figure 8.2: The concept of developing Initial Framework.

The foundational structure of the framework was derived from the findings presented in Chapter 5, which focused on the review of relevant documents. This framework was further validated through a triangulation process incorporating data from expert interviews (Chapter 7) and on-site observations (Chapter 6). Refining the framework involved thoroughly evaluating elements, ensuring that their inclusion or exclusion was based on a systematic review and verification process conducted during the Document Reviews, as outlined in Chapter 5. These steps were undertaken prior to the development of the initial framework, ensuring that it was grounded in theoretical and empirical insights.

Additionally, all key elements identified through this research were carefully analysed and integrated to form the initial Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). The framework's development followed a structured process, incorporating multiple validation layers to ensure its relevance and applicability in the conservation of KTMHs. This process is illustrated in Figure 8.1, demonstrating the framework's step-by-step formulation and its alignment with the broader conservation principles identified in this study.



Figure 8.3: Process towards establishing Initial KTMH-AoCF

SECTION	KEY EL	EMENTS		
PREAMBLE				
	1 2 3 4 5 6	The Kelantan Traditional Malay House Significance of Kelantan Traditional Malay House Users of KTMH-AoCF Guidance and Reference for KTMH-AoCF Scope of Application for KTMH-AoCF The Kelantan Traditional Malay House		
CONSERVATION PRINCIPLES				
	1 2 3 4 5 6	Heritage Appreciation Understanding The Importance of Setting/Place Involvement (Participation) i. Homeowner ii. <i>Ketua Kampung</i> Traditional Skills, and Technique Value of Fabric, Form, and Function i. Changes		
CONSERVATION PROTECTION				
	1 2 3 4 5 6	Shared Responsibilities for Conservationi.Expertsii.State Government/ Local Authorityiii.Academiciv.Museumv.Industryvi.Ketua Kampungvii.HomeownerRegistryInventoryconservation Program and ManagementFund and IncentivePlanning Regulatory PrameworkEstabishment of the Traditional Malay HouseConservation Centre		
CONSERVATION PRACTICE				
	1	<i>Kampung Setting</i> i. Layout ii. Landscape		
	2 3	Care i. Monitoring and Maintenance ii. Traditional Building System iii. Replacement iv. Timber Treatment Managing Changes i. Change of use ii. Disturbance Fabric iii. Cautious Approach Education Treining and Austrances		
	4 5 6 7	Recording and Documentation Engaging House Owner Kampung Stay Program		

Figure 8.4: The proposed summary of the Initial KTMH-AoCF.

KEY COMPONENTS OF AUTHENTICITY

- 1 2 3 4
- Form and design; Materials and substance; Use and function; Traditions, techniques, and management systems; Location and setting; Spirit and feeling;
- 5 6

8.6 Summary of the Initial Framework

The development of the Initial Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF) was structured to incorporate key themes derived from the research findings. These themes reflect essential elements in the conservation process, including heritage appreciation, awareness, and understanding, as well as the importance of setting and place, community involvement, the *kampung* environment, and relocation issues. Additional critical aspects identified include the responsibilities of homeowners, the establishment of a KTMH Heritage Centre, the availability of materials and traditional skills, the role of the *Ketua Kampung*, lack of government support, insufficient heritage education and documentation, the potential of homestay programmes, and timber treatment practices. The framework also integrates elements such as the relationship between form, fabric, and function, adaptation to change, and the role of *a sense of place* in heritage conservation.

Given that many of these elements overlap, they were consolidated into five key sections to ensure clarity and coherence:

- 1. **Preamble and Definitions** This section provides fundamental definitions and clarifications regarding the conservation of KTMHs, setting the foundation for the framework.
- Conservation Principles This section encompasses fundamental conservation values, including heritage appreciation, understanding, and the importance of place and setting. It highlights participation and involvement, knowledge transmission, traditional skills and techniques, and the significance of preserving form, fabric, and function. It also considers the locational value of KTMHs within their original *kampung* context.
- 3. Conservation Protection—This section focuses on the roles and responsibilities of various stakeholders, including heritage experts, local authorities, academics, museums, industry professionals, and homeowners. It also outlines protective measures such as establishing a KTMH registry, conservation programmes, regulatory planning frameworks, financial incentives, and the proposed KTMH Heritage Centre, which would serve as a dedicated institution for safeguarding and promoting the built heritage of Kelantan for future generations.
- 4. Conservation Practice This section addresses the practical implementation of conservation efforts, including managing changes, care and maintenance, traditional building systems, material replacement strategies, timber treatment techniques, and site-specific interventions. It also emphasises the preservation of the *kampung* setting, relocation considerations, systematic recording and documentation, and the importance of education, training, and public awareness. Additionally, it includes strategies for homeowner engagement and the potential integration of KTMHs into homestay programmes to ensure sustainable conservation.
- Authenticity Components The final section outlines the key elements of authenticity, ensuring that all conservation efforts align with internationally recognised heritage principles while respecting the unique characteristics of KTMHs.

This structured framework provides a detailed approach to conserving KTMHs, ensuring that tangible and intangible heritage aspects are effectively safeguarded for future generations. Again, to emphasise that this research did not extend to expert validation of the final framework, the framework development remained within the second phase of template analysis, focusing on refining the initial framework as a scholarly contribution to the discourse on authenticity in conservation. The details of the framework is in figure

8.7 Chapter Summary

This chapter has presented an in-depth analysis of key findings that contributed to developing the Kelantan Traditional Malay Houses (KTMHs) conservation principles framework. Throughout the refinement process, multiple emerging elements were identified, drawn from house owner and expert interviews (Chapter 7), on-site observations (Chapter 6), and document reviews (Chapter 5). The document reviews included local legislative frameworks and international conservation charters, providing a comparative basis for assessing conservation practices. These three methods were systematically triangulated to determine key elements for formulating the initial framework. The foundation of this research was guided by the conservation philosophy outlined in the Burra Charter (2013).

The findings were holistically integrated, incorporating the significance of KTMHs in terms of cultural heritage, community well-being, sense of place, and environmental benefits (Vellinga, 2007; Yung et al., 2012; Bullen & Love, 2010). These aspects were structured into a series of categorised articles within the initial framework, ensuring that conservation principles were aligned with theoretical and practical perspectives. The outcome of this chapter is the formulation of the Initial Framework for the Conservation of KTMHs, structured into five key sections: Preamble, Conservation Principles, Conservation Principles, and Key Components of Authenticity.

It is important to note that this research did not involve validation of the final framework. As such, the framework development remained at the second phase of template analysis which is revising the initial framework as an academic exercise. The study primarily serves as a foundational exploration of conservation principles for KTMHs, offering insights into potential strategies for their preservation, but further empirical validation is required for its full implementation.

Figure 8.5: The proposed details of the Initial KTMH-AoCF.

SECTION	KEY	ELEMENTS
PREAMBLE - This section provides an introduction and sets the stage for the entire framework.		
	1	The Kelantan Traditional Malay House
	2	Significance of Kelantan Traditional Malay House
	3	Users of KTMH-AoCF
		The KTMH-AoCF is an invaluable guide for parties conserving Kelantan Traditional Malay Houses (KTMH). These include, but are not limited to, house owners, experts, authorities, government bodies and local authorities responsible for heritage preservation and regulatory compliance, conservators, contractors, academics, and students.
	4	Guidance and Reference for KTMH-AoCF
		The KTMH-AoCF is a standalone document that offers detailed guidance and reference materials within a unified framework. Users are encouraged to review the entire document to gain a complete understanding of its principles and guidelines. This holistic approach ensures clarity and effective implementation.
	5	Scope of Application for KTMH-AoCF
		The KTMH-AoCF is designed specifically to address the conservation needs of Kelantan Traditional Malay Houses (KTMHs). However, its insights and principles are applicable to the conservation of Traditional Malay Houses (TMHs) in other regions of Malaysia as well.
		When formalising the heritage status of a KTMH, adherence to the National Heritage Act 2005 and the Guidelines for the Conservation of Heritage Buildings (2012) is essential. These legal and regulatory frameworks ensure alignment with broader national heritage conservation initiatives and obligations.
	6	Interpretation/ Definition
		Kelantan Traditional Malay House (KTMH) : KTMH has typologies of Rumah Tiang Dua Belas, Rumah Bujang Berselasar, Rumah Perabung Lima, and Rumah Perabung Pecah Lima
		 Anjung is the front guest entrance open platform, often next to the Serambi Gantung (hanging veranda); serves as a space for welcoming visitors and is typically accessed by stairs. Awan larat: A decorative wood carving motif resembling stylised cloud patterns, symbolising the connection between the earthly realm and the divine, often featured on architectural elements such as beams, doors, and window panels in royal and aristocratic Malay houses. Bumbung asap : Jack roof in traditional Malay architecture roofing style, typically with a pointed, triangular shape, designed to facilitate ventilation and the escape of smoke and hot air, particularly from the kitchen area.

carvings, particularly found in traditional Malay architecture in the states of

Selantan and Terengganu. Jemuran: A semi-open transitional space in traditional Malay houses, typically used for drying clothes or food and as a private pathway, especially for women. Traditionally roofless to allow sunlight and ventilation.

Jemuran Dapur : A semi-open or transitional area in traditional Malay houses, typically located adjacent to the kitchen (dapur). Traditionally used for

drying kitchen-related items such as utensils, food, or laundry, this space often featured open or roofless designs for natural ventilation and sunlight.

Kelarai: A traditional wattle work made from woven bamboo strips, commonly used in early Malay houses, palaces, and mosques, known for its intricate floral patterns and durability

Kelek Anak: Same with Serambi Samanaik.

- Kolong : The raised space beneath traditional Malay houses on stilts, designed for ventilation, flood protection, and multipurpose use such as storage or shaded activities.
- Lebah Bergantung is a decorative motif in traditional Malay architecture, often found on the gable ends or roofline of *Rumah Limas Bumbung Perak*; resembles a hanging bee or beehive and is a characteristic feature of more ornate Malay houses, symbolising the owner's status and local craftsmanship.
- *Loteng:* A loft or attic space under the roof, used mainly for storage and accessed by a ladder. During times of conflict or insurgency, it also served as a hiding place, particularly for daughters.

Papan Kembung: Same with Janda Berhias.

- Pawang: A shaman or spiritual practitioner who plays a crucial role in performing rituals and ceremonies to ensure the spiritual well-being of a building and its occupants, often invoking protection and harmony with the surrounding environment.
- Pelantar: A external open platform, often located near the kitchen or entryway; used for activities like washing, drying clothes, and food preparation. It is open and designed to handle water drainage efficiently
- *Penghulu:* The head of a Malay village or community, traditionally responsible for local governance, justice, and administration.
- *pucuk rebung*: Decorative motif inspired by the triangular shape of bamboo shoots (*rebung*), symbolising growth, resilience, and the connection between the earthly and spiritual realms.
- Rumah Dapur : The kitchen section in traditional Malay houses, typically located at the rear of the house. It serves as a functional space for cooking, food preparation, and related activities.
- Rumah Ibu: The central living space in a traditional Malay house, often elevated on stilts, serving as the primary area for family activities such as sleeping, gathering, and praying. It functions as the heart of the house, embodying key aspects of traditional design.
- Rumah Selang: Same with Rumah Tengah.
- Rumah Tengah: The central section of the house that connects the Rumah Ibu (main living area) and the Rumah Dapur (kitchen area). This intermediary space often serves as a multifunctional transition area, providing additional privacy and supporting household activities and circulation within the house.
- Serambi Gantung: A lower, linear space next to the *Rumah Ibu*, used for entertaining guests. Its floor level is lower than the *Rumah Ibu*, serving as a public area for visitors.
- Serambi Samanaik: Aclosed veranda that extends from the *Rumah Ibu* and is at the same floor level as the main living area. It provides additional space for family activities and blends seamlessly with the house.
- Serambi: A semi-enclosed veranda located at the front or side of the house; serves as a transitional space between the exterior and interior, often used for social interactions, welcoming guests, or relaxing.
 Sorong: A specific part of the *Rumah Ibu* (main house) used for sleeping or resting;
- Sorong: A specific part of the *Rumah Ibu* (main house) used for sleeping or resting; traditionally a semi-private space, separated by simple partitions like curtains, and is adaptable for different functions, reflecting the multifunctional nature of Malay house.
- Tebar Layar: The gable end of the roof, characterised by its inverted V-shaped design

Tiang Gantung: Same with Tiang Tongkat.

Tiang Tongkat. A shorter support pillar that reaches only up to the floor level.

Tingkap Labuh: Long window positioned at floor level.

- *Tunjuk langit*: Decorative ridge or roof finial found on traditional Malay houses, characterised by its upward-pointing design.
- Lantai Jarang: Type of floor construction characterised by a raised wooden platform with gaps between the floorboards, allowing for ventilation and water to flow out.
- *Tukang:* A skilled craftsman or builder, typically involved in the construction, design, and ornamentation of Malay houses; responsible for executing the architectural vision, using traditional techniques and materials.

CONSERVATION PRINCIPLES - These principles establish the foundational values and philosophies that guide the conservation efforts for KTMHs.

1 Heritage Appreciation

Authenticity Perspective: KTMHs built before Malaysia's Independence in 1957 are culturally and historically significant and must be preserved. Post-1957 KTMHs with notable historical ties to the community, state, or nation should also be considered for conservation.

Recognising Values: KTMHs hold important architectural, cultural, historical, and local significance. These values contribute to cultural and educational enrichment.

2 Understanding

Authenticity Perspective: Proper understanding is key to making informed decisions about managing and preserving KTMHs.

Intangible Values: It's essential to recognise both the physical and intangible aspects of KTMHs, such as their cultural meaning, alongside their structure and design.

3 The Importance of Setting/Place

Authenticity Perspective: KTMHs are deeply connected to the traditional *kampung* lifestyle. Preserving this link is vital to maintaining their authenticity.

Contextual Consideration: Many KTMHs now exist in transitioning areas, shifting from rural *kampung* settings to suburban environments.

Informed Change: Any modifications should be carefully studied to meet the homeowner's needs while respecting the house's historical and cultural importance.

Reversible Approach: When changes are needed, use traditional, reversible methods that consider historical, technical, and practical aspects to balance preservation with adaptation

4 Involvement (Participation)

Homeowner:

- Homeowners play a critical role in the conservation of KTMHs, as they are the custodians of these heritage structures.
- Their active involvement ensures that conservation efforts align with the house's original purpose, cultural significance, and the needs of the family.
- Empowering homeowners with knowledge about conservation practices fosters a sense of ownership and responsibility, ensuring long-term preservation.

Ketua Kampung:

- The *Ketua Kampung* (village head) acts as a key coordinator and advocate for conservation efforts within the community.
- They bridge the gap between homeowners, local authorities, and conservation experts, ensuring that cultural practices and communal values are respected.
- Their leadership fosters community participation, encourages shared responsibility, and ensures that conservation efforts reflect the collective heritage of the village.

5 Traditional Skills, and Technique

Authenticity Perspective: The lack of skilled craftsmen, such as joiners or *Tukang*, is a major challenge. Their expertise is essential for preserving the structure and cultural authenticity of KTMHs.

Preserving, documenting, and passing on these skills to future generations is critical.

According to the Burra Charter (2013), traditional techniques and materials should be prioritized for conserving significant elements (Article 4.2).

- 6 Integrity of Fabric, Form, and Function
 - i. Guiding Principles for Change

Reversibility: Changes should be reversible, allowing the original character, structure, and function to be restored.

Sustainable Management: Decisions should balance socioeconomic factors, historical evidence, modern needs, and resource availability, ensuring fairness and sustainability.

Preservation First: Minor removals are acceptable only when absolutely necessary for current use.

Defining Essentials: When adaptations are required to prevent abandonment, identify and retain key elements of form, fabric, and function while respecting their significance.

Minimising Impact: Minimise any disturbance to important features. If unavoidable, ensure it is kept to the absolute minimum.

CONSERVATION PROTECTION - This part outlines the various responsibilities, strategies, and

mechanisms to protect and safeguard KTMHs.

1 Shared Responsibilities for Conservation

Experts:

- Provide guidance on preserving the authenticity, structure, and historical significance of KTMHs.
- Advocate for using traditional craftsmen and techniques in conservation efforts.

State Government/Local Authority:

- Oversee registration, monitoring, and funding for KTMH conservation projects.
- Collaborate with other stakeholders to implement effective conservation policies.

Academia:

- Promote the inclusion of traditional building skills and conservation principles in educational syllabuses.
- Facilitate research and internship programs to transfer heritage knowledge to future generations.

Museums:

- Document and showcase traditional materials, techniques, and practices associated with KTMHs.
- Act as a resource centre for promoting awareness and appreciation of KTMH heritage.

Industry:

- Ensure the availability of traditional building materials and skilled craftsmen.
- Support conservation projects through funding and technical resources.

Ketua Kampung:

- Coordinate local conservation efforts, acting as a liaison between homeowners and experts.
- Facilitate solutions to address community needs while respecting cultural traditions.

Homeowners:

- Take primary responsibility for maintaining their inherited KTMHs.
- Work with heritage experts to ensure proper conservation and preservation of the house's cultural and historical values.
- 2 Registry

Creating a Register: Establish an online Register accessible to the public to document and share information about all KTMHs.

Protecting Special KTMHs: Use the Register to monitor and control changes, repairs, or demolitions of significant KTMHs.

Preserving Original Features: Ensure any developments in registered KTMHs maintain their original design, appearance, and historical value.

Any development in a registered KTMH and its *setting* should preserve the original characteristic and appearance of any special interest (architectural or historical) regarding its layout, design, materials, siting, scale and proportion and its uses.

3 Conservation Program and Management

Collaboration: Agencies should work together to conserve KTMHs, with clear goals and funding support.

Owner Proposals: Encourage owners of registered KTMHs to propose conservation projects.

4 Fund and Incentive

Funding for Older Homes: Provide funding for private repairs of KTMHs over 100 years old.

Tax Relief: Offer tax relief to owners of registered KTMHs for conservation efforts.

5 Planning Regulatory Framework

Local Heritage Laws: Develop local regulations to preserve KTMHs and protect their authenticity.

Protection for Registered KTMHs: Ensure registered KTMHs are safeguarded at the local level through these regulations.

6 Establishment of the Traditional Malay House Conservation Centre

Central Conservation Body: Establish a Kelantan Traditional Malay House Conservation Centre to oversee conservation, maintenance, funding, training, education, and documentation.

Educational Resource: Use the Centre as a hub for educating people of all ages about KTMHs.

Online Directory: Create an online directory of materials, contractors, architects, conservators, and traditional craftsmen (*Tukang*) to make resources accessible to owners and industry professionals.

CONSERVATION PRACTICE - Practical guidelines and approaches for conserving KTMHs are detailed here.

Kampung Setting

1

Layout:

- Preserve the original layout of the *kampung*, including the arrangement of KTMHs, pathways, and communal spaces.
- Ensure any development or modification respects the traditional spatial organisation and avoids disrupting the cultural harmony of the *kampung*.

• Conduct thorough site analysis and documentation to retain the authentic layout as a reference for future interventions.

Landscape:

- Conserve the natural and cultural elements of the *kampung* landscape, such as traditional gardens, water bodies, and native vegetation.
- Restore and maintain features like boundary markers, hedges, and traditional planting patterns that contribute to the aesthetic and functional value of the *kampung*.
- Promote sustainable landscaping practices using native plants and traditional methods to ensure the ecological integrity and cultural relevance of the *kampung* setting.
- 2 Maintenance and Care

Authenticity Focus: Maintaining the KTMH's original form, fabric, and function requires sustainable routine maintenance to ensure its quality and continuity.

Preservation and Skills: Regular maintenance not only preserves the KTMH but also helps sustain and promote traditional craftsmanship.

Historical Extensions: Understanding the role of historical prefabricated extensions prevents misinterpretation and enhances the original design's adaptability.

Timber Replacement: Replacement or matching of timber components should respect the historical and aesthetic values identified in the KTMH's character.

Use of Local Hardwood: Local hardwood is essential for maintaining authenticity, though challenges such as sourcing limitations and skilled labor shortages exist. Thoughtful choices can help reduce maintenance costs and efforts for homeowners.

3 Managing Changes

Authenticity Perspective: As lifestyles evolve, changes to KTMHs may be necessary. However, these changes must be carefully evaluated to ensure they preserve the house's authenticity, cultural values, and original form, fabric, and function.

Impact on Cultural Heritage: Inappropriate changes, such as additions, unsuitable materials, abandonment, or decay, can harm the cultural significance and original character of a KTMH. Changes should be handled with care and sensitivity.

Minimising Impact: Adopt strategies that prioritise minimal intervention to respect the house's original features while meeting new needs.

Appreciating Historical Changes: Changes over time can be part of the house's vernacular character, provided they blend harmoniously without undermining original elements. Not all changes require preservation.

Balancing Historical Accuracy: Conservation does not always mean restoring the house to a single historical period. The approach should align with the project's goals and available historical evidence.

Cautious Approach: Avoid speculative changes that distort the form or fabric of a KTMH. Ensure all alterations are based on thorough research and documentation to maintain authenticity.

4 Recording and Documentation

KTMHs should be thoroughly documented and stored in a permanent archive. A centralised digital database should be created to make this information accessible to the public, ensuring easy sharing and efficient use of these valuable records. 5 Education, Training and Awareness

Cultural Awareness: Promote community awareness and education, especially for house owners, through public events, workshops, and open days at conservation sites. Highlight the value of heritage craftsmanship.

Holistic Education: Create comprehensive educational and vocational training programs focused on preserving KTMHs, emphasising authenticity and heritage conservation.

6 Engaging House Owner

Direct Engagement: Work closely with house owners to guide them through conservation processes. Use pilot projects in *kampung* areas to demonstrate successful preservation methods and educate owners.

7 Kampung Stay Program

Showcasing Cultural Uniqueness: Develop an organised *Kampung* Homestay program to offer visitors unique cultural experiences while preserving KTMHs.

Economic Benefits: Encourage house owners to turn their properties into tourist attractions, generating income to maintain their homes and protect cultural heritage

KEY COMPONENTS OF AUTHENTICITY - These are the central pillars of the framework, with each component addressing specific aspects critical to the authenticity and preservation of KTMHs.

FORM AND DESIGN

1

Spatial Configuration

- Analyse and preserve the original arrangement of rooms, living spaces, and communal areas.
- Evaluate any alterations to ensure they do not compromise historical authenticity.

Architectural Details

- Preserve decorative motifs, carvings, and ornamentation unique to KTMHs.
- Repair or recreate intricate details to retain their cultural and artistic significance.

Structural Elements

- Maintain original structural components such as wooden columns, beams, and supports.
- Use traditional construction techniques and materials to ensure stability and authenticity.

Architectural Style

- Safeguard the distinctive architectural styles reflecting the region and era of construction.
- Ensure restoration or renovation aligns with the house's original architectural style.

Exterior Facade

- Preserve the traditional appearance of the exterior, including roofing materials, wall finishes, and architectural elements.
- Maintain the aesthetic integrity of the house.

Spatial Functionality

- Balance historical space functionality with modern and contemporary needs.
- Adapt areas for contemporary use while preserving overall design authenticity.

Historical Significance

• Conserve the physical design alongside the cultural and historical narratives of KTMHs.

• Document and interpret the historical context to retain the heritage value of these houses

MATERIALS AND SUBSTANCE

Material Authenticity

2

- Preserve authentic construction materials such as traditional timber, bamboo, thatch, and *Singgora* tiles.
- Ensure these materials are maintained to conserve the historical character of KTMHs.

Impact of Material Changes

- Evaluate how changes in materials, like replacing timber with modern alternatives (e.g., corrugated zinc), affect the house's authenticity.
- Consider the visual and structural impacts of such changes on the cultural and historical significance.

Availability and Sourcing

- Address challenges in sourcing traditional materials due to scarcity or high costs.
- Balance the use of authentic materials with practical supply constraints.

Compatibility

- Ensure replacement or repair materials are compatible with the original in both appearance and structural performance.
- New materials should seamlessly blend with existing ones.

Documentation

- Document the original materials used in KTMHs to serve as a reference for future sourcing and restoration.
- Use this documentation to inform material conservation decisions.

Conservation Techniques

- Apply traditional construction techniques to process, treat, and assemble materials.
- Align preservation methods with these traditional practices to maintain authenticity.

Adaptive Reuse

- Repurpose materials from deteriorated sections of the house, such as old timber, for non-structural elements.
- Ensure the reused materials contribute to preserving the house's authenticity.

Modern Materials

 When necessary, introduce modern materials carefully, ensuring they support structural integrity while maintaining the KTMH's traditional appearance.

USE AND FUNCTION

3

Preservation of Historical Functions

- **Recognition of Historical Functions:** Maintain the original functions of spaces like *Rumah Ibu* (main house), which were central to family gatherings and cultural activities.
- **Cultural Value:** Preserve the cultural and symbolic significance of historical functions to retain the heritage value of KTMHs.

Evolving Functional Needs

- **Contemporary Needs:** Adapt KTMHs to meet modern occupants' requirements while respecting their original functions.
- **Balancing Authenticity:** Ensure that any adaptations for modern use do not compromise the historical functions and authenticity of the spaces.

Spatial Integrity

- **Preservation of Layout:** Maintain the original spatial layout of KTMHs, including the division of rooms and communal areas, to safeguard historical integrity.
- Impact of Alterations: Carefully assess alterations to ensure they align with heritage values and do not diminish the historical significance of the layout.

Integration of Modern Amenities

- **Balancing Modern Conveniences:** Add amenities such as bathrooms or kitchens in a way that respects the house's historic character.
- **Subtle Integration:** Ensure modern additions are subtly integrated, avoiding visual or structural dominance over traditional features.

Functional Challenges

- Adapting to Modern/ Contemporary Lifestyles: Address functional changes needed for modern living, such as converting communal spaces into bedrooms or offices, while preserving authenticity.
- **Maintaining Cultural Practices:** Retain cultural practices tied to specific functions within KTMHs, ensuring these traditions continue alongside any adaptations.

TRADITIONS, TECHNIQUES, AND MANAGEMENT SYSTEMS

Traditional Building Techniques

- **Carpentry Skills:** Preserve and pass down traditional carpentry skills for crafting intricate timber elements, including carvings and joinery.
- Joinery and Timber Framing: Safeguard traditional joinery and framing techniques essential for the structural and aesthetic integrity of KTMHs.

Cultural Traditions

4

• Cultural Significance: Preserve cultural practices associated with KTMHs, such as rituals*, ceremonies, and community gatherings.

*(Any rituals or practices that conflict with Islamic beliefs for Muslim's project is prohibited)

• **Symbolism and Meaning:** Document and protect traditional motifs and designs with cultural and symbolic significance.

Community Involvement

- Local Expertise: Engage local communities and craftsmen to ensure the transfer of traditional knowledge and techniques.
- **Ownership and Pride:** Foster community involvement to instill a sense of ownership and pride in preserving KTMHs, encouraging active participation in conservation efforts.

Management Practices

- **Conservation Guidelines:** Develop guidelines for project planning, budgeting, and execution, blending traditional and modern management practices.
- **Sustainability:** Promote sustainable material sourcing and construction methods to minimise environmental impact and ensure long-term preservation.

Challenges of Modernisation

- **Balancing Modernisation:** Address the challenges of integrating traditional practices with modern needs and explore strategies for maintaining balance.
- **Training and Education:** Create programs to train future generations in traditional skills and conservation knowledge to counter the erosion of heritage practices.

Documentation and Record-Keeping

- Archival Records: Maintain comprehensive documentation of traditional techniques, oral histories, and cultural practices related to KTMHs.
- **Conservation Records:** Keep detailed records of conservation work, including materials and techniques used, to guide future preservation efforts.

LOCATION AND SETTING

5

Cultural Context

- Preserve the original location of KTMHs, as their placement is often deeply tied to cultural, historical, and environmental contexts.
- Ensure that the house remains integrated with the surrounding *kampung* (village) environment to maintain its cultural significance.

Environmental Harmony

- Conserve the natural surroundings, including traditional landscaping, trees, and water features, which contribute to the house's authenticity and functionality.
- Ensure that any environmental changes harmonize with the KTMH's original setting.

Historical Placement

- Retain the historical placement of the house within its original *kampung* layout, ensuring that its relationship with other structures, pathways, and communal spaces is respected.
- Avoid relocating the house unless absolutely necessary, as relocation can impact its historical authenticity.

Visual Integrity
- Maintain the visual relationship between KTMHs and their surroundings, including sightlines and open spaces that reflect traditional *kampung* aesthetics.
- Prevent the intrusion of modern structures or elements that disrupt the visual harmony of the setting.

Climatic Adaptation

- Preserve features like raised floors, ventilation systems, and roof designs, which were adapted to the local climate and are integral to the KTMH's setting.
- Avoid altering these features in ways that compromise their functional and historical significance.

Community Connection

- Ensure the KTMH remains connected to its local community, as the house is often a focal point for social and cultural activities.
- Foster community involvement in maintaining the integrity of the house's location and setting.

Land Use and Zoning

- Protect the land use and zoning regulations around KTMHs to prevent incompatible developments that could negatively affect their setting.
- Advocate for heritage zoning that prioritises the preservation of KTMHs and their surroundings.

Documentation and Planning

- Document the original location, orientation, and setting of KTMHs to guide future conservation and restoration efforts.
- Develop conservation plans that consider the broader cultural and environmental context of the KTMH's location.

6 SPIRIT AND FEELING

Feeling

- **Cultural Attachment:** Recognise and preserve the deep emotional connection between KTMHs and the communities that value them.
- **Nostalgia and Identity:** Consider the nostalgia and cultural identity associated with KTMHs when implementing preservation efforts.

Spiritual Significance

- **Sacred Spaces:** Acknowledge KTMHs' role as spaces for spiritual or religious practices and preserve their sanctity.
- **Traditional Rituals:** Ensure changes do not disrupt traditional rituals and practices tied to KTMHs.

Cultural Heritage

- Intangible Heritage: Preserve oral traditions, stories, and cultural practices associated with KTMHs as part of their intangible cultural heritage.
- Interconnectedness: Recognise the link between KTMHs and cultural beliefs, practices, and values, and mitigate changes that could disrupt this connection.

Assessment of Alterations

- **Rigorous Evaluation:** Carefully assess the impact of alterations on KTMHs' spiritual and emotional significance, ensuring cultural practices remain intact.
- **Balancing Act:** Strive to balance structural preservation with maintaining the spiritual and feeling of KTMHs through creative solutions.

Documentation and Interpretation

- **Recording Cultural Narratives:** Document the cultural narratives, stories, and memories associated with KTMHs as a record of their significance.
- Interpretation for Visitors: Develop interpretive materials to educate visitors about the emotional and spiritual dimensions of KTMHs, enhancing appreciation and respect for their heritage.

Conclusion

The exploration of key issues in the conservation of Kelantan Traditional Malay Houses (KTMHs) revealed considerable variation in perspectives, as examined through interviews with house owners and conservation experts, on-site observations, and document reviews. The findings effectively addressed the research objectives and identified strategic conservation methods, ultimately contributing to the establishment of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). The integration of multiple research methods provided a triangulated approach, ensuring a well-rounded understanding of the challenges and opportunities in preserving KTMHs. This multimethod approach served as the foundation for answering the research question by balancing empirical data with theoretical insights.

This chapter concludes by revisiting the research process, outlining the limitations encountered during the study, and discussing the broader contributions of this research to the field of architectural heritage and conservation. Additionally, recommendations for future conservation efforts are provided, emphasizing the need for continued research, policy development, and community engagement in sustaining the cultural and architectural legacy of KTMHs. The chapter also includes a self-reflection on the research process, considering the challenges faced and insights gained throughout the study.

9.1 Reviewing the Research Process

The primary focus of this study was to examine the changes and transformations occurring in Kelantan Traditional Malay Houses (KTMHs) while formulating a framework that defines authenticity in conservation, ensuring that any modifications remain aligned with the architectural and cultural integrity of these heritage structures. The research methodology encompassed site observations of case study houses, interviews with house owners and conservation experts, and the examination of existing measured drawing documentations of the case studies. Additionally, a review of existing local and national heritage legislation, as well as international conservation charters, was conducted to provide a broader contextual understanding, supporting the development of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF).

The study reviewed Malaysia's vernacular architecture, focusing on the design concepts of Traditional Malay Houses (TMHs), particularly focusing on KTMHs. This highlighted their significance locally and within the national architectural heritage, emphasising their cultural, environmental, and historical value. Managing change emerged as a critical issue, particularly regarding the loss of KTMHs due to unsympathetic modifications and abandonment. These houses possess unique architectural characteristics, including climate-responsive construction techniques, material adaptability, and flexible internal layouts, which reflect their owners' cultural and social lifestyles and the wider Malay *kampung* community. Furthermore, their distinctiveness and rarity underscore their importance as a valuable local heritage. However, unsympathetic changes to form, fabric, and function and increasing rates of neglect and demolition indicate a disconnection from their architectural and historical significance. The potential loss of KTMHs could be mitigated through collective responsibility and proactive conservation efforts, extending from national to state, district, and community levels.

To address Research Objective 2, the study explored the conservation practices and implementation of heritage policies in Malaysia at the national and local levels. The findings identified deficiencies in existing heritage legislation, particularly concerning the lack of protection for KTMHs within the broader heritage conservation framework, with a notable gap in Kelantan's context. The research incorporated international conservation charters and vernacular heritage principles to provide a more comprehensive perspective, specifically examining authenticity in architectural conservation. The study further investigated various conservation approaches and techniques, identifying adaptable strategies that could be contextualised and applied to ensure the preservation and sustainable management of KTMHs.

The research methodology was outlined in Chapter 4, adopting a multi-methods approach to investigate the conservation of Kelantan Traditional Malay Houses (KTMHs). This approach was selected to enable an in-depth exploration of the subject from both micro and macro perspectives—examining the experiences of house owners and their houses individually while incorporating insights from experts and heritage documentation at local, national, and international levels. Additionally, the research methodology facilitated the structuring of the conceptual framework, ensuring a systematic investigation of the key themes and conservation challenges surrounding KTMHs.

The study employed three primary methods: semi-structured interviews with house owners and experts, on-site observations of selected KTMHs, and document reviews of heritage legislation and international conservation charters. These methods were analysed using thematic analysis for interviews (Chapter 7), structured observation analysis (Chapter 6), and King's template analysis for document reviews (Chapter 5). The findings from these three methods were then triangulated to synthesise key themes and discussions, forming the basis for the development of the initial conservation framework (Chapter 8).

It is important to acknowledge that this research did not extend to the validation of the final framework. The study remained focused on the revision and refinement of the initial framework as part of an academic exercise. While the research provides foundational insights into conservation strategies for KTMHs, further empirical validation and practical applications are required to ensure its full implementation and integration into conservation practices.

9.2 Key Findings

This research examined the changing pattern occurring in Kelantan Traditional Malay Houses (KTMHs). On-site observations (RO1) revealed modifications to the houses alongside issues of poor maintenance, abandonment, and structural deterioration, which in many cases ultimately led to their collapse or demolition. The perspectives of house owners and conservation experts (RO1 and RO3) provided insights into the challenges faced in preserving KTMHs, particularly concerning the lack of awareness, financial constraints, and changing lifestyle preferences. Additionally, the study investigated heritage legislation at local, national, and international levels (RO2), assessing its relevance to the conservation of vernacular architecture.

The primary objective of this study was to develop the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF) (RO4). The research was structured according to the objectives, aligning relevant methods and thematic discussions to provide a structured analysis of conservation issues. The triangulation method was employed to establish an initial framework, integrating key findings from interviews, onsite observations, and document reviews, as discussed in Chapter 8. These findings contributed to shaping a conservation approach that prioritises authenticity while addressing cultural and technical concerns.

The study further highlighted the increasing neglect of vernacular architecture, particularly KTMHs, despite their architectural, environmental, and cultural significance. The on-site investigations clarified why this issue persists, reflecting both practical challenges and shifting societal values. Many house owners expressed acceptance of the transformations, even as the sense of place within kampung areas continues to diminish. These findings reinforce the

need for a structured conservation strategy, ensuring that KTMHs are preserved and relevant within contemporary society.

Research Objective 1 (RO1):

To examine the changing patterns and transformations in Kelantan Traditional Malay Houses (KTMH)

Chapter 6 examined the evolution and changing pattern of KTMHs, focusing on how modifications over time have influenced their conservation. Site observations and measured drawing documentation of the case studies provided evidence of continuous transformations, further analysed alongside interviews with house owners and conservation experts. This triangulated approach facilitated a deeper understanding of how these changes have shaped the architectural and cultural integrity of KTMHs.

Scott (2014) emphasised the necessity of thorough documentation of architectural and structural elements, ensuring that modifications are meticulously recorded to preserve a house's history and allow for potential reinstatement. However, this practice is not always observed in the context of KTMHs. Conservation guidelines and international charters emphasise the importance of retaining KTMHs in their original locations within *kampung* settings, recognising the group and associative cultural values that contribute to their heritage significance. These buildings should not be considered in isolation but as part of a broader cultural and environmental landscape that shapes their meaning.

Findings from surveys and interviews further indicated that the integration of modern living standards into traditional KTMHs often presents challenges, requiring a careful and balanced approach to accommodate contemporary needs while maintaining architectural character. The research sought to examine changing patterns in KTMHs, assessing how adaptations impact conservation efforts while establishing a framework that defines authenticity in conservation. The aim was to ensure that transformations align with architectural and cultural integrity, preventing alterations that compromise these heritage houses' historical and spatial significance.

To mitigate the impact of changes, a range of conservation strategies should be considered, promoting minimal and sensitive interventions that respect the evolutionary nature of KTMHs. Special attention should be given to the three primary spatial components of KTMHs— *Serambi, Rumah Ibu,* and *Rumah Dapur,* as modifications to these areas significantly influence the house's overall character and functionality. The findings highlighted that each intervention requires a tailored approach, as varying levels of alterations affect the house's heritage significance and structural integrity.

Minimal changes that respect the original form and function of KTMHs can be integrated when appropriately contextualised. However, unsympathetic modifications to the form and fabric of these houses have contributed to the loss of sense of place, accelerating their decline into placelessness and eventual abandonment. In some cases, past changes were disregarded or unrecognised by house owners, who did not view them as part of the house's historical evolution. The lack of awareness surrounding the original characteristics and architectural significance of KTMHs has exacerbated this issue, as many modifications have been carried out without concern for their long-term impact on architectural integrity.

A proper understanding of KTMH's heritage is essential for ensuring its future conservation and sustainability. How house owners perceive and value their KTMHs will ultimately determine the fate of these structures, irrespective of any external conservation initiatives. Strengthening awareness and fostering a deeper appreciation for KTMHs among homeowners and communities will safeguard this unique architectural heritage for future generations.

Research Objective 2 (RO2):

Investigating Existing Conservation Principles for Traditional Timber Houses in the Malaysian and International Context Concerning the Preservation of Authenticity in Traditional Malay Houses.

The objective of RO2 was to examine existing conservation legislation relevant to Kelantan Traditional Malay Houses (KTMHs) and, more broadly, Traditional Malay Houses (TMHs) and vernacular architecture in general. This investigation focused on heritage laws, policies, and international charters to identify key parameters that could guide the conservation of KTMHs. As discussed in Chapter 5, an analysis of local, national, and international heritage legislation revealed that no specific legal protection exists for KTMHs or TMHs. This absence of statutory recognition reflects a broader gap in safeguarding Malay vernacular architecture within Malaysia's legal framework.

At the local and national levels, the Melaka Preservation and Conservation of Cultural Heritage Enactment (1988) (S1) and the State of Penang Heritage Bill (2011) (S5) were identified as the closest legal references that offer guidelines on conservation practices within a localized Malaysian context. These enactments provide insights into heritage protection strategies, but neither directly addresses the conservation of KTMHs or TMHs. Within the international context, the Burra Charter (2013) was a key reference in the development of conservation principles applicable to KTMHs, particularly in terms of guiding conservation philosophy and best practices.

A critical conservation aspect involves systematic documentation and record-keeping to support the long-term preservation and management of KTMHs. Establishing a comprehensive database of traditional timber houses could serve as a valuable tool in ensuring their survival for present and future generations. The absence of such documentation increases the risk of losing KTMHs due to a lack of awareness, unsympathetic alterations, and demolition.

Additionally, authenticity in conservation is not explicitly addressed in local or national heritage legislation. Existing guidelines, such as the Guidelines for the Conservation of Heritage Buildings (2016) issued by the Malaysian Heritage Department, provide general references to authenticity. However, they do not specifically define how authenticity should be interpreted and applied in the conservation of KTMHs. This gap highlights the need for a more structured approach to integrating authenticity as a core principle in the conservation of Malaysia's vernacular timber heritage, ensuring that KTMHs retain their cultural, historical, and architectural significance in any conservation effort.

Research Objective 3 (RO3):

Redefining Authenticity in Traditional Malay Architecture

To achieve the objective of redefining authenticity in traditional Malay architecture, this research integrated findings from house owner and expert interviews (RO1 – Chapter 7), onsite observations and measured drawing analysis of case study houses (RO2 – Chapter 6), and heritage legislation and international conservation charters (RO2 – Chapter 5). This process allowed for an in-depth examination of how authenticity is perceived, interpreted, and applied in the conservation of Kelantan Traditional Malay Houses (KTMHs).

The interviews with house owners and experts provided valuable insights into the challenges of preserving authenticity within KTMHs. These perspectives highlighted the changing needs of occupants, the influence of modernisation, and the extent of alterations made to accommodate contemporary living standards. Findings indicated that while house owners recognised the cultural and historical significance of KTMHs, the lack of formal conservation knowledge often resulted in modifications that compromised their architectural integrity. Experts further emphasised the absence of structured guidelines for defining and maintaining authenticity in the conservation of KTMHs.

The on-site observations and measured drawing analysis of case study houses revealed how KTMHs have evolved. Structural and spatial transformations, including alterations to materials, spatial layouts, and traditional construction methods, were examined to understand patterns of change. These changes were assessed about their impact on the architectural authenticity of the houses, identifying key areas where conservation efforts could balance preservation with adaptation.

The review of heritage legislation and international conservation charters provided a broader framework for understanding authenticity in conservation practice. While international charters, such as the Burra Charter (2013), emphasise the importance of authenticity in heritage conservation, local and national heritage legislation in Malaysia does not explicitly define how authenticity should be applied in the context of KTMHs. Existing guidelines, such as the Guidelines for the Conservation of Heritage Buildings (2016) issued by the Malaysian Heritage Department, offer general references to authenticity. However, they do not establish specific principles for preserving the architectural, cultural, and historical integrity of KTMHs.

By synthesising these findings, this research contributed to a redefinition of authenticity that acknowledges the historical significance of KTMHs while allowing for context-sensitive adaptations. Integrating cultural, historical, and architectural values into conservation practices ensures that authenticity is preserved in form and materials and in spatial function, craftsmanship, and community heritage. This approach supports the development of a conservation framework that respects tradition while accommodating the evolving needs of KTMH occupants and house owners, ensuring the sustainable preservation of these vernacular heritage structures.

Research Objective 4 (RO4):

Developing an Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF)

The development of the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF) was structured by integrating findings from interviews with house owners and experts (RO1 – Chapter 7), on-site observations and measured drawing analysis of case study houses (RO2 – Chapter 6), and heritage legislation and international conservation charters (RO2 – Chapter 5). These findings were systematically analysed and interconnected to establish a framework that aligns with conservation principles relevant to KTMHs, as detailed in Chapter 8.

The key parameters were identified from RO1, RO2, and RO3, representing critical aspects of architectural conservation, heritage management, community engagement with the main focus of authenticity. These parameters were then triangulated and categorised into five main sections within the framework: Introduction, Conservation Principles, Conservation Protection, Conservation Practice and Key Components of Authenticity (Chapter 8). Each category was designed to address different dimensions of conservation, ensuring that the framework provides a structured approach to safeguarding the architectural integrity, cultural value, and historical significance of KTMHs while allowing for context-sensitive adaptations that respect their authenticity.

While conservation serves as a means of preserving national identity (Sulaiman & Theodossopoulos, 2014), the findings of this study reveal the fundamental challenges facing the conservation of Kelantan Traditional Malay Houses (KTMHs). These challenges stem primarily from societal lifestyle changes within *kampung* communities, contributing to the gradual abandonment of KTMHs. A key issue is the lack of awareness among house owners regarding the potential role they could play in conservation. If provided with the necessary knowledge and guidance, house owners could actively engage in a dynamic, flexible, and informed approach to preserving their homes (Sulaiman & Theodossopoulos, 2014). However, without such awareness, many KTMHs have been neglected, resulting in a weakened sense of place and cultural detachment that extends beyond individual house owners to the broader community.

The loss of sense of place, or the emergence of placelessness, was evident throughout this study, particularly in the context of conservation challenges faced by KTMHs. Without a strong connection to architectural heritage and local identity, these traditional houses face an increased risk of disrepair and dereliction. This concern aligns with Bullen and Love (2011), who assert that the sustainability of local communities is closely tied to their sense of place and the value they attribute to their heritage. Additionally, Martin et al. (2014) emphasize that the rapid adoption of modern construction techniques and the disconnect from traditional principles contribute to eroding architectural and cultural identity.

An exploration of house owners' perspectives on KTMH conservation, supported by expert insights and on-site observations, revealed multiple factors contributing to the abandonment and neglect of these houses. The study also highlighted a significant gap in formal conservation measures, as there is currently no specific regulatory framework, guideline, or policy dedicated to the conservation of historic Malay timber houses. Even within the National Heritage Act 2005, there is limited recognition of the broader historic timber environment, particularly in Kelantan, where similar conservation issues are prevalent. Furthermore, the lack of comprehensive documentation and publicly accessible reference materials has further impeded awareness and understanding of the significance of these heritage houses. Addressing these challenges requires a structured conservation strategy, ensuring that the historical, cultural, and architectural values of KTMHs are safeguarded for future generations.

9.3 Research Limitations

This research was conducted within several constraints that influenced its scope and applicability. Acknowledging these limitations clarifies the challenges encountered during the research process and helps contextualise the findings.

Limited Access to Interior Spaces

Gaining access to the interior of KTMHs for on-site observation and photography proved challenging, as some occupants were reluctant to allow documentation of their homes, particularly when informed that the photographs would be included in the thesis. This affected the ability to fully document interior spatial arrangements and architectural details.

• Constraints in House Selection within the Study Area

Identifying and accessing a sufficient number of KTMHs within Kota Bharu, Kelantan, posed challenges due to logistical constraints and property ownership issues. Some houses had undergone significant modifications or had been abandoned, making it difficult to obtain a representative sample for on-site observations.

• Time Constraints in Data Collection

Conducting detailed on-site surveys required significant time, particularly in building trust with house owners and occupants. Given the constraints of the research timeframe, some observations and interactions were limited, affecting the depth of qualitative insights gathered. In some cases, additional follow-up data was obtained through email, which supplemented the analysis and strengthened the findings.

• Safety Concerns in Accessing Abandoned KTMHs

Several abandoned KTMHs within the study area were in severe disrepair, posing safety risks for direct observation and on-site assessment. Due to structural instability, access to these houses was restricted, limiting the ability to document first-hand evidence of deterioration and neglect.

• Limited Availability of Literature on KTMH Conservation

A challenge was the limited availability of academic literature focused on KTMH conservation concerning the authenticity. While there are broader studies on vernacular Malay architecture, few sources provide in-depth discussions on conservation practices for KTMHs. To address this, the study integrated knowledge from related disciplines, including international conservation principles, to provide a broader contextual understanding.

Despite these limitations, the research gathered detailed data through interviews, site observations, and document reviews, contributing to a deeper understanding of KTMH conservation challenges. Future research could benefit from extended fieldwork durations, greater collaboration with local authorities, and enhanced documentation access to further enrich the study of traditional Malay timber houses.

9.4 Contribution of the Study

This research contributes to the conservation discourse by developing a framework focused on authenticity for the Kelantan Traditional Malay House (KTMH). This approach has not been previously established for traditional Malay houses (TMHs) in Malaysia. The study integrates rich empirical data collected through house owner and expert interviews, on-site observations, and heritage documentation, which have been synthesized to formulate the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF). This framework directly reflects the findings and discussions, offering a structured approach to addressing conservation challenges related to authenticity in vernacular timber architecture. The contributions of this research are outlined as follows:

• Guidance for Heritage Conservation in Kelantan

The framework presents an opportunity for the Kelantan State Government to develop guidelines for built heritage conservation, providing a structured reference for preserving KTMHs within state and local planning policies.

- Expanding the Knowledge Base in Malaysian Conservation Studies
 Within the theoretical context, this research contributes to the existing body of knowledge on building conservation in Malaysia, particularly regarding vernacular timber architecture and authenticity in conservation practice. The findings reinforce the importance of localized conservation approaches tailored to cultural and environmental contexts.
- Bridging the Gap Between Theory and Practice
 - Much of the existing vernacular architecture literature focuses on preservation principles in an international context, with limited discussion on timber heritage conservation in Malaysia. This study addresses this gap, providing insights into conservation challenges and strategies within the specific context of KTMHs. The research findings may serve as a catalyst for bridging theory and practice, encouraging greater integration of conservation principles within policy and decision-making processes.
- Practical Application in Conservation Efforts

The KTMH-AoCF was developed by examining real-world conservation challenges faced by homeowners, conservation experts, and policymakers and reviewing heritage legislation. As a result, the framework has the potential to be utilized as a guideline for wider conservation efforts involving vernacular Malay architecture.

• A Holistic Approach to Built Heritage Conservation

The framework adopts a multidisciplinary perspective, encompassing architecture, cultural heritage, policy development, and community engagement. It applies to professionals and homeowners as well as heritage administrators at both local and national levels.

Potential Adaptation for Other Traditional Malay Houses in Malaysia
 Given that KTMHs share architectural and cultural characteristics with other TMHs across Malaysia, the proposed framework can serve as a broad conservation model that may be adapted to suit regional heritage needs in different states.

9.5 Recommendations and Potential Applications

It is important to note that this research did not involve validation of the final framework. As such, the framework development remained at the second phase of template analysis which is revising the initial framework as an academic exercise. The study primarily serves as a foundational exploration of conservation principles for KTMHs, offering insights into potential strategies for their preservation, but further empirical validation is required for its full implementation.

The framework offers an additional opportunity to supplement existing national, state, local, district, and *kampung* protection mechanisms. It integrates key conservation principles and practices, resulting in a structured approach. The guidelines outlined within the framework emphasise the implementation of conservation works, the roles and responsibilities of various stakeholders, and the collaborative efforts required between house owners, professionals, and government agencies. Understanding conservation challenges—as viewed by house owners and experts—has revealed areas requiring targeted attention, mainly through a holistic conservation approach.

One of the key findings highlights the need for more outstanding government support, particularly in addressing budgetary constraints faced by house owners. Additionally, the proposed framework takes an inclusive approach, ensuring that all stakeholders benefit from conservation efforts. The interconnected factors identified in this research may also support new strategies for the adaptive reuse or relocation of KTMHs where appropriate. The study has revealed gaps in conservation practice, not only from the perspective of house owners but also within Kelantan's wider built heritage environment, including professionals and government agencies. While the study acknowledges its limitations, several areas for future research and policy action have been identified to enhance long-term heritage conservation efforts.

9.5.1 Prospect for Future Research

Several areas warrant further investigation to strengthen conservation practices and expand heritage knowledge:

- Conservation of KTMH Fabric and Structure Exploring conservation techniques specific to architectural and structural elements, particularly about the form, fabric, and function of KTMHs and other vernacular architecture within different settings and contexts.
- Revitalisation of Traditional Skills

A detailed study on the future of traditional craftsmanship, focusing on preserving indigenous techniques and knowledge related to traditional Malay architecture.

- Enhancing Heritage Legislation
 Analysing opportunities to strengthen heritage legislation at local and national levels to establish a comprehensive conservation policy that ensures the safeguarding and management of local heritage, mainly through federal, state, and district-level governance.
- Sense of Place and Community Engagement
 Investigating the importance of place attachment and placelessness to promote community participation in heritage conservation at both micro and macro levels.

9.5.2 Future Action and Policy Implementation

To support long-term conservation efforts, several policy recommendations and initiatives are proposed:

- Utilisation of the Conservation Framework by Local Authorities
 The KTMH-AoCF could serve as a guideline for local authorities in Kelantan and Malaysia to support the conservation of TMHs.
- Establishment of a Dedicated Conservation Team
 Form a specialised conservation team responsible for monitoring, maintaining, documenting, and managing KTMHs to ensure sustained protection efforts.
- Development of a Comprehensive TMH Inventory Creating an inventory of all TMHs in local areas to facilitate conservation planning, safeguarding efforts, and future reference.
- Training and Knowledge Transfer in Traditional Skills
 Strengthening collaboration between state and federal governments and educational institutions to incorporate traditional construction skills into training programs for students, builders, and the wider public.
- Integration of the Framework into National Heritage Policy
 The KTMH-AoCF could serve as a reference tool for heritage agencies, such as
 the National Heritage Department Malaysia, to enhance the protection and
 conservation of vernacular Malay timber architecture.
- Financial Support for Conservation Initiatives
 Identifying potential funding partners to provide financial assistance for training programs, restoration projects, and urgent conservation efforts.
- Raising Awareness Among House Owners

Conducting awareness campaigns to educate house owners on the importance of building fabric and preventive maintenance, emphasising the cultural and historical value of KTMHs.

 Community Engagement through In-Situ Programs
 Encouraging collaboration between local communities and authorities through knowledge-sharing initiatives, in-situ training, and heritage workshops to promote the continuity of traditional practices.

9.6 Self-Reflection

Conducting this research has been an invaluable learning experience, providing deep insights into the complexities of the research process. The journey has been challenging and rewarding, requiring patience, persistence, and adaptability. Research is not always a straightforward path; it is a continuous cycle of discovery and refinement, often filled with unexpected obstacles and moments of clarity. Throughout this process, the guidance and support of supervisors and colleagues have been crucial in navigating uncertainties and maintaining direction. The research journey could have been significantly more complex and prolonged without this structured mentorship.

This study has also been a critical exercise in decision-making, requiring careful timing, adaptability, and reflection at every stage. Engaging in discussions with colleagues and experts has provided valuable perspectives and knowledge-sharing opportunities, reinforcing the importance of collaborative learning in heritage conservation research. Investigating the conservation challenges of KTMHs, particularly about authenticity in Kelantan's context, has expanded my understanding of how people perceive traditional Malay houses. Perspectives from house owners, conservation experts, and heritage legislation frameworks have demonstrated that conserving vernacular architecture requires the active involvement of multiple stakeholders, each playing a role in these historic structures' protection, maintenance, and sustainability.

The study findings have highlighted significant criticisms and challenges related to the conservation of KTMHs. These include modifications in form, fabric, and function and the lack of formal protection for vernacular Malay architecture within local and national heritage legislation. Additionally, the study has provided an overview of international conservation charters and principles, identifying areas where macro-level policies can be adapted to local conservation efforts. The final framework integrates these key parameters and aligns them with existing conservation approaches, offering a structured perspective that could be implemented in future conservation initiatives.

While this research focuses primarily on KTMHs, the principles developed in the Authenticity-Oriented Framework for the Conservation of Kelantan Traditional Malay Houses (KTMH-AoCF) could also be applied to other Traditional Malay Houses (TMHs). Effective conservation requires an open-minded approach, considering both top-down policy-driven strategies and bottom-up community-led initiatives. Whether through legislative interventions, owner-driven conservation efforts, or collaborative frameworks, the fundamental concern should be a clear understanding of the cultural and historical significance of KTMHs.

The effectiveness of conservation efforts depends on comprehensive planning, structured technical support, financial and fiscal incentives, ongoing monitoring, and sustainable maintenance strategies. A well-established conservation management system integrating advisory resources, policy frameworks, and technical guidance could contribute to a holistic and sustainable approach to built heritage conservation in Kelantan. This research has reinforced the importance of structured conservation efforts, emphasising that heritage preservation is a shared responsibility, requiring commitment from house owners, experts, authorities, and the wider community to ensure the long-term survival of KTMHs.

GLOSSARY

Adhan: An Islamic call to prayer, announced from a mosque to inform the community of the times for daily prayers.

Anjung is the front guest entrance open platform, often next to the Serambi Gantung (hanging veranda); serves as a space for welcoming visitors and is typically accessed by stairs.

- Awan larat: A decorative wood carving motif resembling stylised cloud patterns, symbolizing the connection between the earthly realm and the divine, often featured on architectural elements such as beams, doors, and window panels in royal and aristocratic Malay houses.
- *Balairung seri*: The main hall or ceremonial space within a royal palace (*istana*), serving as the central area for official functions, audience receptions, and state ceremonies, thereby reflecting the grandeur and hierarchical structure of Malay society.
- Bumbung asap : Jack roof in traditional Malay architecture roofing style, typically with a pointed, triangular shape, designed to facilitate ventilation and the escape of smoke and hot air, particularly from the kitchen area.
- *Istana:* The royal palace, a grand architectural structure that serves as the residence of the Sultan or monarch
- Janda Berhias: A decorative timber wall panel characterised by its intricate carvings, particularly found in traditional Malay architecture in the states of Kelantan and Terengganu.
- *Jemuran* : A semi-open transitional space in traditional Malay houses, typically used for drying clothes or food and as a private pathway, especially for women. Traditionally roofless to allow sunlight and ventilation.
- Jemuran Dapur: A semi-open or transitional area in traditional Malay houses, typically located adjacent to the kitchen (dapur). Traditionally used for drying kitchen-related items such as utensils, food, or laundry, this space often featured open or roofless designs for natural ventilation and sunlight.
- *Kampung:* A traditional Malay village characterised by communal living, cultural heritage, and closely connected social structures; represents a physical settlement and a way of life where architecture, customs, and environmental adaptation coexist, forming the foundation of Malay identity and heritage conservation.
- *Kelarai:* A traditional wattle work made from woven bamboo strips, commonly used in early Malay houses, palaces, and mosques, known for its intricate floral patterns and durability

Kelek Anak: Same with Serambi Samanaik.

- *Kolong :* The raised space beneath traditional Malay houses on stilts, designed for ventilation, flood protection, and multipurpose use such as storage or shaded activities.
- Lantai Jarang: Type of floor construction characterised by a raised wooden platform with gaps between the floorboards, allowing for ventilation and water to flow out.
- Lebah Bergantung is a decorative motif in traditional Malay architecture, often found on the gable ends or roofline of *Rumah Limas Bumbung Perak*; resembles a hanging bee or beehive and is a characteristic feature of more ornate Malay houses, symbolizing the owner's status and local craftsmanship.
- Loteng: A loft or attic space under the roof, used mainly for storage and accessed by a ladder. During times of conflict or insurgency, it also served as a hiding place, particularly for daughters.
- *Pangkin:* A raised wooden platform or seating area, typically found in the open area at the house compound, used for resting or socialising and often positioned to take advantage of natural ventilation and the surrounding environment.

Papan Kembung: Same with Janda Berhias.

- *Pawang:* A shaman or spiritual practitioner who plays a crucial role in performing rituals and ceremonies to ensure the spiritual well-being of a building and its occupants, often invoking protection and harmony with the surrounding environment.
- *Pelantar:* A external open platform, often located near the kitchen or entryway; used for activities like washing, drying clothes, and food preparation. It is open and designed to handle water drainage efficiently
- *Penghulu:* The head of a Malay village or community, traditionally responsible for local governance, justice, and administration.
- *pucuk rebung:* Decorative motif inspired by the triangular shape of bamboo shoots (*rebung*), symbolizing growth, resilience, and the connection between the earthly and spiritual realms.
- *Rumah Dapur* : The kitchen section in traditional Malay houses, typically located at the rear of the house. It serves as a functional space for cooking, food preparation, and related activities.
- *Rumah Ibu* : The central living space in a traditional Malay house, often elevated on stilts, serving as the primary area for family activities such as sleeping, gathering, and praying. It functions as the heart of the house, embodying key aspects of traditional design.
- Rumah Selang: Same with Rumah Tengah.
- *Rumah Tengah:* The central section of the house that connects the *Rumah Ibu* (main living area) and the *Rumah Dapur* (kitchen area). This intermediary space often serves as a multifunctional transition area, providing additional privacy and supporting household activities and circulation within the house.
- Serambi Gantung: A lower, linear space next to the Rumah Ibu, used for entertaining guests. Its floor level is lower than the Rumah Ibu, serving as a public area for visitors.
- Serambi Samanaik: Aclosed veranda that extends from the *Rumah Ibu* and is at the same floor level as the main living area. It provides additional space for family activities and blends seamlessly with the house.
- Serambi: A semi-enclosed veranda located at the front or side of the house; serves as a transitional space between the exterior and interior, often used for social interactions, welcoming guests, or relaxing.
- Sorong: A specific part of the *Rumah Ibu* (main house) used for sleeping or resting; traditionally a semiprivate space, separated by simple partitions like curtains, and is adaptable for different functions, reflecting the multifunctional nature of Malay house.
- *Tanggam:* A traditional Malay wood joinery technique using mortise and tenon joints, often reinforced with wooden dowels or wedges, and without nails or screws, allowing easy assembly and disassembly of timber structures.
- Tebar Layar: The gable end of the roof, characterized by its inverted V-shaped design
- Tiang Gantung: Same with Tiang Tongkat.
- *Tiang Tongkat*: A shorter support pillar that reaches only up to the floor level.
- *Tingkap Labuh:* Long window positioned at floor level.
- *Tukang:* A skilled craftsman or builder, typically involved in the construction, design, and ornamentation of Malay houses; responsible for executing the architectural vision, using traditional techniques and materials.
- *Tunjuk langit:* Decorative ridge or roof finial found on traditional Malay houses, characterised by its upward-pointing design.

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