

Social Housing Project with Reference to the Building Systems and Spatial Configurations of Traditional Malay House

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1. Introduction

Traditional Malay house embodies a deep connection to local climate and culture through vernacular wisdom. However, colonial influence and post-independence mass housing have gradually displaced these values in Malaysian residential design. This study aims to address cultural and spatial disconnection in contemporary living by proposing a social housing approach inspired by traditional building systems and spatial configurations. In this proposal, passive design strategies improve living comfort and mediate between public and private zones, such as elevated floor, roof ventilation, solar protection and various in-between spaces with their spatial composition. Housing units and shared spaces are organized in a semi-lattice system in order to create a sense of living together and revive the communal spirit of traditional Malay village life.

2. Environmental Strategies and Social Implications of Traditional Malay House

This study analyses the Traditional Malay House through the concepts of Part and Whole. Fig. 2 discusses on the Part, examining individual building elements such as Roof (R), Wall and Opening (W), Floor (F), Structure (St), and Furniture (Fu). These are examined through Material/Pattern, Construction, Shape, and Scale/Proportion. Roof (R), typically in the form of Bumbung panjang (gable roof), uses breathable materials like ironwood shingles. Wall and Opening (W) includes non-load bearing panels made of timber or woven bamboo and often feature full height symmetrical openings with ventilation details. Floor (F) and Structure (St) are built using a post and beam method, with the house raised on stilts. The house's scale often follows anthropometric logic, such as the span of a mother's outstretched arms. Furniture (Fu) is minimal, low and movable, supporting a floor-based lifestyle that reflects communal and flexible use of space.

Figure 3 examines the Whole, emphasising spatial configuration through Space (Sp) and Volume (V). A clear spatial hierarchy moves from serambi (verandah) to rumah ibu (main space) and dapur (kitchen), with transitional spaces like selang (passageway) and anjung (porch) mediating public and private zones. This layered arrangement reflects cultural values such as privacy, respect, and social interaction. Multiple access points from front, side, middle, and rear, support flexible circulation and practices like guest hosting. Volumetric organisation such as selang and parallel arrangements support modular expansion, adapting to changing household needs.

Figure 4 illustrates passive design strategies and their link to spatial use. Elements like raised floors, ventilated roofs, wide eaves, full-height openings, and operable louvres enhance airflow, daylight, shading, and humidity control. This climate-responsive design ensures the interior remains comfortable, which is essential for supporting the

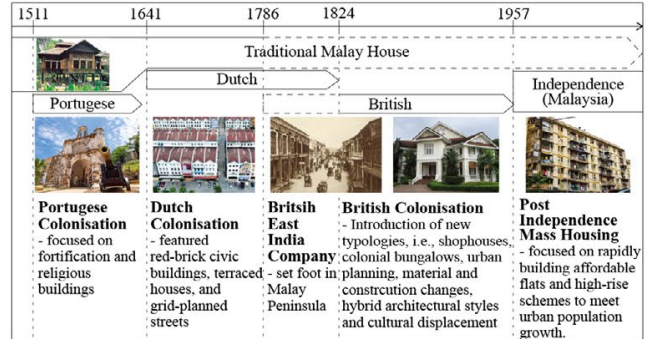


Fig. 1 Historical Development of Architecture in Malaysia

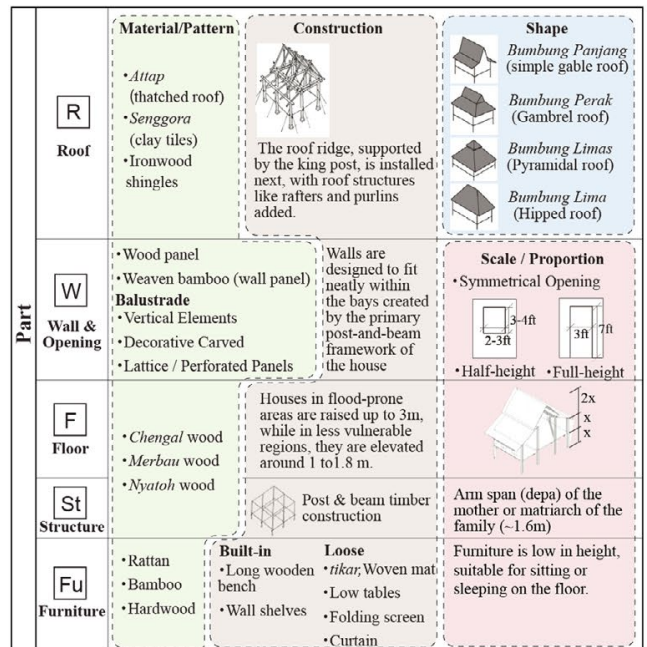


Fig. 2 Building Elements of Traditional Malay House

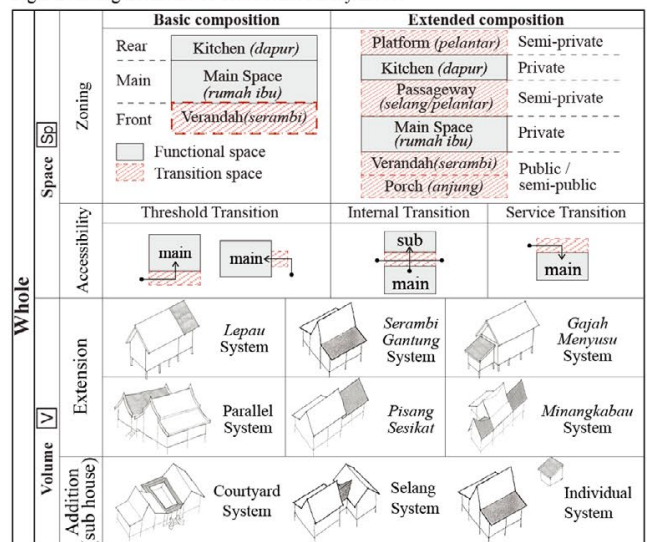


Fig. 3 Spatial and Volumetric Organisation of the Traditional Malay House

home's daily activities and cultural functions, particularly the communal gatherings in the rumah ibu.

3. Proposal

3.1 Critical Analysis of Existing Social Housing

Post-independence social housing in Malaysia has been criticised for environmental comfort, spatial flexibility, and community interaction (Fig. 5). Poor ventilation, lack of shading and heat-retaining materials cause high indoor temperatures and dependence on mechanical cooling. Rigid unit layouts designed for nuclear family ideals are outdated and do not support evolving lifestyles or multi-generational living. Privacy is limited due to the absence of transition spaces. Common areas such as corridors and courtyards are underutilized, offering little opportunity for social interaction.

3.2 Concept and Design Strategies

This proposal redesigns three block parcels at an existing social housing development in Wangsa Maju, a strategically located urban area in Kuala Lumpur with access to public transport, surrounding green reserves, and neighbourhood amenities. It reinterprets the traditional Malay house as a multi-unit collective housing model that integrates spatial layering, transition spaces, and passive design strategies under one roof. Each unit (U) is arranged around transition spaces (T), which function as buffers for privacy and shared zones that support daylight and natural ventilation (Fig. 6). A range of unit types, basic, studio, family, and two storey, accommodates diverse household compositions and living patterns. These units are connected through verandahs, corridors, and shared platforms, forming a hierarchy of transitional spaces that allows interaction.

The three housing blocks are linked by elevated walk-

ways arranged in a semi-lattice network. These walkways and decks connect homes to the adjacent park and form communal circulation that offers resting points, views, and opportunities for social interaction. Between buildings, shared courtyards and shaded open zones support neighbourly encounters and visual connectivity. At the centre, where the three blocks converge, a central courtyard functions as the communal heart, hosting features such as a water pavilion, small marketplace, or seasonal gatherings (Fig. 7).

The structure is raised on stilts to enhance underfloor ventilation and create shaded *kolong* (underfloor space) for social gatherings or practical uses such as small businesses, workshops, or gardening. A tiered staircase from the corner slope invites the public to the ground floor, leading to a plaza that blends with the undercroft and connects to the central courtyard and park, encouraging inclusive access. Parking at the lower slope connects to the road and is naturally ventilated through skylights. The design makes use of local slope winds to improve the microclimate, guiding cool air through the open ground level (Fig. 9). Stack ventilation is supported by varied floor levels, breathable materials, and a roof system that draws in cool air and releases hot air through ridge vents and louvred gable ends. Full-height operable louvred windows allow cross ventilation, while roof overhangs and open corridors reduce heat gain and protect from rain (Fig. 10).

4. Conclusion

This proposal reconnects modern social housing with traditional Malay values by integrating passive design and spatial configuration, aiming to restore climate sensitivity, cultural relevance, and a shared sense of community within contemporary Malaysian urban living.

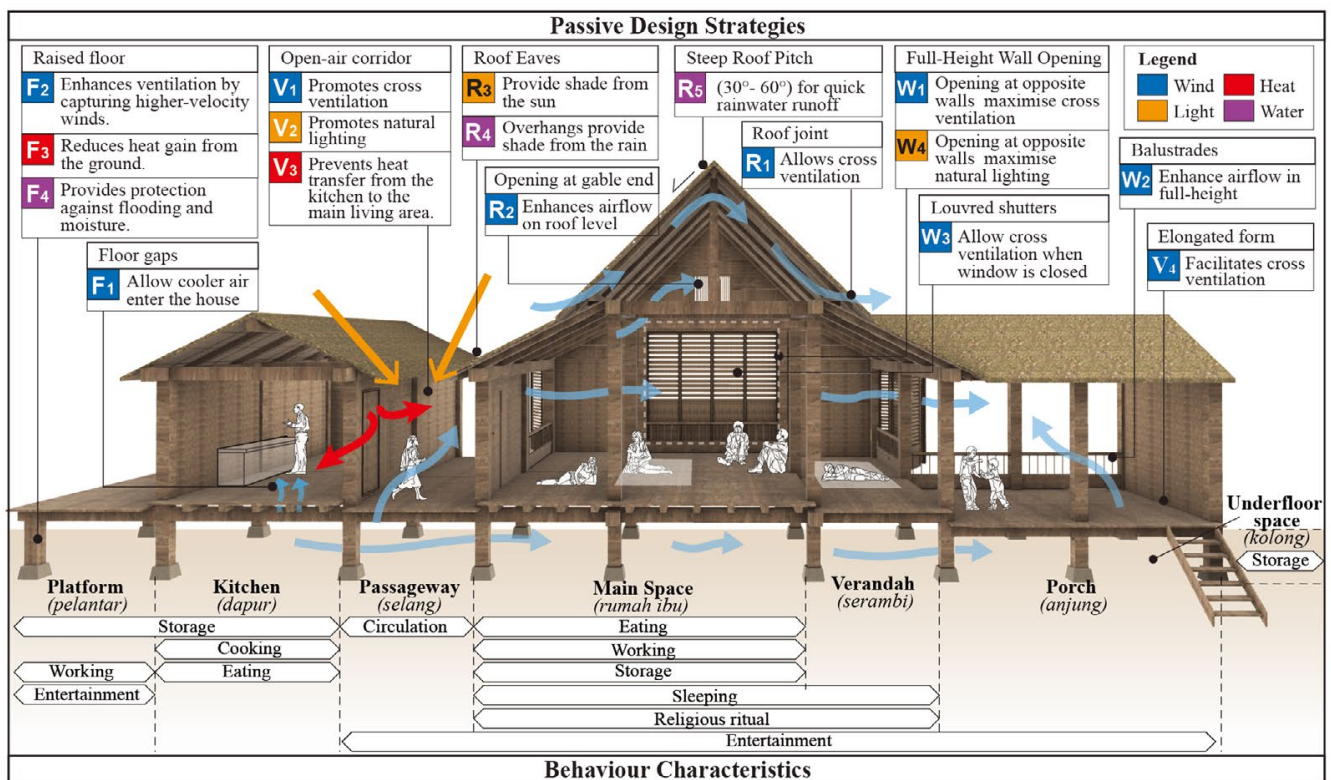


Fig 4 Passive Design Strategies and Behaviour Characteristics of the Traditional Malay House

Critical Analysis of the Existing Social Housing

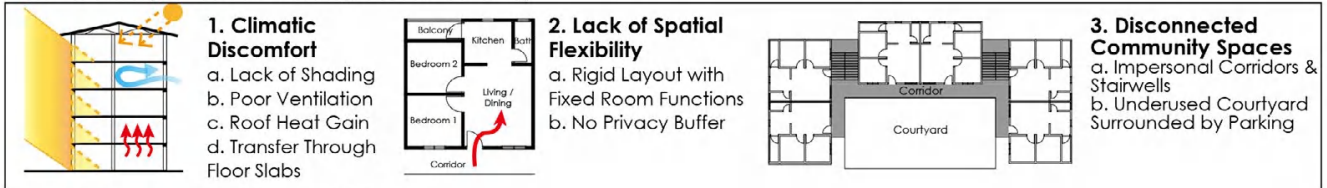


Fig. 5 Critical Analysis of the Existing Social Housing

Concept of Design Proposal

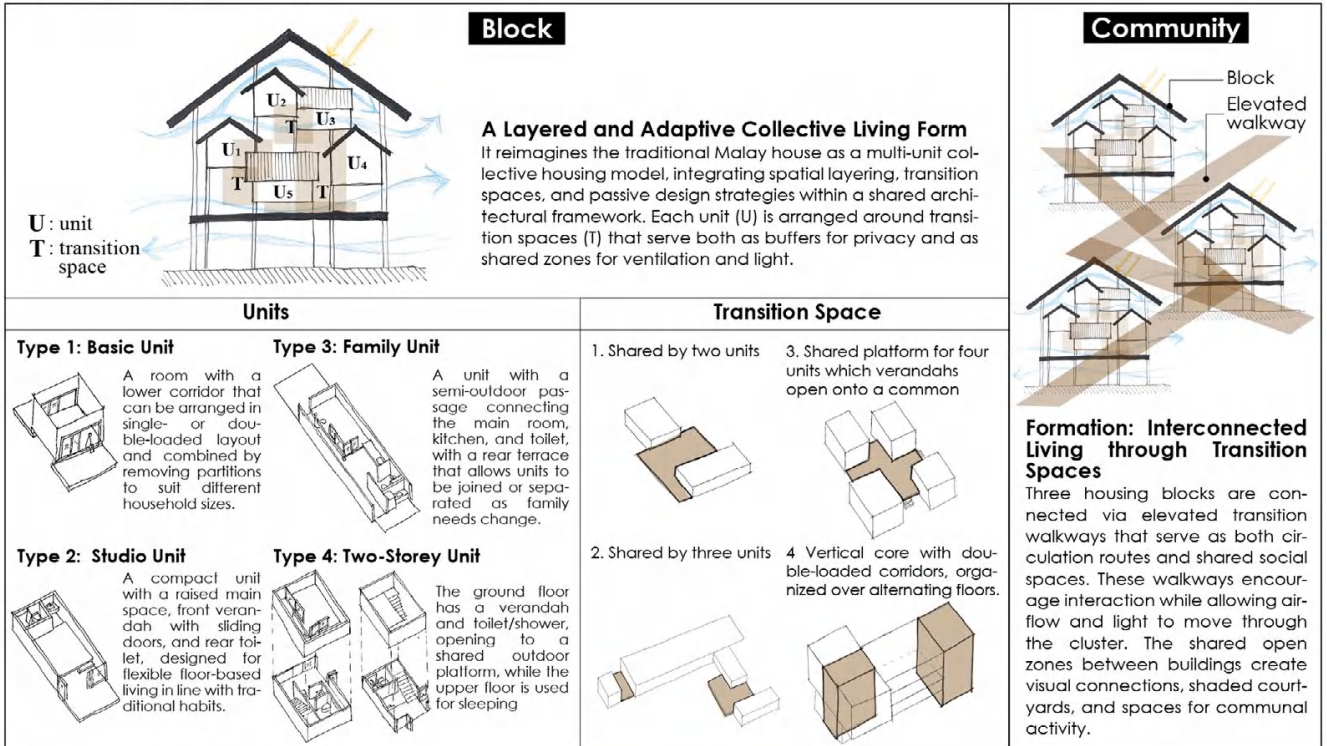


Fig. 6 Concept of Design Proposal



Fig. 7 Site Plan



Fig. 8 Bird's-Eye View of the Entire Site from the North-east Proposed Site



Fig. 9 Sectional Perspectives of the Entire Site

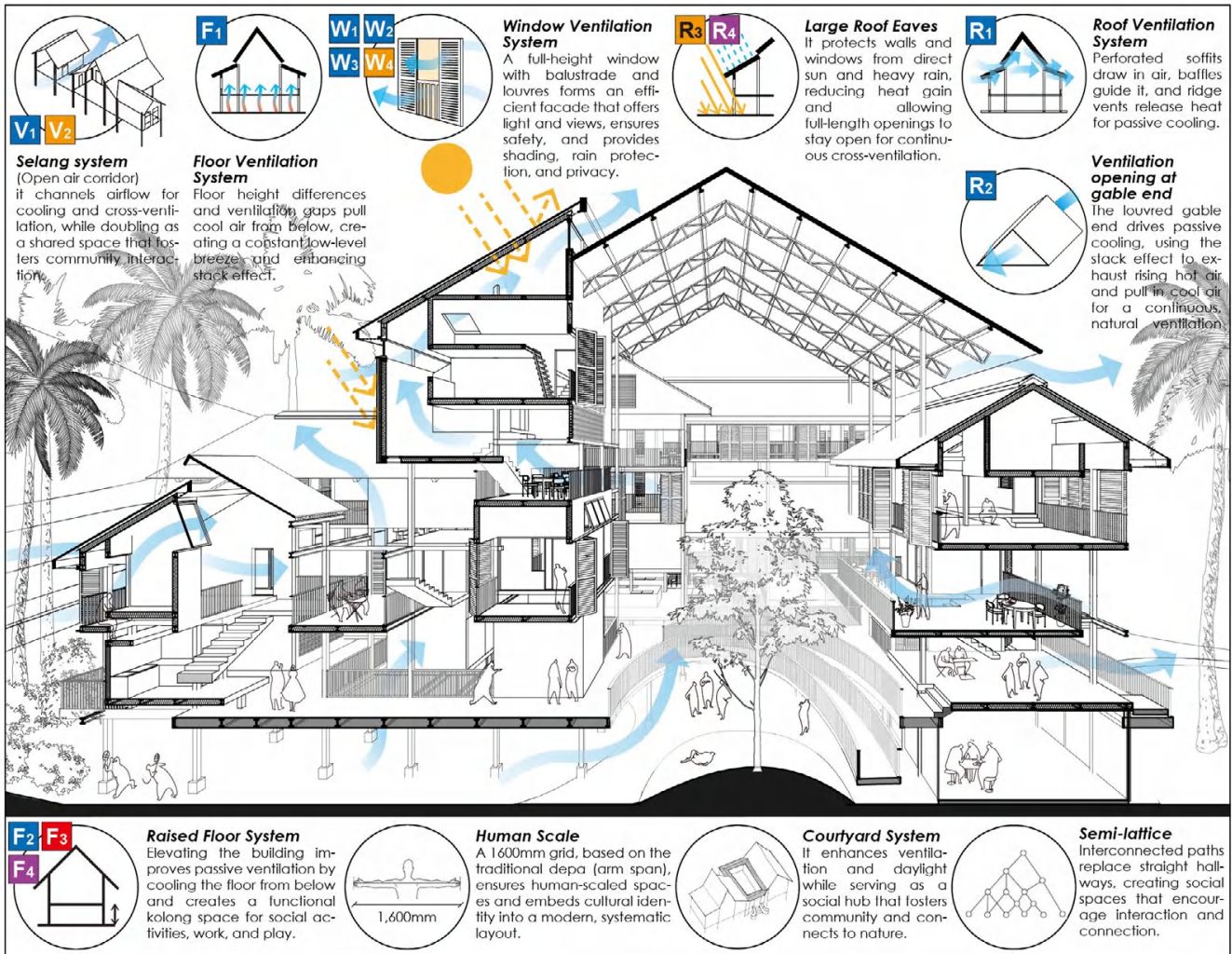


Fig. 10 Sectional Perspective of a Block with Design Strategies



Fig. 11 View towards Courtyard from Ground Level



Fig. 12 View towards Central Courtyard from Elevated Walkway

