

Chinese Peranakan Vernacular Architecture: A Source of Inspiration for Contemporary Urban Housing Solutions

Mohd Azri Mohd Jain Noordin^{1,2*}, Azizi Bahauddin²

¹Faculty of Architecture and Ekistics, Universiti Malaysia Kelantan, Malaysia

²School of Housing, Building and Planning Universiti Sains Malaysia, Malaysia

*Corresponding author: azri.mjn@umk.edu.my

Abstract

This paper examines how the spatial and community-oriented characteristics of Chinese Peranakan traditional houses in Kampung Tirok, Terengganu, offer valuable design insights for contemporary urban housing. By analysing features such as open yards and flexible interior layouts, this study explores how these architectural elements support privacy, encourage social interaction, and enhance communal relationships. The research proposes that such vernacular principles can address modern challenges including social isolation and urban density. It also evaluates existing communal housing initiatives to explore how Peranakan design values may be translated into present-day urban contexts. The findings aim to assist architects in creating culturally sensitive, sustainable housing models that foster community cohesion in densely populated environments.

Keywords: Vernacular Design Adaptation, Spatial Organization, Chinese Peranakan Traditional Houses, Urban Housing Solutions

Citation:

Noordin, M. A. M. J., & Bahauddin, A. (2025). Chinese Peranakan vernacular architecture: A source of inspiration for contemporary urban housing solutions. *Alam Cipta*, 18(Special Issue 3), [Article 4]. <https://doi.org/10.47836/AC.18.S3.PAPER04>

Received:

04 February 2025

Accepted:

22 October 2025

Published:

December 2025

Introduction

Kampung Tirok, located near Kuala Terengganu on Malaysia's east coast, stands as one of the few surviving settlements that preserve the distinctive Chinese Peranakan architectural and cultural heritage. Recognized for its unique fusion of Chinese craftsmanship and Malay vernacular traditions, the village's residences exemplify an exceptional architectural synthesis that reflects both climatic adaptation and social cohesion. These houses, often over a century old, feature elevated timber floors, open courtyards, deep eaves, and elaborately crafted façades that embody the hybrid identity of the Peranakan Cina community. Beyond their material construction, these homes represent a living heritage where spatial arrangements continue to sustain family networks, neighbourly relations, and cultural rituals deeply rooted in shared communal life (Zain & Andi, 2020). The architectural and cultural significance of Kampung Tirok is increasingly relevant today as cities across Southeast Asia grapple with the challenges of rapid urbanization, high-density living, and weakening community bonds. Contemporary urban housing developments often emphasize efficiency and profit-driven design at the expense of sociability, leading to social isolation, cultural detachment, and declining neighbourhood interaction (Kearney, 2005; Hisham & Amin, 2020; Ardiansyah & Layang, 2021). In contrast, the vernacular logic embedded in Kampung Tirok's Peranakan houses demonstrates how architecture can harmonize social well-being, environmental performance, and cultural continuity.

In the face of rapid urbanization and the rise of high-density housing, many contemporary cities struggle to maintain a sense of community and belonging among residents. Modern housing developments often prioritize spatial efficiency

and market-driven design over social connectivity, resulting in environments marked by isolation, weakened neighbourhood ties, and diminished cultural engagement. While innovation and sustainability are emphasized in current architectural discourse, the social dimensions of design once deeply embedded in traditional vernacular housing are frequently overlooked. The Chinese Peranakan traditional houses in Kampung Tirok, Terengganu, offer a culturally rich and socially responsive alternative, featuring open yards, flexible interiors, and shared spaces that facilitate daily interaction and communal life. Despite their potential relevance, limited research has explored how these design principles can inform contemporary housing solutions in Southeast Asia.

This study addresses that gap by investigating how the spatial organization and communal values of Peranakan architecture can be adapted to modern urban contexts, offering architects and planners culturally sensitive, socially integrative strategies for future development.

Literature Review

Chinese Peranakan Architecture and Community-Oriented Design

The traditional Chinese Peranakan houses in Kampung Tirok, Terengganu, represent a rare and rich synthesis of Chinese symbolism and Malay spatial planning. Scholars such as Samsudin et al., (2020) describe these dwellings as architectural hybrids designed for environmental adaptability, with features such as open yards, elevated timber floors, deep eaves, and flexible interiors that allow for both comfort and social cohesion. The spatial layout typically integrates front verandas and semi-public yards that function as informal communal zones. However, much of the existing scholarship remains descriptive and stylistic, focusing on decorative motifs and construction techniques rather than examining how these architectural elements actively shape social relationships. Studies like Darmayanti and Bahaiddin (2020) discuss intergenerational living patterns but stop short of analyzing how such spatial configurations could inform modern housing models. This study extends the discourse by critically exploring how Peranakan spatial logic, especially its blending of privacy and collectivity, can serve as a model for designing inclusive urban communities.

The Role of Architecture in Social Connectivity

Architecture does more than provide shelter with it shapes patterns of social life. A well-designed built environment can foster interaction, trust, and belonging, while a poorly designed one can intensify isolation and disconnection. Research by Williams (2005) and Omar (2009) highlights how shared spaces, thresholds, and courtyards nurture spontaneous encounters and emotional safety within neighbourhoods. Yet, contradictions arise in the application of these principles in contemporary contexts. Many modern urban housing developments especially high-rise apartments and gated communities tend to prioritize security, privacy, and efficiency over interaction. While this ensures personal comfort, it inadvertently suppresses community dynamics, creating socially fragmented environments. This contrast underscores a research gap: the need to re-examine traditional spatial typologies, like those in Kampung Tirok, that successfully balance privacy with sociability and could inspire human-centred urban design.

Challenges and Opportunities in Adapting Vernacular Models

While vernacular traditions provide timeless lessons in spatial harmony and social inclusion, translating these values into modern housing is not straightforward.

As Omar (2009) notes, current urban housing policies emphasize density, cost efficiency, and standardization, often resulting in monotonous layouts and reduced livability. Moreover, architectural discourse in Malaysia frequently separates cultural heritage from sustainability and urban policy, leaving vernacular wisdom underutilized in design innovation. However, several contemporary models such as cohousing developments (Fu, 2018) and biophilic housing frameworks demonstrate that social sustainability can coexist with density when design intentionally promotes shared spaces. These models echo the Peranakan ethos of interdependence and openness, proving that heritage principles remain adaptable. What remains underexplored is how to reinterpret these values in a way that respects cultural identity while addressing modern constraints such as limited land, changing family structures, and regulatory requirements. This study therefore adopts a critical comparative approach, using Kampung Tirok's Chinese Peranakan houses as a reference point for evaluating gaps in current urban housing design and for proposing adaptive frameworks that embed social and cultural values within sustainable architectural practice. Table 1: Showcases the comparative summary of Peranakan vernacular features and contemporary urban housing typologies, illustrating social and environmental contrasts.

Table 1: Showcases the Comparative Overview of Peranakan Vernacular Housing and Contemporary Urban Typologies, Highlighting Key Social and Environmental Distinctions.

No.	Aspect	Peranakan Vernacular Housing (Kampung Tirok)	Contemporary Urban Housing	Critical Insight / Design Implication
1.	Spatial Layout.	Layered sequence of open yards, verandas, and interior courts creating a gradient between public and private realms.	Compact, enclosed layouts emphasizing security and efficiency with limited transitional spaces.	Reintegration of semi-public spaces (e.g., communal courtyards, shared corridors) can foster daily interaction.
2.	Social Function.	Houses designed for intergenerational cohabitation and community gatherings.	Nuclear-family oriented, individual units with minimal neighbour contact.	Reintroduce shared zones to support intergenerational and social diversity.
3.	Climate Adaptation.	Passive cooling through cross-ventilation, timber floors, and shading eaves.	Reliance on mechanical ventilation and artificial cooling systems.	Adopt vernacular passive strategies for sustainable and energy-efficient housing.
4.	Cultural Symbolism.	Architectural motifs and rituals reinforce identity and belonging.	Generic modern forms lack cultural continuity.	Infuse local identity and heritage-inspired design elements into urban developments.
5.	Maintenance and Ownership.	Shared responsibility for communal spaces; collective upkeep.	Private ownership with limited communal accountability.	Promote cooperative models encouraging shared maintenance culture (as in cohousing).
6.	Design Philosophy.	Balance between individuality and collectivity rooted in cultural values.	Prioritization of privacy and profit-driven development.	Encourage human-centred design that values social well-being alongside economic viability.

Methodology

This research adopts a qualitative case study methodology, suitable for exploring architectural characteristics and the lived experiences of residents in specific cultural contexts. The case study focuses on Kampung Tirok, a village in Terengganu known for its unique blend of Chinese and Malay architectural traditions. The qualitative approach allows for in-depth analysis of the spatial configurations, environmental adaptations, and social dynamics within these homes. This method is particularly relevant when seeking to understand how cultural values are expressed spatially and how these expressions impact human behaviour and community development. Data collection was conducted using two primary techniques; structured observations and semi-structured interviews. The observations involved detailed spatial analysis of one well existing Chinese Peranakan houses within Kampung Tirok, selected based on their architectural completeness, historical integrity, and continued residential use. Key architectural features such as the arrangement of open yards, room divisions, circulation

patterns, and multifunctional spaces were documented. Sketches, photographs, and spatial measurements were taken to support the visual analysis. These observations aimed to reveal how spatial organization fosters interaction and privacy simultaneously, particularly in multigenerational living arrangements. The second phase of data collection involved interviews with five residents, including homeowners and elderly occupants with deep knowledge of the historical and cultural context of the homes. The interviews were conducted in a conversational format using open-ended questions, focusing on themes such as everyday spatial use, perceived community ties, intergenerational living practices, and the perceived benefits and limitations of the architectural features. Participants were selected through purposive sampling to ensure the inclusion of long-term residents with lived experience in these traditional settings. The data collected through observations and interviews were analysed using thematic analysis and basic descriptive analysis. Recurring themes were identified and categorized under headings such as “communal space usage,” “privacy in shared environments,” and “adaptive use of open yards.” These themes were further cross-referenced with the architectural observations to triangulate findings and ensure interpretive validity. This analytical process not only clarified the architectural mechanisms supporting social interaction but also highlighted challenges in adapting these mechanisms to modern urban contexts. To strengthen the rigor of the methodology, field notes and interview transcripts were reviewed by peer researchers and verified with participants where necessary. The methodology was designed to bridge the gap between architectural form and social function, ensuring that the findings would be useful both theoretically and practically. Figure 1, illustrating the methodology of the research, showcasing the relationships between the research design, qualitative approach, data collection methods; field observations, and interviews, and the data analysis process leading to outcomes.

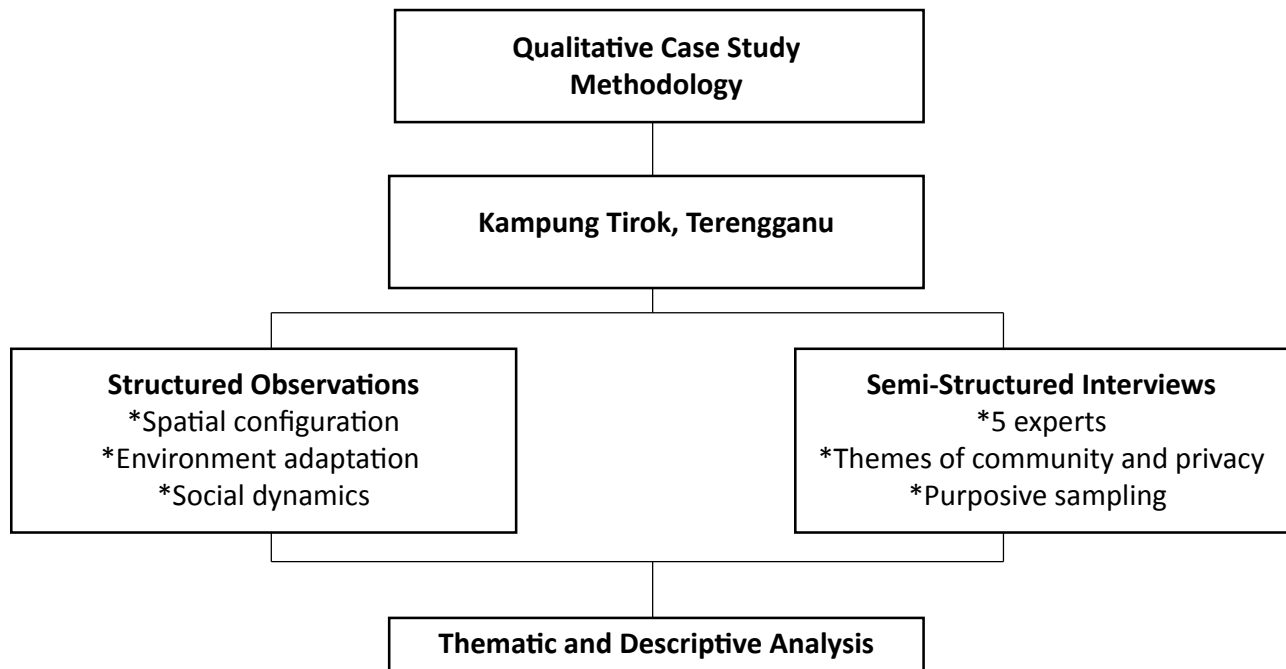


Figure 1: Relationship Between Data Collection Techniques and Data Analysis in the Study of Kampung Tirol.
Source* Author 2024

Results and Discussion

Key Architectural Features of Chinese Peranakan Traditional Homes in Kampung Tirok

The architectural analysis of Chinese Peranakan houses in Kampung Tirok revealed three primary design features that contribute to community-oriented living: open yards, raised timber floors, and flexible interiors. Open yards serve as vital transitional spaces between public and private realms, facilitating natural social interaction while offering climatic benefits such as ventilation and shading. Raised timber floors, common in many traditional Malay-influenced homes, enhance passive cooling and protect against flooding an adaptation to the tropical environment. The flexible interior layouts, often demarcated by movable partitions, support multifunctional activities and intergenerational living, allowing spaces to adapt to changing household needs. Figure 2 illustrates the typology of Mrs. Yee Choo Im's house as a representative case. Table 1 outlines these architectural attributes in greater detail.



Figure 2: Offers a Comprehensive View of the Chinese Peranakan Traditional Houses Belonging to Mrs. Yee Choo Im, in Kampung Tirok. Source* Author 2024

Table 2: Showcases the Characteristics of Chinese Peranakan Traditional Houses in Kampung Tirok.

No.	Architectural Feature	Description	Impact on Community and Living Spaces
1.	Open yards.	Large open yards at the front and back of the houses shared by multiple families.	Creates a communal space for social gatherings, fostering frequent interactions and strong community ties.
2.	Multifunctional interiors.	Flexible interior spaces designed for various uses such as dining, socializing, and sleeping.	Encourages family gatherings while providing private spaces when needed, supporting both community and personal needs.
3.	Deep eaves.	Deep roofed passage connecting different sections of the home.	Enables seamless movement between private and communal spaces, promoting social interactions while maintaining privacy.
4.	Open-air design.	Large windows, lattice work and open-air yards to facilitate airflow and natural light.	Enhances environmental comfort, making the shared spaces more inviting for social activities.
5.	Open verandas.	Front-facing verandas overlooking the streets or open yards.	Acts as a transitional space between private and public areas, allowing for casual social interactions with neighbours.

Community and Social Benefits Reported by Residents

Interviews with residents emphasized the social benefits embedded in the spatial configurations of these homes. Respondents highlighted how shared spaces encouraged regular interaction between family members and neighbours, fostering intergenerational support and informal social surveillance. Open yards were most frequently mentioned as a source of belonging and togetherness. They act as daily meeting grounds and informal community centers; *“The yard keeps us close. You don’t have to plan to meet people—you just step outside”*. This spatial openness also supports collective responsibility, where neighbours share maintenance duties and social care; *“If the plants need watering or a roof leaks, everyone helps. It’s not just my house—it’s ours”*. Flexible interiors encourage intergenerational living and dynamic domestic routines. The ability to modify space reinforces inclusivity and mutual respect; *“My parents, children, and grandchildren live together easily. We can divide space when needed or join it for family time”*. Open-air designs and verandas bridge social interaction with environmental harmony. Residents valued both the comfort and sensory connection with nature; *“The breeze and sunlight make us want to stay outside. We feel part of the weather, not locked away from it”*.

Overall, interviews indicate that residents value these features on two interlinked levels—practically for their thermal and functional efficiency and emotionally for their ability to foster communal identity and continuity. This duality confirms that the Peranakan spatial model succeeds not only as climate-responsive design but also as a living cultural system. The qualitative insights are summarized in Table 3, which categorizes the recurring themes related to community well-being, shared routines, and social cohesion.

Table 3: Outlines the Community and Social Advantages as Identified by Residents.

No.	Community Benefit	Architectural Feature(s) Associated	Resident Feedback
1.	Stronger social bonds.	Open yards and verandas promote frequent interaction.	5 (100%) respondents agreed regular social gatherings take place in the open yards, which have become the heart of the community.
2.	Cultural preservation.	Open-air spaces and deep roof facilitate cultural gatherings.	4 (80%) respondents agreed communal spaces have helped preserve cultural practices, with families celebrating festivals together.
3.	Sense of belonging.	Communal open yards and multifunctional interiors enable social engagement.	5 (100%) respondents agreed residents feel a strong attachment to their homes and neighbourhoods due to the ongoing social interactions with neighbours.
4.	Intergenerational living.	Flexible interior spaces allow for the accommodation of extended families.	4 (80%) respondents agreed families of different generations coexist harmoniously, with the elderly being well integrated into the social fabric.
5.	Collective responsibility.	Communal verandas and open yards provide shared spaces that require collective care.	3 (60%) respondents agreed open yards and communal spaces have instilled a sense of collective responsibility for maintenance and upkeep.

Design Implications for Urban Housing

The findings suggest that key elements of Peranakan spatial design could offer valuable strategies for improving the quality of urban housing. In high-density contexts, these principles may be translated into shared semi-public zones such as rooftop gardens, communal corridors, or open atriums. The concept of flexible interiors can inform modular housing layouts that accommodate diverse family structures and evolving residential needs. Additionally, zoning strategies that prioritize community interaction—such as clustering units around common areas—could promote stronger neighbourhood ties. However, applying these ideas to modern cities requires careful consideration of land constraints, privacy norms, and cultural diversity. Therefore, architects and planners must thoughtfully reinterpret traditional principles to suit contemporary conditions without compromising their communal essence.

Relating Findings to Contemporary Housing Frameworks

The spatial logic and lived experience of Kampung Tirok resonate strongly with three emerging design paradigms, cohousing biophilic design, and climate-responsive architecture. The shared yards and verandas mirror cohousing's emphasis on communal spaces that promote social interaction and shared responsibility. Peranakan houses naturally integrate daylight, greenery, and airflow, reflecting biophilic ideals of reconnecting people with nature. Raised timber floors, deep eaves, and open-air circulation exemplify vernacular climate adaptation. These features minimize heat gain and allow for natural ventilation, aligning with contemporary low-energy building strategies. Incorporating similar elements, such as shaded breezeways, ventilated façades, and recessed balconies that can reduce urban heat and enhance habitability in tropical high-density housing. Together, these reveal that the Peranakan model embodies a form of socio-climatic intelligence where spatial, environmental, and social systems function in mutual support. This alignment underscores the broader potential of Kampung Tirok's vernacular logic to guide sustainable urban development.

Conclusion

The architectural and social values inherent in traditional Chinese Peranakan houses offer meaningful lessons for designing socially responsive urban environments. These homes demonstrate how spatial features particularly open yards and adaptable interior layouts that can successfully balance communal interaction with personal privacy, supporting both social well-being and environmental adaptation. The close-knit community dynamics observed in Kampung Tirok are not incidental but are instead deeply rooted in the physical form and arrangement of the homes themselves. Translating these values into contemporary urban housing requires thoughtful adaptation rather than direct replication. Elements such as shared yards, communal lounges, and modular interiors can be integrated into modern apartment buildings to reflect the social intentions of Peranakan design. While modern constraints such as limited space, regulatory codes, and changing lifestyles pose challenges, selective incorporation of these principles is both feasible and valuable. Moreover, the alignment between Peranakan communal design and contemporary sustainable housing models such as cohousing, eco-villages, and green urban developments that highlights the continued relevance of vernacular wisdom. Incorporating green infrastructure, passive cooling techniques, and water-sensitive design within socially inclusive layouts can address both environmental and community goals. These strategies contribute to resilient and culturally rooted urban neighbourhoods that meet the social needs of today's diverse populations.

In conclusion, this study reinforces the importance of learning from traditional architecture to address modern housing challenges. The spatial principles of Chinese Peranakan houses provide a foundation for creating housing that is not only functionally efficient but also socially vibrant and environmentally sustainable. Architects and planners are encouraged to draw inspiration from such vernacular traditions when envisioning inclusive, human-centered urban futures. Figure 3, proposes a conceptual framework for applying these values in high-density settings, demonstrating how architecture can bridge cultural heritage and modern urban living.



Figure 3: Opportunities for Promoting Communication Between Buildings, Understanding the Balance of Interpersonal Interaction in Architecture, the Function of Open Yards and Flexible Spaces.

Source* Author 2024

This research contributes to architectural discourse by linking vernacular wisdom with contemporary housing needs. Through the study of Kampung Tirok's Peranakan houses, the paper presents a set of adaptable design strategies that align with sustainable development goals and social well-being. The study also emphasizes the importance of culturally responsive design, particularly in regions where heritage and modernity must coexist. It advocates for a design approach that is not only functional and sustainable but also rooted in the social fabric of the community. Urban planners and architects can draw from the findings to incorporate communal features in housing developments without compromising spatial efficiency. Open verandas, shared yards, and modular interiors may be implemented in apartment blocks or cluster housing to promote interaction and social cohesion. These interventions could mitigate social isolation while enhancing quality of life in high-density environments. Ultimately, this study reinforces the value of tradition as a guide for innovative, people-centered design in the urban age.

Acknowledgements

The authors express gratitude to the School of Housing, Building and Planning, Universiti Sains Malaysia (USM) and Faculty of Architecture and Ekistics, Universiti Malaysia Kelantan (UMK) for providing research facilities and support, and to all participants, for their invaluable assistance.

References

- Ardiansyah, A., & Layang, S. (2021). Feasibility Study Of Xiv Hiu Putih Housing, Palangka Raya City Based On Permenpera No 22/PERMEN/M/2008., 7(1), 1-9. <https://doi.org/10.37304/parentas.v7i1.2949>
- Darmayanti, T E., & Bahauddin, A. (2020). Pengaruh Perubahan Sirkulasi terhadap Fungsi Ruang Di Rumah Peranakan, Kampung Babagan, Lasem., 5(2), 265-276. <https://doi.org/10.30822/arteks.v5i2.403>
- Fu, N. (2018). Evolving Rural Typologies for Rapidly Growing Cities: Urbanus's Work Towards Inclusive Communities. Wiley, 88(4), 70-77. <https://doi.org/10.1002/ad.2323>
- Hisham, N N., & Amin, N D M. (2020). Housing Design for Urban Poor in Kuala Lumpur: A Literature Review. IOP Publishing, 498(1), 012083-012083. <https://doi.org/10.1088/1755-1315/498/1/012083>
- Kearney, A. (2005). Residential Development Patterns and Neighborhood Satisfaction. SAGE Publishing, 38(1), 112-139. <https://doi.org/10.1177/0013916505277607>
- Omar, D. (2009). Communal Living Environment in Low Cost Housing Development in Malaysia. Canadian Center of Science and Education, 4(10). <https://doi.org/10.5539/ass.v4n10p98>
- Samsudin, N A., Misnan, S H., Astuti, W., Mokhtar, S N., & Rashid, M F. (2020). An Adaptation of the Malay Kampongs or Villages Concept on Modern Housing Schemes Development in Malaysia. IOP Publishing, 447(1), 012026-012026. <https://doi.org/10.1088/1755-1315/447/1/012026>
- Williams, J. (2005). Designing Neighbourhoods for Social Interaction: The Case of Cohousing. Taylor & Francis, 10(2), 195-227. <https://doi.org/10.1080/13574800500086998>
- Zain, Z., & Andi, U F. (2020). The Intangible Characteristics of the Two Indigenous Traditional Dwellings in West Kalimantan., 17(1), 25-36. <https://doi.org/10.5505/itujfa.2019.97720>