Longhouse Architecture of the Austronesian Region in Global Context: Narrative Literature Review

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ABSTRACT

Longhouse architecture is a vernacular residential typology found in a variety of cultural and climatic contexts around the world. Despite its wide distribution, existing studies often discuss longhouse traditions within a limited regional or disciplinary framework. This article presents a literature-based review of longhouse architecture in the Austronesian region in a global context, examining how spatial organization, construction systems, and climate adaptation shaped the social role of longhouses in Scandinavia and North America. The study uses a narrative literature review. The synthesis in the study focuses on building morphology, spatial continuity, material use, and environmental strategies. The study shows that Austronesian longhouses are characterized by flexible and continuous collective spaces, lightweight and renewable building materials, and passive design strategies that are closely integrated with communal social practices and rituals. In contrast, longhouses in temperate and cold regions tend to prioritize structural efficiency, enclosure, and functional segmentation. These findings suggest that the significance of Austronesian longhouse architecture lies in the integration of vernacular knowledge, social organization, and environmental responses as interconnected systems. By placing Austronesian longhouse architecture within a global framework, this literature review contributes to the broader discourse on vernacular architecture and offers insights relevant to contemporary discussions about socially informed and climate-responsive architectural design.

Keywords: Literature Review, Longhouse architecture, Austronesian, Global

INTRODUCTION

A unique vernacular home typology known as "longhouse architecture" has independently developed in many different cultural and climatic regions of the world. Longhouses, which may be found anywhere from Scandinavia and North America to Southeast Asia and the Pacific, are frequently linked to communal living arrangements, shared social customs, and context-specific building traditions (Bukkemoen, 2025). Despite this wide worldwide spread, longhouse traditions have mostly been studied within disciplinary or regionally defined boundaries in architectural studies, which has led to a lack of comparative knowledge of their socio-spatial and environmental relevance (Nguyen et al., 2019). Rather, vernacular architecture plays a crucial role in understanding how traditional societies shape the built environment in response to local social, cultural and environmental needs. Among the diverse typologies of vernacular dwellings that exist around the world, the longhouse is an important form of collective dwelling due to its emergence in different geographical and cultural contexts (Pardo, 2023; Dunn et al., 2024), including in the Austronesian, Scandinavian and North American regions. While sharing the basic elongated form and the function of group dwelling, variations in longhouse architecture reflect profound differences in the social organization, climate adaptation strategies and construction logics that shape the life of their respective communities (Hjelle et al., 2017).

According to Fox (2006), longhouses are a significant example of vernacular architecture in the Austronesian region, which reflects the intimate connection between indigenous construction expertise, environmental circumstances, and social structure. Rich anthropological and architectural data has been produced by previous research on Austronesian longhouses, with a focus on communal living, cultural symbols, and climate responsive

building techniques (Yang et al., 2022). However, rather than placing Austronesian longhouses within a larger architectural discourse, a large portion of this material continues to be descriptive and context-specific, frequently considering them as culturally distinctive products. However, environmental determinism or structural efficiency have been prioritized in comparative debates of longhouse architecture in global contexts, especially in studies of longhouses from temperate and frigid climes. Even while these studies provide insightful information about building logic and climate adaptation, they hardly ever systematically address the social and geographical aspects of communal living (Victoria et al., 2017). Understanding longhouse architecture as an integrated architectural system is hampered by the division of environmental, social, and spatial studies (Moosavi et al., 2025). This article offers a narrative literature review that places Austronesian longhouse architecture into a global comparative context in order to address these shortcomings. The review synthesizes important architectural and anthropological works to investigate how spatial organization, construction techniques, and climatic adaptation interact to form the social significance of longhouses across regions rather than offering a comprehensive database of longhouse types. To elucidate contextual distinctions and common architectural principles, comparative comparisons to longhouse traditions in North America and Scandinavia are used.

RESEARCH OBJECTIVE

1. To synthesize and critically evaluate existing literature related to longhouse architecture in the Austronesian region in a global context.

METHODOLOGY

The purpose of this study, which is a narrative literature review, is to compile and evaluate the body of knowledge regarding longhouse architecture in the Austronesian region within a global context. Using terms like "longhouse architecture," "Austronesian region," and "global context," Martin-Martin et al. (2018) a thorough search was carried out across scholarly databases like Connected Paper, Dimensions AI, & Scopus. The study includes peer-reviewed literature published in English between 2021 and 2026. To uncover and arrange important findings, a theme analysis was done on a few chosen papers. This approach was selected due to its efficiency in combining a range of interdisciplinary sources to create a shared knowledge of this intricate conceptual subject and to pinpoint areas that require further investigation.

Table 1: Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Time line	2021 - 2025	< 2021
Publication type	Research articles (empirical data)	Book series, review articles, proceedings paper, paid articles, published before 2021
Language	English	Non english

Table 1 show the inclusion criteria for this study include the use of English-language articles and the exclusion of publications written in languages other than English. Items published prior to 2021 are not included in the article chronology, which spans from 2021 to 2025. Additionally, the publications that are included were selected by researchers from databases that contain empirical data; book series, review articles, progress papers, and paid pieces are not included as primary sources.

LITERATURE REVIEW

2.1 Vernacular Architecture and Longhouse Typologies

Vernacular architecture has been widely discussed as an expression of the interaction between cultural practices, environmental conditions and locally available resources, rather than as a static or pre-modern building tradition (Lamzah, 2025). Fundamental scholars argue that vernacular buildings embody systems of accumulated knowledge that respond to social organization and ecological constraints. In architectural research, vernacular

dwelling typologies are increasingly being studied as spatial systems that encode ways of life, rather than as isolated formal artifacts (An et al., 2023). Among these typologies, the longhouse occupies a unique position due to its presence across a variety of cultural and climatic contexts, including Southeast Asia, the Pacific, Scandinavia and North America (Sand-Eriksen, 2023). Existing architectural studies have documented longhouses primarily through morphological descriptions and construction analyses, often focusing on regional specificities. While this body of work has contributed to the preservation and understanding of vernacular forms, it has tended to prioritize physical features over analytical interpretations of spatial logic and social function. For architectural discourse, this limitation underscores the need to reposition longhouse architecture as a comparative and analytical subject within the built environment.

2.2 Spatial Organization and Social Structure in Longhouse Architecture

The relationship between spatial organization and social structure is a central concern in the study of the architecture and anthropology of communal dwellings. Built form is increasingly understood as an active medium through which social relations, collective identities and cultural practices are produced and maintained (Steckley, 2021). According to Olayinka et al., (2025), in longhouse architecture, spatial configurations often reflect kinship systems, patterns of collective life and ritual hierarchies, revealing the inseparability of architecture and social life. In communal and longhouse settings, built form is an active medium that creates and maintains social relations, identities, and ritual orders, making architecture and social life analytically inseparable, according to research from the fields of archaeology, vernacular architecture, and housing studies. Longhouses have been characterized as socio-spatial institutions in the Austronesian context where ongoing communal interactions are facilitated by spatial continuity and flexibility (Khatibi, 2021; Gapor, 2022). While geographical differentiation frequently corresponds with familial or symbolic distinctions, shared spaces facilitate everyday activities (Huber, 2024) and ceremonial practices (Asmal, 2023; Moosavi, 2025). On the other hand, longhouse customs in cool and temperate climates frequently show a more distinct functional division, reflecting various climatic and social preferences. Nevertheless, the majority of current research examines these connections in a constrained cultural setting, providing little comparative insights. This gap limits more comprehensive ideas of how communal spatial systems function under various socio-climatic conditions from the standpoint of the built environment.

2.3 Environmental Adaptation and Construction Logic

The longhouse was the predominant domestic form during the Neolithic and Iron Age periods, according to archaeological and architectural studies from Scandinavia and Central Europe. Compact plans, earth fast structural systems, south-facing orientations, and sturdy roof and gable configurations allowed for adaptation to cold temperatures and strong winds (Suhrbier & Scharl 2023; Bukkemoen 2025). Variations in longhouse form over time such as the transition from two-aisled to three-aisled layouts and changes in building outline have been linked to broader socio-economic transformations and long-term climatic shifts (Sand-Eriksen, 2025), indicating that longhouse morphology evolved in response to both environmental and social pressures (Maréchal & Heuzé, 2021).

In contrast, longhouse traditions in Southeast Asia, particularly among Indigenous communities in regions such as Sarawak, Malaysia, are characterized by linear communal dwellings that accommodate multiple family units beneath a shared roof (Stia et al., 2023; Gapor et al., 2023). These structures are closely attuned to humid tropical climates and riverine or roadside environments, employing lightweight timber construction, elevated floors, and continuous circulation spaces to enhance ventilation, thermal comfort, and protection from flooding (Shou & Xu, 2023). Here, architectural form is closely integrated with patterns of collective living and mobility rather than enclosure or insulation. According to Gray (2022), longhouses along the Pacific Northwest Coast of North America further illustrate the social embeddedness of this typology.

Moreover, across Coast Salish and other Northwest Coast peoples, longhouses or plank houses functioned as more than shelters dan they were core institutions of social, political, and ritual life (Ritchie et al., 2024). In fact, longhouse also constructed as large plank-built winter dwellings by hunter– fisher–gatherer societies (Friesen, 2022), these longhouses exhibit significant regional variation structured by language groups and kinship systems (Hamon & Gomart, 2021. Comparative analyses emphasize their role as collective architectural traditions in

which building form expresses social organization and cultural identity alongside environmental adaptation. At a broader scale, cross-cultural macro-studies of vernacular housing patterns confirm that elongated communal dwelling forms such as longhouses correlate not only with climatic conditions but also with social variables including sedentism, kinship structure, and degrees of political complexity. These findings challenge environmentally deterministic interpretations and reinforce the view of longhouse architecture as a socio-spatial typology shaped by the interaction of environmental constraints and social organization.

2.4 Anchoring theoretical insights in lived experience

This study also reviews Rapaport's Vernacular Architecture Theory (Mohamed et al., 2025), socio-culture, and cultural ecology to understand the Austronesian longhouse as a manifestation of the relationship between humans, the environment, and the social system. The approach from previous studies also allows the longhouse to be analyzed not only as an architectural object, but also as a cultural space that contains symbolic values, rituals, and collective identity among the community (Mora, 2022). Therefore, the vernacular architecture theory explains how the form of the longhouse developed through adaptation to the local context, including the use of natural materials such as belian wood, bamboo, rattan, and nipah leaves as well as high-pillared designs and open ventilation that are suitable for the humid tropical climate (Dayaratne, 2024). The approach in previous studies shows that the longhouse is a product of local knowledge inherited from generation to generation and is closely related to the life of the Austronesian community.

In addition, socio-cultural and cultural ecology approaches are used to examine the relationship between spatial organization, social structure, and environmental adaptation in Austronesian longhouses. Longhouses are not just dwellings, but also social institutions that reflect the family system, rituals, and collective interactions of the community. According to Zeng (2023), spatial divisions such as ruai, tanju, and family rooms demonstrate public, semi-public, and private functions that strengthen community solidarity. In a global context, a cross-cultural comparative approach allows Austronesian longhouses to be compared with longhouse traditions in Scandinavia, the Amazon, and North America (Antonio, 2022). Although sharing community functions and elongated forms, Austronesian longhouses have their own uniqueness that is related to the cosmology, cultural identity, and life experiences of Austronesian maritime societies.

CONCLUSION

In order to highlight longhouse architecture's architectural relevance beyond region specific or descriptive descriptions, this narrative literature review has synthesized recent studies and looked at longhouse architecture in the Austronesian region within a larger global perspective. The review shows that form, climate, or symbolism alone are insufficient to fully comprehend longhouse architecture in a variety of climatic and cultural contexts. Rather, the literature consistently presents longhouses as integrated socio spatial systems that are influenced by the interplay of environmental reaction, social organization, and vernacular knowledge. The results show that although longhouse types are common throughout the world, Austronesian longhouses stand out due to their close integration of household, social, and ritual practices, emphasis on spatial continuity, and flexible collective space. Austronesian examples demonstrate how common spatial structuring serves as both a social institution and a climate-responsive approach, in contrast to longhouse traditions in temperate and frigid climates that frequently stress enclosure and functional separation. This supports recent academic claims that vernacular architecture should not be viewed as a static typology but rather as an adaptive process.

This review adds to the current conversation on vernacular architecture and the built environment by placing Austronesian longhouse architecture within a worldwide comparative context. It emphasizes the value of Austronesian longhouses as sources of architectural intelligence for tackling contemporary issues with group living, social sustainability, and climate-responsive design. The review emphasizes the importance of narrative literature synthesis in exposing theoretical links and research gaps that are hidden in studies that are limited by geography or discipline. In order to further clarify the connection between communal life and architectural form, future research may build on this synthesis by doing more thorough cross-regional comparative analysis utilizing consistent analytical frameworks or by fusing empirical spatial analysis with anthropological understanding. Overall, the studied literature attests to the long-lasting significance of Austronesian longhouse architecture as both a cultural legacy and a significant addition to the body of knowledge about architecture worldwide.

REFERENCES

1. An, Y., Liu, L., Guo, Y., Wu, X., & Liu, P. (2023). An Analysis of the Isomerism of Tibetan Vernacular Dwellings Based on Space Syntax: A Case Study of the Semi-Agricultural and Semi-Pastoral District in Gannan Prefecture, China. Buildings. https://doi.org/ 10.3390/buildings13102501.
2. Antonio, J. G. (2022). The Bornean longhouse in historical perspective, 1850-1990. Indonesian Houses: Volume 1: Tradition and Transformation in Vernacular Architecture, 207, 285.
3. Bukkemoen, G. (2025). Beyond the Longhouse: On the Heterogeneity, Spatiality and Temporality of Scandinavian Iron Age Households. Cambridge Archaeological Journal. https://doi.org/ 10.1017/s0959774324000313.
4. Dayaratne, R. (2024). Theoretical inspirations of Amos Rapoport: Reflections on the International Studies on Vernacular Settlements (ISVS). In Theorizing Built Form and Culture (pp. 160-170). Routledge.
5. Dunn, R., Kirby, K., Bowern, C., Ember, C., Gray, R., McCarter, J., Kavanagh, P., Trautwein, M., Nichols, L., Gavin, M., & Botero, C. (2024). Climate, climate change and the global diversity of human houses. Evolutionary Human Sciences, 6. https://doi.org/10.1017/ ehs.2024.5.
6. Fox, J. (2006). Comparative Perspectives on Austronesian Houses: An Introductory Essay. https://doi.org/10.22459/ia.09.2006.01.
7. Friesen, M. (2022). Hunter-gatherer aggregations writ large: Economy, interaction, and ritual in the final days of the Tuniit (Late Dorset) culture. Journal of Anthropological Archaeology. https:// doi.org/10.1016/j.jaa.2022.101437.
8. Gapor, S., Moriat, R., Rahman, H., & Saruan, M. (2022). Physical Evolution of the Last Melanau Communal Dwelling in Kampung Sok, Matu, Sarawak, Malaysia. International Journal of Environment, Architecture, and Societies. https://doi.org/10.26418/ ijeas.2022.2.1.55-72.
9. Gapor, S., Silini, M., Echoh, D., & Rahman, H. (2023). Factors and effects of changes in the spatial layout of Iban dwelling in Sarawak. Malaysian Journal of Society and Space. https://doi.org/10.17576/ geo-2023-1902-05.
10. Gray, D. (2022). Longing for cedar: Tracing Indigenous family in the Pacific Northwest from longhouses to urban sprawl and bureaucratic command. University of Texas at Arlington. https://mavmatrix.uta.edu/honors_fall2022/3
11. Hamon, C., & Gomart, L. (2021). Social Rules and Household Interactions Within the LBK: Long-Standing Debates, New Perspectives. Open Archaeology, 7, 690 - 704. https://doi.org/ 10.1515/opar-2020-0158.
12. Hjelle, K., Grønnesby, G., Dahl, B., Arntzen, J., Oma, K., Stamnes, A., Prøsch-Danielsen, L., Meling, T., Gjerpe, L., Sauvage, R., Gil, T., Jensen, C., Petersson, H., Soltvedt, E., Bukkemoen, G., Mokkelbost, M., Bjordal, E., Iversen, F., & Rødsrud, C. (2017). The Agrarian Life of the North 2000 BC AD 1000 : Studies in Rural Settlement and Farming in Norway. . https://doi.org/10.17585/ noasp.13.42.
13. Huber, A., Heinrichs, H., & Jaeger-Erben, M. (2024). Promoting neighbourhood sharing: infrastructures of convenience and community. Buildings and Cities. https://doi.org/10.5334/bc.442.
14. Khatibi, M. (2021). Socio-spatial interactions of a cluster-house concept apartment in mehr als wohnen project in Zurich, Switzerland. Frontiers of Architectural Research. https://doi.org/ 10.1016/j.foar.2021.10.002.
15. Lamzah, A. (2025). Vernacular architecture: (Re) Visiting the concept. Materials Research Proceedings. https://doi.org/ 10.21741/9781644903391-1.
16. Maréchal, L., & Heuzé, Y. (2021). Interaction between environmental temperature and craniofacial morphology in human evolution: a focus on upper airways. In Evolutionary cell processes in primates (pp. 161-188). CRC Press.
17. Martín-Martín, A., Orduna-Malea, E., & Delgado López-Cózar, E. (2018). Coverage of highly-cited documents in Google Scholar, Web of Science, and Scopus: a multidisciplinary comparison. Scientometrics, 116(3), 2175-2188.
18. Memmott, P. (2025). Exploring the Continuity of Settlement Tradition Through Australasia and Oceania over 65,000 Years. Buildings, 15(22), 4165.
19. Mohamed, W. S. W., Alli, H., Ja'afar, M. F. Z., Magiman, M. M., & Bakar, F. A. (2025). TRADITION IN TRANSITION: THE TRANSFORMATION OF BUKET LONGHOUSE VERNACULAR

ARCHITECTURE IN SARAWAK. In 4th International Conference on Science, Social Sciences, and Humanities (ICOSSH2025) (p. 36).

20. Mora, S. (2022). Community's House and Symbolic Dwelling: A Perspective on Power. Humans, 2(1), 1-14.
21. Moosavi, S., Cornadó, C., Askarizad, R., & Garau, C. (2025). The Social Life of Residential Architecture: A Systematic Review on Identifying the Hidden Patterns Within the Spatial Configuration of Historic Houses. Buildings. https://doi.org/10.3390/ buildings15122120.
22. Nguyen, A., Truong, N., Rockwood, D., & Le, A. (2019). Studies on sustainable features of vernacular architecture in different regions across the world: A comprehensive synthesis and evaluation. Collection of Frontiers of Architectural Research, 8, 535-548. https://doi.org/10.1016/j.foar.2019.07.006.
23. Olayinka, A., Adebamowo, M., & Sangowawa, A. (2025). INTERIOR SPACE UTILIZATION AND SOCIAL INTERACTION IN LSDPC ESTATES. International Journal of Environmental Research and Earth Science. https://doi.org/10.70382/caijeres.v8i4.012.
24. Pardo, J. (2023). Challenges and Current Research Trends for Vernacular Architecture in a Global World: A Literature Review. Buildings. https://doi.org/10.3390/buildings13010162.
25. Ritchie, P., Ritchie, J., Blake, M., Simons, E., & Lepofsky, D. (2024). Settling the record: 3,000 years of continuity and growth in a Coast Salish settlement constellation. Journal of Anthropological Archaeology. https://doi.org/10.1016/j.jaa.2024.101570.
26. Sand-Eriksen, A. (2023). Exploring Affordances: Late Neolithic and Bronze Age Settlement Locations and Human-Environment Engagements in Southeast Norway. Norwegian Archaeological Review, 56, 180 - 213. https://doi.org/ 10.1080/00293652.2023.2262463.
27. Sand-Eriksen, A. (2025). Building small, living large: A corpus of south-eastern Norwegian settlement evidence, 2350–500 BC. European Journal of Archaeology, 1-24.
28. Shou, T., & Xu, H. (2023). Climate adaptation in traditional dwelling typologies: the case of Southern Anhui, China. Architectural Engineering and Design Management, 20, 1301 - 1322. https:// doi.org/10.1080/17452007.2023.2295362.
29. Steckley, J. (2021). Big Arms-The Transformation of an Indigenous Name. Academia Letters.
30. Stia, J., Hamid, S., Mahayuddin, S., Jasni, M., & Zulkifli, M. (2023). Longhouse Spatial Elements for Sustainable and Affordable Housing Construction. Advances in Humanities and Contemporary Studies. https://doi.org/10.30880/ahcs.2023.04.02.009.
31. Suhrbier, S., & Scharl, S. (2023). Combining geometric morphometrics and redundancy analysis to analyse Neolithic architecture – A case study on southwest German longhouses 5000-4500 BCE. Journal of Archaeological Science. https://doi.org/ 10.1016/j.jas.2023.105771.
32. Victoria, J., Mahayuddin, S., Zaharuddin, W., Harun, S., & Ismail, B. (2017). Bioclimatic Design Approach in Dayak Traditional Longhouse. Procedia Engineering, 180, 562-570. https://doi.org/ 10.1016/j.proeng.2017.04.215.
33. Zeng, M. (2023). The Renewal Strategy of Public Space in Traditional Kaifong Community Based on the Concept of Community Building----A Case Study of Nanhuaxi Area in Guangzhou (Doctoral dissertation, Politecnico di Torino).