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From house to café: A comparative study of adaptive reuse in two Rumoh Aceh

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Abstract.
Traditional houses of the Acehnese community are known as Rumoh Aceh. These houses hold significant historical and cultural value. Their presence has become increasingly marginalized due to changing modern spatial needs. Some communities have begun reusing these traditional houses by changing their function. One common transformation converts the house into a café to meet contemporary needs. This study examines the application of adaptive reuse principles in café interiors through a comparative case study of two buildings: Rumoh Aceh Kopi Luwak and Rumoh Kupi. The study aims to analyze how adaptive reuse principles can preserve the cultural values as well as the symbolic meaning and local identity of Rumoh Aceh without diminishing its new function as a public space. Adaptive reuse theory serves as the analytical foundation with focus on interior significance changes in spatial configuration and the interpretation of symbolic meaning and local identity. A qualitative method was employed using interviews, observations, and documentation as data collection techniques. The data were analyzed using the Miles and Huberman model from data reduction to conclusion drawing. The findings show that both café interiors have adopted adaptive reuse principles to different degrees. Several primary spaces remain underutilized. The essence of Rumoh Aceh architecture is also not yet fully represented in the spatial experience. Therefore strengthening local cultural elements is necessary so that the historical and philosophical values of the building can be more perceptible in its new function as a café.

Keywords: acehnese traditional house, cultural preservation, interior adaptive, local identity, spatial transformation

Introduction

A house is not merely a shelter but a space that actively shapes the comfort, character, and behaviour of its occupants (Wulanda & Asdiana, 2024). Traditional houses in particular embody spiritual, psychological, and symbolic values (Hamzenejad & Dashti, 2016). The traditional dwelling of the Acehnese people, known as Rumoh Aceh, represents a significant architectural heritage of the Indonesian archipelago carrying substantial historical and cultural importance (Arfa et al., 2022). Its existence reflects a form of vernacular dwelling responsive to environmental conditions while functioning as a cultural symbol shaped by kinship systems, family structures, social norms, communal networks, and collective identity (Wulanda et al., 2021). Shifting spatial needs and modern social transformation have gradually altered the original function of Rumoh Aceh. Many structures have transitioned from private residences into public spaces including cafés as part of broader efforts to sustain their historical relevance (Dewi et al., 2025). This functional shift has also been documented in

Banda Aceh through the adaptive reuse of colonial residential buildings converted into cafés (Dewi et al., 2025) and old houses repurposed as coffee shops (Pasha et al., 2021). These studies, however, examine buildings shaped by imported colonial architectural conventions rather than the vernacular structural and symbolic system of Rumoh Aceh. This study extends that inquiry by centring the analysis on interior significance and symbolic meaning within a vernacular typology rather than on functional change alone.

Adaptive reuse is widely regarded as an effective strategy for maintaining the sustainability of existing buildings by accommodating new functions without compromising their original character (Lanz & Pendlebury, 2022). Prior studies confirm that this approach revitalises historic buildings while preserving their primary structural systems and architectural values (Sofiana et al., 2015), and is recognised as a sustainable method for managing heritage buildings whose forms and structures remain relevant to contemporary demands (Soekanda & Darmady, 2023). In practice, adaptive reuse addresses three key dimensions: place significance, referring to historical and architectural values remaining perceptible to users; interior transformation, involving changes in spatial function and configuration; and the interpretation of historical values, encompassing symbolic meanings embedded in interior components (Sofiana et al., 2015). Materials, structural systems, spatial layouts, furniture, lighting, ventilation, and decorative elements constitute critical components within this framework.

This study addresses the application of adaptive reuse to Rumoh Aceh converted into cafés with particular focus on the retention of cultural values and local identity. The preservation of Rumoh Aceh cannot be confined to its physical fabric alone since cultural meanings and symbolic values are fundamental to its spatial organisation. Adaptive reuse has been widely applied to colonial and urban heritage structures (Mısırlısoy & Günçe, 2016; Plevoets & Van Cleempoel, 2019). Existing studies on vernacular Indonesian architecture have examined adaptive reuse primarily for conservation and tourism purposes such as the Bawömataluo traditional village on Nias Island (Atmanti & Uekita, 2023) and translocated Javanese houses repurposed as hotel facilities (Yusran et al., 2021). None of these studies however examine interior significance and symbolic transformation within a vernacular dwelling converted specifically into a café. This gap is significant given the distinctive architectural characteristics of Rumoh Aceh including elevated pile structures, timber construction, symbolically charged ornamental systems, and spatially encoded cultural meaning. Colonial buildings were designed following imported architectural conventions with heritage value often tied to stylistic and historical authenticity. Rumoh Aceh instead encodes cultural meaning through construction logic and customary spatial practice rooted in local tradition rather than through imported style. This study systematically examines how interior significance, interior transformation, and the interpretation of historical values are expressed through the interior elements of Rumoh Aceh following adaptive reuse, with the aim of strengthening the theoretical and practical foundations of vernacular interior preservation.

Methods

This study adopts a qualitative research strategy, as qualitative inquiry enables the systematic exploration of meaning, cultural values, and spatial interpretation within the built environment (Groat & Wang, 2013). This methodological orientation was selected to develop a thorough and contextually grounded understanding of adaptive reuse as applied to the interiors of Rumoh Aceh buildings that have undergone functional conversion into commercial cafés. To enable systematic comparison between cases, qualitative findings were further supported by a five-point scoring instrument applied to each research indicator, as detailed in the Data Analysis Techniques section below. The study is organised around three analytical dimensions: interior significance, interior transformation, and the interpretation of historical values as expressed through the interior elements of Rumoh Aceh.

Research Location and Object

The research objects consist of Rumoh Aceh buildings that have been functionally converted into cafés while retaining their original structural systems. A preliminary survey identified five cafés in Banda Aceh operating within converted Rumoh Aceh buildings. Case selection was conducted purposively based on the relevance of each building to adaptive reuse concerns and its potential for the preservation of local cultural values. Three criteria guided the selection process: (1) the building retains identifiable traditional architectural elements; (2) the building has undergone a functional transition into a public space; (3) the building demonstrates a substantive relationship with the local cultural context. Two of the five candidates were selected using maximum variation sampling to capture contrasting degrees of structural preservation among cafés satisfying all three criteria. Rumoh Aceh Kopi Luwak represents a lower degree of material authenticity, most notably its original rumbia (palm thatch) roof having been replaced with zinc sheeting. Rumoh Kupi represents a higher degree of preservation effort, retaining its original form while incorporating Acehnese colour motifs and using paranet netting to protect the original rumbia roof rather than replacing it. This contrast enables the study to examine how varying degrees of physical retention relate to the interpretation of historical and symbolic values within the same building typology.

Rumoh Aceh Kopi Luwak, located at Rawa Sakti V No.122B, Jeulingke Village, Syiah Kuala District, Banda Aceh City.



Figure 1. Rumoh Aceh Kopi Luwak
Source: Author's Documentation, 2026

Rumoh Kupi, located at Prada Utama, Pineung Village, Syiah Kuala District, Banda Aceh City.



Figure 2. Rumoh Kupi
Source: Author's Documentation, 2026

Data Collection Techniques

Data were collected through three complementary techniques: observation, semi-structured interviews, and documentation. Observation was employed to examine the physical condition of each building, its spatial layout, and the character of its interior elements (Sari et al., 2025). Semi-structured interviews were conducted with one key informant at each site: the owner at Rumoh Aceh Kopi Luwak and the manager at Rumoh Kupi. Each interview lasted approximately sixty minutes and followed an interview guide covering three themes aligned with the study's analytical dimensions: the meanings attributed to the transformation process, the perceived outcomes of spatial adaptation, and the cultural values consciously retained (Groat & Wang, 2013). The guide allowed for in-depth exploration of these themes as they emerged during discussion. Documentation, comprising photographs and field notes, was carried out to support the visual and spatial analysis of each research object (Dodgson, 2017).

Data Analysis Techniques

Data analysis followed the Miles and Huberman interactive model, comprising data reduction, data display, and conclusion drawing (Groat & Wang, 2013). Data were categorised according to the three analytical dimensions and presented through tables, diagrams, and narrative description.

To enable systematic comparison, each of the seventy-nine indicators in Table 1 was assessed using a five-point scale reflecting the degree of retention relative to the original Rumoh Aceh form: one indicates complete loss or replacement, three indicates partial retention or modification, and five indicates full retention of original form, with two and four representing intermediate conditions. Indicator scores were averaged per research aspect to allow systematic comparison across cases.

Scoring was conducted independently by three researchers based on triangulated evidence from observation, interview, and documentation, with discrepancies resolved through discussion until consensus was reached. This numerical aggregation supported the qualitative interpretation rather than replacing it, with conclusions remaining grounded in contextual analysis. Conclusion drawing and verification were conducted iteratively to produce interpretations that are internally consistent and contextually grounded.

Data Validity

To strengthen the credibility of the findings, source triangulation was employed by cross-referencing data obtained through observation, interview, and documentation. The findings were further validated through informant confirmation, whereby key informants reviewed and verified the interpreted results to ensure their accuracy and trustworthiness (Nurfajriani et al., 2024). This combination of triangulation and member checking serves to enhance the overall rigour of the qualitative analysis and to minimise the risk of interpretive bias.

Research Aspects

The analytical framework of this study encompasses three core aspects: (1) interior significance, (2) interior transformation, (3) the interpretation of historical values. Each aspect is operationalised through a set of observable interior and architectural elements drawn from the physical and cultural characteristics of Rumoh Aceh. Interior significance examines the extent to which culturally and architecturally important elements are retained following functional conversion, with attention to flooring, wall surfaces, roof construction, structural systems, and furniture. Interior transformation assesses the degree of physical and functional change undergone by each spatial component, including the main hall, veranda, undercroft, and ancillary spaces. The interpretation of historical values evaluates how symbolic and historical meanings are expressed through formal interior elements, specifically line, texture, form, colour, and ornament. A detailed operationalisation of each research aspect, together with the corresponding indicators and assessment criteria, is presented in Table 1.

Table 1. Research Aspects

Research Aspect	Operational Definition	Indicators
Interior Significance	The presence and role of interior elements in structuring and defining spatial quality	Floor system, Wall system, Roof system, Structural system, Furniture arrangement, Lighting system, Ventilation system
Interior Transformation	The degree and nature of spatial and physical modifications applied to accommodate a new building function	Roof modification, Main building modification, Stilt space modification
Interpretation of Historical Values	Symbolic meanings and historical values perceived by users through interior elements and design attributes	Colour symbolism, Linear expression, Surface texture, Pattern articulation, Form composition, Ornamental expression

Source: Analysis, 2026

Results and Discussion

This section presents findings from both case studies across three analytical dimensions: interior significance, interior transformation, and the interpretation of historical values. Each case is first described individually to establish the specific condition of its interior elements, followed by a comparative analysis in Section 3.1 that situates the findings against the broader adaptive reuse literature introduced earlier. Rather than treating adaptive reuse as a uniform conservation practice, the discussion examines how the specific structural and symbolic characteristics of Rumoh Aceh shape adaptation outcomes differently from the colonial and urban heritage contexts that dominate existing adaptive reuse scholarship (Mısırlısoy & Günçe, 2016; Plevoets & Van Cleempoel, 2019) including comparable adaptive reuse cases documented elsewhere in Banda Aceh (Pasha et al., 2021; Dewi et all., 2025) and vernacular adaptive reuse practices observed in other regions of Indonesia (Atmanti & Uekita, 2023; Yusran et al., 2021).

Case Study 1: Rumoh Aceh Kopi Luwak

Interior Significance

Interior significance in Rumoh Aceh denotes the capacity of interior elements to sustain spatial quality and cultural legibility following functional conversion. The elements assessed in this analysis encompass the floor, wall, roof, structural system, furniture, lighting, and ventilation. The findings indicate that the majority of these elements retain the original architectural character of the building, while selective modifications have been introduced to accommodate the operational requirements of a commercial café setting.

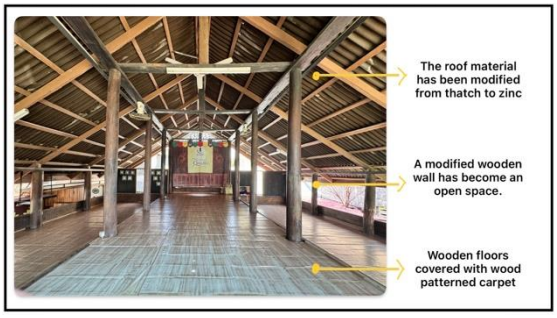


Figure 3. Floor, Wall, and Roof of *Rumoh Aceh*
Source: Author's Documentation, 2026

1. Floor
   The floor retains its original timber material and structure, a defining feature of Rumoh Aceh (Figure 3). A wood patterned carpet overlay was introduced to withstand increased pedestrian load, without compromising the underlying timber's structural or visual integrity. This minimally invasive intervention preserves the traditional spatial atmosphere and local cultural identity, demonstrating that surface level adaptation can meet commercial needs while leaving the heritage interior's material authenticity undisturbed.
2. Wall
   The wall surfaces remain timber framed, preserving the original spatial enclosure of Rumoh Aceh (Figure 3). Originally more closed partitions have been selectively opened to facilitate circulation and social interaction suited to commercial use. This reflects a deliberate negotiation between spatial openness and material continuity, characteristic of adaptive reuse in heritage buildings with strong spatial hierarchies. The consistent use of timber sustains the building's material identity and cultural character, indicating that enclosure modifications need not compromise cultural significance when material consistency is maintained.
3. Roof
   The roof covering has undergone complete material substitution, with the original thatch replaced by corrugated metal sheeting (Figure 3) for improved weather resistance and reduced maintenance. Although the material has changed, the fundamental gable geometry of Rumoh Aceh is retained, prioritising formal preservation over material authenticity while achieving visual continuity with contemporary practical requirements. This compromise is common in adaptive reuse practice, where functional imperatives and conservation principles are negotiated, and aligns with the broader literature holding that material substitution is acceptable when formal integrity is preserved (Plevoets & Van Cleempoel, 2019).
4. Structural System
   The primary structural system has been preserved through the continuation of the stilt construction and timber framework characteristic of traditional Acehnese architecture (Figure 4). The building employs a knock-down assembly technique in which structural components are joined using binding connections and wooden pegs, entirely without metal fasteners (Azzahra, 2024). This construction logic reflects both the technical ingenuity and the cultural philosophy embedded in traditional Acehnese building practice, wherein the joinery system itself constitutes a form of intangible architectural knowledge. The preservation of the stilt structure represents a successful integration of adaptive reuse principles with the historical and functional logic of vernacular architecture. Beyond its cultural significance, the elevated structural configuration retains environmental relevance to the tropical climate context by facilitating sub-floor cross-ventilation and providing protection against ground moisture penetration. Structural continuity therefore serves a dual function, simultaneously preserving cultural heritage and sustaining the passive environmental performance integral to the original design logic of the building.

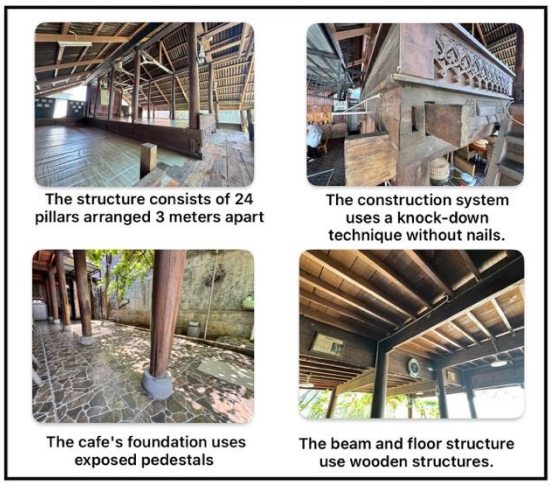


Figure 4. Structure of Rumoh Aceh
Source: Author's Documentation, 2026

5. Furniture

Among all assessed elements, furniture has undergone the most extensive transformation, with domestic items such as sleeping platforms and storage wardrobes replaced by café tables and chairs. Despite this wholesale replacement, a traditional clay water jar, symbolically used for self-purification upon entering the home, has been retained beneath the staircase. Its deliberate preservation sustains the connection between the new commercial function and the dwelling's original cultural practice. The use of timber materials and traditionally referenced furniture forms further reflects a conscious effort to reinterpret local cultural values, keeping cultural references accessible within the café's everyday spatial experience (Figure 5).



Figure 5. Furniture in Rumoh Aceh
Source: Author's Documentation, 2026

6. Lighting System

The lighting system continues to rely primarily on natural daylight admitted through window openings and ventilation apertures, consistent with the environmental design principles of Rumoh Aceh, which historically prioritise natural illumination as the principal light source (Figure 6). Artificial lighting fixtures have been introduced as a supplementary system to support café operations during evening hours and conditions of reduced natural light availability. This approach reflects an adaptive reuse strategy that balances contemporary comfort requirements with the preservation of the original daylighting logic, ensuring that natural illumination is maintained as the dominant experiential condition within the interior. The integration of supplementary artificial lighting without displacing the passive daylighting system exemplifies a layered approach to environmental modification, in which the heritage spatial quality associated with natural light is sustained alongside the functional upgrades required by the new commercial programme.



Figure 6. Lighting in Rumoh Aceh
Source: Author's Documentation, 2026

7. Ventilation
   Natural ventilation is sustained through cross ventilation generated by window openings, perforated wall panels, and structural gaps within the timber frame (Figure 7), producing a cooling effect conducive to thermal comfort during café operations (Jia et al., 2021). Electric fans have been introduced as a supplementary measure to address elevated thermal demands during peak occupancy or high temperatures. This layered integration of passive and active ventilation maintains the original environmental logic of Rumoh Aceh while responding to increased thermal demands from its commercial function, illustrating how mechanical supplementation can extend rather than replace the performance of traditional passive design strategies.

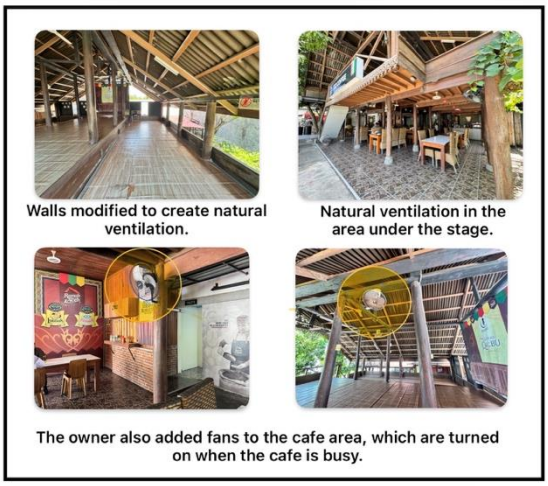


Figure 7. Ventilation in Rumoh Aceh
Source: Author's Documentation, 2026

Interior Transformation in the Adaptive Reuse

The analysis of interior transformation examines the spatial and functional changes resulting from the conversion of Rumoh Aceh into a café. While modification is necessary to meet new programmatic requirements, its scope must be carefully evaluated to preserve symbolic meaning and historical values. Interior changes in Rumoh Aceh are distributed across three primary spatial zones: the upper zone comprising the roof, the middle zone comprising the serambi, and the lower zone comprising the stilt space.

1. Upper Zone
   The roof undergoes no significant change in form or function, retaining its original gable configuration and continuing to serve as the primary climatic protective element (Figure 8). The substitution of thatch with corrugated metal sheeting constitutes a minor material adaptation that does not compromise formal authenticity. The upper zone therefore represents the most

conservatively treated area of the building, where formal and functional continuity is fully maintained.



Figure 8. Roof of Rumoh Aceh
Source: Author's Documentation, 2026

2. Middle Zone

The middle zone comprises three sequential areas: seuramoe keue, seuramoe teungoh, and seuramoe likot (Figure 9), each originally fulfilling distinct domestic functions including reception, sleeping, and cooking respectively (Meutia et al., 2021). Following conversion, all three areas have been collectively repurposed as a dedicated prayer space, producing a fundamental shift in spatial character from a domestic to a devotional setting. The interior is sparsely furnished and equipped with prayer items including mukena and prayer mats. This transformation substantially diminishes the seuramoe's original interior essence, reducing visitors' capacity to engage with the authentic spatial character of Rumoh Aceh. Nevertheless, the reinterpretation remains culturally grounded, as the prioritisation of devotional space reflects the deeply rooted religiosity defining Acehnese social life (Nursaniah et al., 2022), representing a case in which cultural continuity is sustained through the substitution of one culturally significant practice for another.



Figure 9. Front, Middle, and Rear Serambi of Rumoh Aceh
Source: Author's Documentation, 2026

3. Lower Zone

The lower zone, or stilt space, undergoes the most substantial interior transformation in the adaptive reuse process. In its original function, this area was an open space without flooring and was used for activities such as storage, toolkeeping, livestock shelter, and informal social interaction. In its new function, the stilt space has been significantly transformed into the main dining and social area for café visitors (Figure 10). These changes include adding flooring, furniture, and interior arrangements to support café operations. This transformation positions the stilt space as the most functionally dominant area in accommodating the new use of the building. Despite significant change, the interior design continues to incorporate local forms and materials to ensure Rumoh Aceh's identity remains recognizable.



Figure 10. Stilt Space of Rumoh Aceh
Source: Author's Documentation, 2026

Interpretation of Historical Values in the Interior Elements

The interpretation of historical values examines how the interior elements of Rumoh Aceh continue to convey symbolic meaning and inherited cultural significance despite the building's functional transformation. Historical value in this context extends beyond physical attributes to encompass occupants' perceptual and experiential engagement with meaning as expressed through colour, line, texture, form, and ornament. Together, these dimensions constitute a layered system of cultural communication embedded within the material fabric of the interior.

1. Colour Palette
   The interior retains a dominant natural brown tone derived from original timber surfaces, complemented by subtle white accents on selected furniture (Figure 11). This colour composition produces a warm spatial atmosphere while embodying Acehnese philosophical values of simplicity and closeness to nature. Within the Acehnese cultural framework, the natural colour of timber signifies honesty and sincerity, reflecting a social character grounded in customary and religious values. The retention of this colour palette reinforces the visual identity of Rumoh Aceh and sustains historical continuity, functioning as a form of non-verbal cultural communication within a transformed functional context.

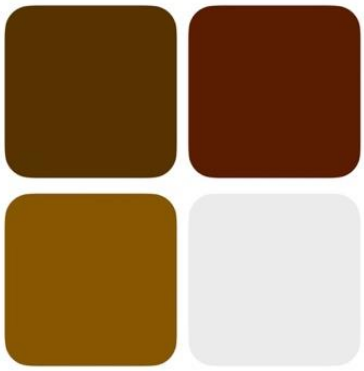


Figure 11. Colour Application in Rumoh Aceh
Source: Author's Documentation, 2026

2. Line
   Linear elements in horizontal and vertical orientations are preserved throughout the structure, roof, walls, and floor planes (Figure 12). Horizontal lines convey stability and balance consistent with Acehnese cultural values, while vertical lines defined by timber columns symbolise the relationship between humanity and the divine. The regularity of these configurations expresses the hierarchical social and religious order of Acehnese society, demonstrating that spatially encoded meaning can endure across functional transitions when the underlying architectural form remains intact.

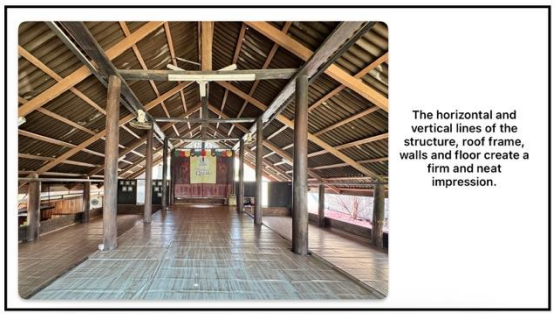


Figure 12. Linear Elements in Rumoh Aceh
Source: Author's Documentation, 2026

3. Texture
   Timber texture remains the dominant surface quality across floor planes, wall surfaces, and furniture elements (Figure 13). Beyond its constructive role, timber carries philosophical significance as a symbol of harmony between human habitation and the natural environment, selected for its organic properties and suitability to Aceh's tropical climate. Its visible and tactile presence reinforces spatial authenticity and sustains material continuity, grounding the transformed interior within a recognisable material culture of the original vernacular dwelling.



Figure 13. Texture of Interior Elements in Rumoh Aceh
Source: Author's Documentation, 2026

4. Form
   Rumoh Aceh is defined by its elevated stilt house form, shaped by the convergence of cultural imperatives and environmental conditions specific to the Acehnese context. At a functional level, the raised structure provides protection against flooding, promotes sub-floor air circulation, and offers security from ground-level hazards. At a philosophical level, the stilt configuration embodies the Acehnese spatial worldview through a tripartite vertical hierarchy: the lower level accommodates utilitarian and supporting activities, the middle level fulfils social and domestic functions, and the upper level provides shelter and protection from the elements. This vertical ordering of space is not incidental but reflects a culturally specific understanding of human habitation, social hierarchy, and the relationship between domestic life and the broader natural and spiritual environment. The stilt form therefore represents not merely an architectural response to environmental conditions but a spatially encoded system of living values shaped in equal measure by cultural, environmental, and social forces. Its preservation in the adaptive reuse of Rumoh Aceh ensures that this fundamental spatial philosophy remains materially present and experientially accessible within the building's new commercial function.
5. Pattern and Ornament
   The ornamental system of Rumoh Aceh incorporates distinctive Acehnese motifs, including On Ranuep, Putik Bungong, Bungong Meulu, Gigoe Daruet, Sisek Buya, Pucok Reubung, and Awan Si On (Figure 14), each carrying specific cultural meanings that collectively constitute a visual language of Acehnese identity. On Ranuep symbolises respect and hospitality, Putik Bungong

conveys growth and emergent potential, Bungong Meulu represents purity and ceremonial elegance, Gigoe Daruet signifies strength and protection, Sisek Buya embodies resilience and vigilance, Pucok Reubung expresses aspirations of progress and communal development, and Awan Si On represents tranquillity and wisdom. The collective preservation of these motifs sustains the cultural expression of Rumoh Aceh and strengthens its capacity to communicate heritage identity to contemporary occupants. In the context of adaptive reuse, ornamental retention functions not merely as decorative continuity but as an active mechanism of cultural transmission, ensuring that the symbolic content of the original vernacular architecture remains legible within a transformed spatial setting.

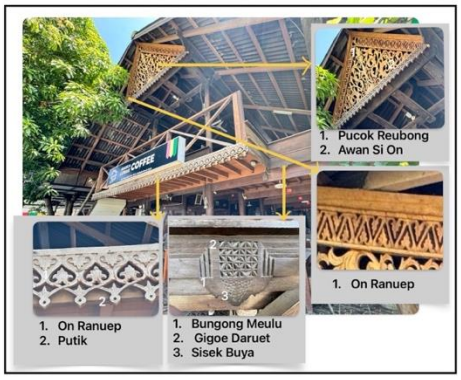


Figure 14. Acehnese Ornaments in Rumoh Aceh
Source: Author's Documentation, 2026

Case Study 2: Rumoh Kupi

Interior Significance

The second case study demonstrates that adaptive reuse in Rumoh Kupi is conducted through a strategy that prioritises the preservation of original interior elements, with selective modifications introduced to accommodate its new function as a café. The analysis of interior components, including floor, wall, roof, structural system, furniture, lighting, and ventilation, provides a basis for evaluating the extent to which cultural values and traditional architectural characteristics are sustained within the transformed spatial environment.



Figure 15. Floor, Wall, and Roof of Case Study 2
Source: Author's Documentation, 2026

1. Floor

   The floor retains its original timber material, with carpet applied as an overlay to improve surface durability under the increased pedestrian load associated with commercial use (Figure 15). The carpet selection deliberately references wood texture, ensuring that the visual continuity of the traditional interior is maintained despite the addition of a protective surface layer. This approach reflects a conscious effort to preserve locally sourced materials of historical significance while responding to the practical demands of a commercial setting. The retention of timber flooring contributes both functionally and atmospherically, reinforcing the warm spatial quality and visual identity characteristic of Acehnese traditional interiors. As in Case Study 1, this strategy exemplifies

a minimally invasive intervention in which surface adaptation is employed to extend material longevity without compromising the underlying heritage fabric.

2. Wall
   Timber remains the primary wall material throughout the building (Figure 15). The external arrangement of timber boards is preserved in its original configuration, while internal partitions have been selectively removed to support the spatial openness required by the café programme. Although this constitutes a functional modification, the overall form and material composition of the wall system are retained. Sustained timber use is integral to maintaining Rumoh Aceh's identity as a vernacular dwelling, carrying both cultural and environmental significance, as porous wall construction supports natural air circulation in Aceh's tropical context. This reinforces that selective spatial modification need not compromise cultural legibility when material consistency is preserved.
3. Roof
   The roof form and material are largely preserved, retaining both the gable configuration and rumbia thatching as the primary roofing material (Figure 15). The owner has made deliberate efforts to maintain this material despite increasing difficulty sourcing rumbia and engaging skilled artisans, resulting in higher maintenance costs. This reflects strong commitment to the environmentally responsive characteristics of traditional Acehnese architecture, as rumbia provides effective thermal insulation under tropical conditions. In contrast to Case Study 1, where roofing was substituted with corrugated metal sheeting, Rumoh Kupi demonstrates that material authenticity remains achievable, underscoring owner commitment and resource availability as key determinants of preservation depth in adaptive reuse.
4. Structure System
   The timber stilt structural system is fully retained, including the traditional knock-down assembly technique that allows the building to be constructed and dismantled without the use of metal fasteners (Figure 16). This structural system constitutes one of the most technically distinctive and culturally significant features of Rumoh Aceh. Beyond its functional role in protecting the building from ground moisture and flood risk, the stilt structure carries symbolic significance related to respect for the natural environment and the philosophical balance between human habitation and ecological conditions. Its preservation in Rumoh Kupi represents a simultaneous act of technical conservation and cultural continuity, demonstrating that the structural logic of vernacular architecture retains both practical relevance and symbolic meaning within a contemporary commercial context.

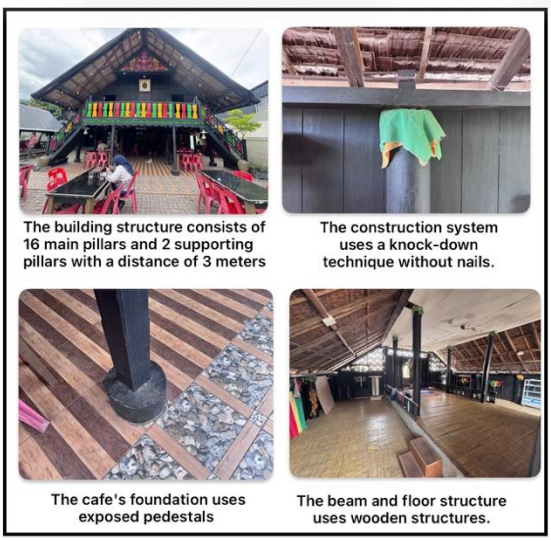


Figure 16. Structure of Case Study 2
Source: Author's Documentation, 2026

5. Furniture

Furniture exhibits the most significant degree of transformation among all assessed components. Original residential furnishings have been largely replaced by modern ceramic and plastic items, with only a selection of traditional guest tables and chairs retained (Figure 17). The widespread substitution diminishes the aesthetic coherence and symbolic meaning previously associated with Acehnese interior culture, reflecting weak cultural integration and reduced spatial authenticity. This condition identifies furniture as the most vulnerable interior element in vernacular adaptive reuse, where commercial pragmatism frequently overrides cultural continuity.



Figure 17. Furniture in Case Study
Source: Author's Documentation, 2026

6. Lighting

The lighting system continues to rely on natural daylight admitted through wall openings and window apertures as its primary source of illumination (Figure 18). Artificial lighting has been introduced as a supplementary system to support café operations during evening hours and conditions of reduced natural light. These additions do not significantly alter the spatial character or experiential quality of the interior. The integration of natural and artificial lighting reflects a functional adaptation that remains consistent with the traditional design principle of prioritising natural illumination as the dominant environmental condition within Rumoh Aceh. This layered approach to lighting demonstrates how supplementary systems can be incorporated without displacing the passive environmental strategies embedded in the original architectural design.



Figure 18. Lighting in Case Study 2
Source: Author's Documentation, 2026

7. Ventilation

Natural ventilation is sustained through door and window openings and the open sub-floor space beneath the stilt structure (Figure 19), generating cross-ventilation that facilitates continuous airflow across the interior and effectively reduces indoor air temperature under tropical climatic conditions (Jiang et al., 2023). Electric fans are introduced as supplementary mechanical ventilation to address thermal comfort during peak daytime operations. This approach reflects an adaptive reuse strategy that preserves the passive ventilation logic inherent to the original design of Rumoh Aceh while accommodating contemporary comfort requirements. The continued primacy of natural cross-ventilation demonstrates the enduring functional relevance of vernacular passive design strategies, and the measured introduction of mechanical supplementation ensures

that occupant comfort standards appropriate to a commercial public space are met without fundamentally altering the environmental character of the interior.

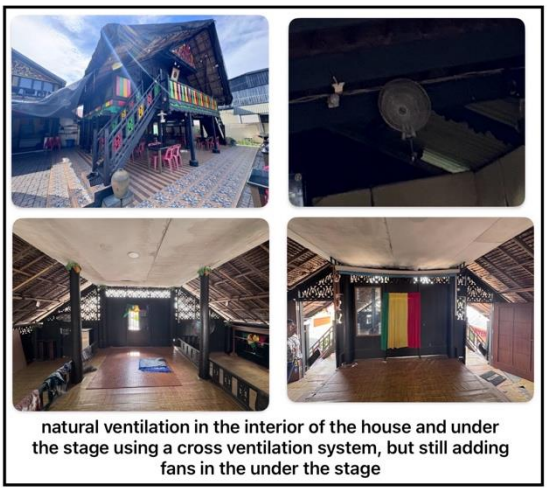


Figure 19. Ventilation in Rumoh Aceh
Source: Author's Documentation, 2026

Interior Transformation

The analysis of interior transformation in Rumoh Kupi reveals a spatially differentiated pattern of adaptation distributed across three primary building zones: the upper zone comprising the roof, the middle zone comprising the serambi, and the lower zone comprising the stilted underfloor space. The degree of functional and physical modification intensifies progressively from the upper to the lower zone, reflecting a preservation hierarchy that is implicitly structured around the symbolic and architectural significance of each spatial layer.

1. Upper Zone
   The roof undergoes no functional or structural modification and continues to fulfil its original role as the primary climatic protective element of the building (Figure 20). The rumbia thatching material is fully retained, preserving one of the most architecturally and culturally distinctive features of Rumoh Aceh. The complete continuity of both form and material in this zone reflects a deliberate commitment to conservation that extends beyond structural logic to encompass the symbolic and environmental dimensions of the original design. The preservation of rumbia in particular is significant, as it represents a conscious resistance to material substitution in a context where sourcing and maintenance present practical challenges, affirming that the cultural value attributed to this element is treated as non-negotiable by the building's owner.



Figure 20. Roof of Rumoh Aceh
Source: Author's Documentation, 2026

2. Middle Zone
   A substantive functional transformation occurs in the seuramoe zone. In its traditional configuration, the seuramoe is organised into three sequential spatial areas: the front veranda, known as seuramoe keue; the central hall, known as seuramoe teungoh; and the rear veranda, known as seuramoe likot (Figure 21). These spaces originally accommodated domestic activities including sleeping, eating, and rest. Following the functional conversion, all three seuramoe areas have been collectively repurposed as a dedicated prayer space. This reallocation produces a

fundamental shift in interior programme, with domestic furniture removed and replaced by prayer mats and religious equipment. Despite the significance of this functional change, the spatial hierarchy of the serambi is preserved through the retention of differentiated floor levels, maintaining the original organisational logic of the traditional interior. This condition is analytically significant: the functional content of the space has changed, yet its spatial structure remains intact. The reallocation of the seuramoe to a prayer function, rather than a commercial one, also reflects a culturally informed adaptation decision that aligns with the deeply religious character of Acehnese society, suggesting that the transformation prioritised cultural and spiritual continuity over commercial maximisation.



Figure 21. Seuramoe Keue, Seuramoe Teungoh, and Seuramoe Likot of Case Study 2
Source: Author's Documentation, 2026

3. Lower Zone

The lower zone undergoes the most extensive transformation in the adaptive reuse process. Originally an open, unfinished space used for storage, livestock shelter, and informal interaction, it now features ceramic flooring supporting the café's primary dining and social functions. Although the stilt structure remains intact, the zone's identity shifts from a secondary utilitarian role to the principal centre of activity. This illustrates a broader spatial hierarchy in Rumoh Kupi, where transformation is inversely proportional to cultural significance: prominent structural and symbolic elements are prioritised for conservation, while lower-significance zones absorb the greatest functional change.



Figure 22. Stilt Space of Case Study 2
Source: Author's Documentation, 2026

Interpretation of Historical Values in the Interior Elements

The interpretation of historical values examines the cultural meanings that remain perceptible through the interior elements of Rumoh Aceh following its functional adaptation into a café. The analysis addresses five formal dimensions: Colour, line, texture, form, and ornamental pattern, each of which operates as a medium for expressing local identity and the architectural heritage of Acehnese culture.

1. Colour

   The building exhibits a significant colour shift in which black emerges as the dominant interior tone. Nevertheless, ornamental elements applied to staircases, terraces, and decorative spear panels retain the culturally characteristic colours of Acehnese heritage, namely red, yellow, and green (Figure 23). Within Acehnese vernacular architecture, red conventionally signifies fluctuating emotion together with passion and enthusiasm, yellow conveys strength, warmth, and a bright visual character while also serving to reduce glare from direct sunlight, and green represents coolness, warmth, and fertility (Herman R.N., 2018). The intentional retention of these colours within decorative surfaces ensures that the cultural chromatic vocabulary of Acehnese identity remains legible despite the broader tonal transformation of the interior.

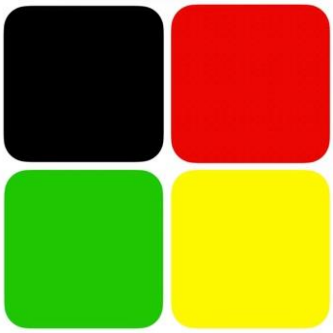


Figure 23. Colour Application in Case Study 2
Source: Author's Documentation, 2026

2. Line

   Linear elements in the interior produce horizontal and vertical configurations that follow the original structural system of Rumoh Aceh (Figure 24). Horizontal lines convey stability and tranquility, consistent with the traditional role of the dwelling as a space for rest and communal deliberation. Vertical lines carry symbolic meaning associated with the relationship between humanity and the divine, reflecting the deeply spiritual orientation of Acehnese society. The linear patterns articulated through the timber structure therefore serve a dual function, operating simultaneously as constructive components and as symbolic expressions of the equilibrium between worldly life and spiritual aspiration.



Figure 24. Line Elements in Case Study 2
Source: Author's Documentation, 2026

3. Texture
   Exposed timber texture is preserved as the dominant surface quality across floors, walls, and structural columns, constituting a defining material characteristic of Rumoh Aceh (Figure 25). Timber in this context carries meaning that extends beyond its constructive role, functioning as a symbol of harmony between human habitation and the natural environment. Within Acehnese traditional philosophy, timber is understood as a living material that embodies honesty and spiritual proximity to the natural world. The retention of this tactile and visual texture sustains the experiential essence of the traditional spatial environment and affirms material continuity in the face of functional transformation.

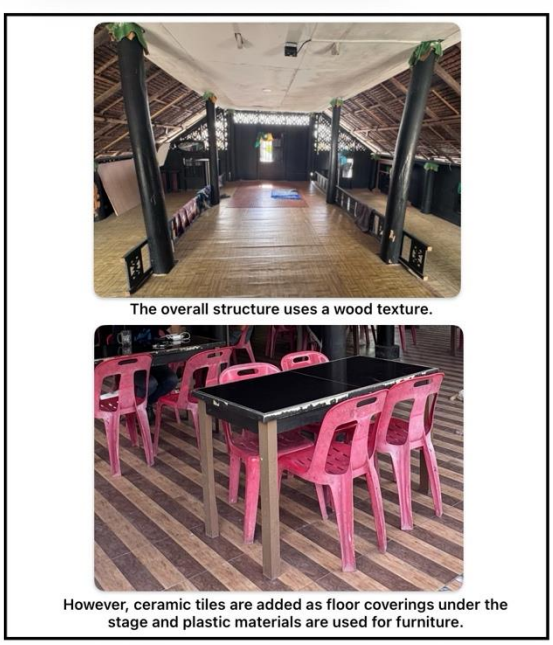


Figure 25. Texture of Interior Elements in Rumoh Aceh
Source: Author's Documentation, 2026

4. Form
   The stilt house form remains among the most immediately recognizable architectural features of Rumoh Aceh (Izziah et al., 2025). Functionally, the elevated structure provides protection against flooding, ground moisture, and environmental hazards. Symbolically, it articulates the spatial stratification of Acehnese social and cosmological values, wherein the elevated living level is associated with domestic life and acts of worship, while the lower space fulfils a utilitarian supporting role. In the context of adaptation into a café, this vertical spatial hierarchy undergoes reinterpretation: the underfloor space is repositioned as the primary zone of social and commercial interaction, the main house assumes a secondary supporting role, and the roof retains its protective function. This reconfiguration establishes a new spatial equilibrium between inherited symbolic meaning and contemporary programmatic demand, demonstrating that formal continuity can sustain cultural significance through functional reinterpretation.
5. Pattern and Ornament
   Traditional Acehnese ornamental motifs are present across multiple architectural surfaces, including decorative spear panels, wall elements, and staircases (Figure 26). The retained motifs encompass both floral and geometric typologies. Floral motifs carry associations with fertility and organic growth, while geometric motifs reflect structural order and adherence to Islamic values through the deliberate avoidance of figurative representation. The specific motifs preserved include Bungong Geulima, a five-petaled flower motif symbolizing harmony, balance, and ideal order; Awan Si On, derived from softly curved cloud formations representing tranquility, wisdom, and the dynamic passage of life; Rencong, referencing the traditional Acehnese dagger and symbolizing courage, honor, and cultural resilience; On Sirih, derived from the betel leaf associated

with welcoming rituals and signifying hospitality and social harmony; Bungong Seulanga, inspired by the kenanga flower and representing moral refinement and grace; Putik Bungong, depicting a flower bud and conveying growth, hope, and emergent potential; and Pucok Reubong, derived from bamboo shoots and symbolizing aspiration, progress, and cultural adaptability. The sustained presence of these ornamental motifs is critical to maintaining the symbolic depth of Rumoh Aceh and reinforcing local cultural identity within a transformed and contemporary spatial context.

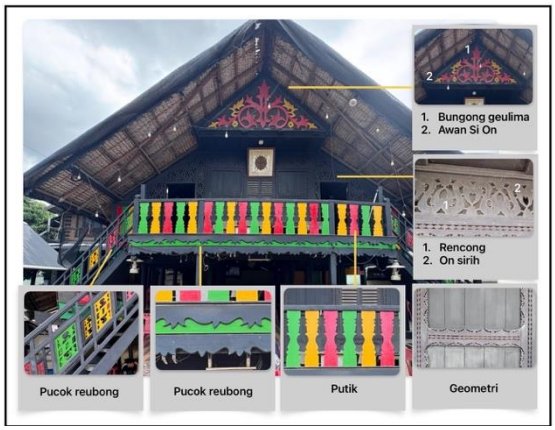


Figure 26. Acehnese Ornaments in Case 2
Source: Author's Documentation, 2026

Comparison of the Two Case Studies

This section presents a comparative analysis of both case studies across three dimensions: interior significance, spatial transformation, and the interpretation of historical values. A scoring rubric was developed to systematically evaluate the degree of change observed in each interior and architectural element, using a scale from 1 to 5. A score of 1 indicates substantial alteration representing a near-total loss of historical integrity. A score of 2 reflects significant change in which the original character is only partially recognizable. A score of 3 represents moderate adaptation where original characteristics are retained but noticeably altered in material, form, or function. A score of 4 indicates largely preserved elements with only minor modifications that do not compromise cultural and architectural integrity. A score of 5 denotes full preservation with strong conformity to the original condition and no meaningful departure from the traditional character of Rumoh Aceh. This framework enables a structured and replicable assessment of each element's response to adaptive reuse demands, facilitating direct comparison between the two case studies and providing a basis for evaluating the effectiveness of each adaptation strategy in retaining the building's cultural and historical identity.

1. Interior Significance

   Interior significance analysis reveals high mean scores of 4.14 for Case Study 1 and 4.29 for Case Study 2 (Table 2), indicating that the majority of culturally significant elements were retained throughout the adaptive reuse process. Equivalent scores in flooring, wall surfaces, and structural components reflect a shared recognition that these elements constitute the primary identity of Rumoh Aceh. A substantive divergence emerges in the roof and furniture elements. Case Study 1 received a lower roof score due to the replacement of rumbia thatching with corrugated zinc sheeting, while Case Study 2 retained rumbia and achieved the maximum score. This condition is inversely reflected in furniture, where Case Study 1 scored higher through the retention of traditional furnishings, whereas Case Study 2 presented ceramic tables and plastic chairs incongruent with the interior character of Rumoh Aceh. This disparity confirms that physical authenticity of the building fabric does not automatically correspond to the strength of interior cultural identity, and that adaptive reuse must be evaluated through the capacity of interior elements to reconstruct a culturally meaningful spatial experience.

Table 2. Comparison of Interior Significance

Indicator	Case Study 1	Case Study 2	Comparative Analysis
Floor	5	5	Original timber flooring is retained without modification in both case studies.
Wall	5	5	Timber-framed wall surfaces preserve the original vernacular construction system across both cases.
Roof	2	5	Case Study 1 undergoes complete roofing material substitution, whereas Case Study 2 retains the original rumbia thatch covering in its traditional configuration.
Structure	5	5	The timber stilt structural system, including its traditional knock-down assembly technique, remains fully intact in both case studies.
Furniture	4	2	Case Study 1 sustains cultural coherence through the retention of symbolically significant objects and traditionally referenced forms, while Case Study 2 exhibits a diminished local identity attributable to the extensive replacement of traditional furnishings with modern commercial materials.
Lighting	4	4	Natural daylighting remains the dominant illumination strategy in both cases, with artificial lighting introduced as a supplementary system to support evening operations.
Ventilation	4	4	Natural ventilation is preserved with additional mechanical support
Average score	**4.14**	**4.29**	**Both case studies demonstrate a high overall level of interior preservation, with Case Study 2 achieving a marginal advantage attributable to the retention of original roofing material and the higher degree of material authenticity this represents.**

Source: Analysis, 2026

This inverse relationship between structural authenticity and furniture retention echoes observations from vernacular adaptive reuse elsewhere in Indonesia, where movable interior elements are typically substituted first while structural and formal systems are more actively preserved (Atmanti & Uekita, 2023; Yusran et al., 2021). The consistently high scores recorded for floor, wall, and structure across both cases further support the general principle that adaptive reuse interventions are most readily accepted in elements of lower symbolic centrality, while structurally defining components are treated as conservation priorities (Plevoets & Van Cleempoel, 2019).

2. Interior Transformation

The analysis of interior transformation reveals a consistent pattern of change across both case studies (Table 3). The roof element received the highest score, as its form and protective function were preserved without significant modification. The undercroft received the lowest score, having undergone the most extensive physical and functional transformation from a secondary service space into the primary operational area of the café. This finding reflects the spatial hierarchy of Rumoh Aceh, in which the undercroft occupies the lowest level of symbolic significance and therefore possesses the greatest capacity for functional reinterpretation without compromising

the cultural legibility of the building. The flexibility of spatial adaptation is thus inversely proportional to the symbolic significance of the space concerned, and an effective transformation strategy should treat spatial hierarchy as a guiding principle for intervention decisions. A more nuanced distinction emerges in the treatment of the veranda, where Case Study 2 achieved a higher score by preserving the veranda not only as a prayer space but also extending its use to accommodate social activities. This demonstrates that spatial adaptation can generate functional reinterpretation that remains culturally grounded, as the underlying social meaning of the space is preserved while its programmatic scope is expanded.

Table 3. Comparison of Interior Transformation

Indicator	Case Study 1	Case Study 2	Comparative Analysis
Roof retains protective function	5	5	The original roof form and functional role are retained without significant modification in both case studies.
Transformation of serambi into prayer space	3	4	Case Study 2 demonstrates a comparatively greater degree of spatial flexibility, accommodating a broader range of devotional and social activities within the adapted interior.
Underfloor transformed into main café area	2	2	Both case studies undergo substantial functional and physical transformation in the lower zone, including the permanent installation of flooring to support commercial operations.
Average score	**3.33**	**3.67**	**Case Study 2 exhibits slightly higher adaptability for public use.**

Source: Analysis, 2026

The consistently low scores recorded for the undercroft in both cases indicate that spaces of minimal original symbolic weight absorb the greatest functional change, a pattern consistent with adaptive reuse practices observed in colonial residential buildings converted into cafés within the same city, where secondary domestic spaces were similarly repurposed as primary commercial areas (Pasha et al., 2021; Dewi et al., 2025). However, the retention of the serambi as a devotional rather than commercial space distinguishes Rumoh Aceh from these colonial precedents, suggesting that vernacular typologies impose interpretive constraints on adaptive reuse that imported architectural typologies do not.

3. Interpretation of Historical Values

Historical value interpretation recorded the highest scores across all assessed dimensions, with 4.33 in Case Study 1 and 4.67 in Case Study 2 (Table 4), indicating that historical values in Rumoh Aceh demonstrate greater resilience to adaptive reuse than its functional spatial values. Line, texture, and form received maximum scores in both cases, confirming that permanently integrated structural elements exhibit the highest resistance to change and serve as the most consistent historical markers. A significant difference emerges in Colour and ornament, where Case Study 2 achieved higher scores through the deliberate application of red, yellow, and green carrying symbolic significance within the Acehnese cultural system, alongside prominent traditional ornamental motifs, collectively strengthening cultural readability. Case Study 1 relies primarily on natural timber expression, producing an authentic atmosphere but remaining limited in explicit

cultural communication. This establishes a key conclusion: the interpretation of historical values requires not only material authenticity but a deliberate strategy of symbolic representation, as cultural readability constitutes an indispensable dimension of any vernacular heritage conservation initiative.

Table 4. Comparison of Historical Value Interpretation

Indicator	Case Study 1	Case Study 2	Comparative Analysis
Colour	3	4	Case Study 2 applies distinctive Acehnese Colours as cultural expression
Line	5	5	Traditional structural lines are preserved in both cases
Texture	5	5	Natural wooden textures remain dominant
Pattern	4	4	Traditional patterns are consistently retained
Form	5	5	The stilt house form remains unchanged
Ornamentation	4	5	Case Study 2 presents more explicit and visually expressive ornamentation
Average score	**4.33**	**4.67**	Case Study 2 demonstrates stronger symbolic and visual expression of Acehnese culture

Source: Analysis, 2026

The comparatively higher resilience of historical values relative to spatial and functional values across both cases supports the broader adaptive reuse premise that formal and symbolic continuity can be sustained even where functional programme undergoes substantial change (Mısırlısoy & Günçe, 2016). At the same time, the divergence in colour and ornamentation scores indicates that historical value is not preserved automatically through material retention alone, but requires a deliberate curatorial strategy, a nuance that receives limited attention in adaptive reuse studies focused primarily on colonial heritage buildings (Plevoets & Van Cleempoel, 2019).

Conclusion

This study examined how adaptive reuse principles in interior design can preserve the cultural values, symbolic meaning, and local identity of Rumoh Aceh while accommodating its new function as a café. The comparative analysis confirms that adaptive reuse sustains defining architectural features, including the roof form, structural system, timber construction, and stilt configuration, while meeting commercial demands. However, preservation remains uneven: the underfloor space, though transformed into the primary commercial area, remains underutilised in terms of cultural expression, and Rumoh Aceh's spatial and philosophical character is only partially conveyed. Case Study 2 narrows this gap through deliberate curatorial strategies, such as culturally significant colour and ornamentation, though material retention still falls short of full experiential legibility.

These findings address the gap identified in the Introduction, where prior research has focused on colonial heritage or vernacular conservation for tourism, with limited attention to interior significance in vernacular dwellings converted into cafés. This study contributes evidence that structural elements exhibit strong resilience under adaptive reuse, while furniture and symbolic

representation remain most vulnerable to cultural dilution, extending adaptive reuse literature beyond principles developed for colonial buildings.

Limitations include the small sample of two cases confined to a single city, which constrains generalisability, and the scoring framework's susceptibility to interpretive subjectivity despite triangulation. Future research should expand the sample, incorporate visitor perspectives, and test the scoring framework across other vernacular typologies.

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