

MORE THAN MEETS THE EYE: MULTISENSORY EXPERIENCES IN JAVANESE TRADITIONAL ARCHITECTURE

Dian Inayah Zahrah Pombo

Department Architecture, CIV-PLAN, Institut Teknologi Sepuluh Nopember (ITS), Surabaya
e-mail: dianinayahzahrahpombo@gmail.com

Didit Novianto

Department Architecture, CIV-PLAN, Institut Teknologi Sepuluh Nopember (ITS), Surabaya
e-mail: didit.novianto.@its.ac.id

Dewi Septanti

Department Architecture, CIV-PLAN, Institut Teknologi Sepuluh Nopember (ITS), Surabaya
e-mail: dewi_septanti@its.ac.id

ABSTRAK

Penggunaan kembali adaptif semakin memposisikan kembali rumah-rumah bangsawan Jawa (ndalem) sebagai tempat komersial dan budaya, namun literatur tentang atmosfer warisan budaya didominasi oleh analisis visual dan arsitektural, sehingga sensori penuh dari bangunan-bangunan ini relatif belum diteliti. Ndalem Ngabean, bekas kediaman pangeran di Yogyakarta, menawarkan sudut pandang untuk menanyakan bagaimana pengunjung dan pengelola membangun rasa otentisitas melalui keterlibatan tubuh dan multisensori, bukan hanya melalui penilaian visual semata. Studi ini menggunakan desain fenomenologi kualitatif melalui wawancara semi-terstruktur mendalam dan ditriangulasi dengan observasi, kemudian dianalisis menggunakan analisis tematik. Temuan menunjukkan pengalaman visual terstruktur di sekitar otentisitas dan kemegahan dalam pandangan warisan budaya, yang berakar pada keaslian konstruksi joglo jati. Pengalaman pendengaran berpusat pada lanskap suara gamelan yang berfungsi sebagai wahana ketenangan sakral. Pengalaman penciuman dibedakan oleh ketiadaan aroma yang disengaja. Pengalaman taktil dan termal menyatu menjadi satu tema yang terwujud berupa kesejukan dan otentisitas material yang dirasakan di dalam tubuh. Studi ini memperluas fenomenologi arsitektur Pallasmaa dan Zumthor ke konteks warisan non-Barat yang diadaptasi secara komersial, dan menunjukkan bahwa pengendalian multisensori bukan dekorasi berlebih justru menjadi kunci mempertahankan otentisitas yang dirasakan di situs warisan hidup.

Kata Kunci: Pengalaman Multisensori, Arsitektur Tradisional Jawa, Fenomenologi

ABSTRACT

Adaptive reuse increasingly repositions Javanese aristocratic dwellings (ndalem) as commercial and cultural venues, yet the literature on heritage atmosphere has been dominated by visual and architectural analysis, leaving the full sensorium of these buildings comparatively unexamined. Ndalem Ngabean, a former princely residence in Yogyakarta offers a vantage point from which to ask how visitors and custodians construct a sense of authenticity through bodily, multisensory engagement rather than through visual appraisal alone. This study employed a qualitative phenomenological design through in-depth semi-structured interviews and triangulated with observation, then analysed using thematic analysis. Findings reveal visual experience was structured around authenticity and splendour in the heritage gaze, anchored in the genuineness of teak joglo construction. Auditory experience cohered around a gamelan soundscape functioning as a vehicle of sacred calm. Olfactory experience was distinguished by the deliberate absence of scent. Tactile and thermal experience merged into a single embodied theme of coolness and material authenticity felt in the body. The findings extend Pallasmaa's and Zumthor's phenomenology of architecture into a non-Western, commercially adapted heritage context, demonstrating that multisensory restraint rather than embellishment is the key mechanism sustaining perceived authenticity in living heritage sites.

Keywords: *Multisensory Experience, Javanese traditional Architecture, Phenomenology of architecture*

1. PENDAHULUAN

Javanese aristocratic dwellings, known as ndalem, occupy a distinctive position within Indonesia's heritage landscape. Unlike monumental palace complexes (kraton) that are typically preserved as static museified artefacts, the ndalem of Yogyakarta were domestic and administrative residences of princely families, built according to a cosmological order in which spatial hierarchy, material choice, and architectural form jointly expressed the social and metaphysical status of the household (Santosa, 2000; Tjahjono, 1989). The joglo roof form, with its stepped pyramidal silhouette and centrally positioned pendopo (open pavilion), is not merely a stylistic device but a built expression of Javanese cosmology, in which the relationship between the ruler, the cosmos, and the everyday life of the household is spatially encoded (Priyotomo, 1984; Santosa, 2000). As Yogyakarta's urban economy has shifted toward heritage tourism and experience-based hospitality, a number of these ndalem have undergone adaptive reuse, becoming restaurants, event venues, and cultural galleries that must simultaneously honour their architectural lineage and accommodate commercial visitor flows (Paramytha et al., 2025).

Ndalem Ngabean, the site examined in this study, exemplifies this transition. Originally constructed as a residence connected to the royal family of Hamengkubuwono VIII, the building today functions as a public cultural venue and restaurant in central Yogyakarta. Genuine teak structural members, a centrally positioned pendopo, and a layout consistent with the architectural conventions of a princely residence have been retained, while the building now accommodates dining, weddings, and informal cultural visitation. This duality positions Ndalem Ngabean as a productive site for examining a question that is increasingly pressing across heritage studies: when a historic dwelling is adaptively reused for commercial purposes, what sustains the visitor's sense that the place remains authentic, and through which sensory channels is that authenticity actually perceived and judged?

The architectural phenomenology developed by Pallasmaa (2005) and Zumthor (2006) provides a productive theoretical entry point to this question, as both scholars argue that the experience of built space is irreducibly multisensory: a building is apprehended not only through the eye but through sound, smell, touch, and the thermal envelope of the skin. Pallasmaa's critique of what he terms the ocularcentrism of modern architectural discourse is particularly relevant to heritage studies, where visual documentation, photogrammetry, and image-based marketing have tended to dominate both scholarly and popular accounts of historic buildings. Zumthor (2006) atmospheric account of architecture similarly insists that the felt quality of a space, its temperature, its acoustic density, its material weight, precedes and conditions any subsequent cognitive or aesthetic judgement that a visitor might form about a building's authenticity or value. Norberg-Schulz (1980) concept of *genius loci*, the spirit of a place as constituted through the total sensory and symbolic character of its physical setting, extends this argument toward questions of identity and meaning. Recent studies on Javanese vernacular architecture have examined how material transformations, reflect shifting cultural values, technical considerations, and community perceptions of material quality (Pambudi et al., 2026). However, the sensory implications of such material substitutions, particularly in shaping embodied experiences of authenticity, comfort, and place perception, remain underexplored.

This study takes these phenomenological premises as its point of departure and asks how the multisensory qualities of Ndalem Ngabean, across visual, auditory, olfactory, tactile, and thermal dimensions, are experienced and interpreted by visitors and by the site's long-serving manager. In doing so, the study contributes to a growing body of heritage scholarship that treats sensory experience not as an incidental backdrop to architectural appreciation but as the primary medium through which heritage authenticity is constructed, negotiated, and sustained in practice (Bender et al., 2024).

2. RESEARCH METHOD

2.1 Research Design

This study employed a qualitative phenomenological approach to explore how visitors experience and interpret the sensory qualities of Ndalem Ngabean, a traditional Javanese heritage building in Yogyakarta. Phenomenology was selected as the guiding methodology because it foregrounds individuals' lived experience and the meanings they construct through direct, embodied engagement with a phenomenon, rather than treating that experience as a derivative of objective architectural properties (Moustakas, 1994). Sensory experience in architecture is, by its nature, subjective and mediated by bodily perception, memory, cultural understanding, and the immediate environmental encounter; a phenomenological design is therefore better suited to this object of inquiry than either a purely structural architectural survey or a quantitative satisfaction instrument. The study investigates five sensory dimensions established in prior architectural sensory scholarship, visual, auditory, olfactory, tactile, and thermal experience.

2.2 Study Area

The study was conducted at Ndalem Ngabean, Yogyakarta, Indonesia. Ndalem Ngabean is a former aristocratic residence associated with the Yogyakarta Sultanate, connected to the family of Hamengkubuwono VIII, that has undergone adaptive reuse and currently functions as a public cultural venue and restaurant. The site was selected purposively because it retains substantial elements of traditional Javanese architecture, including a genuine teak-framed pendopo and a spatial layout consistent with the architectural conventions of a princely residence, while simultaneously accommodating contemporary commercial and cultural activity, including dining, weddings, and informal cultural visitation. (Yudasromo, 2013).

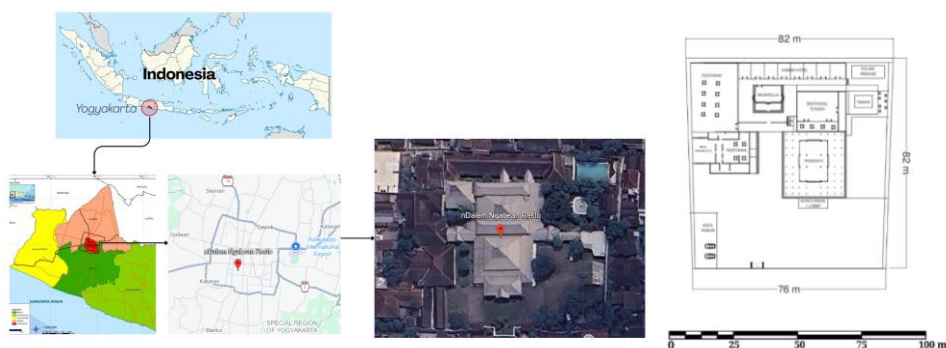


Figure. 1
Map of Ndalem Ngabean, Yogyakarta.
Source: Google Earth, 2026

2.3 Participants

Participants were selected using purposive sampling to ensure that all respondents had direct, first-hand experience of the architectural and sensory environment of Ndalem Ngabean. The study involved seven participants in total: six visitors, ranging in age from 21 to 47 years and engaging with the site through dining, cultural visitation, and photographic or recreational activity, and one site manager with approximately ten years of custodial experience at the location. Table 1 summarises participant characteristics. The inclusion of both visitor and management perspectives allowed the study to capture a dual perspective on the production of sensory experience: visitors' descriptions of how the space was perceived, and the manager's account of how specific sensory qualities, including acoustic ambience and olfactory neutrality, are deliberately maintained.

Code	Age	Gender	Role
R1	21	Women	Visitor
R2	47	Women	Visitor
R3	25	Women	Visitor
R4	27	Men	Visitor
R5	29	Men	Visitor
R6	30	Men	Visitor
R7	40	Men	Site manager

Table 1. Participant Characteristics.

2.4 Data Collection

Data collection employed two qualitative methods: in-depth semi-structured interviews and on-site sensory observation, used in combination to achieve methodological triangulation. Semi-structured interviews were conducted with all seven participants. Interview questions explored participants' sensory perceptions related to architectural atmosphere, visual qualities, sounds, smells, material textures, thermal comfort, emotional responses, and memorable experiences associated with Ndalem Ngabean. The semi-structured format allowed participants to describe their experiences in their own words while preserving a consistent thematic structure across interviews, thereby supporting later cross-case comparison. On-site observations were undertaken to document architectural features and environmental conditions associated with sensory experience. These observational data served a triangulating function, allowing the research team to corroborate or contextualise participants' verbal accounts against the directly observable sensory and material conditions of the site.

2.5 Data Analysis

Transcribed interviews were imported into QSR NVivo 12 to support the data analysis. A thematic content analysis was performed to organize and classify the data into conceptual categories underpinning the research objectives (Bryman, 2016). Data were analysed using thematic analysis following Braun & Clarke (2006) six-phase framework: familiarisation with the interview transcripts and observational notes, generation of initial inductive codes, identification of recurring patterns across codes, development of candidate themes, theme refinement, and final interpretation. Codes were generated inductively from participants' own descriptions of sensory experience rather than being imposed from a predetermined coding frame, although the five sensory dimensions established in the architectural phenomenology literature (Norberg-Schulz, 1980; Pallasmaa, 2005; Tuan, 1977; Zumthor, 2006) were used as deductive sensitising categories that structured the sub-research-questions and guided the initial organisation of the data.

Following Braun and Clarke's (2006) iterative logic, related codes were grouped into broader analytic categories, and these categories were subsequently consolidated into four final themes. Notably, codes relating to tactile material qualities and codes relating to thermal and ventilation conditions were found, during the theme-refinement phase, to describe a single embodied phenomenon, namely the bodily sensation of coolness as a marker of material authenticity, and were therefore merged into one combined final theme rather than reported as separate tactile and thermal themes. This merging follows established thematic-analysis convention for combining categories drawn from different sub-research-questions when they are found to converge on the same higher-order experiential phenomenon (Zairul, 2025).

An iterative analytical process was maintained throughout the study, with the research team returning repeatedly to the interview transcripts and observational notes to verify that the developing themes remained grounded in participants' own language and to ensure consistency between the interview data and the independently collected observational data. Thematic saturation was judged to have been reached when successive interviews, particularly across the final two visitor respondents and the site manager, ceased to generate substantively new codes within the established sensory categories.

3. RESULTS

3.1 Theme 1: Authenticity and Splendour in the Visual Heritage Gaze

This theme captures how visitors' visual experience of Ndalem Ngabean is structured around the perceived genuineness of the joglo form and its materials, amplified by ornamental detail and a maintained,

photogenic spatial order. Four sub-themes were identified, as outlined in Table 2.

Sub-Theme	Description	Supporting Quotes
Architectural Authenticity & Material Genuineness	Genuine teak construction and a complete princely-house structure are read as the building's defining visual evidence of authenticity.	<i>"This one is made of genuine teak wood."</i>
Ornamental & Symbolic Detail	Carvings, roof form, and window arrangement are read as carriers of cultural and moral meaning, not mere decoration.	<i>"The carvings are what capture attention; every detail has meaning."</i>
Narrative & Photogenic Appeal	The site supports both a contemporary, photography-driven mode of looking and a narrative, story-based mode of engagement.	<i>"Quite interesting for taking photos there... with a modern touch, it looks luxurious."</i>
Maintained Spatial Order	Visible neatness is perceived as an inherent quality, though it is the product of continuous custodial maintenance.	<i>"The layout is good, apik... maintenance of this place is also always periodic, routine, and regular."</i>
Architectural Authenticity & Material Genuineness	Genuine teak construction and a complete princely-house structure are read as the building's defining visual evidence of authenticity.	<i>"This one is made of genuine teak wood."</i>
Ornamental & Symbolic Detail	Carvings, roof form, and window arrangement are read as carriers of cultural and moral meaning, not mere decoration.	<i>"The carvings are what capture attention; every detail has meaning."</i>

Table 2. Sub-themes of the visual heritage gaze at Ndalem Ngabean.

Source: Author, 2026



Figure 2.

Facade and Details of the Wood Carved Ornaments of Ndalem Ngabean

Source: Personal Documentation, 2026

Architectural authenticity emerged as the dominant visual code, with the site manager's comparison of genuine teak against the cement substitutes used in other pendopo positioning material genuineness as the decisive criterion of authenticity (R7). Visitors without comparable technical knowledge appeared to rely on a secondary proxy cue, neatness, of the kind expressed by R1, suggesting that visual authenticity operates on two levels: an expert, comparative judgement and a lay, order-based judgement. Ornamental detail was read by some visitors, notably R2, in explicitly symbolic terms (e.g., window size as openheartedness), reflecting Tjahjono (1989) and Santosa (2000) accounts of Javanese architecture as a cosmological and ethical text. The coexistence of photogenic and narrative appeal, rather than their conflict, indicates that successful adaptive reuse can support both contemporary self-presentation and historical storytelling concurrently.

These findings extend (Pallasmaa, 2005) critique of architectural ocularcentrism: visitors distinguish between a superficial, image-based mode of looking and a deeper, materially grounded mode of seeing that approaches Pallasmaa's haptic ideal, in which the eye reads texture and construction as evidence of tactile and material truth. For heritage management, the findings imply that visible maintenance routines function as a directly perceptible authenticity signal and should be resourced and scheduled accordingly.

3.2 Theme 2: Gamelan Soundscape as a Vehicle of Sacred Calm

This theme captures how a deliberately curated, near-silent acoustic baseline, layered with gamelan and gending music, produces an atmosphere that visitors consistently described using a vocabulary of calm and attenuated sacredness. Three sub-themes were identified, as outlined in Table 3.

Sub-Theme	Description	Supporting Quotes
Gamelan as Cultural Soundscape	Daily-programmed gending music, delivered via sound system, is perceived by visitors as an organic ambient quality of the site.	<i>"The melody of traditional musical instruments, so melodious... I felt very calm and touched."</i>
Sacred Tranquility through Sound	The acoustic atmosphere is consistently coded as calm with an attenuated sense of the sacred, despite the venue's secular function.	<i>"The sound created a normal, calm atmosphere, although a slight sacred feel was present."</i>
Curated Acoustic Environment	Infrastructural exclusion of traffic noise (a private access road) and programmed music jointly engineer the site's perceived quietness.	<i>"Vehicles? None at all that disturb, because we have a private road."</i>

Table 3. Sub-themes of the Auditory experience Ndalem Ngabean.

Source: Author, 2026



Figure 3.

Javanese Background Music as an Auditory Element Forming the Sacredness of Space in Ndalem Ngabean

Source: Personal Documentation, 2026

The recurrence of sacredness as a descriptor, despite the absence of any religious or ceremonial sound source, indicates that gamelan timbre itself carries strong cultural-semiotic associations with tradition and ceremony in the Javanese context, associations that transfer readily into a commercial hospitality setting. The manager's testimony reframes visitors' impression of ambient quiet as the outcome of two deliberate management decisions, programmed music and infrastructural noise exclusion, rather than as an incidental property of the historic building.

This theme extends Zumthor (2006) account of atmosphere as an orchestrated architectural quality, showing that atmosphere at Ndalem Ngabean is produced through infrastructural and technological means working in concert with historic fabric. For heritage management, acoustic curation, choice of recorded repertoire and control of ambient noise, should be treated as a design decision warranting the same attention as visual restoration. The findings further indicate that gamelan / gending music constitutes one of the strongest sensory markers of place identity at Ndalem Ngabean. Research on heritage soundscapes suggests that visitors often expect cultural heritage environments to incorporate traditional sounds that reflect local identity and character (Dwipayana et al., 2025). The positive responses toward gamelan therefore imply that auditory curation should be regarded as a strategic heritage-management tool rather than a supplementary atmospheric element. Maintaining a consistent and contextually appropriate repertoire of traditional music may help reinforce visitors' sense of cultural immersion and authenticity.

3.3 Theme 3: The Absence of Scent as a Marker of Natural Authenticity

This theme captures a distinctive finding: rather than being defined by a positive, identifiable scent, the olfactory experience of Ndalem Ngabean was characterised by absence and ordinariness, which functioned as a

deliberate management strategy and a marker of authenticity rather than a sensory deficiency. Three sub-themes were identified, as outlined in Table 4.

Sub-Theme	Description	Supporting Quotes
Memory-Evoking Ambient Scent	A subtle, non-specific ambient scent functions as an associative trigger for personal, autobiographical memory.	<i>"A scent that reminded me of childhood back in my hometown."</i>
Calm Induced by Subtle, Natural Scent	An indeterminate, hard-to-describe scent is linked directly to feelings of calm, comfort, and mild sacredness.	<i>"The scent helps create a comfortable and sacred impression, which makes it memorable."</i>
Deliberate Scent Neutrality as Authenticity Marker	Incense and artificial fragrance are explicitly excluded; this neutrality is presented as a longstanding, religiously informed policy.	<i>"No dupa... for over 30 years, this has been a favorite place for foreign guests... because there isn't any scent at all."</i>

Table 4. Sub-themes of the Olfactory experience Ndalem Ngabean.

Source: Author, 2026

The contrast between visitors' perception of olfactory ordinariness and the manager's account of deliberate incense exclusion is the theme's central finding: what visitors read as a sensory non-event is, in fact, a carefully maintained outcome of religious and cross-cultural trust-building, explicitly credited by the manager with three decades of appeal to a religiously diverse international clientele.

This finding extends Pallasmaa (2005) account of smell in architectural experience by identifying a mechanism not anticipated in his largely Western examples: authenticity constituted negatively, through restraint, rather than positively, through curated fragrance. For heritage management serving culturally diverse visitors, the implication is that ambient-scent strategies common in experience-design literature should not be adopted uncritically; deliberate olfactory neutrality may better serve authenticity perceptions in religiously heterogeneous contexts.

The findings also reveal a potential limitation in the current sensory management strategy. Although the absence of incense successfully avoids religious exclusivity and maintains cultural neutrality, it simultaneously reduces the distinctiveness of the site's olfactory identity. Research in heritage interpretation and multisensory design has consistently demonstrated that memorable scents contribute to stronger emotional recall and attachment to place (Bembibre & Strlič, 2017). The inability of most

visitors to identify a specific aroma associated with Ndalem Ngabean suggests that olfactory experience remains underdeveloped compared with visual and auditory dimensions. Future management interventions might therefore consider introducing subtle scent cues rooted in local cultural practices, allowing the site to cultivate a more memorable sensory atmosphere while respecting its commitment to authenticity and inclusivity.

3.4 Theme 4: Tactile-Thermal Comfort, Coolness and Material Authenticity in the Body

During thematic refinement, codes from the tactile and thermal dimensions converged on a single embodied phenomenon: bodily coolness experienced as direct confirmation of material genuineness. These two dimensions are therefore reported jointly. Three sub-themes were identified, as outlined in Table 5.

Sub-Theme	Description	Supporting Quotes
Structural Solidity & Material Comfort	Sturdy, well-structured materials are experienced as a source of comfort, with authenticity apprehended through touch.	<i>"Sturdy and so well-structured... the supporting materials contributed to a feeling of comfort."</i>
Thermal-Tactile Coolness	Passive cooling from traditional construction is consistently equated with calm, comfort, and confirmation of genuineness.	<i>"Cool and, essentially, there was a sense of calm and comfort, far from the noise."</i>
Thermal-Tactile Coolness as Confirmation of Comfort	Coolness felt against the skin and in the surrounding air is consistently equated with calm, comfort, and confirmation of genuineness.	<i>"Cool and, essentially, there was a sense of calm and comfort, far from the noise."</i>

Table 5. Sub-themes of the Tactile-Thermal experience Ndalem Ngabean.

Source: Author, 2026

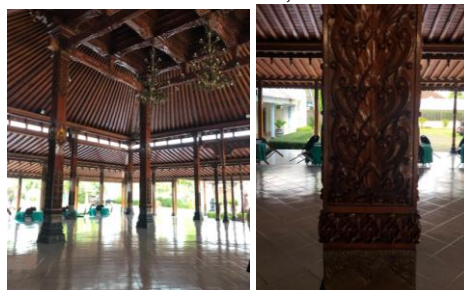


Figure 4.

Tactile Material Quality: Floor Surfaces and Wooden Pillars of Ndalem Ngabean

Source: Personal Documentation, 2026

Visitors consistently equated the physical sensation of coolness and structural solidity with the building's material genuineness, treating thermal and tactile comfort as bodily confirmation of the visual and narrative authenticity claims discussed under Theme 1. The site manager's likening of the building's thermal performance to a pyramid's interior offers a vernacular, experientially grounded theory of passive cooling consistent with the thermal-mass and ventilation properties of traditional joglo construction. Localised friction in enclosed, devotional zones indicates that this embodied authenticity is not uniform across the site and is in places supplemented by mechanical cooling and routine maintenance.

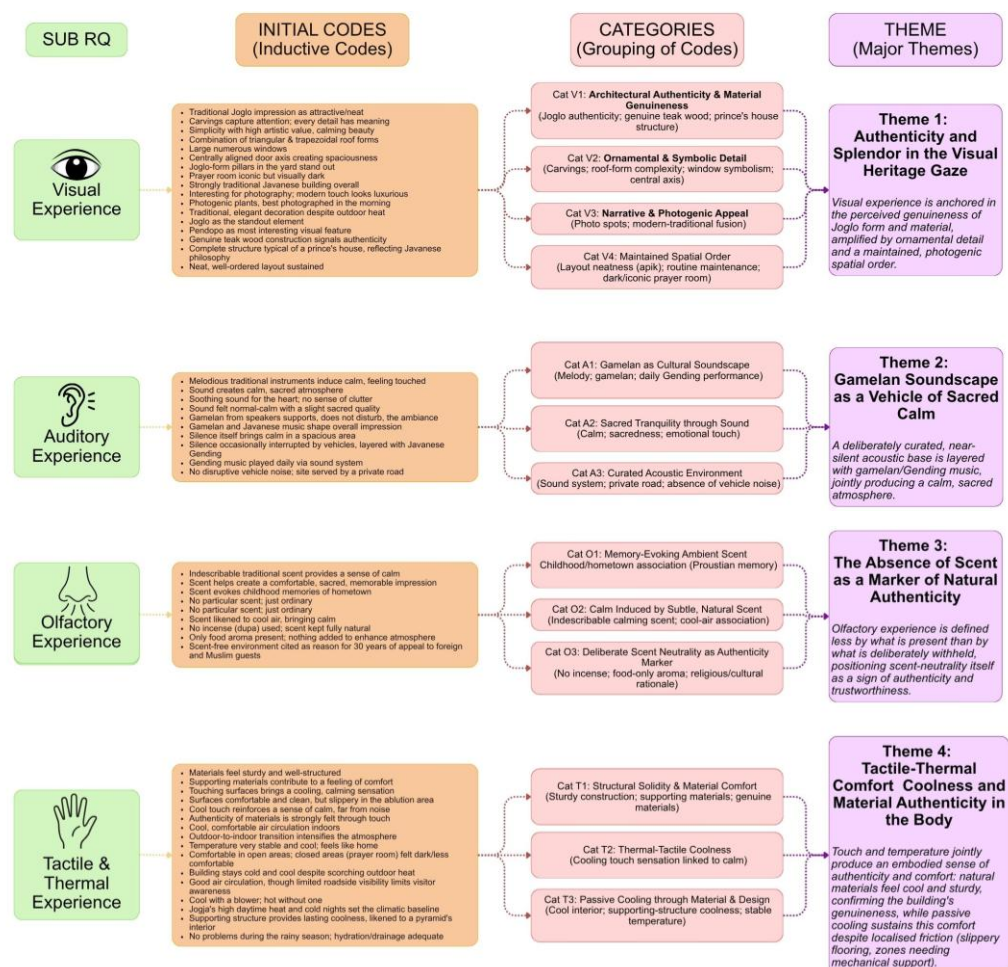


Figure 5.
Thematic Analysis Diagram
Source: Author, 2026

This study set out to understand how visitors and a long-serving custodian experience the multisensory qualities of Ndalem Ngabean, and the findings converge on a single integrative claim: perceived heritage authenticity at this site is not a passive inheritance from historic fabric but an actively, if largely invisibly, managed sensory achievement. Confidence in the building's authenticity was rarely grounded in a single sensory channel. Visual judgements of material genuineness (Theme 1) were corroborated by tactile and thermal sensations of coolness and solidity (Theme 4), while auditory (Theme 2) and olfactory (Theme 3) experiences contributed an affective register of calm and sacredness that operated in parallel with the visual and tactile registers. Authenticity, as actually experienced, thus functions as an emergent property of cross-sensory corroboration rather than a judgement reducible to any one channel, directly consistent with Pallasmaa's (2005) claim that architectural meaning is constructed multisensorially.

The mechanism underlying this multisensory authenticity is what this study terms curated restraint: a management philosophy, evident most clearly in the site manager's testimony, that favours the deliberate exclusion of potentially inauthenticating interventions, cement substitution, incense, disruptive traffic noise, over the positive introduction of atmosphere-enhancing devices. This logic plausibly arises from the site's specific commercial position as a mid-to-upper-tier restaurant and cultural venue serving a religiously and culturally diverse international clientele over three decades, which creates strong incentives to avoid any sensory intervention legible as artificial staging while still requiring active investment in the maintenance and acoustic programming needed to sustain a consistently calm, orderly atmosphere. Restraint, in other words, is not the absence of management but a specific and demanding form of it.

These findings extend, while also complicating, the phenomenological frameworks developed by Pallasmaa (2005) and Zumthor (2006). Both theorists treat atmosphere as a designed outcome, but their accounts, developed primarily in relation to museums, churches, and contemporary commissions in European contexts, do not anticipate a context in which the principal design strategy is the studied withholding of sensory stimulus, particularly scent, as a trust-building device for a culturally diverse audience. Where Pallasmaa treats smell mainly as an underused but potentially powerful positive design resource, the Ndalem Ngabean data suggest that in religiously and culturally heterogeneous heritage-hospitality contexts the deliberate absence of scent can carry equal or greater authenticating force than its deliberate presence. Lang's (1987) environmental-psychological framework of person-environment transaction is similarly extended by the localised friction identified in Theme 4 (slippery flooring, inadequate lighting), which shows that even a building widely judged authentic and comfortable

can generate negative micro-transactions in specific zones, indicating that authenticity judgements operate at a finer spatial grain than a single, undifferentiated impression of the building as a whole.

The study departs from prior heritage sensory-experience research in two respects. First, comparable phenomenological studies of historic urban heritage districts have generally reported sensory layering as a cumulative, additive process in which sight, sound, and smell jointly and positively reinforce cultural immersion. Ndalem Ngabean instead shows a structurally different, asymmetric pattern in which one register, smell, operates through deliberate negation while the visual, auditory, and tactile-thermal registers operate through curated presence; sensory-layering models developed for other heritage typologies should therefore not be applied uncritically to vernacular, religiously inflected, commercially adapted contexts such as the Javanese ndalem. Second, where much of the adaptive-reuse literature treats authenticity as a property at risk of erosion through commercialisation, (Bender et al., 2024; Paramytha et al., 2025) this site's continuous commercial operation over roughly three decades has in fact financed and motivated the very maintenance regime, *apik*, that visitors read as evidence of natural, untouched authenticity. Commercial viability and perceived authenticity are, in this case, mutually sustaining rather than opposed, adding empirical nuance to the more cautionary framing of commercialisation found elsewhere in heritage-tourism scholarship.

Theoretically, the study makes three contributions. It extends Pallasmaa's (2005) and Zumthor's (2006) phenomenology of architecture beyond its predominantly Western, Christian-museological empirical base. This study demonstrates that the haptic material reading and atmospheric orchestration of sound and temperature identified by these theorists operate with comparable force in a non-Western, religiously inflected, and commercially adapted heritage setting. The analysis further surfaces culturally specific inflections not anticipated by the existing literature, notably the symbolic decoding of architectural ornament as moral character and the emic concept of *kodrat* as a frame for naturalising an actively managed authenticity. It introduces and empirically substantiates curated sensory restraint as a distinct authenticity-production strategy that complements, and partly displaces, the more familiar concept of curated sensory enhancement, identifying an asymmetry across sensory channels that complicates additive models of multisensory place identity. It offers a labour-attentive corrective to place-identity theory: following Norberg-Schulz (1980), *genius loci* has tended to be treated as an emergent property of historic material and form, but the evidence here shows it is better understood, at least in this case, as a continuously re-enacted managerial accomplishment sustained through routine, low-visibility custodial labour that visitors systematically misread as an inherent, unmanaged quality of the building.

These findings carry direct, practical weight for architects, conservationists, and heritage managers. Sensory design interventions in adaptively reused heritage buildings should be evaluated not only for fidelity to historic precedent but for congruence with the cultural and religious expectations of the building's intended visitor base, since the same intervention, ambient incense, for instance, that enhances perceived authenticity in one heritage-tourism context could undermine it in another. Maintenance scheduling, including routine cleaning, grounds-keeping, and grass-cutting, should be recognised and resourced as a core component of the visitor sensory experience rather than a peripheral operational matter, given how strongly visitors associated visible neatness with underlying authenticity; acoustic decisions, private access roads, daily-programmed music, likewise warrant the same design attention typically reserved for visual restoration. On olfactory management specifically, the findings caution against uncritically adopting ambient-scent strategies common in experience-design literature: where a visitor base is religiously or culturally diverse, deliberate scent exclusion may better serve authenticity and broaden cross-cultural appeal than an introduced fragrance, even one historically associated with the building's heritage, so olfactory strategy should be assessed case by case rather than assumed to require enrichment. Finally, the localised friction identified, slippery ablution flooring, a dimly lit prayer room, blower-dependent cooling, points to specific, addressable priorities that would likely strengthen rather than compromise the site's overall sensory coherence, since participants treated these as minor departures rather than fundamental challenges to authenticity.

4. CONCLUSION

This study set out to explore how visitors experience the multisensory qualities of Ndalem Ngabean, a traditional Javanese heritage building adaptively reused as a public cultural venue, across visual, auditory, olfactory, tactile, and thermal dimensions. The findings demonstrate that perceived authenticity at this site is constructed multisensorially rather than visually alone, that this construction proceeds through markedly different logics across sensory channels, curated presence in the visual, auditory, and tactile-thermal registers, and curated absence in the olfactory register, and that the entire sensory edifice rests upon a continuous, largely invisible programme of custodial maintenance that visitors systematically perceive as an inherent, natural property of the building rather than as an ongoing managerial accomplishment.

By extending Pallasmaa's (2005) and Zumthor's (2006) phenomenology of architecture, alongside Norberg-Schulz's (1980) concept of genius loci and Lang's (1987) environmental-psychological account of

person-environment transaction, into the underexamined context of Javanese princely domestic architecture, this study offers both a theoretical refinement, the identification of curated sensory restraint as a distinct mechanism of authenticity production, and a practical resource for heritage managers seeking to sustain the felt authenticity of adaptively reused heritage buildings without compromising their commercial viability. Ndalem Ngabean's own custodian named this achievement *kodrat*, destiny, but the evidence assembled in this study suggests that what visitors experience as destiny is, in significant part, the product of careful, sustained, and culturally attuned sensory stewardship.

These conclusions should be read against the study's limitations. The sample, six visitors and one site manager, suits the depth sought by a phenomenological design but precludes statistical generalisation, and the visitor sample was not deliberately stratified by nationality, religion, or prior familiarity with Javanese architecture, factors the findings themselves suggest may shape sensory interpretation. Reliance on a single site manager means the study cannot establish whether the curation strategies described are representative of practice across comparable ndalem or specific to this custodian's ten-year tenure and personal philosophy. The cross-sectional design captures impressions at a single point in time and cannot speak to how repeated visitation, seasonal variation between Yogyakarta's dry and rainy seasons, or longer-term management change might alter the themes identified, and the observational component, while used for triangulation, was not documented with the same granularity as the interview data.

Future research should pursue comparative studies across multiple adaptively reused ndalem, and ideally across vernacular aristocratic dwellings in other Javanese cities, to establish whether the curated-restraint logic identified here, particularly the strategic exclusion of scent, generalises beyond this site's specific commercial and religious positioning. Deliberately sampling visitors by nationality, religious background, and prior cultural familiarity would test the tentative finding that symbolic and cosmological decoding of ornament is unevenly distributed and may constitute a distinct, culturally contingent sub-dimension of visual experience. Longitudinal and seasonal designs would capture how diurnal and seasonal temperature variation interacts with the building's passive cooling performance over time, and combining the phenomenological approach used here with physical environmental measurement, acoustic monitoring, olfactory sampling, thermal logging, would strengthen the triangulation between lived experience and measurable environmental fact that this study's design could only partially achieve through observation alone.

ACKNOWLEDGEMENT

This research is funded by Institut Teknologi Sepuluh Nopember (ITS) and managed under the Strategic Research Grant (SRG) Type D Scheme (Contract No. 1584/PKS/ITS/2026).

REFERENCES

- Bembibre, C., & Strlič, M. (2017). Smell of heritage: a framework for the identification, analysis and archival of historic odours. *Heritage Science*, 5(1), 1–11.
- Bender, A., Guerreiro, M., Agapito, D., Sequeira, B. D., & Mendes, J. (2024). *Sensory experiences in heritage contexts: A qualitative approach*. 1–19.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.
- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Budi Santosa, R. (2000). Omah: membaca makna rumah Jawa. (*No Title*).
- Dwipayana, I. K. W., Wajdi, M., Sutiarto, M. A., Zulfan, M., & Aruku, K. J. (2025). The exploring the role of Balinese gamelan in shaping tourist experiences and tourism growth in Bali. *Kajian Pendidikan, Seni, Budaya, Sosial Dan Lingkungan*, 2(2), 176–187. <https://doi.org/10.58881/kpsbsl.v2i2.61>
- Moustakas, C. (1994). Phenomenological research methods. *Thousand Oaks*.
- Norberg-Schulz, C. (1980). Genius Loci: Towards a Phenomenology of Architecture,“, Rizzoli, New York. *New: Rizzoli*.
- Pallasmaa, J. (2005). The eyes of the skin. *Architecture and the Senses*. Chichester.
- Pambudi, A. S. (2026). *Fenomena Perubahan Material Atap Joglo Pada Rumah Joglo Banyumasan memiliki proses kultural dan bersifat internal (Santosa , 2016) Indonesia orang jawa yang ada di dalam rumah pada umumnya secara turun temurun , lain yang ada di dalam omah , banyak sekali makna yang tersirat dari*. X, 1–18.
- Paramytha, P., Fitriana, M., Said, S. Y., & others. (2025). An Adaptive Reuse Approach to the Interior Function Transformation of Kalang Houses in Kotagede. *Environment-Behaviour Proceedings Journal*, 10(S139), 147–154.

- Prijotomo, J. (1984). Ideas and forms of Javanese architecture. (*No Title*).
- Tjahjono, G. (1989). *Cosmos, center, and duality in Javanese architectural tradition: The symbolic dimensions of house shapes in Kota Gede and surroundings*. University of California, Berkeley.
- Tuan, Y.-F. (1977). *Space and place: The perspective of experience*. U of Minnesota Press.
- Yudasmoro. (2013). *Melacak Sejarah Ndalem Ngabean*. <https://yudasmoro.wordpress.com/2013/04/08/melacak-sejarah-ndalem-ngabeyan/>
- Zairul, M. (2025). Enhancing Qualitative Research with Thematic Analysis Matrix (TAM): A Systematic Approach to Thematic Analysis in Architectural Research. *Alam Cipta: International Journal on Sustainable Tropical Design Research \& Practice*, 18(1).
- Zumthor, P. (2006). Atmospheres: Architectural environments. surrounding objects. In *Atmospheres*. Birkhäuser.