

Interior Design of Karawitan Concert Hall with Gamelan Theme in Surakarta

Zidni Ilman Naafi ^{1,*}, Siti Badriyah ²

Institut Seni Indonesia Surakarta, Jalan KiHajar Dewantara No. 19, Surakarta 57126, Indonesia

¹ zidni.illmaan@gmail.com; ² sitisitibadriyah69@gmail.com

* Corresponding Author



Received 25 February 2025; accepted 8 May 2025; published 19 June 2025

ABSTRACT

The Karawitan Concert Hall with a Gamelan theme in Surakarta responds to two related problems: declining public appreciation of Karawitan arts among younger generations, and the absence of a dedicated space in Surakarta that supports its recreational, educational, and economic appreciation. The design was developed using Pamudji Suptandar's interior design method, structured across three stages—Input, Synthesize, and Output—in which field and digital data on site conditions, user needs, and spatial requirements were collected, processed, and translated into a design response. To engage younger audiences, the interior design uses gamelan instruments as its central theme, expressed both functionally and decoratively across the building's spaces, while spatial and structural elements are arranged to support interactive, educational use. This theme is expressed through a Post-Modern architectural style, selected for the expressive freedom of its core principles—Form Follows Emotion, stylistic plurality, and complexity and contradiction—which align closely with the spontaneity and emotional character of Karawitan music. Acoustic design further prioritizes the natural, unamplified sound of gamelan instruments through architectural treatments such as absorber and reverberation panels. Together, these design decisions are intended to elevate the cultural standing of Karawitan arts, provide artists with a quality performance environment, and offer a transferable model for future performing arts venues.

KEYWORDS

Karawitan
Gamelan
Concert hall
Interior design
Post modern

This is an open-access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license



1. Introduction

Surakarta, known as "The Spirit of Java," carries forward the cultural legacy of the Mataram Kingdom and is widely recognized for its balance, harmony, and diverse traditions—among them, the art of Karawitan music. In Javanese culture, Karawitan is performed through gamelan ensembles built on the non-diatonic slendro and pelog scales (Purwani, Rahmatulloh, and Rahayu 2022). For Javanese communities, Karawitan represents an artistic identity grown from local cultural practice, resulting in a form of traditional music distinct in structure and character from modern, diatonic-based composition.

Despite this cultural depth, Karawitan has declined in popularity among younger generations. Surakarta's 2022 demographic data shows that approximately 71% of its 538,000 residents are of productive age, yet a substantial share of this population perceives Karawitan as conservative and lacking innovation. This perception sits at odds with the art form's demonstrated capacity for adaptation, as Karawitan has already shown potential for integration with contemporary creative fields such as modern music, film, theater, and fashion.

The Karawitan Concert Hall proposed in this study, with its gamelan-inspired interior, responds directly to this gap by providing a space that is simultaneously functional and representative of this cultural heritage. The project is conceived as a cultural, educational, and entertainment hub intended to revitalize public engagement with Karawitan, an objective that necessarily draws on multiple design considerations—functional, ergonomic, aesthetic, and technical—to enhance the audience's experience of gamelan performance while supporting broader public appreciation activities.

This priority on unmediated, natural sound is captured in the Javanese Karawitan proverb *sru rama ngrebeki, senajan lirih paratin*—loosely, "loud sounds will be heard clearly, but without blocking the lower

frequencies." Following this principle, the concert hall's acoustic approach prioritizes the originality and naturalness of gamelan sound without relying on electric amplification, instead maximizing the instruments' acoustic potential through architectural treatments such as absorber and reverberation panels applied to the building's environmental acoustics.

Positioned as an act of cultural revitalization, this interior design is also a strategy for reaching a wider audience for Karawitan music, which means its aesthetic approach must speak directly to that audience. For this reason, the design draws on Post-Modern architecture—recognized for its foundational principles of Form Follows Emotion, stylistic plurality, and complexity and contradiction (Venturi 1966)—as the style best suited to the spontaneity and emotional expressiveness that frequently characterize Karawitan music. To reinforce this connection between form and cultural meaning, gamelan instruments themselves become the interior's organizing theme: present throughout the building both as decorative and functional elements, and, more broadly, as a philosophical reference point shaping the overall design.

2. Method

Since this design responds to a matter of cultural identity, the design process follows an empirical approach to ensure its outcome remains grounded in existing data rather than in assumption alone. The Karawitan Concert Hall was developed using Pamudji Suptandar's interior design method, which structures the design process across three sequential stages: Input, Synthesize, and Output.

The Input stage is where relevant data is collected before any design decisions are made, drawn from three categories that are gathered and read in parallel: literature data, which establishes the design criteria the project must meet; general data, which describes the site and its broader design context; and social data, which surfaces specific issues tied to the building and its site. Together, these three data categories form the evidentiary basis for everything that follows.

In the Synthesize stage, this data is actively worked through rather than simply summarized. It begins with discussion, in which the literature-derived criteria and general site data are read against one another to identify what the design actually needs to resolve. This discussion generates a set of design alternatives, which are then narrowed down through comparison and, where necessary, trial and error, until a single direction can be concluded upon. This conclusion is not a separate step so much as the natural endpoint of the discussion-alternative process—the point at which one direction is judged to respond most directly to the problem established at Input.

The Output stage is the design itself: the final, concrete result of this process. It is understood not merely as one possible response among several, but as the response that sits closest to the original design problem, and therefore functions as its actual solution—directly interactive spaces of the Karawitan Concert Hall's Post-Modern, gamelan-themed interior, developed in the following section, are that output.

3. Results and Discussion

3.1 Site Analysis

The Karawitan Concert Hall is located on Jl. Kolonel Sutarto, one of Surakarta's main roads, on a 24,750 m² site with a total building area of 9,013 m² (Figure 1). Economically, the site sits strategically between the city's cultural and educational development zones and a commercial area; since it remains largely undeveloped, the project carries genuine potential to stimulate the surrounding economy. Its position on a main road, served by four local bus routes and within reasonable reach of Solo Jebres train station, gives the site strong accessibility. The building's north-facing façade limits direct sun exposure and heat gain, easing the air-conditioning load and improving overall energy efficiency. Noise conditions are favorable on three sides—south, east, and west all border residential areas with no significant disturbance—leaving the north side, which fronts the main road, as the site's only meaningful noise source. This asymmetry points to a clear design requirement: targeted acoustic treatment along the building's north-facing elements to prevent structure-borne sound from compromising the concert hall's acoustic performance.



Fig. 1. Site plan for the Karawitan Concert Hall.

Source: author's drawing, 2024.

This site condition directly shapes the project's scope. Centered on maximizing the experience of watching a Karawitan performance, the design's primary focus is the concert hall itself, extended to the supporting facilities that shape the broader visitor experience around it—lobby, restaurant, merchandise store, changing room, control room, public lounge, bar and lounge, and VIP lounge.

3.2 Space Programming and Circulation

Efficient spatial planning for this scope rests on understanding who occupies the building, how their spaces are grouped and zoned, and how circulation connects them. Occupants are classified into three segments based on their needs, privacy requirements, and activities—Audience, Talent, and Management—a classification that directly shapes the building's layout, zoning, and circulation. The Audience, at 78.3% of total capacity, engages in ticket purchasing, watching performances, dining, and shopping. Talent, at 14.3% of capacity, is responsible for training, preparation, performing, dining, gathering, and recording. Management, the remaining 7.3%, handles briefing, day-to-day work, dining, and internal discussion (Figure 2).

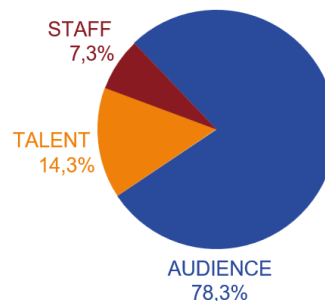


Fig. 2. Space occupant composition by segment: Audience, Talent, and Management.

Source: author's drawing, 2024.

These three segments are translated into a zoning plan that divides the building's areas by activity type and access level—public, semi-public, private, service, and circulation—so that each function sits where user needs and activity patterns require it, and spaces of similar function are clustered to ease circulation and support operational efficiency. This approach is consistent with functional zoning frameworks that emphasize weighing physical and functional factors—microclimate, lighting, acoustics, visibility, and accessibility—together in architectural spatial planning, rather than treating them as separate concerns (Stetsky, Zheltaya, and Dorozhkina 2023) (Figure 3).



Fig. 3. Zoning and grouping plan for the (a) first floor and (b) second floor.
Source: author's drawing, 2024.

This zoning is activated through circulation—how users move horizontally and vertically between spaces. Horizontal circulation includes hallways, atria, paths, entries, and exits; vertical circulation includes stairs, lifts, ramps, and escalators connecting different levels (Ching 2012). Among Ching's circulation path configurations—linear, radial, spiral, grid, and network—the Karawitan Concert Hall applies a radial pattern, centering movement around its key spaces, the main hall and the foyer, with corridors and pathways radiating outward from them (Figure 4). Radial circulation combines centrality and linearity into an extroverted spatial organization well suited to communal or ceremonial buildings, and here it supports intuitive wayfinding, a clear spatial hierarchy, and efficient access to both performance and ancillary spaces, while reinforcing the concert stage's symbolic centrality within the building's overall composition. Circulation planning also separates pathways for different user groups—audience, performers, and staff—and accommodates accessibility needs, ensuring movement throughout the building stays safe, comfortable, and efficient for every occupant segment.

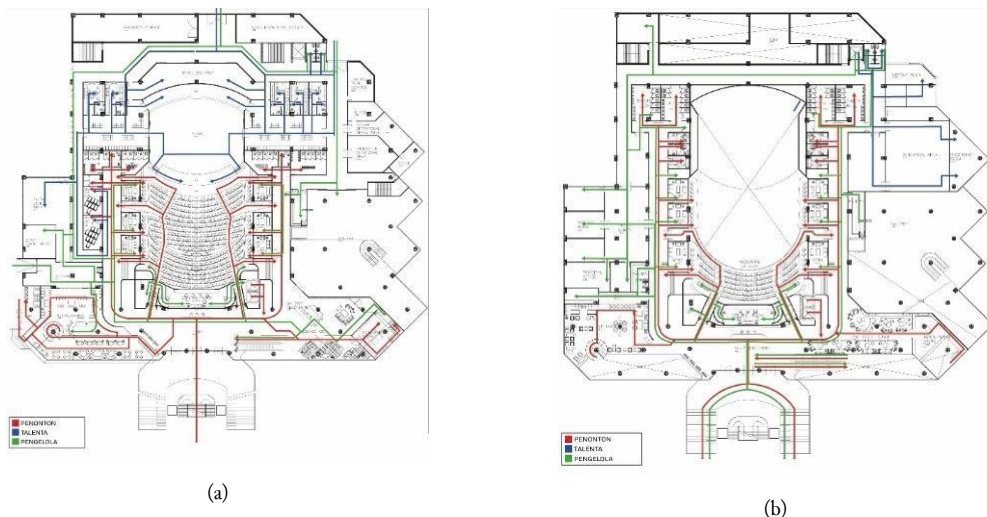


Fig. 4. Circulation plan for the (a) first floor and (b) second floor.
Source: author's drawing, 2024.

3.3 Layout and Design Transformation

Layout planning organizes the building's functions, furniture, and circulation paths by synthesizing the space programming decisions established above with the site's existing conditions—translating users' needs, activity requirements, spatial relationships, and site constraints into a plan that optimizes space use and supports smooth activity flow throughout the building (Figure 5).

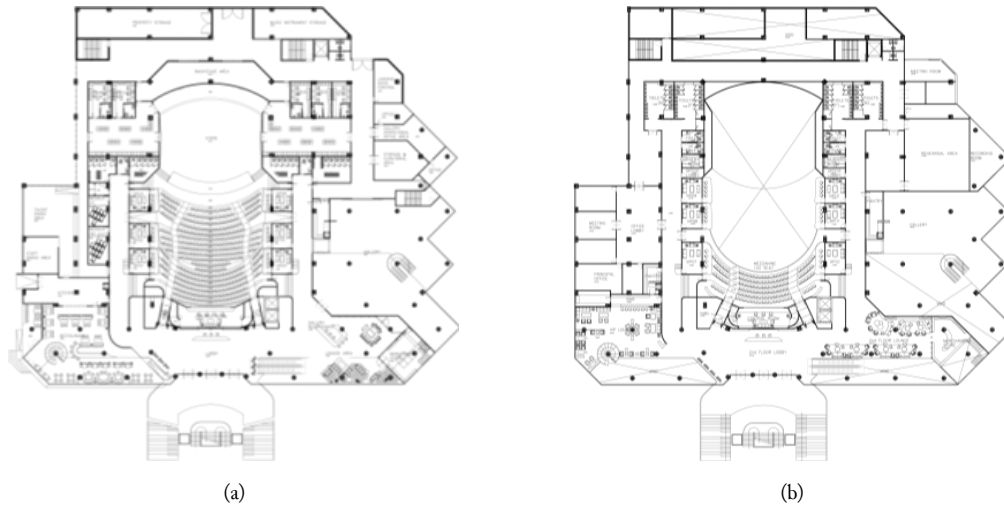


Fig. 5. Layout plan for the (a) first floor and (b) second floor.
Source: author's drawing, 2024.

This layout is carried into the interior through two combined design strategies: a Gamelan theme that communicates cultural meaning to the space's users, and Post-Modern architectural principles that provide the aesthetic foundation through which that meaning is expressed.

The Gamelan theme is developed by adapting individual gamelan instruments into interior furnishings and accessories, through a three-step exploratory process: first, selecting the instrument form to be adapted; second, synthesizing that form through iterative, high-creativity exploration; and finally, resolving the exploration into a finished design output. The lobby's receptionist desk illustrates this process directly, adapting the Saron instrument's repeated bar structure into a symmetrical yet deliberately distorted composition, refined until it functioned as a complete, aesthetically resolved desk form (Figure 6). The same logic extends to the space's lighting: a table lamp combines the Kempul and Kenong instruments, with the smaller Kenong nested face-down inside the larger Kempul to serve as the lamp fitting while the Kempul's interior surface functions as a light reflector; a wall lamp reworks the Kempul alone, turning its exterior face toward the wall while its interior, lit from a centrally placed source, distributes light as a reflector; and a set of six pendant lights combines the Gong Suwukan, Kempul, and Kenong instruments, alternating a Gong Suwukan-based form with Kempul elements in an A-B-A-B pattern, with a distorted three-tone Kempul composition placed at the pendant's lowest point (Figures 7–9). Gamelan's complex, textured forms make it particularly well suited to this kind of adaptation, and applying that adaptation across the space's furnishings and lighting is intended to give visitors both a recreational and an educational encounter with the instruments themselves, not just the music they produce.

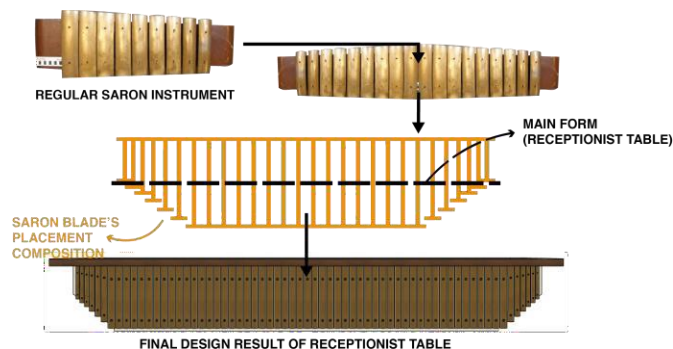


Fig. 6. Design transformation of the Saron instrument into the lobby receptionist desk.
Source: author's drawing, 2024.

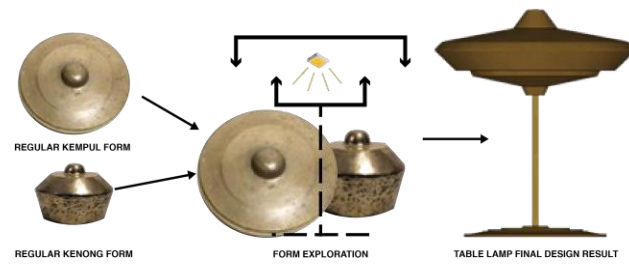


Fig. 7. Table lamp design combining the Kempul and Kenong instruments.
Source: author's drawing, 2024.



Fig. 8. Wall lamp design adapted from the Kempul instrument.
Source: author's drawing, 2024.

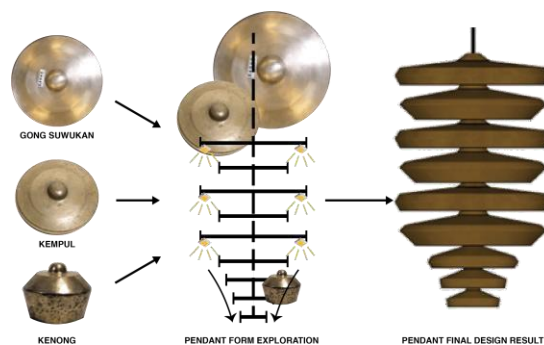


Fig. 9. Pendant light set combining the Gong Suwukan, Kempul, and Kenong instruments.
Source: author's drawing, 2024.

This gamelan-derived vocabulary is expressed through a Post-Modern aesthetic, developed here as a direct critique of modernism's rigidity and its overemphasis on function and efficiency. Three of Post-Modern architecture's core principles structure this approach. Form Follows Emotion reverses modernism's function-first doctrine, allowing decorative and ornamental elements—here, drawn directly from gamelan instruments—to be justified by the emotional and cultural connection they create rather than by function alone, producing a richer visitor experience than spatial functionality could achieve on its own (Tjugito and Mayang Sari 2013). The concert hall's golden statue, positioned at the end of the first-floor corridor and again behind the main stage, applies this principle directly: it depicts the gesture of sungkem, a ritual expressing humility, gratitude, and reverence (Ghofir, Jabbar, and Kunci 2022) (Figure 10). Stylistic plurality governs how Neo-Vernacular elements drawing on local tradition are combined with Modernist universalism, producing a balanced contrast that reflects the layered complexity of Javanese heritage and positions the concert hall as a meeting point of styles and values rather than a performance venue alone (Shakour and Ibrahim 2014) (Figure 11). Complexity and contradiction, following Robert Venturi's foundational concept, is expressed through an intentional color palette—green for fertility and harmony, gold-yellow for nobility and power, and Kasunanan blue for peace and spirituality—symbolizing Javanese philosophical values embedded in gamelan music itself, and allowing contradiction and complementarity to coexist within

the same space, deepening its spiritual and aesthetic register (T'jugito and Mayang Sari 2013; Venturi 1966) (Figure 12).

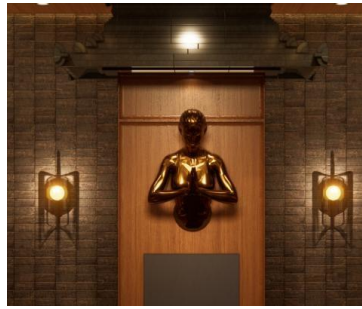


Fig. 10. Golden statue depicting the sungkem gesture, applying the Form Follows Emotion principle.
Source: author's drawing, 2024.

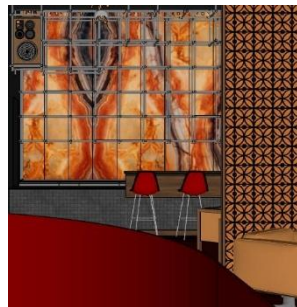


Fig. 11. Application of stylistic plurality through combined Neo-Vernacular and Modernist elements.
Source: author's drawing, 2024.



Fig. 12. Symbolic color palette expressing complexity and contradiction.
Source: author's drawing, 2024.

3.4 Technical Considerations

Acoustics. Achieving optimal acoustic performance in the Karawitan Concert Hall requires careful sound control that preserves the authenticity of gamelan music without depending heavily on amplification. Gamelan produces a rich sound texture in which low frequencies carry musical resonance and character while higher frequencies stay clear without overpowering the rest of the ensemble (Santoso 2018); given the hall's multifunctional use for contemporary music and performance, however, a sound amplification system remains necessary alongside this acoustic foundation. Sound control here spans room dimension and shape, absorptive and reflective materials, sound frequency, and diffusion, together ensuring even acoustic distribution throughout the space (Doelle 1972). Given the hall's proscenium stage configuration and the site's high external noise levels (55–80 dBA), sound insulation is reinforced through buffer zones—the Control Room and VIP Lounge—positioned specifically to minimize structure-borne noise (Figure 13). Balancing absorptive and reflective panels is similarly essential to prevent acoustic distortion such as disruptive echo; controlled sound reflection instead supports clarity and a lively acoustic character, consistent

with established practice in enclosed-space acoustics (Kinsler et al. 2000). Through this combination of absorbing and reflecting surfaces, the hall achieves clear sound diffusion and minimal acoustic defects while preserving the natural resonance of its gamelan instruments, and the addition of a sound amplification system (Figure 14) keeps the space flexible enough to accommodate contemporary Karawitan performances that incorporate modern instruments and require greater sound projection.

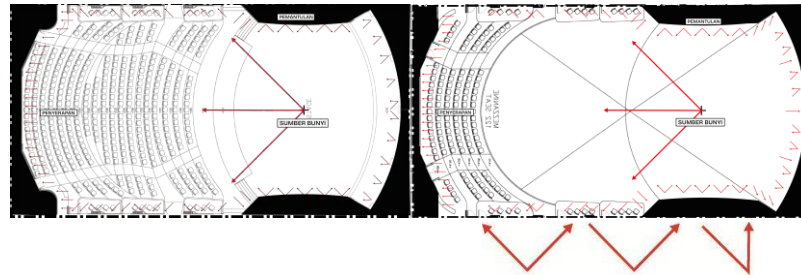


Fig. 13. Absorbed and reflected sound distribution within the concert hall.

Source: author's drawing, 2024.

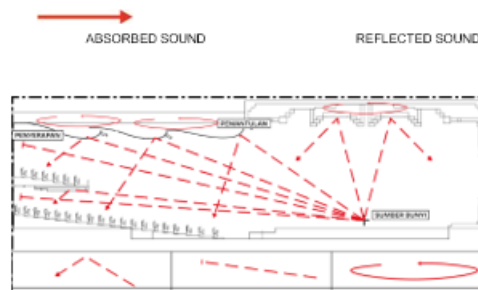


Fig. 14. Sound amplification system layout, showing full-range, side-fill/rear-fill, and monitor speaker placement.

Source: author's drawing, 2024.

Lighting. Stage lighting follows established standards for illumination, mood, and performer visibility, achieved through the strategic placement and selection of fixtures such as ellipsoidal spots, Fresnels, and LED washes, with beam angle, color control, intensity modulation, and dynamic effects governed by DMX-based control systems. Illuminance simulation tools such as DIALux evo were used to meet regulatory lighting standards, following the same approach applied in the stage lighting design for the concert hall at NUST "MISIS," ensuring even light distribution without glare or visual discomfort (Nasennikov 2020) (Figure 15).

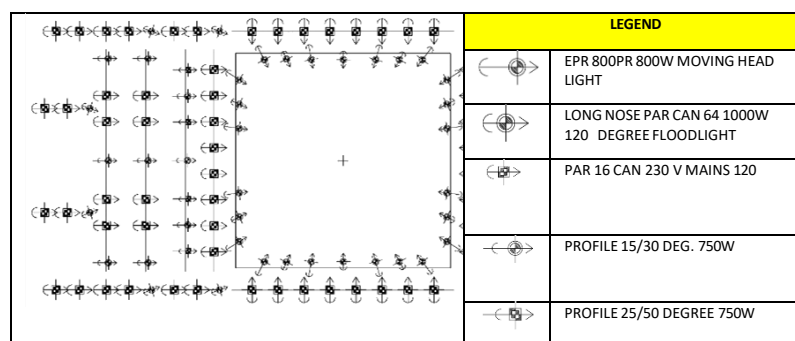


Fig. 15. Stage lighting plot for the Karawitan Concert Hall, with fixture legend.

Source: author's drawing, 2024.

Air Conditioning. The concert hall's planned HVAC system is designed to maintain thermal comfort and indoor air quality while supporting energy efficiency and ease of maintenance. Consistent with modern HVAC design for performance venues, the system incorporates low-noise

equipment and efficient airflow management to avoid disturbing acoustic conditions, with advanced controls that adjust to varying occupancy levels to reduce energy use during low-occupancy periods (Gao et al. 2018). Positioning key building functions to double as buffer zones further supports both sound insulation and HVAC performance—a dual focus on comfort and sustainability consistent with international standards for auditorium HVAC systems.

3.5 Design Results

The final design of the Karawitan Concert Hall integrates these acoustic, architectural, and environmental considerations into a single coherent venue, drawing inspiration from acoustic precedents such as Dewan Filharmonik Petronas, where adjustable absorbing panels and a movable ceiling achieve world-class sound distribution and reverberation control (Nizam Husin, Abdul Haris bin Syed Mustapa, and Syahril Kamal 2004). The main hall itself draws directly on the traditional Javanese pendhapa—a large, open-sided pavilion historically used for cultural performance and social gathering—incorporating its distinctive tumpangsari ceiling of intricately layered wooden beams above the main stage (Figure 16). Beyond its symbolic value, this ceiling form has been shown to produce favorable acoustic conditions in studies of Central Javanese pendopo architecture (Sarwono and Lam 2000), and Karawitan music is understood to resonate most authentically under a classic pendhapa roof (Supanggih 2002)—making this architectural choice both a cultural homage and an acoustically sympathetic design decision that deepens audience engagement with the performance.



Fig. 16. Perspective view of the Karawitan Concert Hall's main stage, incorporating the tumpangsari ceiling.

Source: author's drawing, 2024.

This same coherence extends to the building's supporting facilities—the lobby, restaurant, public lounge, merchandise store, bar and lounge, VIP lounge, and changing rooms—arranged to facilitate smooth circulation, encourage social interaction, and meet the varied needs of the concert hall's community. Each of these spaces carries forward the architectural and interior themes established in the main hall, keeping the visitor experience culturally and aesthetically coherent throughout the venue rather than treating the main hall and its supporting spaces as separate design efforts (Figures 17–18).



Fig. 17. Perspective view of the lobby.

Source: author's drawing, 2024.

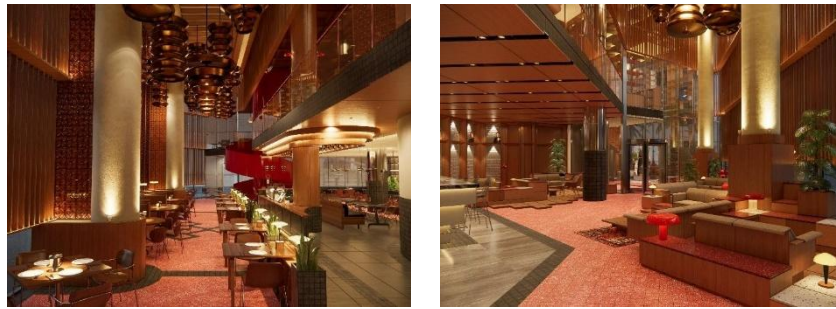


Fig. 18. Perspective views of additional supporting facility spaces.
Source: author's drawing, 2024.

4. Conclusion

This interior design for the Karawitan Concert Hall in Surakarta responds directly to the declining interest younger generations show toward Karawitan and to the limited spaces currently available for appreciating it amid broader globalization pressures. Centered on the gamelan theme, the design positions the concert hall as more than a performance venue: it functions equally as an educational platform for preserving the philosophical depth of Javanese cultural values. This is achieved by working through acoustics, ergonomics, aesthetics, and function together rather than in isolation, producing an environment that is immersive and comfortable for audiences while remaining genuinely representative of the art form for its performers.

This coherence extends across the building's full program. The concert hall itself is supported by a gallery, restaurant, merchandise store, VIP lounge, and additional support spaces, each integrated to sustain recreational, educational, and creative-economic activity around the main performance. Every interior element—from the gamelan-derived furnishings to the building's acoustic treatment—was developed to respect the instrument's distinctive sonic character and the space's visual identity simultaneously, reinforcing local cultural heritage rather than treating it as decorative reference.

In offering this design as a model for future traditional arts venues, this study aims to support artist regeneration and rebuild public appreciation for Karawitan specifically. More broadly, it contributes to cultural preservation and tourism development in Surakarta, reinforcing the city's identity as a center for Javanese traditional arts.

References

- Ching, F. D. K. (2012). *Architecture: Form, Space, and Order* (3rd ed.). John Wiley & Sons.
- Doelle, L. L. (1972). *Environmental Acoustic* (1st ed., Vol. 1). McGraw-Hill.
- Gao, S., Zhai, Y., Yang, L., Zhang, H., & Gao, Y. (2018). Preferred temperature with standing and treadmill workstations. *Building and Environment*, 138, 63–73. <https://doi.org/10.1016/J.BUILDENV.2018.04.027>
- Ghofir, J., Jabbar, M. A., & Kunci, K. (2022). TRADISI SUNGKEMAN SEBAGAI KEARIFAN LOKAL DALAM MEMBANGUN BUDAYA ISLAM. *Jurnal Kajian Islam Al Kamal*, 2(2), 2022.
- Kinsler, L. E., Frey, A. R., Coppens, A. B., & Sanders, J. V. (2000). *Fundamental of Acoustic* (4th ed.). John Wiley & Sons, inc.
- Nasennikov, M. (2020). Illuminance Calculations for Stage Lighting Concept as a Tool to Improve It. *Proceedings of the 30th International Conference on Computer Graphics and Machine Vision (GraphiCon 2020)*. Part 2. <https://doi.org/10.51130/graphicon-2020-2-3-64>
- Nizam Husin, H., Abdul Haris bin Syed Mustapa, S., & Syahril Kamal, K. (2004). Acoustical requirements of Dewan Filharmonik Petronas, Malaysia. *ANZAScA*, 48–52.
- Purwani, O., Rahmatulloh, O. R., & Rahayu, P. (2022). Invented traditions in Surakarta after decentralisation. *Cities*, 131, 103985. <https://doi.org/10.1016/J.CITIES.2022.103985>
- Santoso, I. B. (2018). Ruang Pertunjukan Musik Karawitan (Gamelan Jawa). *Nuansa, Journal of Arts and Design*, 1(2).

Sarwono, S. J., & Lam, Y. W. (2000). The Acoustics of a Pendopo : A Typical Open-sided Hall for Javanese Gamelan Music Performance. *Proc. I.O.A.*, 22, 305–314.

Shakour, A., & Ibrahim, M. (2014). POSTMODERN FURNITURE INSPIRED BY THE LOCAL EMIRATI HERITAGE ELEMENTS AND VOCABULARY. *International Design Journal*, 4(1).

Stetsky, S. V., Zheltaya, A. O., & Dorozhkina, E. A. (2023). Functional zoning in urban planning and architectural design. *E3S Web of Conferences*, 402. <https://doi.org/10.1051/e3sconf/202340209005>

Supanggah, R. (2002). *Bothekan Karawitan I. Masyarakat Seni Pertunjukan Indonesia*.

Suptandar, P. (1999). *Desain Interior*. Djambatan.

Tjugito, S., & Mayang Sari, S. (2013). STUDI GAYA DESAIN POSMODERN PADA INTERIOR STUDIO FOOD COURT TUNJUNGAN PLAZA 1 SURABAYA. *DIMENSI INTERIOR*, 11(1), 56–66. <https://doi.org/10.9744/interior.11.1.56-66>

Venturi, R. (1966). *Complexity and Contradiction in Architecture*. Museum of Modern Art.