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Eco-Aesthetic Integration in Resort Architecture: A Case Study of Puri Brata Gallery

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ABSTRACT

This study investigates the integration of ecological principles and aesthetic considerations in the architectural design of Puri Brata Gallery, a resort that exemplifies sustainable tourism in a tropical context. Through a qualitative case study approach involving site observations, interviews, and design analysis, the research examines how green features—such as the use of recycled materials, solar energy, rainwater harvesting, and vegetation—are harmonized with traditional Javanese cultural aesthetics. The resort demonstrates a thoughtful balance between environmental functionality and visual expression, incorporating spatial arrangements and material choices that reflect local wisdom. The results suggest that eco-aesthetic design not only enhances the environmental performance of buildings but also enriches the visitor experience through contextual and sensory engagement. This case contributes valuable insights into how sustainability and cultural expression can co-exist within resort architecture.

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1. INTRODUCTION

The evolution of resort architecture in the 21st century reflects a growing awareness of two intertwined imperatives: environmental sustainability and experiential richness. In an era marked by climate change, resource scarcity, and cultural homogenization, architects and developers are increasingly called upon to design hospitality spaces that are not only ecologically responsible but also culturally meaningful (Sari & Sholeh, 2022). This dual aspiration has given rise to the concept of eco-aesthetic integration, in which environmental considerations and aesthetic values are harmonized to produce architectural works that are both sustainable and sensorially engaging (Nugroho & Afgani, 2023).

Resorts, by nature, are designed to offer comfort, rest, and immersive experiences in settings that are often environmentally sensitive and culturally significant. In tropical contexts—such as Southeast Asia—these challenges are amplified by climatic demands, rich biodiversity, and strong local traditions (Nazarudin & Anisa, 2020). Here, architectural solutions must respond not only to environmental issues such as energy efficiency, thermal comfort, and water conservation, but also to the aesthetic expectations of guests who seek authenticity, serenity, and a connection to place (Sari et al., 2021).

Puri Brata Gallery, located in Bantul, Yogyakarta, stands as an example of a resort that embraces these principles. Set within a rural landscape, this resort integrates sustainable technologies—such as solar panels, rainwater harvesting systems, and green open spaces—with traditional Javanese architectural motifs, spatial arrangements, and artisanal materials. The resort does not separate ecological functionality from visual composition; instead, it synthesizes both dimensions in a way that blurs the boundary between built and natural environments. Such integration reflects a shift from modernist functionality toward a more holistic and place-based approach to design.

Previous studies have often analyzed green architecture in terms of its technical efficiency—such as energy use, building orientation, or material life cycles (Anisa, 2020). However, less attention has been paid to how aesthetic strategies can reinforce ecological intent, and vice versa. This research seeks to fill that gap by examining how the architecture of Puri Brata Gallery embeds ecological principles within its aesthetic language. It interrogates the ways in which traditional forms, ornamentation, spatial layouts, and landscape integration contribute not only to the resort's visual identity but also to its environmental performance.

The study employs a qualitative methodology based on field observation, photographic documentation, interviews with designers and staff, and interpretative analysis of architectural elements. By focusing on both tangible and intangible design aspects—ranging from passive cooling systems to symbolic ornamentation—the research aims to uncover how eco-aesthetic integration manifests in practice and how it shapes the overall guest experience.

Ultimately, this case study aspires to contribute to the broader discourse on sustainable resort design by offering a nuanced understanding of how environmental ethics and aesthetic expression can coexist and reinforce one another. The findings are expected to be relevant not only for architectural scholars and practitioners, but also for policy-makers, tourism developers, and educators seeking to promote regenerative and culturally respectful design practices.

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2. RESEARCH METHODS

This research adopts a qualitative case study approach to investigate the integration of ecological and aesthetic principles in the architectural design of Puri Brata Gallery. The case study method is particularly appropriate for in-depth exploration of a single unit of analysis—namely, the architectural and landscape elements of the resort—that reflect broader theoretical and practical concerns within sustainable architecture.

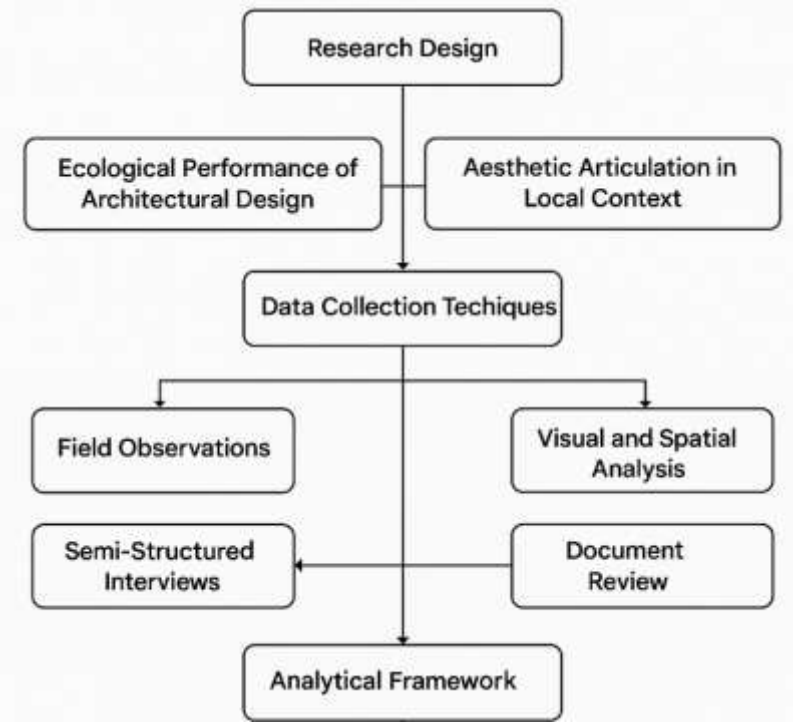

Figure 1. Method Research Flow

2.1 Research Design

The study is structured around two central themes: (1) ecological performance of the architectural design, and (2) aesthetic articulation in relation to local culture and environmental context. These themes are explored through a triangulated method combining site observation, visual analysis, and stakeholder interviews. Rather than isolating quantitative metrics (e.g., energy use or thermal performance) alone, the research emphasizes how design intentions and user experiences intersect to produce a cohesive eco-aesthetic identity.

2.2 Data Collection Techniques

To capture the complexity of the case, several complementary data sources were employed:

- Field Observations: Conducted over multiple visits, observations focused on spatial configurations, building materials, passive design features (e.g., natural lighting, cross ventilation), vegetation layout, and the interface between indoor and outdoor spaces. Observational data were documented through field notes and photographic evidence.
- Visual and Spatial Analysis: Architectural elements such as façade composition, layout symmetry, use of natural materials (wood, stone, bamboo), and traditional motifs were documented and analyzed using interpretive-descriptive methods. Attention was given to how these elements support environmental objectives while enhancing visual identity.

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- Semi-Structured Interviews: Interviews were conducted with the resort's architectural designer, operations staff, and selected guests. Questions focused on design intent, sustainability strategies, guest perception of spatial comfort, and cultural symbolism embedded in the architecture.
- Document Review: Supporting materials such as architectural drawings, promotional brochures, and maintenance protocols were reviewed to provide background and validate field findings.

2.3 Analytical Framework

Data were analyzed using an interpretive thematic coding approach, identifying patterns and relationships that illustrate the integration of environmental and aesthetic design goals. This process included:

- Categorization of ecological strategies, such as energy systems (e.g., solar panels), water management (e.g., rainwater harvesting), material use (e.g., recycled/reclaimed wood), and vegetation planning.
- Categorization of aesthetic strategies, such as traditional spatial typologies (e.g., pendopo), natural material palettes, and incorporation of symbolic or cultural motifs.
- Cross-analysis, examining how these ecological and aesthetic strategies overlap, reinforce, or potentially contradict each other in the lived experience of the space.

2.4 Research Limitations

While the study provides a detailed snapshot of eco-aesthetic integration at Puri Brata Gallery, it is limited by its focus on a single case and lack of quantitative performance data (e.g., energy efficiency metrics or carbon footprint calculations). Moreover, the guest perception data is based on a small interview sample and may not reflect broader visitor sentiment. Despite these limitations, the case offers rich insights into how ecological ethics and aesthetic expression can be synthesized in architectural practice.

3. RESULTS AND DISCUSSION

The findings of this study confirm that Puri Brata Resort & Gallery has successfully embodied eco-aesthetic principles in its architectural design. A key component of this success lies in the resort's emphasis on localism, which is demonstrated through the thoughtful use of indigenous materials, locally sourced labor, and context-sensitive construction techniques. Moreover, the architectural approach is deeply rooted in the cultural, historical, and environmental fabric of the region, ensuring that the design resonates with local traditions and community values. Such strategies are not only sustainable but also transferable—offering replicable models that can be adopted by local communities. Achieving this level of integration necessitates a holistic and interdisciplinary design framework, one that bridges environmental ethics with cultural identity and technical feasibility (Rachmawati & Prijotomo, 2010).

One of the central aspects of Puri Brata Gallery's eco-aesthetic strategy lies in its deliberate use of recycled and rapidly renewable materials. The resort integrates reclaimed timber into its furniture and interior detailing, lending a sense of artisanal authenticity while reducing dependence on virgin resources. These materials are not only ecologically beneficial, but also contribute to a rustic and contextually appropriate visual character. In addition to wood, bamboo is prominently used due to its fast-growing nature and regenerative capacity, aligning with sustainable material sourcing principles. The textural richness and tactile quality

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of these materials enhance the sensory experience of the built environment, illustrating how ecological choices can simultaneously elevate aesthetic outcomes.

Figure 2. Reclaimed timber used in furniture and finishes
(Source: Author, 2023)

Moreover, the spatial composition of the resort reflects an ecological consciousness through the provision of lush green zones embedded within the site layout. The massing of buildings is intentionally arranged to allow generous integration of vegetation—both in courtyards and perimeter spaces—creating living systems that improve air quality, mitigate heat, and cultivate a biophilic atmosphere. These landscape insertions are not mere decorative elements but are functional ecological devices that contribute to the overall wellness of both the environment and its occupants.

As part of its eco-aesthetic framework, Puri Brata Gallery incorporates solar energy technologies to support its environmental performance goals. The installation of rooftop solar panels provides a renewable and clean energy source that aligns with the resort's broader commitment to sustainability. These photovoltaic systems are carefully positioned to minimize visual intrusion while optimizing solar gain—demonstrating how functional green infrastructure can be seamlessly embedded within the architectural language.

Figure 3. Rooftop solar panel array at Puri Brata
(Source: Author, 2023)

By utilizing solar power, the resort significantly reduces its dependence on fossil fuels and contributes to the reduction of greenhouse gas emissions. This approach also capitalizes on the site's high solar irradiance levels, common to the region's tropical climate, making solar integration both environmentally and economically viable. Beyond energy savings, the presence of renewable technology reinforces the resort's identity as a forward-thinking,

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ecologically conscious destination. The thoughtful placement and unobtrusive design of the solar infrastructure exemplify how environmental systems can complement, rather than compromise, architectural aesthetics.

Figure 4. Wide Aperture
(Source: Author, 2023)

The optimization of ventilation systems, the strategic use of natural lighting, and effective control of electrical energy consumption are critical components in achieving energy efficiency within architectural design. These passive design strategies not only reduce reliance on mechanical systems but also support the realization of green building principles (Niza et al., 2020). Within the Indonesian context—characterized by a tropical climate—distinct microclimatic variations exist between highland and coastal regions. Highland areas tend to offer cooler ambient temperatures, while coastal zones are generally warmer and more humid. Despite these variations, both zones share common tropical traits such as intense solar exposure throughout the year. This climatic consistency presents both challenges and opportunities for passive energy design, necessitating architectural responses that are sensitive to local environmental conditions (Hermawan & Fikri, 2020).

Puri Brata Gallery exemplifies an innovative approach to water sustainability by incorporating a rainwater harvesting and gravity-fed irrigation system directly into its architectural configuration. Rainwater is collected, processed, and redistributed using a multi-level spatial concept rooted in traditional forms—most notably through the vertical adaptation of the *kul-kul* tower.

Figure 5. Kul-Kul tower serving as integrated water system
(Source: Author, 2023)

The *kul-kul* structure is reinterpreted not only as a cultural landmark but also as a functional water tower. Water stored on the uppermost floor is channeled by gravity to

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support irrigation and utility needs on the lower levels, reducing the reliance on electric pumps and minimizing energy use. The mid-level of the tower serves as a storage or service room, while the ground floor accommodates essential utilities such as restrooms. This vertically integrated system reflects a thoughtful balance between ecological logic and spatial efficiency, embodying both environmental stewardship and architectural creativity. By embedding water management infrastructure within a culturally resonant form, the design enhances both performance and place-making—a hallmark of eco-aesthetic integration.

The architectural concept of Puri Brata Gallery demonstrates a deep sensitivity to its environmental context, with building massing and spatial orientation carefully adapted to the site's existing natural contours and scenic qualities. Rather than imposing rigid geometries onto the landscape, the resort's layout flows organically with the terrain, enabling visual and spatial continuity between built forms and the surrounding environment.

Figure 6. Site-responsive architectural layout
(Source: Author, 2023)

This site-specific design approach not only enhances visual harmony but also reinforces ecological performance by preserving existing vegetation, facilitating natural drainage, and maximizing views and airflow. The resort draws conceptual strength from *Tri Hita Karana*, a Balinese philosophical framework that advocates for balanced relationships between humans, nature, and the divine. By embodying this philosophy, the resort's design becomes a vehicle for cultural expression and environmental mindfulness—counteracting the fragmenting effects of consumerism and material excess. As such, the architecture fosters a meditative experience that aligns spiritual values with spatial order, inviting guests to engage with the environment in a meaningful and peaceful manner (Ismulyadi, 2018).

Figure 7. Landscape-framed Perspective of Puri Brata Resort
(Source: Author, 2023)

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Figure 8. Exterior façade blending with natural landscape
(Source: Author, 2023)

The architectural expression of Puri Brata Gallery exemplifies a deliberate integration of natural materials and contextual aesthetics, which collectively reinforce both environmental and sensory experiences. Timber and stone—sourced locally—are extensively used throughout the exterior and interior elements of the resort, enabling a seamless visual and tactile connection between the built form and the surrounding landscape. These materials not only minimize the environmental impact of construction but also embody a cultural authenticity that reflects regional identity.

Natural light plays a vital role in shaping the aesthetic atmosphere of the resort. The strategic placement of windows, skylights, and open apertures invites sunlight to penetrate deep into interior spaces, casting dynamic shadows and highlighting textures throughout the day. This passive lighting approach reduces the need for artificial illumination while enhancing spatial comfort and visual warmth.

Further enriching the spatial experience is the curated presence of artworks and sculptural elements within the gallery environment. These are not treated as decorative afterthoughts but as integral components of the spatial narrative, encouraging emotional engagement and multi-sensory interaction. Together, these design strategies cultivate an architectural setting that is immersive, context-sensitive, and evocative—offering visitors a distinct sense of place that honors both nature and culture.

Figure 9. Perforated Wall Detailing with Roster Blocks at Puri Brata
(Source: Author, 2023)

One of the subtle yet impactful elements of eco-aesthetic integration at Puri Brata Gallery is the extensive use of roster blocks—decorative perforated elements embedded into the building façade. These components serve a dual role: functionally as passive ventilation devices and aesthetically as intricate design accents that enrich the visual identity of the structure. The geometric patterns of the roster blocks allow for continuous airflow,

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supporting natural cross-ventilation and reducing the need for mechanical cooling. Simultaneously, their semi-translucent design filters sunlight, creating a rhythmic play of light and shadow within interior spaces. This promotes thermal comfort while also enhancing the spatial ambiance, particularly during the transitions of morning and afternoon light. Beyond their environmental performance, the rosters at Puri Brata carry cultural and symbolic undertones, reflecting local craftsmanship and traditional masonry techniques. By fusing practical climate-responsive function with expressive architectural detailing, the use of rosters exemplifies how sustainability measures can be embedded within visually compelling forms. This approach transforms passive features into active contributors to the resort's eco-aesthetic narrative.

Puri Brata Gallery thoughtfully embeds local cultural identity into its architectural composition, creating a layered experience that merges environmental sustainability with traditional aesthetics. The use of regional motifs, artisanal carvings, and symbolic ornamentation throughout the resort serves not only decorative purposes but also reinforces the spiritual and historical narrative of the space.

Figure 10. Cultural symbolism reflected in interior detailing
(Source: Author, 2023)

Traditional Javanese design elements are integrated seamlessly into both structural and interior features, most prominently within the *pendopo*—a central open pavilion that embodies communal life in Javanese culture. This space is not merely functional; it is ceremonial and social, providing a setting for interaction, contemplation, and connection with the natural surroundings.

Figure 11. Interior of the Pendopo Pavilion
(Source: Author, 2023)

The pendopo features a soaring roof structure, supported by exposed wooden columns, allowing air and light to move freely throughout the space. Natural materials such as teak wood, terracotta flooring, and woven bamboo are used extensively, evoking warmth and

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authenticity. Decorative carvings and traditional patterns accentuate the space without overwhelming it, creating an environment that is culturally immersive yet visually balanced. The ambient lighting, strategic openness, and subtle fragrance of wood harmonize to deliver a sensory experience that links visitors to the cultural essence of Java. By fusing traditional architectural vocabulary with ecological design principles, Puri Brata not only preserves local heritage but also recontextualizes it within a sustainable tourism framework, offering an experience that is as respectful as it is restorative.

Figure 11. Plant-integrated spatial interior
(Source: Author, 2023)

In the context of resort architecture, green design is not only a functional strategy for environmental performance but also a deliberate aesthetic gesture that shapes the overall atmosphere of place. At Puri Brata Gallery, vegetation is treated as an architectural element—carefully curated and positioned to enhance spatial composition, sensory appeal, and ecological benefit. Plant selection is guided by visual parameters such as canopy form, leaf texture, color variation, and flowering cycles, contributing to an ever-evolving aesthetic landscape. This thoughtful integration of flora fosters a symbiotic relationship between built structure and living systems, allowing the resort to embody principles of biophilic design. Green spaces are woven into courtyards, perimeters, and circulation paths—not only to frame views and soften transitions, but also to support psychological comfort and well-being among guests. Visual plant characteristics significantly influence perceived beauty and spatial harmony, a notion clearly reflected in the spatial choreography of the resort (Lestari & Gunawan, 2010).

Figure 12. Cultural interpretation through gate design
(Source: Author, 2023)

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At the threshold of the experience, the main entrance gate functions as both a physical and symbolic marker. Designed with traditional Javanese architectural references—such as carved pillars, layered roofs, and symmetrical composition—the gate communicates a sense of cultural dignity and artistic refinement. It does more than provide access; it sets the tone for an immersive journey where eco-consciousness and cultural depth converge. This emblematic structure invites guests to transition from the external world into a curated realm where architecture, nature, and tradition coalesce. The fieldwork conducted at Puri Brata Gallery reveals a deliberate and coherent effort to integrate ecological awareness with aesthetic expression in the resort's architectural language. This section presents the findings in two interrelated dimensions: (1) Environmental Sustainability Strategies, and (2) Aesthetic and Cultural Integration. The discussion emphasizes how these strategies are interwoven to create an environmentally responsible and culturally resonant resort experience.

3.1 Environmental Sustainability Strategies

a. Use of Recycled and Local Materials

The architecture of Puri Brata makes extensive use of reclaimed wood, bamboo, natural stone, and clay tiles—materials that are not only renewable but also culturally familiar. For instance, furniture and interior elements are crafted from aged teak wood, giving both a sustainable and artisanal character to the space (Lima et al., 2024). These material choices reduce the carbon footprint and strengthen local economic networks through the use of regional craft resources (Huang et al., 2025).

b. Passive Design for Climate Adaptation

The layout of buildings maximizes cross-ventilation and natural lighting, reducing the need for artificial cooling and illumination. Wide roof overhangs, open corridors, and operable window systems help maintain thermal comfort even during peak tropical heat (Xiao et al., 2025). These passive strategies reflect an understanding of vernacular climatic responses while maintaining architectural clarity and elegance.

c. Renewable Energy and Water Management

Solar panels are installed unobtrusively on building rooftops to supply a portion of the resort's energy needs, demonstrating a clean energy commitment without compromising visual harmony. Additionally, the resort features a rainwater harvesting system integrated into the design of traditional *kul-kul* towers, which also function as aesthetic vertical elements. Greywater recycling supports landscape irrigation, further reinforcing sustainability goals (Addo-Bankas et al., 2024).

d. Green Open Spaces and Vegetation

The spatial organization of the resort prioritizes open courtyards and garden corridors, allowing for vegetation to thrive within and around the built environment. Trees, shrubs, and flowering plants are chosen not only for their ecological value (shade, air purification, biodiversity) but also for their visual impact. The green elements serve as soft boundaries between spaces and contribute to the restorative atmosphere for guests (Cui et al., 2024).

3.2 Aesthetic and Cultural Integration

a. Javanese Architectural Typologies

The resort integrates traditional Javanese building forms such as the *pendopo* (open pavilion), *limasan* roof shapes, and symmetrical layouts inspired by local palatial structures. These forms not only convey a regional identity but also facilitate ventilation and openness, aligning with environmental needs (Doyle et al., 2025). The *pendopo* serves as a central communal space, anchoring the spatial hierarchy and cultural symbolism of the resort.

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b. Ornamentation and Symbolism

Decorative elements—such as carved wooden panels, stone reliefs, and terracotta rosters—are positioned to highlight key architectural zones, offering both aesthetic richness and functional benefits (e.g., airflow, diffused lighting). The ornamentation draws from traditional motifs like flora, fauna, and sacred geometry, subtly embedding local cosmology into the built form (Salingaros, 2025).

c. Visual Framing and Spatial Experience

The strategic placement of windows, skylights, and open walls offers framed views of surrounding rice fields, mountain backdrops, and internal courtyards (Ni et al., 2024). This visual connection enhances the sense of immersion and continuity between indoor and outdoor realms. The lighting design also plays a critical role in accentuating materials and textures during both day and night, reinforcing the sensory quality of the resort (Xu et al., 2025).

d. Integration of Art and Nature

Beyond its buildings, Puri Brata functions as a living gallery, with curated artworks, sculptures, and landscape compositions embedded throughout the site. These elements do not compete with nature but instead complement it, providing guests with a multi-sensory journey that unites cultural expression and ecological consciousness (Zoran, 2025).

3.3 Synergy between Ecology and Aesthetics

One of the most significant insights from this study is the synergistic relationship between the resort's ecological strategies and its aesthetic outcomes (Jorge-Romero et al., 2025). For example, the use of natural materials not only reduces environmental impact but also enhances visual authenticity. Similarly, open spatial arrangements support passive cooling while reinforcing traditional social interaction patterns. Rather than treating sustainability and beauty as parallel or competing goals, the architecture of Puri Brata demonstrates that they can be mutually reinforcing. This approach aligns with contemporary theories of ecological aesthetics, which advocate for an environmental design ethos grounded in place-based beauty, cultural memory, and biophilic principles.

4. CONCLUSION

The architectural composition of Puri Brata Gallery exemplifies a successful integration of environmental sustainability and cultural aesthetics, affirming the potential of eco-aesthetic principles in contemporary resort design. Through the incorporation of renewable energy systems, efficient water management, passive climate strategies, and abundant green spaces, the resort demonstrates a comprehensive commitment to minimizing environmental impact while enhancing operational performance. Equally significant is the resort’s sensitivity to cultural heritage and local identity, which is expressed through spatial typologies, material selection, decorative motifs, and the revival of traditional forms such as the pendopo. These elements do not merely serve visual appeal but embody deeper values—of harmony with nature, reverence for tradition, and community-centered living. By synthesizing ecological responsibility with aesthetic integrity, Puri Brata Gallery presents a compelling model for sustainable tourism infrastructure in tropical and culturally rich settings. Its design offers more than just comfort and beauty; it becomes a narrative space where nature, culture, and architecture coexist in equilibrium. The insights from this case study provide valuable direction for future architectural practices that seek to foster not only environmental resilience but also cultural continuity within the hospitality industry.

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REFERENCES

Addo-Bankas, O., Wei, T., Tang, C., & Zhao, Y. (2024). Optimizing greywater treatment in green walls: A comparative analysis of recycled substrate materials. *Journal of Water Process Engineering*, *67*(September), 106282. https://doi.org/10.1016/j.jwpe.2024.106282

Anisa, A. (2020). Kajian Konsep Arsitektur Ekologi Pada Kawasan Resort Studi Kasus: Pulau Ayer resort and Cottages. *Jaur (Journal of Architecture and Urbanism Research)*, *3*(2), 129–138. https://doi.org/10.31289/jaur.v3i2.3413

Cui, Y. W., Wang, L., & Zhang, L. C. (2024). Towards load-bearing biomedical titanium-based alloys: From essential requirements to future developments. *Progress in Materials Science*, *144*(November 2023), 101277. https://doi.org/10.1016/j.pmatsci.2024.101277

Doyle, K., Moore, K., & Foster, P. (2025). Criteria-driven socio-environmental maturity modelling for mining : driving positive sustainability attitudes and perceptions at diverse operational scales. *Resources Policy*, *105*(January), 105606. https://doi.org/10.1016/j.resourpol.2025.105606

Hermawan, H., & Fikri, M. (2020). Kinerja termal rumah berdinding kayu, atap genteng dan lantai tanah di tropis hangat. *Jurnal Ilmiah Arsitektur*, *10*(2), 54–60.

Huang, B., Zhuge, Y., Rameezdeen, R., Xing, K., & Liu, Y. (2025). Optimizing resource efficiency in regional industrial symbiosis: Integrated modelling and scenario analysis. *Journal of Cleaner Production*, *489*(January), 144744. https://doi.org/10.1016/j.jclepro.2025.144744

Ismulyadi, C. (2018). Hibriditas Peziarahan Puri Brata. *Retorik: Jurnal Ilmu Humaniora*, *5*(1), 395. https://doi.org/10.24071/ret.v5i1.1521

Jorge-Romero, G., Elliott, M., & Defeo, O. (2025). The cross-ecosystem dimension of managing sandy beach social-ecological systems. *Ocean and Coastal Management*, *262*(January), 107551. https://doi.org/10.1016/j.ocecoaman.2025.107551

Lestari, G., & Gunawan, A. (2010). Pengaruhh bentuk kanopi pohon terhadap kualitas estetika lanskap jalan. *Jurnal Lanskap Indonesia*, *2*(1), 30–35. https://doi.org/https://doi.org/10.29244/jli.2010.2.1.%25p

Lima, A. T., Kirkelund, G. M., Lu, Z., Mao, R., Kunther, W., Rode, C., Slabik, S., Hafner, A., Sameer, H., Dürr, H. H., Flörke, M., Lowe, B. H., Aloini, D., Zerbino, P., & Simoes, S. G. (2024). Mapping circular economy practices for steel, cement, glass, brick, insulation, and wood – A review for climate mitigation modeling. *Renewable and Sustainable Energy Reviews*, *202*(June). https://doi.org/10.1016/j.rser.2024.114697

Nazarudin, R., & Anisa, A. (2020). Kajian Konsep Arsitektur Ekologi Pada Kawasan Hotel Alam Asri Resort. *Rustic*, *1*(1), 11–21. https://doi.org/10.32546/rustic.v1i1.885

Ni, Z., Zhao, D., Tam, L. ho, Lau, D., & Chow, C. L. (2024). Fire safety performance of functional vegetated green building systems: A comprehensive review. *Journal of Building Engineering*, *98*(September), 111200. https://doi.org/10.1016/j.jobe.2024.111200

Niza, A., Setiyani, A., Sekarkinasih, D., Iswati, Y., & Setyaningsih, W. (2020). PENGARUH BUKAAN UNTUK EFISIENSI ENERGI DALAM BANGUNAN DAN KAWASAN HIJAU Studi Kasus Majapahit Eco-Resort di Mojokerto. *Juli*, *3*(2), 507–518.

Nugroho, N. F., & Afgani, J. J. (2023). KAJIAN KONSEP ARSITEKTUR BIOKLIMATIK PADA BANGUNAN HOTEL RESORT (STUDI KASUS HAINAN BLUE BAY WESTIN). *PURWARUPA Jurnal Arsitektur*, *7*(1), 21–26. https://doi.org/https://doi.org/10.24853/purwarupa.7.1.21-26

Rachmawati, M., & Prijotomo, J. (2010). Pelestarian Alam Dalam Arsitektur : Masalah Dan Usulan Pemecahannya. *Jurnal Bumi Lestari*, *10*(2), 341–351.

Salingaros, N. A. (2025). Living geometry, AI tools, and Alexander's 15 fundamental

properties. Remodel the architecture studios! *Frontiers of Architectural Research*, *xxxx*. https://doi.org/10.1016/j.foar.2025.01.002

Sari, K. A. L. H., Hayati, A., & Samodra, F. T. B. (2021). Perception of Visual Impairment Towards the Aesthetic of Architectural Elements. *IPTEK Journal of Proceedings Series*, *0*(6), 252. https://doi.org/10.12962/j23546026.y2020i6.11102

Sari, K. A. L. H., & Sholeh, M. S. R. (2022). Perkembangan Arsitektur Biomorfik Hingga Integrasinya Terhadap Prinsip Arsitektur Hijau. *Prosiding SEMSINA*, *3*(2), 184–190. https://doi.org/10.36040/semsina.v3i2.5104

Xiao, Z., Tian, Z., Chen, T., Ouyang, C., Zhou, Y., Heng, C. K., & Lucchi, E. (2025). Sustainable adaptation of heritage buildings in tropical rainforest climates: The innovative practice of Tanjong Pagar Railway Station in Singapore. *Energy and Buildings*, *335*(December 2024), 115560. https://doi.org/10.1016/j.enbuild.2025.115560

Xu, X., Tong, W., Wei, Z., Xia, M., Lee, L. H., & Qu, H. (2025). Transforming cinematography lighting education in the metaverse. *Visual Informatics*, *9*(1), 1–17. https://doi.org/10.1016/j.visinf.2024.11.003

Zoran, A. R. (2025). Digital gastronomy 2.0: A 15-year transformative journey in culinary-tech evolution and interaction. *International Journal of Gastronomy and Food Science*, *39*(February), 101135. https://doi.org/10.1016/j.ijgfs.2025.101135

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