

REVITALIZING TRADITIONAL ARCHITECTURE FOR CONTEMPORARY HOUSING IN BALI

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ABSTRACT

The research aims to propose a conceptual framework for implementing Balinese architectural elements in contemporary living environments. Utilizing a qualitative methodology, the study conducts a comprehensive literature review to explore the integration of traditional Balinese architecture into modern architectural practices. The research identifies key Balinese architectural elements that can be adapted for contemporary use, including spatial layout, pamesuan (entrance), facade, ornamentation, and materials. These elements are recognized for their potential to enhance modern living spaces with cultural depth, aesthetic value, and environmental sustainability. The study concludes that the thoughtful incorporation of Balinese architectural principles into modern designs can create living spaces that are not only functional and aesthetically pleasing but also deeply rooted in cultural heritage. This integration offers a pathway towards preserving Balinese architectural identity while meeting the demands of contemporary living, suggesting a harmonious balance between tradition and modernity.

Keywords: *Balinese Architecture, Cultural Preservation, Sustainable Design, Contemporary Housing, Architectural Integration*

1. INTRODUCTION

In Bali, like many other places around the world, traditional architecture is facing challenges in an increasingly modernized and urbanized society. However, there is a growing recognition of the value and importance of preserving and revitalizing traditional architecture to maintain cultural identity and promote sustainable living practices. One approach to address this challenge is to incorporate modern elements and technologies into traditional architectural designs, creating a harmonious blend of the old and the new (Philokyprou, 2015). This approach allows for the preservation of traditional building techniques and materials, while also adapting them to meet the needs and comforts of contemporary living. By revitalizing traditional architecture in Bali, not only can the unique cultural heritage be preserved, but it can also contribute to sustainable development and a thriving tourism industry. Furthermore, revitalizing traditional architecture can serve as a source of inspiration and education for future generations, providing them with a deeper understanding of their cultural roots and encouraging appreciation for sustainable and contextually sensitive design (Silvestrelli, 2013). Utilizing the lessons and wisdom from traditional buildings, contemporary architects can create innovative designs that pay homage to the past while embracing the needs of the present. This approach can also have positive social and economic impacts by creating opportunities for local artisans, craftsmen, and builders to contribute their skills and knowledge to the revitalization process (Hui Tian et al., 2023).

Revitalizing traditional Balinese architecture for contemporary living holds significant importance in maintaining Bali's cultural identity amidst rapid modernization and urbanization. It embodies a commitment to preserving the region's rich heritage and provides a sustainable approach to modern building practices, drawing from principles like natural ventilation and the use of locally-sourced materials (Siahaan, 2020). Such efforts support the tourism industry, which thrives on the uniqueness of Bali's traditional aesthetic and cultural experience. Revitalization also has economic benefits, facilitating job creation and sustaining the livelihoods of local artisans whose crafts are integral to traditional methods of construction (Talib and Sulieman, 2012). Furthermore, these projects serve as an educational resource, offering lessons in the value of heritage and the potential for sustainable design. A continuity of regional style is maintained, supporting a seamless visual and cultural landscape integration. In adapting traditional Balinese architectural designs to the present day, there's a reinforced connection with the natural environment, yielding structures that are inherently suited to the local climate and reducing dependence on non-renewable energy sources (Siahaan, 2020). Collectively, this approach to revitalization is more than an architectural practice—it's a bridge between the wisdom of the past and the innovations of the present, prompting a sustainable and culturally-rich future for Bali's architecture. Revitalizing traditional architecture for contemporary living in Bali is important because it allows for the preservation of cultural heritage and sustainable design practices. Additionally, it fosters a sense of identity and pride among the local community, as they see their traditional architecture being valued and celebrated.

2. RESEARCH METODOLOGY

The research methodology for revitalizing traditional architecture for contemporary living in Bali may include the following: (1) Literature Review: Conduct an extensive review of existing literature on traditional Balinese architecture, its principles, environmental sustainability practices, and previous revitalization efforts. (2) Case Studies: Analyze various case studies where traditional Balinese architectural elements have been incorporated into contemporary structures to understand the challenges and successful strategies used. (3) Design Proposal: Based on the data collected, propose a design framework that integrates traditional Balinese architectural elements into contemporary buildings in a practical and aesthetically pleasing manner.

3. LITERATUR REVIEW

To gather a comprehensive understanding of traditional Balinese architecture and its principles, an extensive literature review would be conducted. This would involve studying books, scholarly articles, and research papers that discuss the history, characteristics, and significance of traditional Balinese architecture. This would also include exploring the cultural and environmental sustainability aspects associated with traditional Balinese architecture in order to identify key elements that can be incorporated into contemporary designs.

The critical review of "Preserving traditional Balinese architecture: exploring the relevance of undagi's indigenous knowledge in post-pandemic interior design" by I Kadek Dwi Noorwatha and Imam Santosa underscores the significance of undagi—traditional Balinese master builders—in shaping contemporary interior design amidst the recent global shift due to the COVID-19 pandemic. The article stresses that despite the modern era's demands for health-focused and nature-connected living spaces, there lies an opportunity to harmonize these new design priorities with the invaluable, age-old undagi wisdom that embodies Balinese cultural heritage. The research within the article suggests that while there has been a departure from stringent adherence to historical practices, the essence of undagi knowledge continues to remain pertinent, creating a foundation for a blended approach where traditional values enrich modern design considerations, resonating with the

emerging global emphasis on well-being and sustainability in built environments (Dwi Noorwatha and Santosa, 2023).

The article "Optimizing the Authenticity of Bali Aga Sidatapa Traditional House Architecture in Sustainable Tourism in Sidatapa Village" by Nyoman Ratih Prabandari and Wiwik Pratiwi serves as a pivotal resource in understanding how the preservation of traditional architectural forms can be leveraged to promote sustainable tourism. This literature review recognizes the article's substantive contribution to the field, particularly its focus on the authenticity of Bali Aga Sidatapa traditional houses as a draw for tourism that benefits local communities. The article's strength lies in its qualitative methodology, integrating architectural analysis with cultural insights to propose a tourism model that respects and preserves local heritage. However, the study could be further enriched by including quantitative data on the impacts of such tourism models on economic sustainability and community well-being. Comparatively, this work is distinctive within the existing literature for its holistic approach to sustainable tourism, particularly in light of the challenges posed by the COVID-19 pandemic as highlighted by the authors (Prabandari and Pratiwi, 2022).

In "Cultural Sustainability and Evoking Architectural Identity in Buleleng-Bali, Indonesia," I Dewa Gede Agung Diasana Putra and Ida Bagus Gde Wirawibawa offer an insightful examination of the interplay between architectural ornamentation and cultural sustainability in the context of Balinese temple architecture. Their study underscores the significance of traditional building practices and the expressive power of architectural ornaments as repositories of cultural identity, while also pointing out the lack of systematic research on the role of culture in sustainable development. The paper operates within a complex framework of qualitative and quantitative research methods, arguing for the incorporation of cultural values into the sustainability discourse and vividly advocating for more empirical investigations in this underexplored domain (Putra and Wirawibawa, 2023).

In "The Other Side of Tropical Paradise: Traces of Modernism within the Vernacular Landscapes of Early Twentieth-Century Bali," Amanda Achmadi offers a critical revision of the island's architectural identity by examining the impact of colonial and modern influences on what is traditionally perceived as a static cultural paradise. Achmadi delves into the historical context of Bali under Dutch colonial rule, employing Edward Said's concept of orientalism to explore how the island's built environment reflects a complex interplay between vernacular tradition, cosmopolitanism, and modernity. The insightful analysis challenges the prevailing notion of Balinese architectural authenticity and underscores the island's dynamic evolution, shaped by the interactions of global forces and local cultural politics (Achmadi, 2016).

4. RESULTS AND DISCUSSION

The results and discussions of the research on revitalizing traditional architecture for contemporary living in Bali indicate the importance of preserving cultural identity and architectural heritage in the face of urbanization and globalization. Some element that can be preserved into contemporary housing: zoning, layout, facade, and ornament.

a. Incorporating Traditional Balinese Zoning Pattern into Contemporary Housing

The Sanga Mandala principle is closely observed within the traditional Balinese homestead, where the residential compound is intricately segmented into nine primary sections. The sacred area, known as parhyangan, is situated in the kaja-kangin zone, while human activities, or pawongan, take place in the central zone. The service area, or palemahan, which includes functional spaces like the kitchen and storage, is located in the kauh-kelod zone. A focal point of the Balinese compound is the natah, a central courtyard that is flanked by various important structures. The Bale Meten, set towards the kaja, acts as a sleeping area, with the

Bale Sumanggen in the kangin direction serving both ceremonial functions and as a communal hall. The kitchen, known as Paon, and the Bale Dauh, a supplementary sleeping space, are found in the kelod and kelod kauh zones respectively. The granary, or Jineng, is positioned in the kauh area, unless displaced by the Bale Dauh, in which case it takes up the kelod-kauh or kelod-kangin zone. Water-related structures, including wells and baths, are typically placed in the kaja-kauh area. Finally, the rear part of the compound, the teba, holds a practical role for rearing livestock and growing plants. This spatial division not only dictates physical structures but also embodies the harmonious relationship between the spiritual, communal, and functional facets of Balinese life (Gelebet et al., 1986).

Contemporary Housing with Traditional Shapes and Patterns (Natah)

In modern Balinese housing, there is a clear effort to maintain traditional Balinese architectural concepts within the contemporary design, as evidenced by the adherence to the Sanga Mandala and Tri Angga principles. These principles influence the spatial organization and structural layout of homes to align with traditional criteria, often resulting in the inclusion of a Natah, or open space. While this adherence is noticeable, there are several adaptations to the traditional functions of spaces within the residence. For instance, activities such as dining and socializing, previously held in separate locations like the paon (kitchen) and the terrace, are now often accommodated in combined living and dining rooms within the main building.

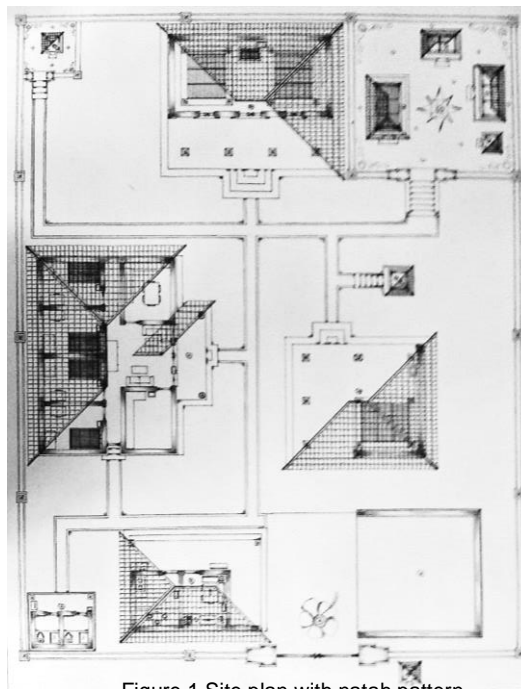


Figure 1 Site plan with natah pattern
Source: <http://ikadekdiantara.blogspot.com>

Material changes are also prevalent. While wood was a common material for main support columns, there is a shift towards concrete for both structural and economic reasons. Similarly, construction methods have moved away from traditional techniques like using wooden pegs to modern methods such as reinforced concrete constructions.

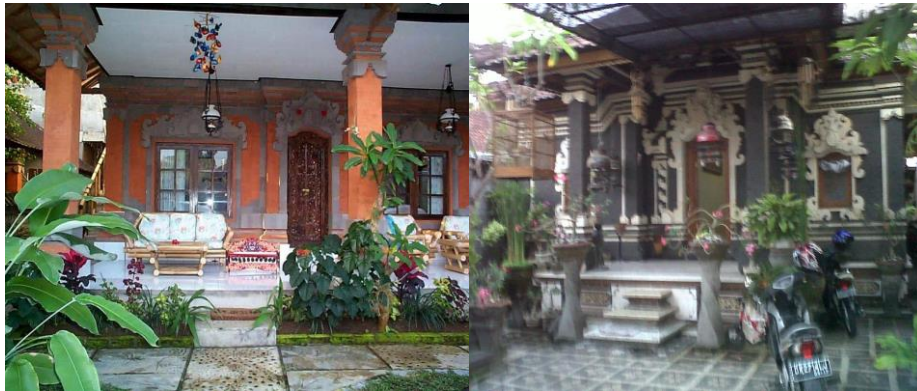


Figure 2 Front view of the building with some modified ornaments Source: <http://indonesiawow.com>

Furthermore, the requirements of contemporary living, such as transportation by cars, necessitate modifications to the entrances of homes (pamesuan or angkul-angkul), resulting in wider gateways to accommodate vehicles. Changes are also seen in the materials used for these entrances; where once red bricks or mud soil were prevalent, there is now a switch to readily available materials like black stone, which may be crafted on-site or manufactured as precast elements.



Figure 3 Widened angkul-angkul
Source: <https://1219251059ninyomanlitanugrahenidewi.wordpress.com>

Contemporary Housing with Single Mass Housing Complex

The essence of the traditional Balinese natah pattern is not commonly found in present-day homes. However, traces of Balinese architectural identity remain, especially observable in the sculptural form and arrangement of contemporary housing, which often adheres to the concept of Tri Angga. This traditional principle involves vertically dividing the building mass into three symbolic sections: the head, body, and legs. While modern houses may lack traditional Balinese decorations, elements such as modified boundaries or fences and angkul-angkul (gateways) are still incorporated, showcasing a blend of authenticity and change.

In recent years, residential development in Denpasar City has predominantly been driven by private companies offering various house types suited for the lower-middle-income market. These range from small 15 to larger 70 square meter homes, situated on plots from 60 to 200 square meters, termed Kapling Siap Bangun. Popular choices among Denpasar residents include house types 21, 36, 45, and 70.

Notably, since 1998, the construction of the smallest model, type 21, has ceased. This halt is attributed to concerns over potential slums and the unprofitability due to escalating land prices (Dewi and Swanendri, 2007).



Figure 4 Kontemporer dwelling without traditional Balinese ornaments but adopting *penyengker / fence and angkul-angkul*
Source: rumahin.wordpress.com

In modern residences, the Balinese architectural signature is barely discernible, mainly visible in the roofing referred to as the "head", which may still exhibit traditional Balinese roof characteristics, marked by features such as the *mudra* and *ikut cledu*. Beyond this, contemporary homes are generally stripped of customary ornaments and seldom feature the *penyengker* (fences) and *angkul-angkul* that signify traditional Balinese residences.



Figure 5 Contemporer house in a residential complex
Source: rumahin.wordpress.com

b. Incorporating Traditional Balinese Structure and Facade Pattern into Contemporary Housing

Tri Angga is a Balinese spatial concept that divides structures into three vertical zones analogous to the human body, with each portion having its own function and symbolic meaning. 1. *Utama* - This is the topmost zone, which corresponds to the head and symbolizes the sacred or spiritual realm. In traditional Balinese architecture, this might be where the most sacred elements are placed, such as shrines or other items of religious significance.

Madya - Corresponding to the torso, this central zone represents the realm of human activity. It is where everyday interactions take place and serves as the communal area within a building or compound.

Nista - Representing the feet or the lower part of the body, the nista zone encompasses the functional and service-oriented aspects of a building, such as storage, utility areas, or any space designated for mundane activities.

In a vertical application within contemporary housing, these zones could be represented through the following:

Utama: The top floors of a multi-story dwelling might be dedicated to private rooms that require quiet and peace, such as bedrooms or home offices, or could include a rooftop garden that provides a sanctuary-like space with the potential for meditation or spiritual practice.

Madya: The middle floors or the central part of a home should be areas designed for living, dining, and entertaining, serving as the heart of social interaction and daily activities.

Nista: The ground floor or basement could be designed for services and utilities, such as parking, pantry, laundry, and other mechanical services or installations that support the functionality of the home.

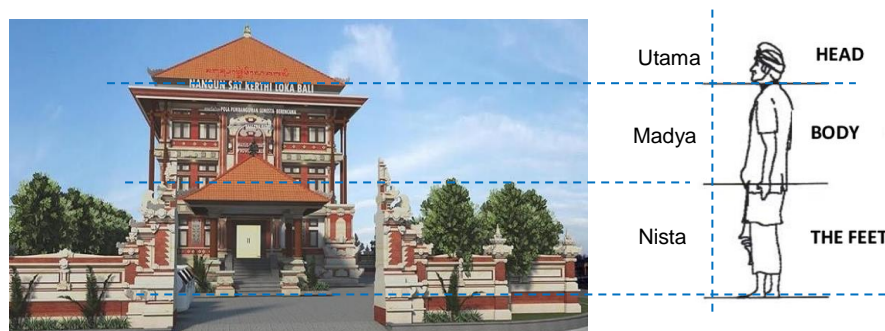


Figure 6 Incorporating Traditional Balinese Structure and Facade Pattern into Contemporary Housing
Source: tatkala.co

In contemporary architecture, while the strict spatial delineation of traditional Balinese compounds may not always be practical, the essence of Tri Angga can guide the functional zoning and hierarchical planning of domestic spaces in a multi-level structure.

c. Incorporating Traditional Balinese Ornament into Contemporary Housing

Ornamental features in Balinese construction serve a dual purpose, acting not just as decorative elements but also carrying symbolic significance that reflects the structure's intrinsic message. Typically, these decorative elements are etched into brick or solid stone. Collectively known as *pepatran*, which relate to flora, and *kekarangan*, associated with fauna, the diversity of Balinese ornamentation is extensive. Influences on these designs are multicultural, with patterns such as *Patra Mesir*, *Patra Cina*, and *Patra Welanda* highlighting external artistic impacts.

The *kekarangan* motif is characterized by a standardized pattern, with reliefs displaying a broad array of animal figures, both real and mythical, that take on the shapes and forms of the creatures they represent, including elephants and mythological beasts. These stylized faunal motifs are significant in understanding the cultural narratives imbued within Balinese architecture.

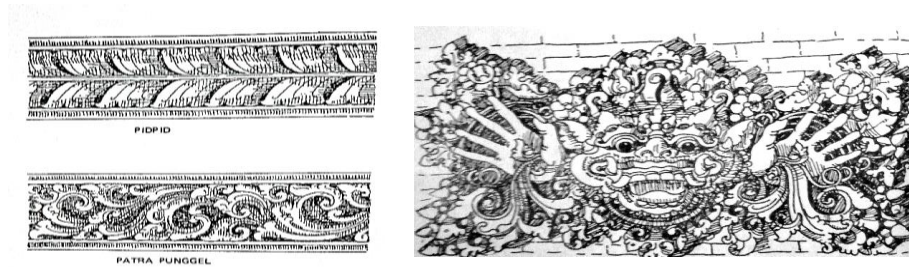


Figure 7 Some Balinese Ornaments
Source: Gelebet, 1986.

Implementing Balinese ornaments into modern housing involves incorporating traditional decorative elements into contemporary design in a way that respects their cultural significance while also fitting the aesthetics and functionality of modern living. Here are a few ways in which Balinese ornaments can be integrated:

Façade Accents:

Use Balinese stone carvings or wood carvings as accent features on the exterior of the building. This can be in the form of relief panels or sculpted elements around the entrance or windows. Balinese ornamentation can also be used in gate designs, wall fences, and other boundary markers to hint at the traditional influence while still maintaining modern lines and forms.

Interior Design Elements:

Integrate traditional Balinese motifs into flooring, such as tiles or carved wood panels, creating focal points within living spaces. Employ Balinese patterns on textiles, such as curtains, throw pillows, or upholstery fabrics for furniture, combining tradition with modern comfort.

Architectural Details:

Incorporate Balinese ornate carvings into structural components like doorframes, window frames, and support columns, offering an elegant touch that respects traditional craftsmanship. Design uniquely shaped ceilings or overhangs with Balinese motifs, keeping in mind the local styles of woodwork.

Gardens and Outdoor Spaces:

Embed Balinese ornaments in garden landscapes, such as stone statues and water features like fountains, ponds, or a lily pond both as a design element and to create a tranquil atmosphere. Use patterned pathways or accent tiles with Balinese designs in outdoor areas to create a visual connection with the island's traditions.

Furniture and Decor:

Incorporate ornaments in the design of furniture pieces such as headboards, tables, or cabinetry. Use decor items like lamps, vases, or artwork that feature Balinese motifs to subtly bring traditional elements into space. When incorporating Balinese ornaments into modern housing, it is important to do so thoughtfully and respectfully, ensuring the elements are context-appropriate, harmonizing with the surrounding architecture and interior design, and not trivializing cultural symbols. The goal is to create a contemporary living space that nods to Balinese heritage and craftsmanship while remaining functional and stylistically cohesive.

5. CONCLUSION

In conclusion, this study underscores the vital importance of revitalizing traditional Balinese architecture within contemporary housing as a means of preserving the island's rich cultural identity and advancing sustainable living practices. By melding the aesthetic beauty and wisdom of traditional design with modern technologies and materials, Bali is poised to maintain its unique architectural heritage while catering to the needs of its inhabitants. Furthermore, such an integration initiative supports not only the conservation of cultural values but also serves to bolster the local economy through tourism and provides educational insights into sustainable architectural practices. For practical advice, it is recommended that contemporary architects keenly study and understand the intricacies of Balinese architectural principles to ensure authenticity in their modern interpretations. Collaboration with local artisans and craftsmen can preserve traditional craftsmanship while also injecting modern proficiency into the design process. Prioritizing the use of sustainable and locally-sourced materials, coupled with energy-efficient strategies, will contribute to the environmental aspect of sustainable architecture. Finally, fostering a dialogue with the community at large will enhance the recognition and valuation of Balinese architectural heritage, ensuring that these timeless designs continue to inspire and serve the community well into the future. Through these concerted efforts, Bali can showcase how tradition and modernity can coexist in harmony, paving the way for a resilient and culturally-enriched built environment..

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