



Revitalization of Teba Space Design to Preserve Cultural and Environmental Sustainability in Traditional Balinese Houses

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Abstract

Teba, being an essential component of traditional Balinese dwellings, holds a significant role in community assignments, historical and societal contexts of Balinese culture, and ecological sustainability. Nevertheless, the process of urbanization and shifts in lifestyle have resulted in a decrease in Teba spaces and their conversion into less ecologically sustainable regions. This article explores initiatives to rejuvenate the design of Teba spaces in traditional Balinese houses to uphold a harmonious coexistence between environmental and cultural conservation in contemporary times. This research explores techniques and design solutions for Teba places that can effectively adapt to evolving circumstances while upholding traditional values. By doing so, it seeks to promote both environmental and cultural sustainability. This study employs a qualitative and ethnographic methodology to investigate ways for revitalization. These strategies involve the utilization of natural and local materials, the implementation of sustainable design techniques, and the creation of flexible and multifunctional spatial arrangements. The findings suggest that the restoration of Teba contributes to preserving biodiversity and enhancing air quality, reinforces cultural identity, and promotes sustainable tourism development. Integrating traditional techniques with modern technologies can optimize the functionality of Teba as both a productive green area and a center for cultural preservation. Hence, cooperation among architects, government entities, and the community is crucial in developing inventive and sustainable design solutions that enhance the cultural heritage of Bali within evolving circumstances.

Keywords: Revitalization, Design, Teba, Space, Traditional, Bali, Environment.

1. Introduction

The concept of Teba is an essential element in the architecture of traditional Bali houses, symbolizing the harmonious relationship between humans and their environment [1] [2] [3]. One of the concepts of nature conservation that the Hindu community has embraced is the concept of Teba. Teba, a spacious outdoor area behind the house, has historically served as a versatile space for various household activities, including gardening, composting, and livestock farming [4] [5]. This function promotes natural equilibrium and safeguards cultural practices and ancestral values that prioritize sustainability. Teba is an invaluable cultural treasure that should be conserved due to its significant role in enhancing societal well-being and fostering a more successful existence [6] [7].

Nevertheless, due to the progression of time, urbanization, and shifts in lifestyle, numerous traditional Bali houses saw substantial alterations, such as the diminution or complete removal of the Teba. For instance, the presence of teba/teben in the Ubud district is diminishing because of the substantial alteration in land use caused by the increasing demand for housing and the quick expansion of tourist lodging businesses. This tendency gives rise to environmental issues, including the reduction of green areas, heightened pollution, and the eradication of traditional behaviors that promote sustainability [8] [9] [10]. In addition, these alterations also jeopardize the preservation of cultural legacy that has been transmitted from one generation to the following [11] [12] [13].



To address this issue, it is necessary to rejuvenate the design of the Teba space in a way that combines traditional characteristics and contemporary needs. This aligns with the socialization efforts focused on educating and implementing advanced teba-based waste treatment in Dusun Riang Ancut, aiming to ensure the preservation of environmental sustainability. This approach seeks to sustain ecological equilibrium and safeguard and enhance Bali's cultural legacy [14] [15]. The research aims to investigate effective strategies and techniques for rejuvenating Teba in the contemporary era. This involves fostering collaboration among architects, governments, and local communities to develop inventive and environmentally friendly solutions [16] [17].

2. Methods

This research uses a qualitative approach, using ethnographic techniques to gain a comprehensive understanding of the transformations and endeavors aimed at rejuvenating the Teba concept in traditional Balinese dwellings during the modern era. His research methodology includes conducting literature reviews, making field observations, conducting in-depth interviews, analyzing data, and utilizing case studies. The objective is to conduct a comprehensive analysis of the literature on Teba, focusing on traditional Bali architecture and environmental sustainability practices, to gain a deep understanding of the idea and identify relevant past research [18] [19].

Direct observations were carried out on Teba residing in traditional dwellings to examine the impact of modernization on their way of life. In addition, these observations encompassed visual documentation and comprehensive descriptions of Teba's utilization. Interviews were conducted with key informants, including traditional homeowners, architects, cultural experts, and local government officials. This interview aims to obtain a comprehensive understanding of the significance of the teba, the ongoing transformations, and the initiatives that have been and can be implemented to revive it [20].

The data obtained through observations and interviews were analyzed using thematic analysis techniques to discover recurring patterns and significant themes about the concept of the Teba and its attempts towards rejuvenation. Several case studies were selected for thorough examination. This case study examines specific instances of traditional houses in Teba that have achieved success or are currently undergoing revitalization. It also includes an assessment of the achievements and difficulties encountered in these endeavors. The expected results of this research methodology are poised to offer an all-encompassing comprehension of how the Teba concept might be rejuvenated to uphold environmental and cultural equilibrium inside the framework of modern development in Bali [21].

3. Result and Discussions

3.1. The Transformation of Spatial Functions and its Impact in the Modern Era

The Teba Room in a typical Bali home is a multifunctional space for storage and daily activities. It holds significant cultural and spiritual value, serving as a dedicated room for rituals, social interactions, and family activities. Nevertheless, in the contemporary era influenced by globalization and the growth of the tourism sector, the roles of Teba Space are starting to experience changes. The transformation of the function of Teba space in the traditional Bali home has undergone a significant transition in the modern era due to social, economic, technological, and urbanization factors, as well as lifestyle changes. The Teba Space, which traditionally served as a green area for gardening, waste treatment, and other household activities, is now frequently transformed into commercial property, additional buildings, or parking lots. Many traditional Bali houses have been repurposed for commercial usage, such as hostels, restaurants, or art galleries, rendering the Teba Room obsolete for its initial purposes. Today, the Teba Room is being transformed into a more versatile area to better cater to the demands of tourists and the economy. Economic factors play a significant role in transforming the Lumbung's functions and architecture in traditional Balinese houses. In some cases, the Teba area may be repurposed to become a component of the contemporary dwelling or completely removed during the new construction process. It is in line with the transformation of Teba in the Sading Adult Village that has resulted in the transformation of various structures such as residences, garages, and barracks, which continue to serve the purpose of Teba.

This alteration not only modifies the tangible utilization of the area but also impacts the societal and cultural behaviors of the inhabitants of Bali. The change in the lifestyle of the people in Bali is being influenced by the economy and modernization, which is gradually replacing the previously prominent spiritual values and sense of unity. Furthermore, these changes adversely affect the environment, including decreased air quality, increased pollution, and the depletion of green areas that function as local ecosystems. This shift also endangers conventional behaviors that uphold ecological and social equilibrium.

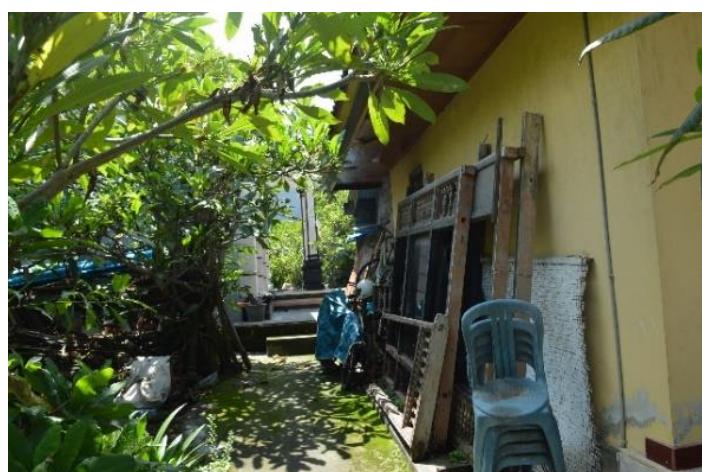


Fig 1. Closer and more constricted areas

Source: Author's Documentation, 2024

In general, the alteration of Teba results in the loss of its original purpose, leading to the destruction of the local ecosystem and the erosion of cultural values transmitted over generations. Therefore, it is crucial to rejuvenate Teba by integrating contemporary technology with customary methods to reinstate ecological functionality and preserve Bali's artistic legacy in the face of modernization challenges.



Fig 2. The Teba Room has been converted into a garage and stall.
Source: Author's Documentation, 2024

3.2. Revitalization of Teba Room Design in Bali's Traditional House in the Modern Era

The resurgence of Teba space design in traditional Bali dwellings in the modern era has become progressively pertinent to the present trends of globalization and urbanization. Teba, a component of Bali's architectural design, functions as an intermediary space connecting the inside of the home with the surrounding natural environment. It plays a crucial role in maintaining the equilibrium of the home ecosystem, as well as upholding the spiritual and social values of the Bali community. Nevertheless, modernization and economic influences, especially from the tourism industry, have substantially altered numerous traditional Bali houses. These changes frequently disregard the original purpose and significance of Teba. To overcome this trend, the Teba concept is being revitalized by incorporating it into modern architectural designs while maintaining its original characteristics. The rehabilitation endeavors in several Bali communities have demonstrated that amalgamating contemporary technology with ancient customs can rejuvenate Teba's ecological and cultural role. This includes developing a Teba space that is not only a green area or a backyard but also a social space that can accommodate community activities and customary rituals. For instance, implementing organic waste management systems and productive gardening enhances environmental quality and supports local food sustainability.

Furthermore, this rejuvenation is motivated by an awareness of the significance of ecological sustainability. Teba is critical in establishing a green area to achieve a harmonious equilibrium between humans and the natural environment. The rehabilitation aims to save Bali's cultural heritage and provide ecologically sustainable architectural solutions in the modern era.



Fig 3. The Teba Room, which continues to uphold the Green Concept
Source: Author's Documentation, 2024

To revitalize the Teba space design of traditional Bali houses in the modern era, it is necessary to use a method that achieves a harmonious balance between cultural preservation and environmental sustainability. An essential approach is to combine Bali's distinctive folk style with contemporary technologies. This can be achieved by incorporating traditional aspects of Teba, such as using indigenous materials and layouts that adhere to the Tri Hita Karana principles, while embracing eco-friendly technologies. For instance, implementing natural ventilation systems and adequate lighting can decrease the need for artificial energy, creating comfortable and energy-efficient environments.

The subsequent phase entails adapting the Teba design to contemporary requirements while preserving its original functionalities. An adaptive and multifunctional space can be established where the Teba can function as an open area for daily activities and a location for traditional rites and other communal activities. Teba's continued relevance in modern society is ensured by this establishment, which also reinforces its identity as a cultural hub. This aligns with what the Celuk village community does, which utilizes the Teba region to effectively handle independent waste management, mainly focusing on organic material known as "modern teba." Teba, in its modern form, serves as a tool or facility for converting organic waste into composite fertilizer. It is regarded as one of the practical and efficient choices for waste management.



Fig 4. The Teba Room serves as a dedicated space for preparing traditional ceremonies.

Source: Author's Documentation, 2021

Preserving the original qualities of Teba requires the crucial use of natural and local resources, like natural stone, bamboo, wood, and silk roofs, as part of a revitalization initiative. Furthermore, these materials promote environmental sustainability, contribute to the local economy, and preserve the visual appeal of traditional Balinese buildings. Integrating traditional construction techniques helps enhance the connection with the local culture.

The next design strategy is that the teba is designed as an open green space that not only supports the preservation of the environment but also improves the inhabitants' quality of life. Introducing Bali fruit trees, medicinal plants, and unique species in the vicinity of Teba can promote biodiversity and provide a sustainable local food supply. This concept also upholds the principle of harmonious coexistence between humans and nature, which lies at the core of the Bali people's life philosophy.

In the context of social and cultural fields, Teba serves as a physical location and a communal and spiritual space. The redesign of Teba should consider revitalizing these activities by creating spaces that encourage interaction with others, such as communal gathering areas for families and communities and specific spaces for rituals and customary ceremonies. Therefore, Teba is the focal point of spiritual and social activities in the traditional Bali household.

A community-based strategy is essential during the process of revitalization. By actively engaging local communities in the planning and design process, Teba can ensure that the space remains a true reflection of the cultural values and requirements of the local community. The presence of indigenous communities in the village of Pakraman Muncan has significantly impacted the development of architecture and interior design in the area, particularly in terms of preserving vast living spaces.

Education and training in ecologically sustainable and culturally rooted design strategies can empower the community to maintain and preserve Teba effectively.

The government plays a crucial part in supporting the revitalization of Teba by implementing policies that support the preservation of culture and the environment. Implementing a zoning policy that protects green open spaces, offering incentives to homeowners for the maintenance or restoration of Teba functions, and enforcing laws on the use of environmentally friendly materials are among the measures that governments can use to ensure the efficient implementation of revitalization efforts. By implementing these strategies and solutions, the design of Teba spaces in traditional Bali houses can be rejuvenated to maintain relevance in the modern era while preserving its essence as a space that represents Bali culture and adheres to environmental sustainability principles.

3.3. Benefits of Revitalizing Teba Space Design for Environmental and Cultural Conservation

The revitalization of Teba space design in traditional Bali houses provides substantial advantages for both the environment and the preservation of culture. From the perspective of the environment, this rehabilitation contributes to the enhancement of biodiversity, a reduction of pollution, and the enhancement of air quality by restoring green areas that were previously lost. Organic waste management and revitalized traditional gardening practices contribute to the long-term viability of local ecosystems. Culturally, the revitalization of Teba revives conventional practices that have long been an integral part of the life of the Bali community, strengthens cultural identity, and promotes the values of local wisdom. This initiative entails the cooperation of local communities, architects, and governments, demonstrating that a participatory and collaborative approach is crucial for success. The rejuvenation of Teba not only preserves its cultural heritage but also nurtures ecological consciousness among younger generations, ensuring the perpetuation and reverence of these principles in the future. Teba's rejuvenation is a comprehensive and strategic approach to maintaining a sustainable balance between the environment and culture. The rejuvenation of the Teba space design in the traditional Bali house yields numerous significant benefits for both the environment and the preservation of culture. Here are several main benefits that can be obtained:

1. Conservation of Biodiversity and Local Ecosystems: The revitalized ribs function as open green spaces that promote the preservation of local wildlife and ecosystems. By cultivating indigenous plants, fruit trees, and medicinal plants in the vicinity of Teba, the surroundings of Bali's traditional dwellings have become more verdant, thereby enhancing the long-term viability of the local plant life. Additionally, it fosters the development of habitats for indigenous fauna, such as avian species and insects, thereby promoting equilibrium within the environment.
2. Reducing the Environmental Impact of Urbanization: In the context of escalating urbanization, the revitalization of Teba aids in minimizing the adverse effects on the environment. Teba functions as a crucial reservoir zone for flood prevention and the preservation of groundwater quality. Incorporating natural and locally sourced materials in the Teba design minimizes the carbon footprint and energy consumption commonly associated with contemporary buildings and contributes to the overall reduction of environmental effects. To ensure the preservation of the teba technology and the conservation of water resources, multiple stakeholders must collaborate to protect the teba.



Fig 5. Teba Space as Waste Management Area
Source: Author's Documentation, 2024

3. Improving Air Quality and Waste Management: Revitalizing Teba by cultivating green plants is an excellent method for filtering air pollutants and enhancing air quality in the surrounding area. Furthermore, Teba can function as a facility for managing organic waste, such as compost, so promoting small-scale agriculture systems and diminishing reliance on artificial fertilizers. Therefore, the Teba is a crucial component of the sustainable environmental management system in the traditional Bali home.
4. Strengthening Cultural Identity and Preserving Architectural Heritage: Revitalizing Teba design contributes to the preservation of Bali's rich architectural heritage and enhances the community's cultural identity. Teba has become a symbol of cultural continuity in modernization by incorporating traditional design aspects, such as spatial planning following Tri Hita Karana principles and using local materials. It is essential to ensure that future generations remain connected to the cultural roots and understand the traditional values inherited. Teba is the conventional way of waste management in Bali's ancestral culture, involving the excavation of a large hole usually located at the back of the house.
5. Increasing environmental and cultural awareness in communities: The Teba revitalization process also has critical educational benefits. Through community involvement in the planning and implementing of revitalization, people become more aware of the importance of environmental and cultural preservation. This lesson strengthens dedication to sustainability and encourages active participation in preserving and nurturing Teba as a shared inheritance. Therefore, from that knowledge of the various potentials of local wisdom, it is crucial to dissocialize society to realize the concept of sustainability (Dewi, 2015). It is also reinforced by the education given in the village of Penebel on the function of current trash.
6. Promote Sustainable Tourism: The revitalized Teba can serve as a destination for sustainable tourism, allowing visitors to immerse themselves in Bali's genuine and exquisite traditional architecture. Teba promotes sustainable tourism that emphasizes cultural and environmental preservation. This brings economic advantages to local communities and educates visitors about the significance of maintaining a harmonious relationship between humans and the natural world. Communities can generate additional money while upholding and safeguarding local culture by utilizing Teba to cultivate indigenous crops or produce traditional crafts. It contributes to the economic prosperity of the community while upholding traditional values.
With these benefits, revitalizing the Teba space design at the traditional Bali home protects the environment and cultural heritage. It creates a sustainable life model in harmony with nature in the modern era.
7. Culture-Based Local Economic Development: The rehabilitation of Teba can also promote sustainable local economic development. The community may establish a fresh revenue stream while simultaneously upholding and safeguarding local heritage by utilizing Teba as a platform for cultivating indigenous flora or as a hub for traditional craftsmanship. This contributes to preserving the community's economic prosperity while upholding traditional principles.

The rejuvenation of the Teba room design in traditional Balinese houses has several advantages. It preserves the environment and cultural history and establishes a sustainable and nature-friendly living model in the modern era.

4. Conclusion

This research concludes that revitalizing the Teba concept in traditional Bali houses is essential to the environmental and cultural balance in the modern era. Teba, with its significant historical and artistic value, should be preserved while incorporating current technology and practices to ensure its continued relevance. The transformation of Teba's functions due to urbanization and lifestyle changes has negatively impacted the environment and threatened the local cultural heritage. Utilizing strategies such as incorporating natural materials, sustainable design principles, and adaptable space planning has been demonstrated to be successful in safeguarding cultural values while enhancing environmental quality. The advantages of this revival encompass the conservation of biodiversity, enhancement of air quality, and the reinforcement of cultural identities and sustainable tourism.

The research findings suggest that critical strategies for improvement include enhancing community engagement, fostering collaboration among many stakeholders, implementing environmentally friendly technology, and creating adaptable design models. Furthermore, it is necessary to consistently assess and publicly advocate for the significance of Teba to guarantee the success of its regeneration and encourage community engagement in maintaining environmental and cultural equilibrium. Integrating traditional components with modern requirements in new designs has enhanced environmental quality and rejuvenated cultural traditions that promote ecological equilibrium. Hence, it is essential to have a holistic approach that respects local values to maintain the environmental and cultural balance in Bali.

References

- [1] I. B. K. Mahardika *et al.*, "Landscape Plant Management in Pinggir Tourism Village," *AJARCDE (Asian J. Appl. Res. Community Dev. Empower.)*, vol. 6, no. 3, 2022, doi: 10.29165/ajarcde.v6i3.116.
- [2] I. Tantlefskij, "The concept of the universe as a divine 'Imprint' in Plato's Timaeus and in doctrines of medieval Jewish Thinkers," *Platonic Investig.*, vol. 10, no. 1, 2019, doi: 10.25985/PI.10.1.09.
- [3] J. S. Pasaribu and A. Tamami, "Analysis of the Web Development of Pikesi Ganesha Polytechnic Campus Students With the Integration of the MBKM Program Menu in the Student Information System Project," *Int. J. Eng. Sci. Inf. Technol.*, vol. 4, no. 3, pp. 28–34, 2024, doi: 10.52088/ijest.v4i3.520.
- [4] E. M. Sánchez-Teba, J. García-Mestanza, and M. Rodríguez-Fernández, "The application of the inbound marketing strategy on costa del sol planning & tourism board. Lessons for post-covid-19 revival," *Sustain.*, vol. 12, no. 23, 2020, doi: 10.3390/su12239926.
- [5] I. A. A. Suryaningsih, K. Shintya Nita Kristiana Putri, and I. A. Karina Putri, "PERANCANGAN MODEL WISATA EDUKASI DI SUBAK TEBA MAJALANGU, DESA KESIMAN KERTALANGU KOTA DENPASAR," *J. IPTA*, vol. 11, no. 2, 2024, doi: 10.24843/ipta.2023.v11.i02.p04.
- [6] S. Lelepadang, R. Nuhun, N. Nasrul, and S. N. Ahmad, "ANALISIS PERBANDINGAN BIAYA KONSTRUKSI PERKERASAN KAKU (RIGID PAVEMENT) DAN PERKERASAN LENTUR (FLEXIBLE PAVEMENT) (Studi Kasus : Jalan Prof. M. Yamin, Kelurahan Puuwatu, Kota Kendari)," *STABILITA // J. Ilm. Tek. Sipil*, vol. 8, no. 3, 2020, doi: 10.55679/jts.v8i3.16192.
- [7] D. Harini, Radian, and Iwan Sasli, "Tanggap Pertumbuhan dan Perkembangan Jagung Ketan terhadap Pemberian Amelioran dan Pupuk NPK pada Tanah Ultisol," *J. Agron. Indones. (Indonesian J. Agron.)*, vol. 49, no. 1, 2021, doi: 10.24831/jai.v49i1.34284.
- [8] GRiSP, *Rice Almanac*. 2013. doi: 10.1093/aob/mcg189.
- [9] S. Schiavoni, F. D'Alessandro, F. Bianchi, and F. Asdrubali, "Insulation materials for the building sector: A review and comparative analysis," 2016. doi: 10.1016/j.rser.2016.05.045.
- [10] O. Faruk, A. K. Bledzki, H. P. Fink, and M. Sain, "Biocomposites reinforced with natural fibers: 2000–2010," *Prog. Polym. Sci.*, vol. 37, no. 11, pp. 1552–1596, 2012, doi: 10.1016/j.progpolymsci.2012.04.003.
- [11] E. E. Shishlova and L. R. Tvanba, "A System-Level Mechanism for the Conservation and Prospective Development of the Cultural Heritage of a Small Nation (on the Example of Abkhazia)," *Concept Philos. Relig. Cult.*, vol. 7, no. 1, 2023, doi: 10.24833/2541-8831-2023-1-25-96-108.
- [12] M. M. Daiyan, "The Impact of Climate Change on Indigenous Knowledge and Cultural Practices," *Prax. Int. J. Soc. Sci. Lit.*, vol. 6, no. 6, 2023, doi: 10.51879/pijssl/060611.
- [13] E. Purnamasari, "Prediksi Perkembangan Nilai Impor Komoditas Utama," *J. Inf. dan Teknol. Vol.*, vol. 5, no. 1, pp. 165–172, 2023, doi: 10.37034/jidt.v5i1.271.
- [14] G. A. Siswadi and S. Dwiputri Maharani, "Dimensi Aksiologis pada Tata Letak Bangunan di Bali Berdasarkan Lontar Asta Kosala Kosali," *Sphatika J. Teol.*, vol. 14, no. 2, 2023, doi: 10.25078/sphatika.v14i2.3038.
- [15] I. M. Y. Pramana, "Chewing Betel in Bali: An Ancient Tradition Faces Modern Times," *Bali Tour. J.*, vol. 7, no. 2, 2023, doi: 10.36675/btj.v7i2.92.
- [16] L. Östlund and G. Norstedt, "Preservation of the cultural legacy of the indigenous Sami in northern forest reserves – Present shortcomings and future possibilities," 2021. doi: 10.1016/j.foreco.2021.119726.
- [17] I. G. A. Purnamawati, F. Jie, and S. E. Hatane, "Cultural Change Shapes the Sustainable Development of Religious Ecotourism Villages in Bali, Indonesia," *Sustain.*, vol. 14, no. 12, 2022, doi: 10.3390/su14127368.
- [18] I. Made and P. Subawa, "Traditional Architecture Teo-Cosmology Hindu Society In Bali," *Vidyottama Sanatana Int. J. Hindu Sci. Relig. Stud.*, vol. 4, no. 2, 2020.
- [19] N. M. E. Nutrisia Dewi, I. K. Pranajaya, and N. K. Yuni Utami, "THE INDEGENEOUS PEOPLES AND DEVELOPMENT OF ARCHITECTURE AND INTERIOR BALI TRADITIONAL HOUSE IN MUNCAN CUSTOMARY VILLAGE, KARANGASEM, BALI," *E-Journal Cult. Stud.*, vol. 15, no. 1, 2022, doi: 10.24843/cs.2022.v15.i01.p05.
- [20] N. Hapsari, R. M. Sinaga, P. Pujiati, and D. Miswar, "Adaptation Of Traditional Bali Architecture In New Restu Village, Central Lampung District (A Cultural Inheritance From A Social Science Perspective)," *Int. J. Progress. Sci. Technol.*, vol. 40, no. 2, 2023, doi: 10.52155/ijpsat.v40.2.5640.
- [21] N. R. Prabandari and W. D. Pratiwi, "Optimizing the Authenticity of Bali Aga Sidatapa Traditional House Architecture in Sustainable Tourism in Sidatapa Village," *Archit. Res. J.*, vol. 2, no. 1, 2022, doi: 10.22225/arj.2.1.2022.15-23.