

## An evaluation of the relationship between function, form, and architectural meaning of the traditional house *Mbaru Niang* in Wae Rebo village

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i> Received May 20, 2025 Received in revised form June 21, 2025 Accepted July 08, 2025 Available online August 01, 2025</p> <p><i>Keywords:</i> Dwelling tradition <i>Mbaru Niang</i> Meaning <i>Niang Gena Maro</i> <i>Niang Gendang</i> Traditional architecture</p> <p>*Corresponding author: Purnama Salura Doctoral Program of Architecture, Faculty of Engineering, Universitas Katolik Parahyangan, Bandung, Indonesia Email: <a href="mailto:purnama.salura@unpar.ac.id">purnama.salura@unpar.ac.id</a> ORCID: <a href="https://orcid.org/0000-0002-3652-7192">https://orcid.org/0000-0002-3652-7192</a></p>	<p>Numerous initiatives have been undertaken to safeguard cultural heritage, including reconstruction and restoration efforts led by various stakeholders. One such case is the traditional village of Wae Rebo, where the <i>Mbaru Niang</i> houses serve as a prominent example of preservation through the faithful reconstruction of architectural form and structural integrity. Since Wae Rebo developed into a tourist destination in 1997, <i>Mbaru Niang</i> has experienced multiple reconstruction phases, each time maintaining its original shape—a form intrinsically linked to both its function and symbolic meaning. This interconnectedness is particularly evident in vernacular architecture, where function, form, and meaning are inherently interrelated. These observations prompt critical questions: Do current preservation practices uphold the original relationship among function, form, and meaning? And to what extent does preserving the same form influence their functional and symbolic roles? This research aims to examine the architectural dimensions of function, form, and meaning of <i>Mbaru Niang</i> in Wae Rebo Village by employing qualitative methods, including field observations and interviews. The study aspires to enrich the discourse surrounding Wae Rebo's architectural heritage while offering a critical perspective on traditional structures subjected to conservation practices.</p>

### Introduction

Wae Rebo Village in East Nusa Tenggara is one of the few places that still preserves its local wisdom. This village serves as an example of a local community that continues to uphold its cultural identity amidst the currents of modernization. Located at an elevation of approximately 1,200 meters above sea level, the village is accessible only on foot after several hours of trekking, rendering it not only geographically remote but also relatively isolated in cultural terms. Wae Rebo Village is the only remaining settlement among the three regencies of Mangarai, and one of the few that still

maintains its pristine authenticity (Dwiputri 2021).

Wae Rebo Village boasts a legacy of seven traditional houses that serve as a unique point of interest, characterized by their conical form, five-tiered interior structure, and the use of natural materials without the aid of nails in their construction. These seven traditional houses are known as *Mbaru Niang* (Antar 2010).

*Mbaru Niang* serves not only as a dwelling but also as a cultural space that reflects the traditions and beliefs of the local Wae Rebo community (Lon and Widayawati 2020). Moreover, *Mbaru Niang* functions as a site for the community's social structure, particularly the *Niang Gendang*,



which is the primary and most sacred house where religious rituals and community deliberations take place. Their residential culture is rooted in values of collectivism, wherein multiple families reside within a single house, sharing space and responsibilities (Reza and Liauw 2021; Zakiya and Hariyadi 2022)

However, since 1997, Wae Rebo began to be developed into a cultural tourism destination, and a revitalization project was initiated by architect Yori Antar and the Rumah Asuh Foundation to preserve local wisdom. This revitalization was carried out from 2008 to 2011, faithfully reconstructing the buildings in the same form as their originals (Afifah and Kurniawan 2022). Although the physical forms have been preserved, an important question arises: Are the meanings and functions of these traditional houses still relevant and fulfilled within the current cultural context, which is increasingly undergoing change? The preservation of form does not always equate to the preservation of meaning. When an architectural form is frozen for the sake of visual authenticity alone, what occurs is a form of immobilization, rather than preservation.

In this era of globalization, research into the impact of tourism activities and their influence on cultural transformation within communities has grown more in-depth. Many factors contribute to this phenomenon, including cultural exchange and economic necessity, as experienced by Wae Rebo. However, conflicts often arise from such mechanisms, particularly affecting the community's cultural integrity. For instance, while Wae Rebo retains the form of its houses, the question remains: is this unchanging form sufficient to accommodate the functions and meanings of *Mbaru Niang* as a building, especially after Wae Rebo develops into a tourist destination? This is because the focus on developing tourism destinations is often more oriented toward meeting the needs of visitors, which are undoubtedly different from those of the local community (Fatimah et al. 2021). Moreover, the preservation of vernacular architecture poses its challenges, where maintaining the form often sacrifices the functionality or comfort of the inhabitants in the name of preserving local wisdom (Tomasi and Barada 2021).

The central issue of this research is the relationship between the function and meaning of *Mbaru Niang* concerning its physical form, which has been rebuilt identically. This issue is relatively new, considering that existing studies

on Wae Rebo have primarily focused on the *Mbaru Niang* houses and their associated local wisdom. Similar concerns are also evident in other vernacular villages facing the pressures of globalization and tourism, where the physical form is maintained, but the community's values and way of life begin to shift.

This study is not only relevant within the local context of Wae Rebo, but also contributes to broader discussions on the conservation of vernacular architecture in the era of modernization and its relationship with cultural tourism. The issue of preserving form without adapting to the times and the functional needs of buildings has become a widespread concern in many regions, including Indonesia.

The objective of this study is to conduct a critical analysis of the relevance of the relationship between function, form, and meaning in the two selected case studies. The benefit of this research is to enrich the body of literature, particularly for the design of vernacular architecture, so that the findings may serve as a survival strategy for the Wae Rebo community and offer recommendations for the preservation of vernacular architecture.

## Methods

### Case study

The selected case studies examined in this research are *Niang Gendang* and *Niang Gena Maro*, two of the seven *Mbaru Niang* traditional houses. The selection of these case studies is based on considerations of building usage, form, and function. *Niang Gendang* serves as the principal traditional house used for customary ceremonies, while *Niang Gena Maro* was originally an ordinary residential house, later repurposed as guest accommodation for visitors from outside Wae Rebo.

Both case studies are located in Wae Rebo Village, where seven *Mbaru Niang* houses are arranged in a circular formation around the *Compang*, the central ceremonial altar of the village. Each house faces one of seven surrounding mountain peaks, symbolizing reverence for the seven cardinal directions (Karolus Torto Tandi and Ir. I Ketut Adhimastra 2020).



Figure 1. Niang Gena Maro



Figure 2. Niang Gendang

The case studies focus specifically on the *Mbaru Niang* houses namely Niang Gendang and Niang Gena Maro which are traditional houses of Wae Rebo Village. These houses are conical in shape with a circular floor plan.

The traditional houses are located in Wae Rebo Village, where the seven *Mbaru Niang* are constructed surrounding the central altar known as Compang. Each structure is oriented toward one of seven mountain peaks, symbolizing a spiritual connection to the seven cardinal points (Karolus Torto Tandi and Ir. I Ketut Adhimastra 2020).

The objects of this study were chosen based on the following considerations:

First, the houses underwent preservation and revitalization following the village's development

into a tourism destination around the year 1997 (Setiawati et al. 2023).

Second, the architectural forms were reconstructed in exact replication despite the ongoing currents of modernization, wherein human habitation needs and traditions continue to evolve.

Third, *Niang Gendang* was selected due to its status as the primary and ceremonial house of the Wae Rebo community, while *Niang Gena Maro* represents one of the six remaining dwellings.

#### Research method

The research was conducted through the following steps: First, data collection was carried out to obtain relevant information that would support the analytical framework of the study.

Data were gathered through direct field observation, in-depth interviews with customary leaders of Wae Rebo Village, and visual documentation in the form of photographs and field notes.

Second, the research involved classifying and formulating conceptual understandings of Wae Rebo's traditional houses based on a literature review. These concepts, derived from academic sources, would later serve as the foundation for analysis.

Third, the study introduces the theoretical framework to be employed in the analysis. The primary frameworks used include architectural anatomy theory, which allows for a structural and spatial breakdown of the building, and vernacular architectural theory, which is applied to evaluate the interrelationship between function, form, and meaning particularly relevant as the subject is a traditional architectural form. The theoretical references include the works of Paul Oliver, Amos Rapoport, Christian Norberg-Schulz, and Hassan Fathy. In addition, several comparative cases of architectural preservation, which share similar phenomena with that of Wae Rebo, are also presented to provide comparative insights.

Fourth, the study evaluates the alignment between function, form, and meaning, as conceptualized in the previous steps, using the established theoretical lens.

This research adopts a qualitative-descriptive approach. Field observations were conducted over

one day in Wae Rebo Village, from July 2, 2024, to July 3, 2024. The analysis technique employed is thematic analysis, which organizes findings into three main themes: spatial function, physical form, and philosophical meaning. Informants were selected based on their involvement in the community, including caretakers of the houses in Wae Rebo, residents, and architects with specialized knowledge in vernacular architecture. Additionally, external observers such as visiting tourists were also interviewed to introduce alternative perspectives and to minimize bias from a purely community-based perception. Data validity was maintained through triangulation of sources namely, interviews, observations, and literature. Furthermore, the researcher adopted a reflective stance in analyzing the data, taking into account field experiences and the potential for meaning shifts arising from external perspectives on cultural preservation.

## Results and discussion

### Step one: Data collection results

Data collection was conducted in Wae Rebo. The collected materials include photographs, visual documentation, and interview transcripts. The photos and images obtained depict the current conditions of the two study objects:



Figure 3. Documentation of Niang Gendang



Figure 4. Documentation of *Niang Gena Maro*

Interviews were conducted with several sources: two Wae Rebo residents, two visitors, and three architects. The results revealed significant differences in perspective among the interviewees.

Respondents from Wae Rebo explained that, as a dwelling, the *Mbaru Niang* house cannot be considered ideal for daily living. However, its form remains unaltered in order to preserve local wisdom and ancestral heritage. As a space for communal deliberation and sacred activities, *Mbaru Niang* still functions effectively in fulfilling its traditional role.

In contrast, visitors and architects noted that although the local wisdom has been well-preserved, *Mbaru Niang* cannot fully be categorized as a residential space, as not all community members reside there. Especially with the functional transformation of *Niang Gena Maro* into an accommodation for outsiders, Wae Rebo is now seen more as a transit village rather than a permanent settlement. Nevertheless, *Mbaru Niang* continues to serve as a gathering space and sacred site for rituals.

#### Step two: Concept classification

According to literature, *Mbaru Niang* traditionally functions in three core ways: as a residential space, a communal gathering hall, and a sacred site. As a residence, *Mbaru Niang* serves as the primary dwelling, a space for daily activities, and a form of physical and spiritual protection for its inhabitants.

As a place for communal deliberation, *Mbaru Niang* functions as a gathering space for both family and community. It is the venue for

decision-making among residents and village leaders, particularly when communal issues need to be resolved.

As a sacred space, the house functions as a site for traditional rituals and religious practices, and serves as a place for offering ceremonial offerings.

#### Step three: Theoretical framework

This study also adopts theoretical perspectives from key scholars of vernacular architecture. These theories serve as analytical tools to evaluate *Mbaru Niang* in light of the core values of vernacular architecture. Paul Oliver (1987) defines vernacular architecture as "architecture of the people and by the people, but not necessarily for the people." It is a form of folk architecture, constructed by the local population using indigenous knowledge of the time. However, it is not mass-oriented or intended for universal use (Rogi 2011).

According to Rapoport (1969), culture encompasses all ideas, customs, and activities conventionally practiced by society. House form is not the result of physical forces or singular causes alone but is shaped by a range of socio-cultural factors. These include climate adaptation, construction techniques, material use, and available technologies, with socio-cultural values being the primary driving force (Bhaswara 2010).

Christian Norberg-Schulz (1979), in his theory of *Genius Loci*, stresses the importance of creating "places" that hold existential meaning places where humans can truly dwell. In the context of *Mbaru Niang*, this meaning has shifted with the relocation of the hearth (symbolizing the

woman's role) and the conversion of one house into a guest lodge. Although the external form is preserved, the space no longer offers a sense of authentic dwelling but rather caters to tourist expectations (Septianto et al. 2014; Shalaby and Mostafa Ahmed 2024).

Hassan Fathy warns against forms of preservation that do not serve the needs of the local community. He argues that true architecture enables people to build, live, and thrive in alignment with their cultural values. When traditional homes are no longer comfortable for living or are modified for external uses (such as tourist accommodation), preserving only their physical form can become counterproductive to sustaining the community's cultural legacy (Shalaby 2022; Tawab 2018).

Accordingly, these theories are employed in this study to critically assess whether the preservation of *Mbaru Niang*'s form truly supports the traditional functions and meanings associated with these indigenous structures. Rather than freezing form as a lifeless artifact, preservation should adaptively maintain the dynamic relationship between community and living space.

To initiate the analysis of the relationship between function, form, and meaning in *Mbaru Niang*, this study also applies the architectural anatomy theory (Salura 2010), which enables dissection of fundamental architectural components. This is paired with conceptual classification derived from literature into three categories: house as dwelling, house as communal hall, and house as sacred space.

## Form



Figure 5. Form of Niang Gendang



Figure 6. Form of Niang Gena Maro

The floor plan of *Mbaru Niang* is circular. Each house is supported by a central main post known as *Siri Bongkok* and nine additional primary posts called *Hiri Mehe*. According to one informant, these nine posts were originally arranged in a square pattern, but following renovations in 2009, the pattern was altered to a circular layout.

The roof takes the form of an inverted cone, resembling an ice cream cone. This form symbolizes the spiritual connection between humans and the divine, and reflects the Manggarai philosophy of balance and harmony with nature.

Space

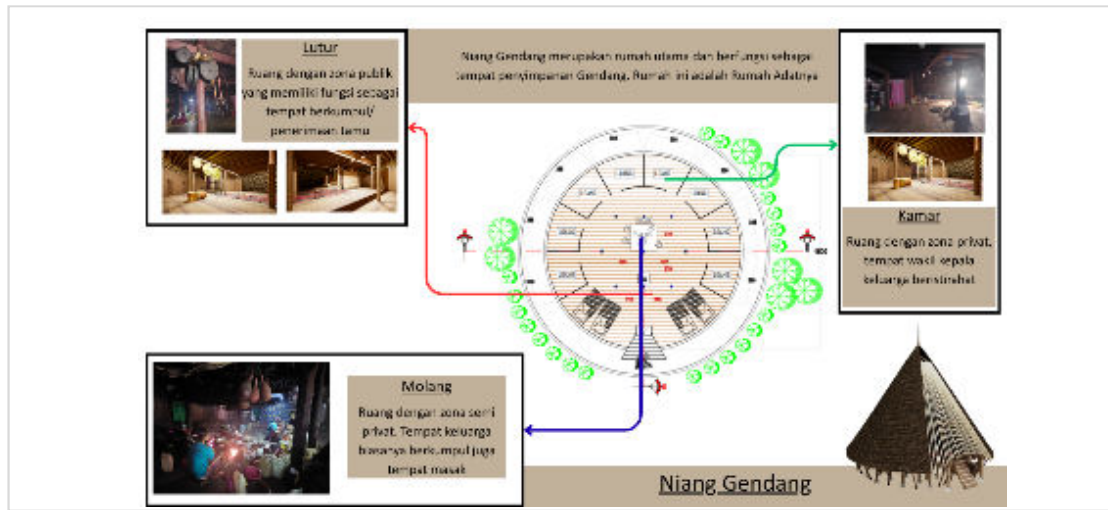


Figure 7. Spatial Division of Niang Gendang

All six *Mbaru Niang* houses share identical forms and interior layouts except for *Niang Gena Maro*, which has been restructured to function as guest accommodation. The traditional zoning consists of three main areas:

*Lutur*, *Molang*, and bedrooms, with the number of rooms corresponding to the number of resident households. However, in contemporary practice, most community members reside in Kampung Kombo, a settlement located at the base of the mountain.

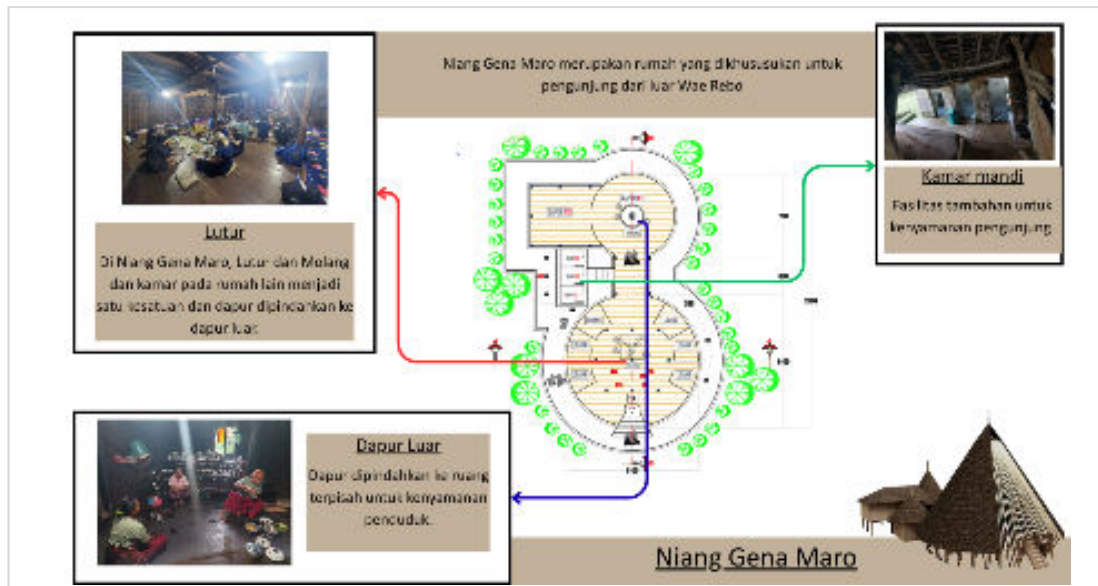


Figure 8. Spatial division of Niang Gena Maro

Niang Gena Maro, now serving as a guesthouse, has had its central hearth removed to enhance guest comfort. A separate toilet has been provided for visitors. While the overall circular

plan remains, the functional zoning has been altered.

### Structure

The structural design of *Mbaru Niang* remains largely unchanged, with support from *Siri Bongkok* and nine main posts within the *Tenda*, where most daily activities take place. The

traditional five-tiered floor structure *Tenda*, *Lobo*, *Lentar*, *Lempa Rae*, and *Hekang Kode* is still intact. Natural materials are used throughout, including thatched roofing (*alang-alang*), wooden framework, and bamboo components.

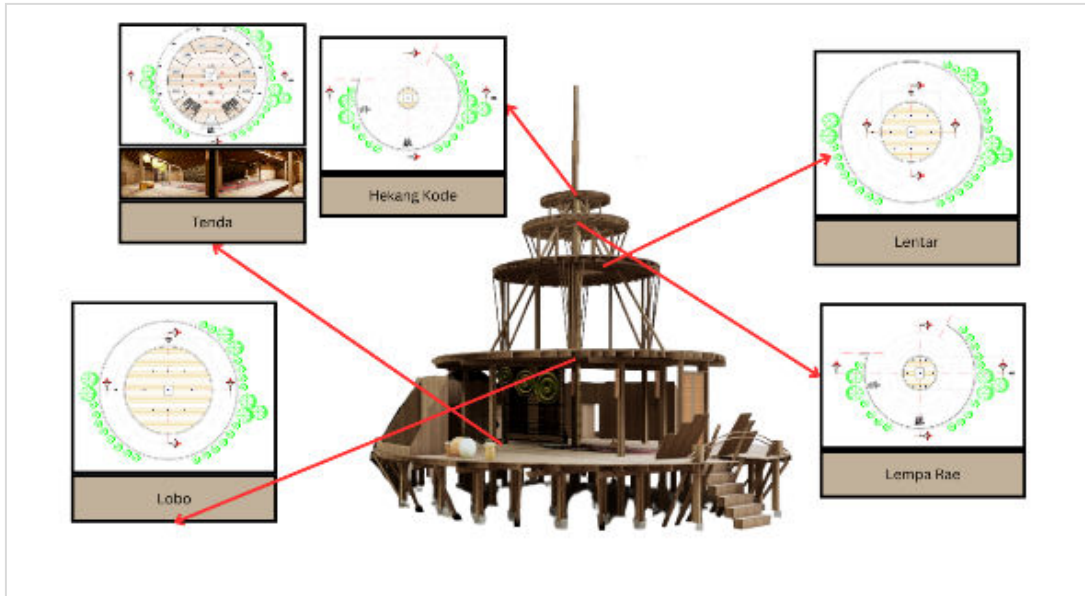


Figure 9. Structure of Niang Gendang

Each house is occupied by representatives of extended families. *Niang Gendang* houses eight households, while other houses typically accommodate six. However, only family representatives currently reside in Wae Rebo; most community members live in Kombo Village or newer housing located outside the traditional village.

Residents are primarily farmers. They produce coffee, which is sold to outsiders. Some members

also serve as hosts or guides for visitors and overnight guests.

As *Niang Gena Maro* has been converted into a lodging facility, guests are invited to experience traditional *Mbaru Niang* life, including participating in *Lonto Le'ok*, a cultural circle-based dining practice that is a key attraction for cultural tourism.



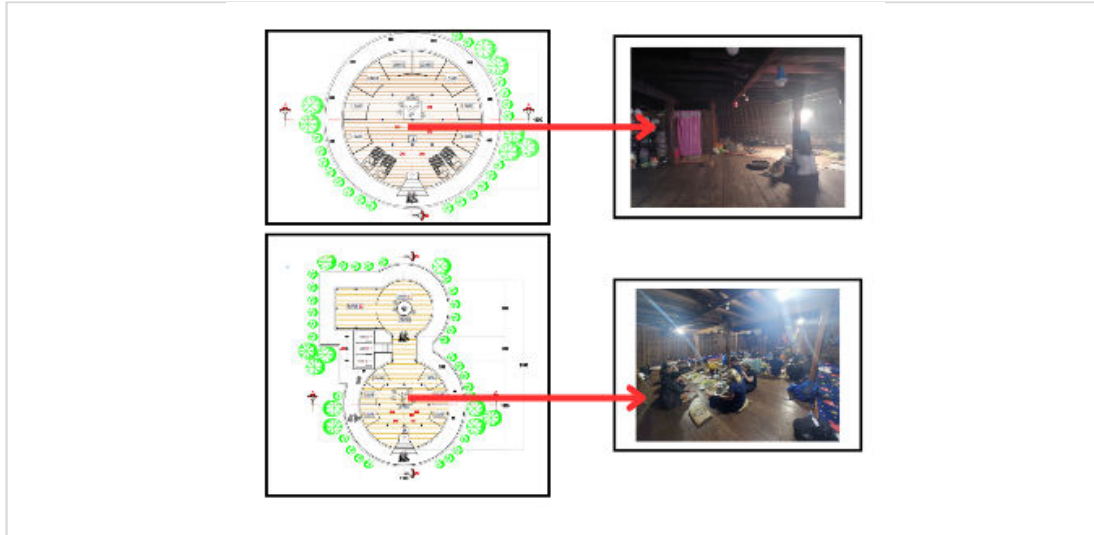
Figure 10. *Lonto Le'ok* cultural practice for Visitors

Step four: Evaluation of the relationship between function, form, and meaning

The focus of the analysis is to evaluate the coherence between function, form, and meaning from a contemporary perspective.

Based on the field data and interviews, several functional transformations have occurred,

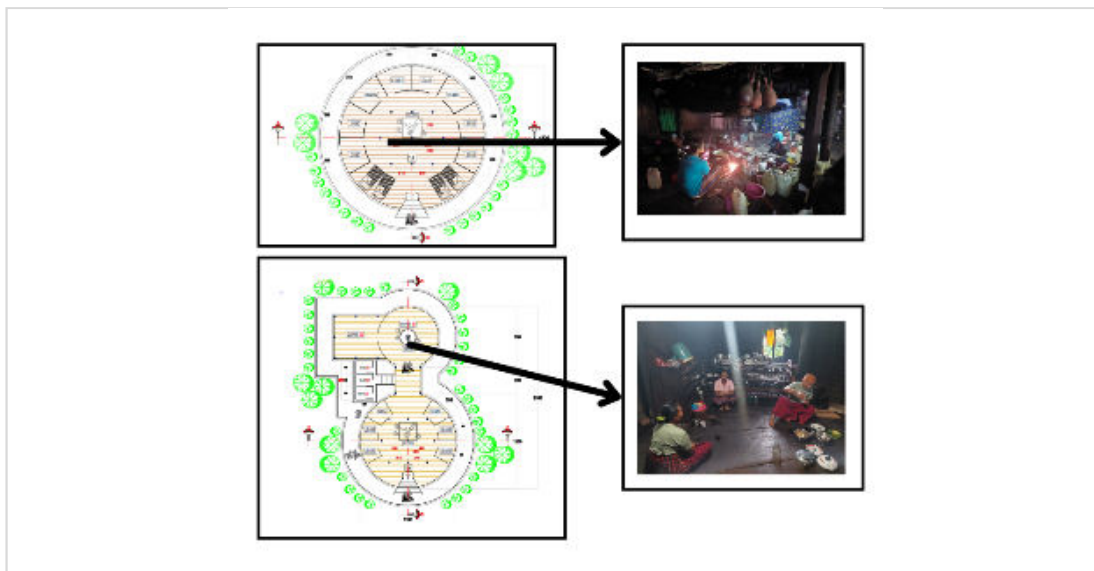
particularly in *Niang Gena Maro*. One of the most prominent changes is the relocation of the kitchen, which, in Manggarai belief, represents the spiritual essence of women in the household. Moving it outside the house disrupts this symbolic meaning.



**Figure 11.** Comparison of Luter Area: Niang Gendang vs. Niang Gena Maro

According to historical accounts, each *Mbaru Niang* house could accommodate numerous families, with each having dedicated rooms. This is no longer the case. Today, only family heads remain in Wae Rebo, while most residents have relocated due to limited facilities and the isolated

nature of the site. Consequently, *Mbaru Niang* no longer fully functions as a residential space, particularly *Niang Gena Maro*, which functions more accurately as a guest shelter.



**Figure 12.** Kitchen Area Comparison: Niang Gendang vs. Niang Gena Maro

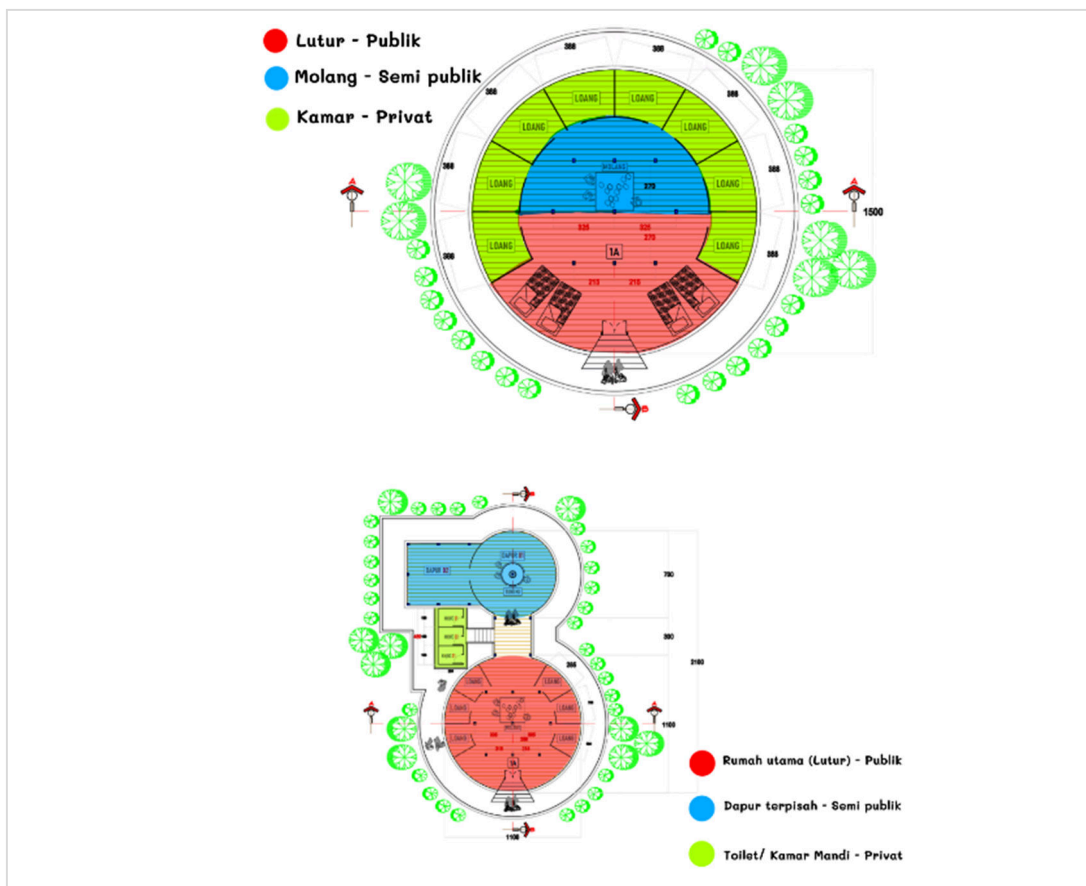


Figure 13. Zoning Comparison: *Niang Gendang* vs. *Niang Gena Maro*

The spatial zoning in *Niang Gena Maro* has also been altered. Traditionally, zones were divided into *Lutur*, *Molang*, and bedrooms. In the current adaptation, rooms have been removed; guests sleep in open beds without partitions. The *Molang* area has disappeared, and the kitchen is now external. This spatial reconfiguration contradicts the philosophical values of gender balance, where separate zones reflected respect for both male and female roles. The lack of spatial boundaries between hosts and guests further diminishes the sacred privacy of the home. Additionally, the cultural practice of *Lonto Le'ok*, while still in place, is now commodified and mainly presented as a performative cultural element to attract tourists especially in *Niang Gena Maro*.

The only remaining function that has not been altered is that of sacred ritual space. *Niang Gendang*, as the primary house, continues to serve as the venue for ritual ceremonies from guest welcoming to other traditional rites. The uppermost level of the house is still used for

placing offerings, preserving its spiritual role unchanged.

Based on the above analysis, the following comparative synthesis can be drawn:

**Table 1.** Based on the analysis above, several indicators can be derived to evaluate the relationship among function, meaning, and form of the *Mbaru Niang*, as presented in the following table:

Aspect	<i>Mbaru Niang</i> in the Past	<i>Mbaru Niang</i> Today
Kitchen	Located in the center of the house, sacred, collective	<i>Niang Gendang</i> : Still maintains the traditional setup <i>Niang Gena Maro</i> : Separated for visitor comfort
Number of Inhabitants	More than 100 people, extended family	<i>Niang Gendang</i> : Only accommodates representatives of households (8 families) <i>Niang Gena Maro</i> : Functions as a shelter for visitors

Aspect	Mbaru Niang in the Past	Mbaru Niang Today
Meaning of the House	Cultural heritage, family identity, symbol of harmony	Largely the same, but has begun to shift toward being a living museum
Spatial Function	Residence, place for deliberation, sacred space	
Domestic Activities	Cooking, sleeping, gathering (daily life activities)	Domestic activities have moved outside; most current uses are related to tourism

**Table 2.** Evaluation of the relationship among function, form, and meaning based on interviews

No.	Indicator	Local community perspective	Perspective of architects and visitors
1	Residential Function	Considered increasingly difficult to inhabit as a residence	Cannot be regarded as a residence, as not all locals reside there
2	Deliberation Space	Still functions as a communal space for deliberation	Still used for community gatherings; <i>lonto le'ok</i> is a key attraction
3	Sacred Space	Continues to serve for traditional ceremonial practices	Still used to perform traditional rituals and ceremonies

### Conclusions of the analysis

Based on the results of the analysis conducted through interviews with the local community, the following conclusions can be drawn:

**Table 3.** Analysis of the relationship Between Function, Form, and Meaning

No	Indicator	Niang Gendang			Niang Maro			Gena
		T	B	H	T	B	H	
1	Primary residence		✓					✓
2	Resident security		✓					✓
3	Gathering space	✓					✓	
4	Decision-making venue	✓					✓	
5	Ritual ceremony site	✓						

No	Indicator	Niang Gendang			Niang Maro			Gena
		T	B	H	T	B	H	
6	Site for offerings	✓						

Keterangan:

T: Remained

B: Change

H: Lost

From the above analysis, it can be observed that the relationship between function, form, and meaning has transformed following the conservation of the site into a tourist destination. Function, form, and meaning are inherently interrelated elements, as form is created due to the presence of both meaning and function. The issue examined in this study is relatively novel; however, this phenomenon is not exclusive to Wae Rebo. Similar cases have been observed in other traditional villages. For example, Bena Village in Flores is also facing the tension between preserving form and the demands of cultural tourism. The distinction in the case of Bena lies in the fact that the spatial form and arrangement tend to be better maintained (Osin et al. 2019).

Likewise, in the villages of Naga and Baduy, the community actively preserves the function and meaning of traditional houses as integral components of their social system, rather than merely visual objects for tourist consumption (Damayanti and Ningrum 2019). In Bawōmataluo, functional adaptations are undertaken by retaining the original structure while cautiously accommodating modern needs, thereby ensuring that cultural meaning is not lost, even though some alterations in form occur (Atmanti and Uekita 2023).

This brings us back to the argument that retaining homogeneous forms of traditional buildings and rigidly adhering to fixed aesthetic expressions fails to accommodate contemporary human needs. The philosophical meaning of a house may be sacrificed for the comfort of outsiders. This situation demonstrates that the relationship among function, form, and meaning no longer complements one another as it ideally should.

Therefore, what is revealed through this analysis is that the process occurring is not one of preservation but rather a freezing of form. This is due to the lack of a complementary relationship

among form, function, and meaning, as previously existed.

## Conclusion

Based on the findings of the analysis, several key points emerge regarding the research outcomes. First, the relationship among function, form, and meaning has changed. Initially, these three elements complemented each other harmoniously. However, after renovations that prioritized the visual elements of form, the components of function and meaning shifted due to changing needs and the emergence of external activities namely, those introduced by tourists.

Second, preservation has transformed into the freezing of values. This has occurred because the fixed form is no longer able to accommodate the original functions and values, owing to the evolving needs of the community and the site's conversion into a tourist attraction.

This research concludes: first, that *Mbaru Niang* holds three principal functions residential space, communal gathering place, and sacred site. Its form symbolizes harmony and the sacred structural order of the Wae Rebo community.

Second, function and form are closely linked through the conical shape, which represents sacredness, balance in nature, and the relationship between humans and the divine. The spatial arrangement is also designed to facilitate its function as a dwelling.

Third, the relationship among function, form, and meaning has shifted, particularly in terms of its function as a residence, due to the prioritization of form. This shift has disrupted the previously balanced relationship among the three. Thus, the objective of conservation should not merely be to freeze the form.

Fourth, the study concludes that preserving the physical form of traditional buildings such as *Mbaru Niang*, without accommodating the evolving dynamics of function and cultural meaning, risks turning conservation into cultural stagnation. Therefore, conservation strategies must adopt a relational approach, positioning form, function, and meaning as mutually influencing and complementary elements. This approach contributes to the development of conservation principles for vernacular architecture that go beyond visual form to

encompass the social dynamics and symbolic values of the communities that own them.

Fifth, this study is expected to contribute to architectural discourse by offering an evaluative approach to the dynamic relationship among function, form, and meaning. By comparing the past and present conditions of the traditional house, this research provides an understanding that in architecture, form, function, and meaning are interdependent. Therefore, conservation efforts must not solely emphasize visual form but must also consider the social context and evolving cultural meanings. This approach can serve as an evaluative model in the conservation of other traditional architectures, particularly in facing the pressures of tourism and globalization.

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#### Author(s) contribution

**Gianti Maria Angela Paridy Man** contributed to the research concepts preparation, methodologies, investigations, data analysis, visualization, articles drafting and revisions.

**Purnama Salura** contribute to the research concepts preparation and literature reviews, data analysis, of article drafts preparation and validation.

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