

The Transformation of Form and Discourse of Identity in Sumbanese Houses and Settlements

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ABSTRACT

In the traditional settlement of Sumba island, the local community transforms the architecture based on their constantly shifting needs. The houses undergo a series of transformations in the interior spaces as well as exterior in both architectural form and implemented building materials. The easy access of factory-produced prefabricated materials substitutes the increasingly scarce nature sourced one. Growing family members force the occupant to modify the existing spatial configuration and function, such as transforming the semi-public veranda into a private bedroom area. On the other hand, cultural and religious transformation forced the removal of the sacred inner hearth, diminishing the ceremonial and cooking capabilities inside the house. This creates phenomena of secondary structure act as the external kitchen as well as creating extension space for the occupants. This paper attempts to clarify the flexibility of space and the significance of identity in Sumbanese settlement as well as the methodology used by the people in transforming the space in both the micro and macro spectrum. Through the comparison of six observed villages, the difference in the transformation process and pattern of each region can be identified. The transformation and the implication to identity shift are divided into several patterns according to the settlement location: hilltop and flatland villages. The process of house and cultural identity shift occurs in both settlement types. The transformation process shows the adaptabilities of traditional Sumba houses in response to the modern needs of the residents, and the discourse of shifting identities occurred constantly in both interior and village scale.

Keywords: *Community, House Form, Identity, Sumba, Settlement, Traditional House, Transformation*

1. INTRODUCTION

The word vernacular is derived from the Latin word *Vernaculus*, which means native or domestic. When combined with architecture, it adds the value of domestic or locality in the broad meaning of architecture. Hence vernacular architecture refers to building, which responded to the needs of the specific people and reflecting the character of the local environment. It is the architecture that becomes and processed by a society located in certain area (Allsopp, 1980). It is best argued that the early involvement of architecture by the people is in the effort of providing shelter from the environment. Thus, vernacular architecture is always responding to the environment and very dependent on the knowledge and culture of the people. Therefore, vernacular architecture is not constant, it changes along with the passing of time, and the way people perceive their houses changes accordingly.

The purpose of the research is to observe the transformation process of traditional houses by local people, which mostly happened in various places in Indonesia. It is possible to trace and define the transformation pattern throughout the years.

The research also aimed to establish a clear understanding of fundamental reasoning that triggers the transformation process that occurs especially in Sumba island, Indonesia. Sumbanese people or the local called themselves *Orang Humba*, is an ethnic group of people that lives in Sumba island. They are socio-culturally structured into several castes and living in many *kabihu* or settlement groups. The livelihood of those who live in the rural area is predominantly horse and kettle breeders, some others are farmers and fishermen, while those living in the cities mostly work as office employees or opening small scale business. Each *kabihu* has settled in several areas designated by their king or leader called *Rato*, and the location characteristics reflect the livelihood of each group. This understanding of the transformation process is built on the basic knowledge of Sumbanese people's cultural values, accompanied by observation of their pattern-making process, and used as a basis in the effort to assimilate the thought process of local people into the architectural form. Therefore, as time progress, the significant cultural and identity changes should occur to each *kabihu* and triggers the transformation process in the form of the house they live in.

2. THEORY AND RESEARCH METHOD

2.1. The Origin of Pacific Pile Dwelling

The assumption that Indonesian vernacular houses always change originated from the notion that the form of traditional pile dwelling in the Pacific region is rooted in the form of the granary. In the Sumba case, the transformation from the granary to the house is by adding a platform beneath the granary floor and enclosed by walls (Sato, 1991). In Sumatera, the Toba Batak has an old custom of converting old granary called *sopo* into dwellings through transformation phases that provided a better kind of *ruma* (Domenig, 2003). The transformation also indicates a continuous thought process in considering the priority value that they decided to be maintained. Certain old features are still in evidence in the house of *Nage*, which has undergone a considerable change (Forth, 2003). These various observations suggest that the house is not static but dynamic objects that keep changing throughout the time.

2.2. Research Methods

The spatial archetype of a house can be seen by observing the relationship between existing values and the physical condition of the house. Observation begins by analyzing the space that includes social dimensions and corresponds to a fixed spatial arrangement (Barbey, 1993). The real essence of

this method is to see the relationship between houses, its function, meaning, and time as an exchanging process between physical and spatial dimensions. This method was put forward by Barbey when he saw the lack of architect's attention to how everyday life affects the spatial organization, thought process and arrangement of goods in it, or how they change within a certain timeframe. It clearly shows that there is a strong influence between everyday life and spatial planning of the occupants.

In traditional society, every element in the house has a strong meaning and influence, implicated by the values or norms that are always enforced. In this case, the community must first acknowledge the relationship between each element of the house, thus making the house well maintained. To better understand how the people and their characteristics influence the form of their house, field surveys and interviews were held with both emic and etic approaches. Six villages across the Sumba island, from both western and eastern parts, were selected and observed, taking into account the location and differences in the topographic characteristics existed in each village. In total, 65 houses were observed from those villages and 10 houses were measured in detail to establish databases for further analysis. The spatial hierarchy and the transformation pattern of each house are then acquired by comparative analysis from the data set. Those comparison data supplemented by the interview data will result in a thorough understanding of the connection between each transformation in the house form and its causative identity shift that triggered the house owner to take the related decision on each phase.

Table 1 List of observed and measured houses in each village.

Location	Village Name	Total Houses in the Village	Measured Houses
West Sumba	Wailolong	7	1
	Parewa Tana	9	2
	Prai Ijing	27	2
East Sumba	Praing Umalulu	2	1
	Watu Puda	13	3
	Mburukulu	7	1

Table 2 Analysis process scheme.

Methods	Target	Obtained data	Analysis technique	Obtained result
Interview	House owners and family members, as well as their neighbors.	House transformation history and cultural triggers for each transformation phase	3D conversion and comparative analysis of change through each period.	House transformation pattern and diagrams
Observation and measurement	The current condition of the house:	Current house form	The current house form is used as a comparison basis.	Hierarchy of space and archetype, as well as the existing values of the house

3. RESULT AND DISCUSSION

3.1. Early Settlement and Distribution

Sumba island is located in the East *Nusa Tenggara* province of Indonesia. The island's proximity to Australia resulting in a transitional climate between tropical and dry, resulting in an extensive grassland landscape. Sumbanese people have a physical characteristic mixture of Malay and Melanesian race, and they adhere to the caste system in their social structure. The combination of these factors influenced heavily on the culture and belief system of Sumbanese people, which later intersects with their underlining mindset and habit in building and modifying their houses.

While nowadays the majority of Sumbanese adheres to Christianity, the old people and their ancestors believe in local religion called *Marapu*. This belief focuses on the existence of the ancestral spirits that dwell in their houses, protecting the family members as well as become the link that connects between the living and their God. Therefore, the existence of ancestral spirits is highly associated with both house form and village arrangement. Perhaps one of the striking features in the village layout is the spatial intimacy between the living and the death, of their tombs and the houses, which are placed side by side. This connection resulting in the triadic division of space in the village, with two opposing ends mediated by the central area. (Waterson, 1990). This means every village has two entry points on either side and a field in the middle where large stone tombs were erected.

Sumbanese house, also known as *rumah adat* in the Indonesian language has a striking characteristic in the form of a thatched roof with a towering high hat in the middle. It has variation in size and height, depending on the location and environmental characteristics around the village. This vernacular houses can be found mainly in the rural area, usually either on the top of the hill, or on the lowland area around river or shoreline, and also depending on the age of the village itself.

The island itself both culturally and politically divided into the western and eastern areas. Historically the western part of Sumba has been divided by warring fiefdom for centuries, while the eastern side, although sparsely populated, more politically dominant (Barry Dawson, 1994). On the other hand, Sumba island is geographically divided into vast savanna and hilly topographic eastern region, as well as mountains and dense forests in the west. Six progress were observed, three of which are selected as a representation of each western and eastern type of village and houses. The result is classified into hilltop and flatland villages.

3.1.1. Hilltop village

The village located in the hilltop area is usually classified and regarded as the old and sacred one, characterized by the existence of a praying altar for Marapu religion called *katoda*, and a ceremonial house called *Uma Mbatangu* in which the ancestral spirits are believed to gather and stay. In general, around 30 minutes to two hours hike are needed to reach the hilltop villages, depending on the accessibility from the nearest road. One of the hilltop villages that was chosen and observed in this research is *Parewa Tana* in western Sumba. Upon interviewing village chief and cultural customary elders, as well as some other community members, the village was established approximately in 1850. The houses are arranged in the lengthwise in the north to the south axis line, following the available spaces in the topographical character of the site. This parallel line and dense house arrangement are common characteristics of hilltop villages, taking advantage of the lacking of vacant land available on the site.

The population of hilltop villages is mostly declining, on average only inhabited by 50 people or less with mostly adults and elderly. This decline caused by the majority of the youngsters decided to move out of the village to live in the city for education and employment reason, or married to other people from different *kabihu* or clan. There are even other villages that nearly deserted, leaving only the elders and *marapu's* ceremonial leaders who decided to remain in the village to conserve the cultural value of the village itself.

3.1.2. Flatland Village

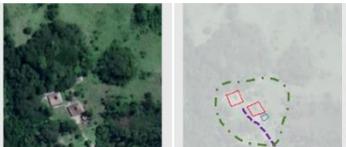
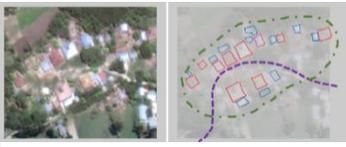
Contrary to the hilltop village, the flatland villages are settlements located near cities or the island's shorelines. Most of the flatland villages emerged as an expansion settlement from the people who moved out from the hilltop villages, to find better access to and from the cities. The village was characterized by an abundance of spaces, making the whole settlement wider with stone tombs erected on the center area and the houses arranged to encircle and facing the tombstones. The majority of flatland villagers work in the cities and therefore much more exposed to technology and assimilate to other cultures as well. Their life becomes much more affected by modernism, and the ease of access also means penetration of electricity to their daily life. The exposure to foreign cultures has the most influence on changing their beliefs from the old *Marapu* to other religions such as Christianity, Islam, or the others. This religious transformation is one of the main factors that greatly transformed their cultural value and identity, thus end up triggering the transformation of house form and values in the spatial hierarchy of Sumbanese houses.

3.2. Village Typology Comparison

The data obtained from the survey is categorized to highlight the connection between population statistics, environment, and house placement layout (table 3). The different characteristics between the hilltop and flatland villages can be easily distinguished by observing at the traced house configuration images in table 3. The houses on the hilltop

villages are arranged in dense linear configuration leaving narrow spaces between each house. The aerial images show that this was the result of the adaptation of village growth to the topographical character, coping with the lack of available space by following the flow of the contours. On the other hand, the land in the flatland villages is much abundant, allowing wider space between each house.

Table 3 Statistic data comparison between six villages.

	Village Name	Established Year	Population	Aerial Image and house Configuration	Topography Classification
West Sumba	Wailolung	1984	84		Flatland
	Parewa Tana	1850	55		Hilltop
	Prai Ijing	1925	68		Hilltop
East Sumba	Praing Umalulu	1800	5		Hilltop
	Watu Puda	1986	130		Flatland
	Mburukulu	1930	93		Flatland

The differences in the characteristics of each village are more visible when grouped into two types: hilltop and lowland villages (table 4). The hilltop villages mainly have limitations in the land area due to the hilly topographical character resulting in a small area of land available to build houses. With a tight distance between houses and squeezed by forest

and ravines, there is no horizontal space left in the village. On the contrary, the flatland village has a much more spacious land area, resulting in an abundance of space and flexibility for the people to develop their houses further following demands in increasing family members.

Table 4 Village grouping based on topographical characters.

Village Name	Location	Characteristics	Images
Praing Umalulu	Hilltop	<ul style="list-style-type: none"> Population growth slows, low expansion demand. 	
Parewa Tana		<ul style="list-style-type: none"> Narrow land, a lot of vertical spaces from topography → vertical house extensions. 	
Prai Ijing		<ul style="list-style-type: none"> Additional space is mostly used as a kitchen or post-harvest working area. No electricity in the village, but some households have a small solar panel and battery to light the house at night. Maintain <i>Marapu</i> religion. 	
Wailolung	Flatland	<ul style="list-style-type: none"> Population growth fast, high demand for new space. 	
Watu Puda		<ul style="list-style-type: none"> Wide land area → horizontal house extensions/secondary structures. 	
Mburukulu		<ul style="list-style-type: none"> Secondary structure functioning as a new kitchen or cooking area and sometimes bedroom for new family members. Receiving electricity connection, resulting in quite large technological influence in daily life (having electronic facility, television, refrigerator) Mostly change their religion to Christianity. 	

3.3. House Transformation Typologies

The transformation of form in Sumbanese house is an adaptation result of the changes in people's daily lives and its possible by the sustainable system imposed in their traditional house construction methods. Their knockdown construction system provides easiness in process of assembly and disassembling, resulting in flexibility in the attempt to rearrange the house configuration by the owner. The most common spatial configuration changes are done in the method of adding a partition wall to divide spaces to create another room or dismantle it if deemed unnecessary. One common

example of this kind of transformation is changing their open veranda area into new private bedroom space for the children. Another common addition is the construction of a new platform deck under the house by mounting new frame sections into the existing column and related structure of the house. This complete understanding of the difference in spatial hierarchic changes and the division of spaces in each house is achieved through tracing the floorplan into diagrams. The comparative analysis of the diagrams from different villages showing the current forms, although different in some elements, has rules that apply in every transformation process (table 5). For example, in the hilltop village where *Marapu*

religion is still being practiced, the core area of the house doesn't experience any significant transformation as it is considered as a very sacred place. Only minor transformations are allowed in this sacred area such as adding or removing partition walls. These walls are built to accommodate the division of spaces according to the numbers of family members and are done by modifying the spaces around the hearth. The owner of the house also able to easily transform the semi-public spaces such as the veranda into private

bedroom space to accommodate the need of a bedroom as the family member and their needs grows from time to time. The need for new spaces always grows along with the new addition in the family member of the house owner. However, as there is a lack of vacant space in the hilltop village, the villagers adapt and outsmart it by constructing new spaces vertically, taking advantage of land contours. Vertical transformation becomes a pattern that is mainly adapted and developed over time in the hilltop settlements (table 6).

Table 5 Hilltop village house sampling and diagrams.

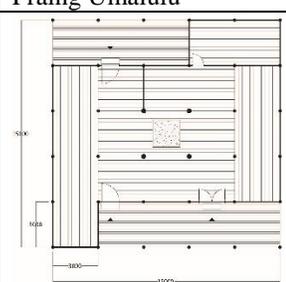
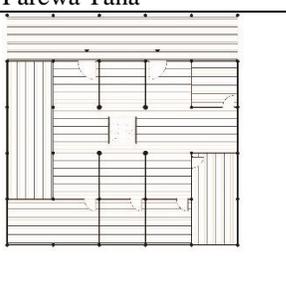
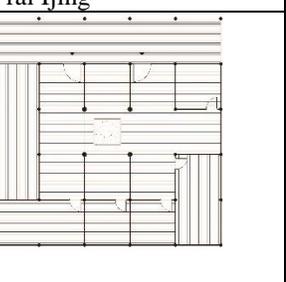
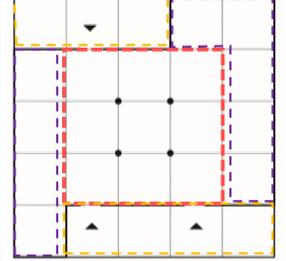
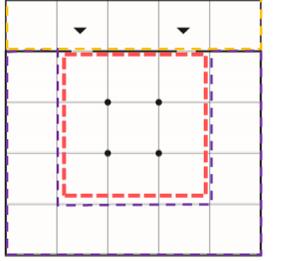
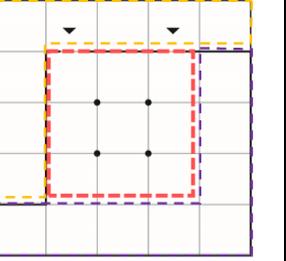
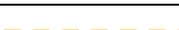
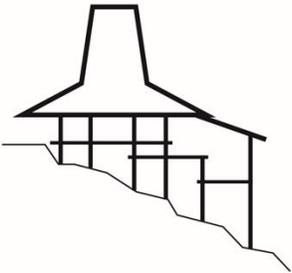
	Praing Umalulu	Parewa Tana	Prai Ijing
Floor Plan			
Diagram			
	The core area of the house	Used for ceremonies and cooking	
	The private area of the house	Bedrooms and in-house activity area	
	Semi-public area of the house	Functioning as veranda, guest reception in ceremonies	

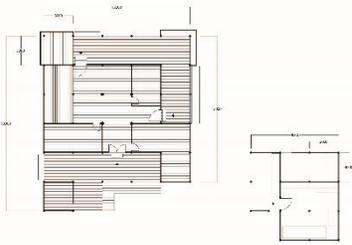
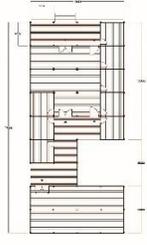
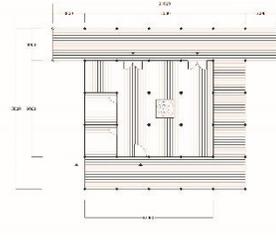
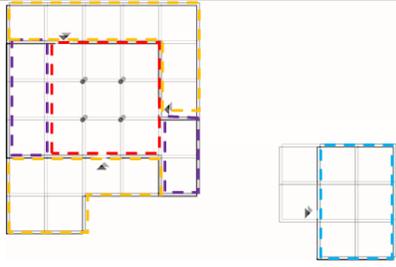
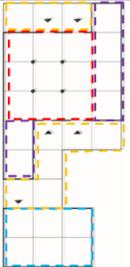
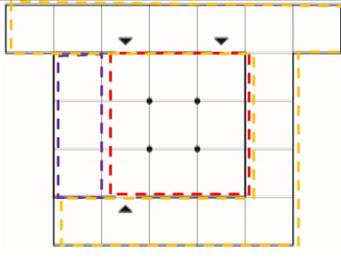
Table 6 Vertical additional space in hilltop villages.

Vertical additional spaces examples	Simplified diagrams
	

On the other hand, the houses in flatland villages undergo a much-varied transformation pattern compared to the hilltop villages. The abundance of land triggers transformation unlimited by the envelope of the main house. Since the religion change is common in flatland villages, any house elements that are considered sacred to *Marapu* were forbidden, and therefore decided to be dismantled. This is one of the major identity shift that occurs in Sumbanese society, and impact greatly on the spatial hierarchy of the houses as the inner hearth that acts as the core space and a pivot in every ceremonial event is removed entirely from the house. The removal of the hearth also meant losing the cooking area,

which responded by constructing a secondary structure functioned as new kitchen separated from the main house area. The influence of electricity and modern technologies gradually introduced into flatland village people's lifestyle by both government programs as well as the young family members who attend higher education levels. Amenities such as television, fridge, piped water, lighting, sometimes even air conditioning, factory cut wooden materials, corrugated iron or zinc roof, to village infrastructure as asphalt road and parking spaces are common transformation in the flatland villages. This also means the transformations that are applied in the houses are more rigid and permanent, and used in the long run.

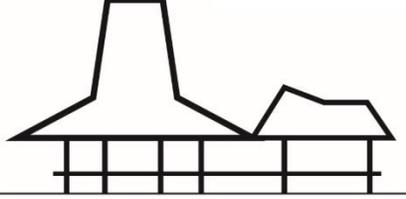
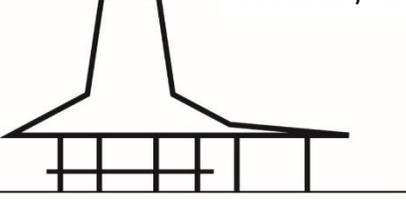
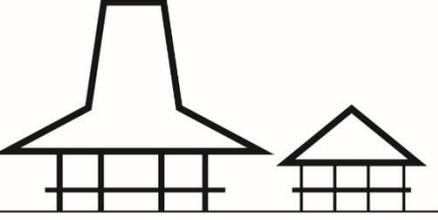
Table 7 Flatland village house sampling and diagrams.

	Wailolung	Watu Puda	Mburukulu
Floor Plan			
Diagram			
	The core area of the house	Ceremony and cooking purposes	
	The private area of the house	Bedroom and in-house activity area	
	Semi-public area of the house	Functioning as veranda and guest reception in ceremonies	
	Semi-public extension area	New kitchen space, food storage, horse stable and in some case new bedrooms	

Observation in the flatland house patterns indicates three types in the secondary structure in addition to the main house (table 8). The first one is the secondary structure connected to the main house by floor but has independent roof structures. The floor connection is purposed for easy access for the house occupants. The second type is the secondary structure as an extension part of the main house. The second type is characterized by extending the roof of the main house to the

extension area, without floor on the extended spaces. This type occurs in the village where the division of land ownership between neighbors is clear. The third type is the secondary structure that is completely separated and structurally independent from the main house. This type is usually established in the higher caste and wealthy family houses where they afford to build a larger kitchen area, sometimes including the addition of new bedrooms or horse stables.

Table 8 Horizontal additional space in flatland villages.

Horizontal additional spaces examples	Simplified diagrams
	<p data-bbox="846 317 971 342">Main House</p> <p data-bbox="1029 348 1268 373">Secondary structure</p>  <p data-bbox="769 606 1386 632">Type 1: Secondary structure connected to the main house.</p>
	<p data-bbox="846 684 971 709">Main House</p> <p data-bbox="1029 716 1268 741">Secondary structure</p>  <p data-bbox="769 974 1370 1024">Type 2: Secondary structure as an extension of the main house.</p>
	<p data-bbox="846 1083 971 1108">Main House</p> <p data-bbox="1029 1083 1308 1108">Secondary structure</p>  <p data-bbox="769 1404 1403 1430">Type 3: Secondary structure separated from the main house.</p>

3.4. Identity Shift and Transformation Phases

Tracing the transformation history of the Sumbanese house also implies on tracking the change of social identity of the occupants of the house. This attempts to indicate the relation between events on the particular year that influences significant transformation that has been done in the house. Through interpreting the existing construction and form, combined with collected stories from the house owner as well as the carpenter foreman and the community members who helped in the construction process, it is assumed that the house undergoes several transformation phases.

Three-dimensional interpretation showing a different pattern between the hilltop villages and flatland villages in modifying the form and spaces of their houses (figures 2 and 4). The topographical character of the site resulting in the limitation in the direction of new spatial construction for each village type. Hilltop village tends to transform the house vertically resulting from the lack of horizontal space availability, and the flatland village built a secondary structure close to the main house. However, if examined closely there is another factor that highly influences the type and functions of the new space. In hilltop village, *Marapu* is still believed and has a strong influence on the placement of various religious objects

and symbols throughout the spatial order of the house. The hearth is still considered as a sacred central point of the house, untouched by any kind of change even though the configuration of the space around it undergoes a drastic transformation. Traditional ornaments such as pig jaws are still seen hanging around the house, while buffalo skulls and horns are still used as foothold steps at the entrance of the house, or wall ornaments. In special cases such as in the house of the ceremonial leaders, the front area of the house where the sacred drum is hung and stored has also never been touched by any form of transformation.



Figure 1 The hearth of a house in Parewatana, surrounded by partition wall dividing the space.

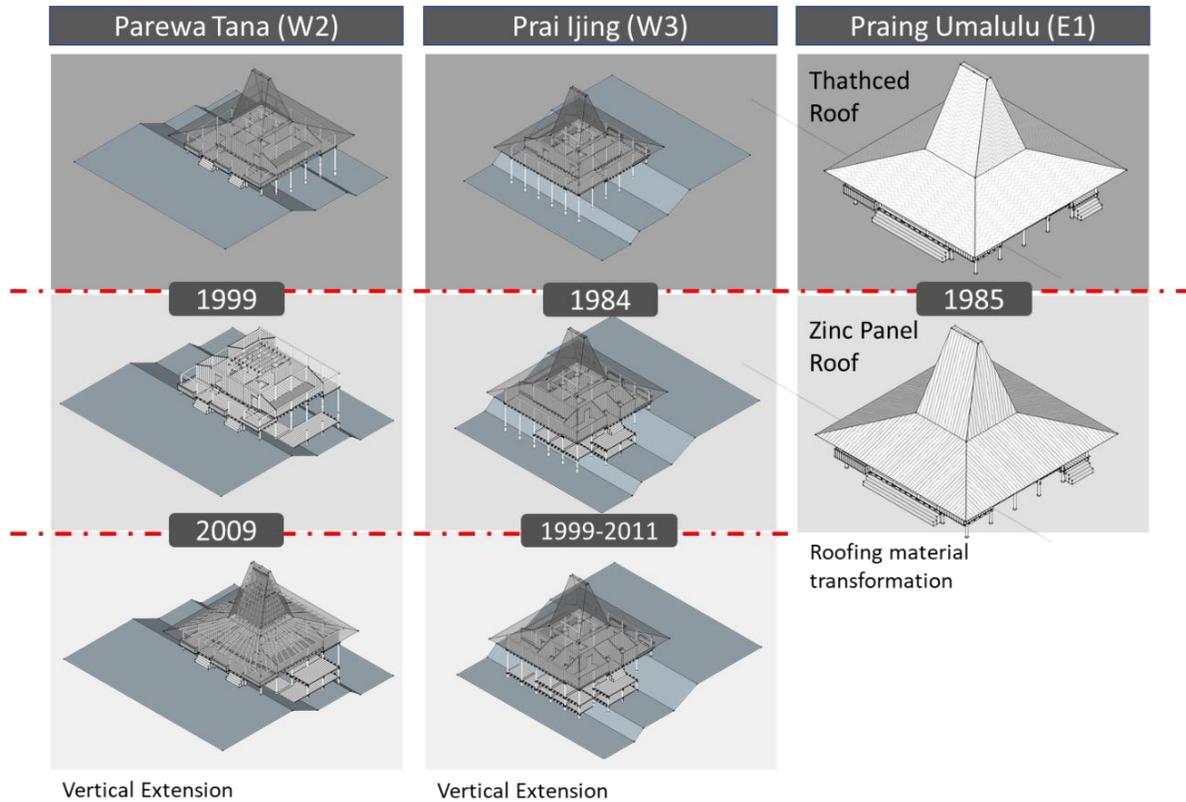


Figure 2 Hilltop village house transformation phases

Flatland village, on the other hand, has more possibilities concerning the transformation of the houses. Most of the flatland villages are new settlements originating from the people who moved out from the hilltop villages, as an effort to create easier and faster access in their commute to the cities. This proximity and easier access to the city means the

community gets exposed to a lot of different and heterogeneous culture, which some of them got adapted into everyday life. This acceptance of external factors influenced heavily on the development of the community's mindset, and one of the most affected is the religious view of the people.

The decline in *Marapu* religion becomes the greatest change in the villager's identity which on one hand erases a lot of sacred values of the house, but on the other hand, becomes a substantial factor in creating the opportunity for the flexibility in the transformation process of their houses. This religious development appears to involve a fundamental change in the way of living in flatland village communities. The majority of secondary structures are allocated as new kitchen spaces with some additional room such as a bedroom or in some cases, horse stable, depending on the needs of the house owners. Albeit the fact that most of the houses in flatland village received various external influences that affect the transformation process, including the shift in applied house materials, the traditional construction methods are still being used. The hearth part of the new kitchen for example, still constructed using a similar block of stone pedestal propping up the fireplace and encircled by four main pillars. This effort to maintain the hearth as closely related to the old hearth in the main house they had removed, shows that the kitchen as space and cooking activities itself still regarded as closely related to their ancestral values. Other cooking-related spatial functions, such as food storages, also follow the old configuration; over the hearth to ensure the benefit of the smokes arising from the fire. Therefore, moving the hearth from the main house to the external kitchen also implying to moving the core activity area from the main house to the secondary structure.

The former core area of the house, now without the sacred hearth, experience major change in the kind of activities being done inside. If before the removal of the hearth the spaces are used for ceremonial and cooking activities, it has now become living room space where the family members gather to chat or watch television. However, the owner of the house still tends to display the new religious ornaments in the former sacred area in the house. The central area of the house, formerly identical to the *Marapu*, is now transformed into Christian or Muslim related ornament display spaces.



Figure 3 Religious ornament displayed on the wall in the formerly *Marapu* related space

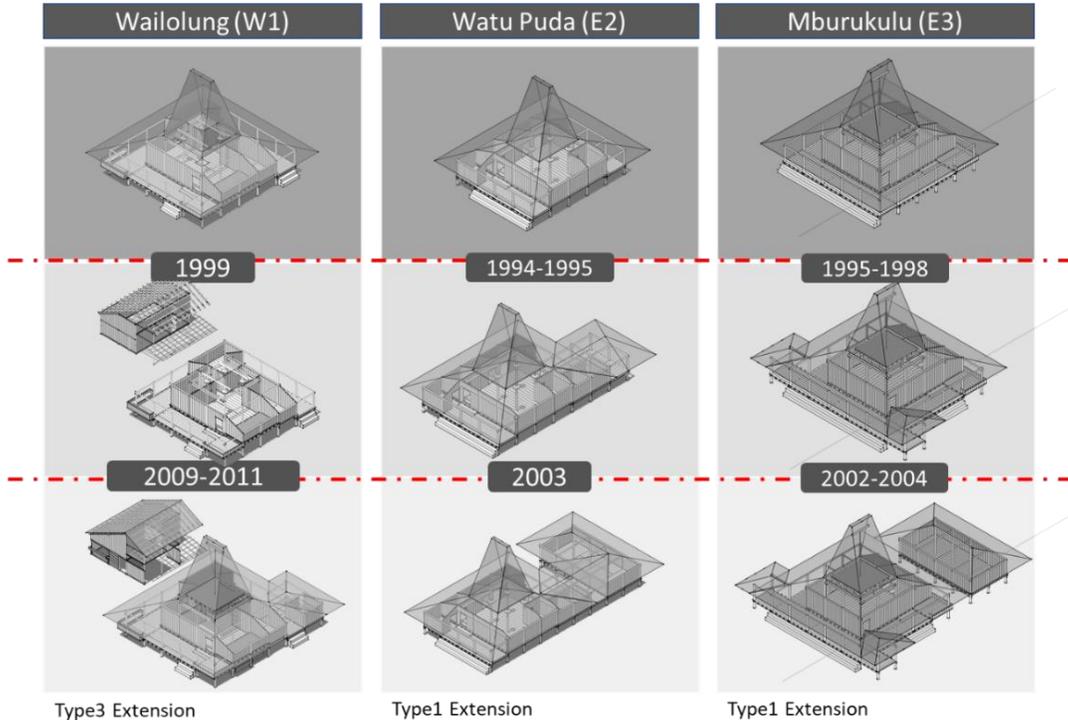


Figure 4 Flatland village house transformation phases

The transformation progress table below (table 9) indicated two types of transformations in Sumbanese houses. Minor transformations such as maintenance and replacement of old materials that happened frequently once every three to four years were not mentioned in the table as it did not affect the house form significantly. The major change, on the other hand, occurs gradually and divided into several phases. It is interesting that from the 6 houses, the phases can be collected into two groups. The first phase of transformation in hilltop village occurred in the span of the 80s to the 90s where most of the transformations are making a new bedroom. This is quite contrary to the flatland villages as the majority of the new bedroom constructions occurred in the second phase. This may suggest the gap of the emergence of new generations between those villages, indicating the decline of the village population as there are no demands for the new rooms on the second phase of the hilltop village in a similar timescape.

In the flatland village, the transformation phases also can be grouped into a two-time frame where the first one occurred in a much longer span between 1994 to 1999 and the second phase is between 2002 to 2011. For a village that the majority of the people converted into non-Marapu religion, the ceremonial associated inner hearth was the main element of the house that is removed initially. Since the hearth is also used as a cooking space, this elimination also triggers the construction of a new kitchen area as a replacement. On the other hand, there are socio-economical factors that affect the transformation of flatland village as more of the young population attend to higher education and bring knowledge into the village communities. As a result, there is tension between ancestral practices pertaining to the free but time-consuming application of natural material to modern knowledge and the idea of time-saving but money consuming prefabricated house materials.

Table 9 Transformation progress between villages

	Parewa Tana	Prai Ijing	Praing Umalulu
Hilltop Village	<ul style="list-style-type: none"> • 1999 (Phase 1) <ol style="list-style-type: none"> 1. Transforming veranda into bedrooms 2. Construction of external deck under the house • 2009 (Phase 2) <ol style="list-style-type: none"> 1. Transform veranda into bedrooms 2. Expand the deck, construct a new deck on the other side of the house. 	<ul style="list-style-type: none"> • 1984 (Phase 1) <ol style="list-style-type: none"> 1. Construction of additional bedroom. 2. Changing thatch roof to zinc roofing. • 1999-2011 (Phase 2) <ol style="list-style-type: none"> 1. Chosen as a tourist village by local government, receive development funding. 2. Structural material change: wooden → concrete. 3. New bedroom construction. 	<ul style="list-style-type: none"> • 1985 <ol style="list-style-type: none"> 1. Roof material change: straw → zinc roof. <p>The extensive transformation of the sacred <i>Marapu</i> area in the house is strictly prohibited.</p> <p>Strong belief in <i>Marapu</i> caused the house to undergo very minimum changes.</p>
	Wailolung	Watupuda	Mburukulu
Flatland Village	<ul style="list-style-type: none"> ▪ 1999 (Phase 1) <ol style="list-style-type: none"> 1. Inner hearth removal 2. Construction of external kitchen ▪ 2009-2011 (Phase 2) <ol style="list-style-type: none"> 1. Expanding the external kitchen area 2. Construction of additional bedroom in the main house 3. Construction of a new storage room in the main house 	<ul style="list-style-type: none"> ▪ 1994-1995 (Phase 1) <ol style="list-style-type: none"> 1. Construction of new room on the back of the main house 2. Veranda deck extension as room access ▪ 2003 (Phase 2) <ol style="list-style-type: none"> 1. Inner hearth removal 2. Construction of the external kitchen, connected to the main house 	<ul style="list-style-type: none"> ▪ 1995-1998 (Phase 1) <ol style="list-style-type: none"> 1. Veranda extension construction 2. Construction of two additional bedrooms ▪ 2002-2004 (Phase 2) <ol style="list-style-type: none"> 1. Inner hearth removal 2. Construction of external kitchen

4. CONCLUSION

The comparative analysis on transformation of house form in Sumba indicates the strong connection between the topographical location of the houses and the transformation pattern that occurred. The transformation in Sumba houses are divided into two axes, either vertically or horizontally, and the location of the house greatly influences the direction of change. In a hilltop village, the transformation is done vertically, creating a trade-off between the limitations on internal space modification caused by religious factor and dense layout between the houses, with flexibility utilizing space under the house. On the other hand, the flatland village house utilizes the abundance of land availability which enhances the flexibility in repurposing and transforms the form of the house.

The changes in socio-cultural factors on village communities also influence the type of necessities that triggers the form of newly constructed facilities. The hilltop villages focus on constructing new bedrooms to get around the growing number of family members. The persistence of *Marapu* religion creates limitations in transforming the core part of the house, leaving it intact until the current time. In flatland villages, *Marapu* religion has faded resulting in the removal of strongly related house elements especially the hearth. Thus, the majority of newly erected space is appointed as the kitchen. Moving the kitchen from the main house to the outside also impacts the kind of activities that took place inside the main house. The main house becomes solely used for sleeping and receiving guests, and the other family gathering activities happen around the kitchen in the secondary structure.

This research implies that in a society where there is no profession such as architects, the house evolved by constant spatial modification carried out by the local community. Through this process, the identity change of the occupants of the house directly affects the daily life of the occupants of the house, influencing the decision-making behind the process of house transformation. Therefore, we can gain an understanding that the knowledge of local architecture not only passed down to the newer generation but also received new values that influence the form of the house. Therefore, the research on this topic should be discussed more frequently to maintain the updated analysis of the latest form of the house.

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