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VERNACULAR DWELLINGS

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VERNACULAR DWELLINGS

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Traditional Dwellings and Settlements

Working Paper Series

HIDDEN IN PLAIN SIGHT: AN EVALUATION OF THE VERNACULAR ARCHITECTURE TRANSFORMATION IN INDONESIA IN THE PAST DECADE

Athina Ardhyanto, Feni Kurniati

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HIDDEN IN PLAIN SIGHT: AN EVALUATION OF THE VERNACULAR ARCHITECTURE TRANSFORMATION IN INDONESIA IN THE PAST DECADE



This study departs from the question of what makes vernacular buildings vernacular. Suppose a local material is made into a building by the local community, with no architectural education background, but rather with local construction knowledge and local cultural values and lifestyle. Is it traditional or vernacular architecture? If one local aspect changes, will it still be traditional? What if all the aspects change? Will vernacular architecture no longer exist? Will vernacular architecture always be limited only to traditional materials and forms?

In Indonesia, local material is no longer fully accessible, making switching to industrialized materials such as reinforced concrete and lightweight concrete blocks a common phenomenon. Accessible local materials, such as wood for structures or walls or thatched grass for roofs, are now becoming expensive as they require many human resources, annual maintenance, or a complicated, expensive, and extensive procedure to procure. These limit the users of these local traditional materials to the ones who can afford them, such as ex-pats, hotel resorts, or cultural centers. The statistics from the macro analysis of Indonesia's poverty from the Central Statistics Agency (BPS Statistics Indonesia) in the last ten years are proof of that. This study utilizes and analyses these quantitative data using the data tabulation method to understand the trends in physical transformations of vernacular buildings in Indonesia. It shows that urban and rural areas of Indonesia see houses change from wooden walls to brick-and-mortar ones, from terracotta tile or thatched grass roofing to zinc sheets. Poor and non-poor households are transforming in the same direction, which is the picture of the current vernacular of Indonesian architecture.

This paper further discusses the finding by incorporating the recent trend in vernacular architecture dictated by the government's tourism development agenda in 2015 to establish ten prioritized tourism destinations concentrated in rural areas across the country. Moreover, it argues that while tourism is seen as a tool for alleviating poverty and a catalyst for modernization and lifestyle changes, these two factors also play significant roles in transforming vernacular architecture. This paper concludes with a discussion highlighting conflicting outcomes of vernacular architecture-based tourism practices, such as debates between decreasing poverty and environmental change, local cultures and modernization, and the extent of negotiating with the preferences of international tourists and lifestyles. The discussion leads to questions regarding the vernacular of Indonesian architecture that will need further investigation. Finally, it indicates the need to find a meeting point between the locals and the imported, as the transformation in these areas during intense developments will be critical to the future of vernacular architecture in Indonesia.

1. INTRODUCTION

Vernacular architecture as a building tradition undergoes a continuous transformation through time and generations, responding to contemporary conditions, be it sociocultural, political, economic, or environmental, at a specific time and place. Over time, these issues influence the architectural production manifested in the built environment. Departing from the originators of vernacular architecture knowledge, such as Rudofsky, Oliver, and Rapoport, to name a few, this study uses their perspectives on defining vernacular architecture that it refers to buildings of and by people, with their production heavily relying on natural attributes, availability of materials and techniques on the given place and time¹. This perspective opens

the possibility to see ordinary buildings as a record of changes and transformations undergone through time resulting from various aspects, be it social, political, economic, and environmental. This paper aims to evaluate the physical modifications of domestic and ordinary houses in Indonesia. This study consists of two parts. The first evaluation will be based on changes in housing main materials, while the second part will explore house transformation concerning image and identity. This paper further elaborates on factors dictating and influencing such transformation in vernacular houses across the country.

Like other vernaculars around the world, vernacular houses in Indonesia have been characterized as buildings with organic integration into their natural surroundings². Historically, Indonesian vernacular houses heavily relied on natural resources for housing materials, namely bamboo and wood for structure and wall, and palm fiber or water reed for roof. However, as the world has become increasingly connected, growing attention has been devoted to studying the modern development of vernacular architecture³. One of the focuses is material changes on vernacular houses as the impacts of modernization and globalization cause eroding traditional social patterns and environmental conditions.

In terms of natural resources, Indonesia once became one of the top exporters of logs; however, in the late 1980s, the country experienced environmental degradation due to the vast extraction of natural resources, which caused problems such as extensive land conversions, the loss of forests, pollution, and the increasingly worrying issues on the future availability of water supply⁴. Therefore, in the end of 1990s, the government established a new agency called “Environmental Impact Control Agency” to work together with the Ministry of Environment ministry to deal with environmental policy and enforcement to control and ensure the sustainability of natural resources⁵. Following this regulation is the publication of a Law Concerning Forestry limiting access to woods, including those used for housing materials⁶.

During this period, when access to natural materials for housing was reduced, the government promoted modern materials for vernacular houses. A national program designed to support this agenda is 'Healthy House', implanting the image of being civilized through having a healthy house characterized by materials selections: natural vs. fabricated. This program gave communities monetary support to replace their houses' materials, from natural (wood, bamboo, and thatched roofs) to modern (concrete and zinc sheets)⁷. Due to such material changes, there was a significant growth in the number of vernacular houses with modern materials across the country, sometimes even in the form of traditional houses with elevated floors and pointed roofs⁸. Here, it is clear that the governments made an association between house materials and the owner's status, that using industrialized materials represents a higher and better social and economic status of the occupants. In fact, such a conception is still used as the basis of consideration in developing housing qualities in Indonesia⁹.

As the country progressively moves towards the tourism industry in regions with tourist attractions in the rural areas across the country, the government has initiated a program called 'sarhunta,' a tourist homestay injected in local houses to support this program. The government targeted low-income households to participate in this program by providing financial support to improve their housing conditions. This aligns with the national goal of using tourism as a means of economic alleviation¹⁰. The latest statistics from the Ministry of Public Works and Housing show that in 2020, the government built 1,843 homestays and 2,836 units renovated, while in 2021, it produced 186 units of new homestays and 711 units renovated¹¹. Such large-scale developments change the morphology of vernacular houses across the country, which raises a question on the basis and guidelines used for architectural interventions. This paper examines this as an opportunity to investigate changes and transformations made to vernacular houses to support tourism programs.

2. REVISITING VERNACULAR ARCHITECTURE

Defining what vernacular architecture is has always been challenging. One of the main reasons is the breadth and diversity of the objects under study, that "[a]t any given time and in any given place almost any kind of building can be included within the boundaries of...vernacular architecture"¹². Pevsner's famous statement, "[a] bicycle shed is a building; Lincoln Cathedral is a piece of architecture," complicates the delineation¹³. For Pevsner, the scope of 'architecture' does not include domestic, ordinary buildings or small houses. It eliminates vernacular buildings from the architecture field. However, over the last hundred years, the study of vernacular architecture has greatly changed and matured. Rudofsky used the term vernacular architecture to refer to buildings of and by the people, "architecture without architect," where architects or specialist designers are not employed in producing the building. In his photo exhibition in the Museum of Modern Art, he introduced the unfamiliar, non-pedigreed architecture from around the world. He challenged the concept of the art of building¹⁴. Rudofsky's work helped set the base for vernacular architecture field development and resonated with many scholars.

As attention to and discussion on vernacular architecture is more prevalent, the definition evolves and is sometimes interchangeable with traditional architecture. Rapoport proposes a continuum classification of building tradition with four points, marked by primitive architecture at one end, then vernacular architecture, followed by popular architecture, and finally high style architecture at the other end¹⁵. He distinguishes vernacular architecture as a folk building tradition with an emphasis on direct relationships to the users: vernacular architecture grows directly out of the needs, means and natural order of users. With a more anthropological definition, Oliver argues that "vernacular architecture comprises the dwellings and all other buildings of the people, [r]elated to their environmental contexts and available resources, ...[and] customarily owner- or community-built, utilizing traditional technologies¹⁶. These scholars, through cases and examples

provided, directs the discourse of vernacular architecture to cultural groups such as indigenous communities, often with a very distinct form of buildings. However, many scholars later challenge such limitation by gradually parting away from the focus on distinctiveness of the building form. For example, Davis proposes a definition of vernacular architecture through three qualities buildings should have: stability over time, repetitive nature in a particular place, and the ability to change when necessary¹⁷. It opens possibilities for all types of buildings around the world to be considered as vernacular, regardless of their cultural groups or their relation to traditional culture.

Problematizing these terms is useful to understand the debates embedded in using the two terms, which will help to better comprehend the dynamics in the context of Indonesian history. To understand vernacular and traditional terms within the discourse of Indonesian architecture, one cannot look away from the historical perspective of the country's political dynamics. The term "traditional" is often seen as revival of the New Era with Soeharto's cultural politics that built forms, identified as "traditional" were preserved for project of modernity and nation-state building. Therefore, the use of vernacular (in place of the traditional) is often associated with the new era, encompassing the sense of informality, memory, and practices of everyday life, instead of hierarchy of architectural evaluations¹⁸. Tjahjono, as one of supporters of the term vernacular, in his inaugural speech points out that "history of architecture has moved from its focus on the styles of monumental buildings to the analysis of the spatial ordering of everyday life," which putting small mundane domestic houses within the scope of architectural knowledge¹⁹.

However, regardless of such developments, there is still resistance to the term 'vernacular' due to its etymological definition, which although ideas surrounding it develop over time, has an impression of low culture, primitive and uncivilized, inherent in it which one cannot ignore. Priotomo takes an 'oppositional' approach to reject the term vernacular and instead proposing the term 'Nusantara' when referring to local architecture in the country, highlighting the tradition of the society-without-writing in producing their architecture. Nusantara refers to the Indonesian archipelago, firstly proposed by Doves Dekker to imagine the Indonesian regions. The term itself originates from the Old Javanese Sanskrit word of 'Nusa' (island) and 'Antara' (in between), which convey the idea of a 'whole' archipelago under the influence of the Majapahit Empire²⁰. This term is then picked up by the current governments in promoting and developing tourism programs in Indonesia. Various architectural competitions are held to promote local architecture under the theme of 'Nusantaran Architecture'. This approach, however, is again putting vernacular/traditional architecture in the hands of authority rather than those who use the space as part of their daily lives. This is because it typically maintains the pristine form of the buildings and hides the ordinary elements of everyday lives to provide foreigners' eyes with different and exotic experiences. Consequently, such practices shift the

definition of vernacular architecture towards the 'preserved traditional' ones, while those buildings with the nature of mundaneness and domestic are out of the imagined tradition.

Finally, relying on the understanding of vernacular architecture as buildings of and by people, with no specialized designers involved, this paper defines vernacular architecture as buildings built by and for the owners specific their specific needs and housing affordability. While many studies focus on the modern developments of architectural heritage²¹, this study takes this opportunity to look at changes and transformation on the ordinary domestic buildings as the face of contemporary vernacular architecture development in Indonesia.

3. THE TRANSFORMATION: MATERIALITY, ACCESSIBILITY, AND AFFORDABILITY

To understand changes in the contemporary vernacular buildings in Indonesia, it is necessary to see how the modernization and globalization takes part in this transformation. For instance, changes in dwelling culture that younger generations gradually leave agriculture-based livelihood and embrace the rise of industrial paradigm shaping modern production and consumption with a tendency to be more functional, economical, fast, and individual, instead of gradual and communal²². Another reason for this change is that there is a growing preference for modern buildings that are usually identified by the use industrialized materials as an image of being modern and civilized as promoted by the governments²³. In addition, accessibility to natural materials (in most cases, wood) is increasingly limited. In other words, maintaining and constructing a vernacular house the way it used to be, by using the same materials of wood and thatched roof, has become significantly more costly compared to replacing the materials with industrialized ones such as concrete and zinc plate²⁴. Replacing vernacular materials with the fabricated ones has been increasingly mushrooming in Indonesia since 1990s, which is considered as the mark of modernization process in the country²⁵. In contrast to being modern, the governments perceive vernacular architecture as comprised of primitive buildings that need to be replaced to strengthen the civilized image of an independent nation²⁶. This consequently led the government to encourage homeowners to improve their houses by replacing the materials with more modern ones²⁷.

The causes of material change in vernacular architecture, especially in the 1990s, can be traced back to the material sourcing. Amongst the many natural materials used in previous vernacular architecture, one that is governed under national law is wood. The first law in Indonesia to govern forestry and define the allowed type of forests to source wood was made in 1999²⁸. This law refers to the first law of agrarian rules made in 1960 by the Indonesian government after the nation's independence to manage the authority over land²⁹. The next references were also from the 1990s concerning conservation of natural resources and their ecosystems,

spatial planning, and environment management³⁰. In the four references there was no mention of wood sourcing as they were mostly regarding spatial planning and environmental conservation. This leads to the assumption that the reduce of wood in vernacular architecture in Indonesia started after the implementation of this law in 1999.

The law divides the forests into three types: conserved forests, protected forests, and production forests, and mentions how wood can only be sourced from the production forests³¹. There are procedures to apply for the logging of these wood, and even though it can be applied individually or by group³², the reality of the process is that it is complicated and costs a lot of energy and money compared to their previous wood sourcing processes. Although the steps are daunting, some traditional villages have managed to get their forest as their registered customary forest for them to conserve, protect and harvest according to the communities' customary laws. This type of forest is directly linked to their existence as a traditional village and allows them to continue the use of local timber for their traditional vernacular architecture. However, it does not cover the whole of the Indonesian vernacular architecture outside the traditional villages. With many regulations about timber standardization and export, it seems that this decline of wood in vernacular architecture is not yet perceived as an urgent problem that needs to be solved.

On the other hand, the government is currently highlighting the need to provide inhabitable healthy houses, especially for lower income Indonesian citizens³³. These programs grant the applicants a sum of money that is used for the material and construction of a very basic house with a disclaimer that the applicants should provide other things that they require in their residence outside of the proposed drawings³⁴. The goal is to reduce uninhabitable houses which are categorized through the buildings' structural resilience, area of the house per person, sanitation system and access to drinking water³⁵. Currently, there are three aid types giving support in creating livable houses with different levels of outputs and target different levels of low-income households. In addition to self-funding the house's completion, applicants must participate in workshops on standards of healthy and livable houses. This effort to increase awareness of a better lifestyle is beneficial for the people if applied according to the local context and material availability, hence avoiding adding more power disparity.

The aid implemented in the tourism prioritized regions are the inhabitable houses with business, targeting households with low income, usually referred to as tourism residential facilities (*sarana hunian wisata* or abbreviated as *sarbunta*). The material used in this program may adjust to the material availability in each area³⁶. Although the applied policies on *sarbunta* projects are limited to be publicly accessed, the process of material selection of another aid type is said to be delegated to the local managers to assess available local materials along with the recipients³⁷. This gives a hope that the locals can continue their vernacular material in

these new partially government-funded houses, as there is only one mention regarding the material and type of houses in each region, published in 2002, which was to regulate the housing aid program of the previous cabinets ³⁸. Hence, leading to the assumption that if local material is not used in the recent projects, apart from the expensive price on timber as mentioned before, it might be due to the changing preferences of the recipients, designers, and government officials, because of the engrained standard of housing projects from the 2002 projects.

4. METHODOLOGY

In this research, the methodology will be to tabulate data from the two set of series of "Indonesian Macro Poverty Calculation and Analysis" from 2012 to 2022 and "Regency/City Poverty Data and Information in Indonesia" from 2002 to 2022 published by the Indonesian Central Statistics Bureau. The first data set is to portray and analyze the data of transformation recorded, while the second data set is to portray the socio-economic condition of the regions in the tourism development scheme of the national agenda. Then this data will be analyzed along with findings from an interview who is a recipient of the government aid for tourism accommodation residences. The interview is not to reflect the whole process of the program, but to help portray the depth of design intervention experienced by the recipients.

The first data set will also provide insight on how the statistics perceive the transformation of the houses in a decade, from 2012 to 2022. The transformation datasets available are the area size, materials used, lighting source, water source, latrine type, to ownership of their residence. The data collected in this research will focus on the architectural elements which contribute to vernacular architecture, such as the area of their houses and the materials used in those houses.

On the other hand, the second data set will aid in picturing the socio-economic context of the regions in two decades, from 2002 to 2022. This insight gives us a glimpse on the social dynamic condition especially with direct intervention from the national government. The interventions under the national tourism development scheme are mostly direct instructions from the national executive function as the tourism body of authorities in each destination are built and positioned under this function. This gives their decisions for the tourism agenda more powerful in both the national and local contexts.

The aim of the interview was to investigate the depth of the changes the recipients had gone through and the actors behind those decisions. This is important to understand as it gives perspective into how their vernacular architecture is built, and on whose sets of standards were the decisions based upon. The interview took place in October 2021 in Labuan Bajo, one of the prioritized destinations, with the informant's house completed in January 2021 and some houses in the area still under construction.

5. FINDINGS AND DISCUSSION

In the macro calculation and analysis of poverty in Indonesia, the characteristics of houses are recorded, not to understand the transformations of the built environment, but to recognize which characteristics are tied to which group of households, the poor or non-poor. These observed characteristics go as far as the infrastructures available in and the ownership of the houses, but for this paper the analyses will focus on the transformation of physical and territorial aspects of the houses. This is done with the aim of achieving an insight into how vernacular architecture has evolved. The data tabulated in this section is from 11 series of publications, spanning from 2012 to 2022.

Before analyzing the tabulated data, the definition of poverty used in the series is based on the basic needs approach. Poverty is defined by the economic inability to fulfill basic food and non-food needs. These basic food and non-food needs are calculated to a month of expenditure and used to define the poverty line. The households with monthly income lower than this amount of monthly estimated basic needs are deemed to be poor households, positioned under the poverty line. The poverty line is calculated separately by province and creates a different image of poverty based on each region. The illustration of poverty is further divided into urban and rural areas in some statistics, to give insight into the different characteristics the poor and non-poor households show in different settings.

The first aspect analyzed is the area size per person in each household. Shown in Fig. 1 is the tabulated data from the series published in 11 years. The minimum area used in this series is 8 m² per person in each household to ensure privacy and health of the residents. If a household has a house with less than 8 m² per person, then their house is deemed unhealthy by those standards as it cannot provide the bare minimum of a livable space. In **Error! Reference source not found.**, the poor households always have a higher percentage of houses not meeting the minimum area standards both in urban and rural areas. Both poor and non-poor households that do not fulfill the standard have decreased in 11 years, both in urban and rural areas, with the poor households decreasing more than the non-poor households who despite of that have a more constant decrease. The decrease of houses with uninhabitable living space slowed down from 2015 and stagnated until 2022. The number of poor households having the minimum area space, above 8 m² per person and below 15 m² per person, are quite constant in the series. It shows how both groups of households have a similar perspective on how their houses need to increase in area. The government housing aid program for the low-income households has highlighted the healthy minimum area during their implementation period. This leads to the belief that both households share the same view with the government, whether it was a direct result of their programs or not, that the area of the house should be at least 8 m² per person and, if possible, they would further increase.

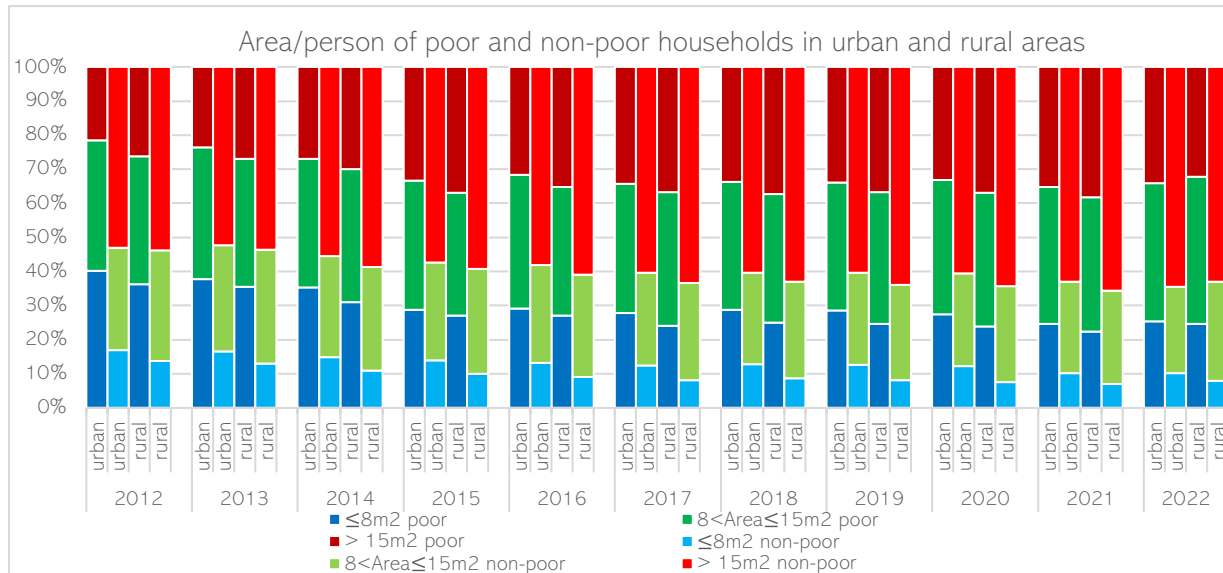


Fig. 1 Area/person of poor and non-poor households in urban and rural areas in Indonesia 2012-2022

From the statistical series, the conclusions of the analyses on materials used in the poor and non-poor households are mostly to identify which materials are more related to which group. This was said to be essential in urban planning, yet it lacks the humanity and leads to the assumption that this is to segregate the haves and have-nots through the materials used in their houses. However, in learning the transformations of vernacular architecture, this dataset can be used to see the trend that most people are going to follow, by their economic background and their urban-rural context.

The first material assessment was on the floor material. The variety of flooring used in this dataset is limited to two, soil or other than soil. In Fig. 2, the tabulated data from 11 years is shown and gives information on how the number of households with soil used as their widest floor type constantly decreases from year to year. This trend is found in both poor and non-poor households. It is worth noting that in urban non-poor households, the use of soil as a flooring material is minimal. Yet, this small presence may indicate personal preferences over affordability.

It is mentioned in the series, that the use of soil floor in houses might be related to the traditions and culture of a community. However, it does not mention which type of house these households have, which might be either stilt house or landed house. The decision to limit the floor material to binary answers of either soil or other than soil was not mentioned in any of the published series. This leads to the assumption that they identify poverty with having bare soil flooring and anything else is healthy and matched the livable house standards.

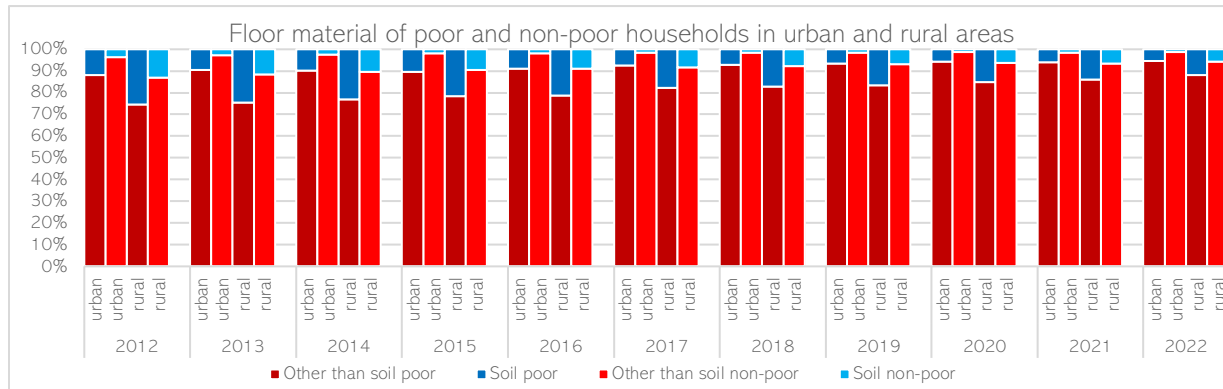


Fig. 2 Floor material of poor and non-poor households in urban and rural areas in Indonesia 2012-2022

The graph depicted in Fig. 3 illustrates a noteworthy shift in roofing material preferences among households in both poor and non-poor communities. Over the past 11 years, there has been a growing inclination toward using zinc sheets as the primary roofing material. Despite this emerging trend, the predominant roofing material in both types of communities, particularly in urban areas, remains to be concrete, terracotta tiles, or bitumen.

According to the graph, houses in poor households, mainly located in rural areas, commonly featured roofs made of natural fiber. Yet the use of natural fiber decreased in both poor and non-poor communities, regardless of their urban or rural locations. In urban areas, the prevalence of thatched grass roofs started at approximately 2% in poor households and less than 0.5% in non-poor households. However, by 2022, these figures had dwindled to 0.35% for poor households and 0.07% for non-poor households. In rural areas, poor households saw a 3.76% reduction, while non-poor households experienced a 1.38% decrease in the use of thatched grass roofs. Other alternative roofing materials followed a similar trajectory, albeit with considerably lower percentages. Consequently, the graph suggests a likeness in roofing materials between poor and non-poor households, with a slight tendency toward adopting zinc sheets.

The data series concluded their analysis that households with thatched roofs predominantly belonged to the poor category. This could also lead to the questionable message that houses with natural fiber roofing can be an identification of the economic class of the household, even though it was part of our unique identity and culture in the past. If amplified, this message can further encourage the adoption of zinc or reinforced concrete roofs as the future of our vernacular architecture.

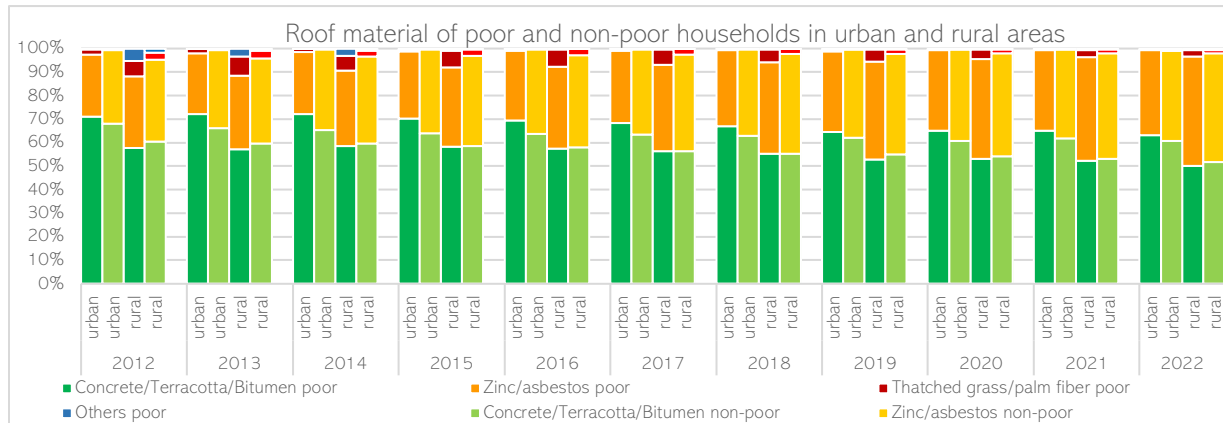


Fig. 3 Roof material of poor and non-poor households in urban and rural areas in Indonesia 2012-2022

Fig. 4 provides insights into the evolution of wall materials within both poor and non-poor households over the past decade. The rural and urban areas exhibit contrasting amounts, alluding to the disparities between poor and non-poor communities. In rural non-poor households, brick-and-mortar walls dominate and exhibit a steady increase over the decade. In 2012, rural poor households had a nearly equal distribution of brick-and-mortar and wooden walls, surpassing bamboo, and other materials. By 2022, the proportion of brick-and-mortar houses increased by 15%, while wooden walls decreased by more than 5%. Bamboo walls, on the other hand, experienced a significant reduction, declining by over half their initial percentage in both rural and urban areas and further decreasing in non-poor households. By the end of the data series, it was mostly found in poor households. This may lead to the belief that bamboo is being opted out by both groups if they can afford to change to other materials.

From this tabulated data of walls transformation, it shows that the trend Indonesian vernacular architecture is heading towards is brick-and-mortar walls. The urban areas, with both poor and non-poor households, have already made the switch to brick-and-mortar walls. As time goes by, the rural counterparts follow suit. This can also lead to the hypothesis that as a rural area becomes urbanized, the houses will inevitably switch to brick-and-mortar walls along with the economic increase of the households.

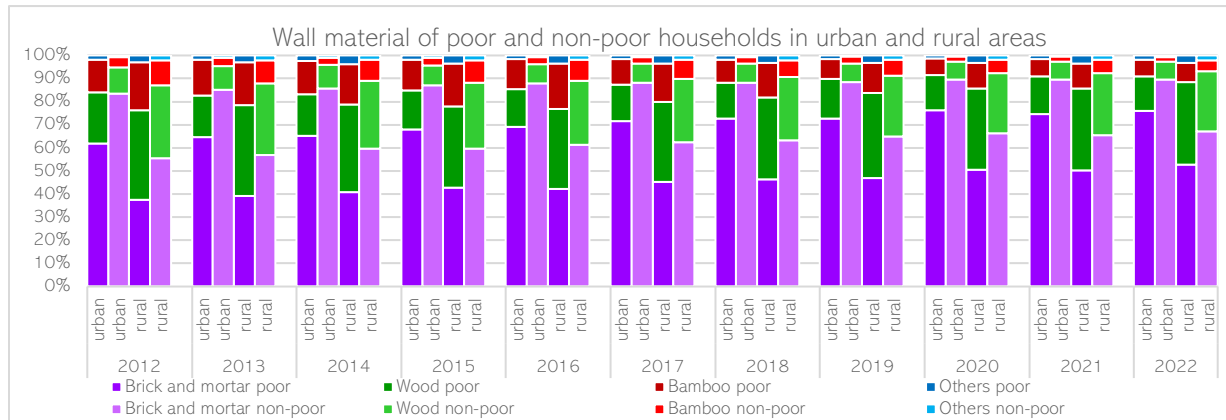


Fig. 4 Wall material of poor and non-poor households in urban and rural areas in Indonesia 2012-2022

In summary, the only data of architecture transformation was collected to help identify the trend of poor and non-poor households through their built environment in both urban and rural context. It shows how the houses' area size increased significantly in the beginning of the series but then had a very slow increase since 2015. Most houses have opted out bare soil as their flooring material. Then the trend of roof material has gone towards the increasing use of zinc. The walls have the undeniable tendency to be made of brick and mortar. This is the current projection of Indonesian vernacular architecture, a house with flooring material other than soil, zinc roof and brick-and-mortar walls.

However, a deeper look into the data series' conclusions shows the perspectives of the people behind the survey. The floor type was only limited the binary to soil and other than soil, which means that a house with soil flooring will be from a poor household or with traditional values. This further insinuates the notion that landed houses with soil flooring are at the bottom of the poverty level and must be avoided to not be seen as a poor household. The logic of their message is insensitive, and it proves that further research on materials in the ever-evolving vernacular architecture needs to be done urgently.

On the other hand, the roof and wall materials each have four variations which are sorted from most to least. The number can indicate the trend that people have more preference over, but this dataset is only from 11 years of survey. If this dataset was to be analyzed further decades before 2012, it might reveal whether this order of preferences has a correlation with the sense of modernity in the past or the affordable price nowadays. This can only be seen as an indication to the evolutionary path of vernacular architecture deemed as a normal phenomenon by the Indonesian collective.

Further reading into the dataset and their conclusion raises some questions, does it mean that architecture is only important in assessing poor/non poor? Is it viewed as merely a sign of welfare? Is this the view of the government or does it also reflect the view of the people? Answering such questions heavily relies on the

understanding of power relations, especially between the authorities and general population. An interesting observation done by Cole on this topic is that in places with high poverty, such as Eastern part of Indonesia, there is unproportional power dynamics between central governments and the public. There is a strong tendency for decisions to be made by bureaucracy, who then inform the people. This is due to a perception among governments that the population is uneducated and thus encouraging local involvement in decision-making is simply overlooked³⁹.

The discussion continues to the application in one of the development industries, tourism. Tourism has become an important industry in Indonesia, which has been adopted and developed by the government to efforts of poverty alleviation. The need to attract more visitors has created a need for architecture identity in the industry. The Ministry of Tourism aims to increase the number of tourists and develop destinations to support the huge number of visitors, driving growth in the mass tourism direction. To achieve this, the government has prioritized ten destinations in Indonesia, shown in Fig. 5, and implemented a plan to develop them following the success achieved by Bali.

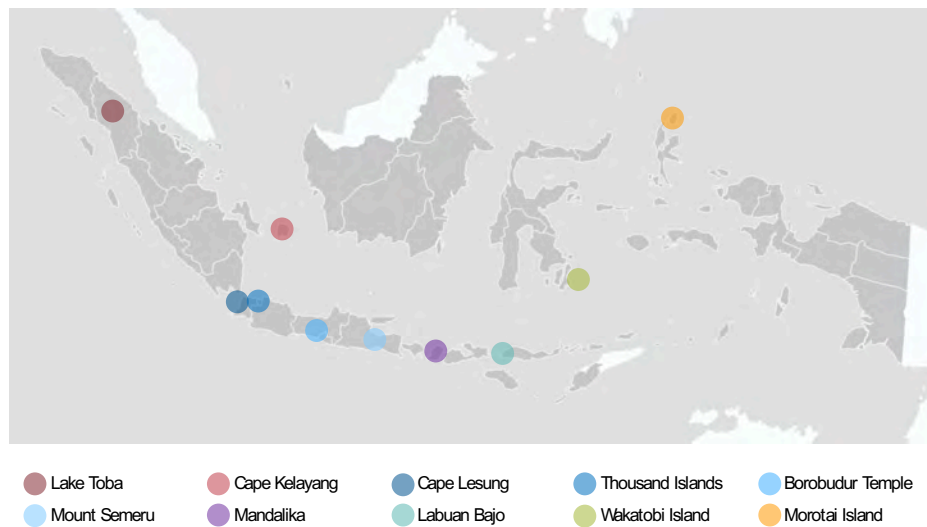


Fig. 5 Map of the ten prioritized destinations in Indonesia

Most of the destinations are nature-based tourism and located in the rural or developing areas. However, the national agenda of promoting tourism birthed annual design competitions that encourage the incorporation of local design elements from each of the ten destinations. The subsidy program for houses with tourism-related business in these destinations from the Ministry of Public Works and Public Housing mentioned earlier also incorporated local architects to help the recipients build or renovate to support their kiosks or homestays. All these efforts in embodying local design in the construction of new tourism infrastructure indicate the need for representation or locality in tourism. As a result, there is a hypothesis that suggests the

more intense the tourism development is, the more drastic and faster is the architecture transformation along with the increased interventions.

In addition, this tourism development scheme is done with the aim of alleviating poverty, hence, they expected an economic increase as a result. In those regencies where the destinations are, the number of poor populations, as published by the Indonesian Central Statistics Bureau in a series of "Data and information on district/city poverty in Indonesia" tabulated in Fig. 6 from 2002-2022, has slightly decreased. The line in 2015 signifies the year the prioritized destinations were announced. The decrease is not as significant as the years before, yet the data for after the announcement is limited and impacted by the global epidemic which resulted in lowering economy especially for tourism. Further observation on the continuation of this data might be useful to see the impact of tourism development for poverty alleviation.

However, the percentage of the poor population in Fig. 7 shows a different story. It shows which prioritized destination has the most drastic and fastest change in the span of 21 years. Mount Semeru has the highest poor population, but Labuan Bajo has the highest percentage of the poor population from the start to the end of the graph. Both regions are in rural locations, but Labuan Bajo is in the Nusa Tenggara Timur province, one of the poorest provinces throughout Indonesia's history, and has the highest poor percentage among the ten destinations. As mentioned before, poverty can lead to a great disparity of power, especially if it is between the government and the people, they serve. This leads to the hypothesis that the people of Labuan Bajo experience more economic change and transformations in their built environment compared to other destinations, be it in their favor or from government instructions.

This research conducted a face-to-face interview with a recipient in Labuan Bajo to see how the government subsidy program is implemented and how deep were the locals involved. The interview was done in the house funded partially by the aid program to allow for direct observation. Shown in Fig. 8, the landed house was constructed with reinforced concrete columns and beams, ceramic flooring, brick-and-mortar walls, and zinc roofs. It has two rooms with one having an inside bathroom and its own entrance, and the other accessible

through the living room. The house was designed by the local architect, from the same province but a different region and island, with little interference from the owner.

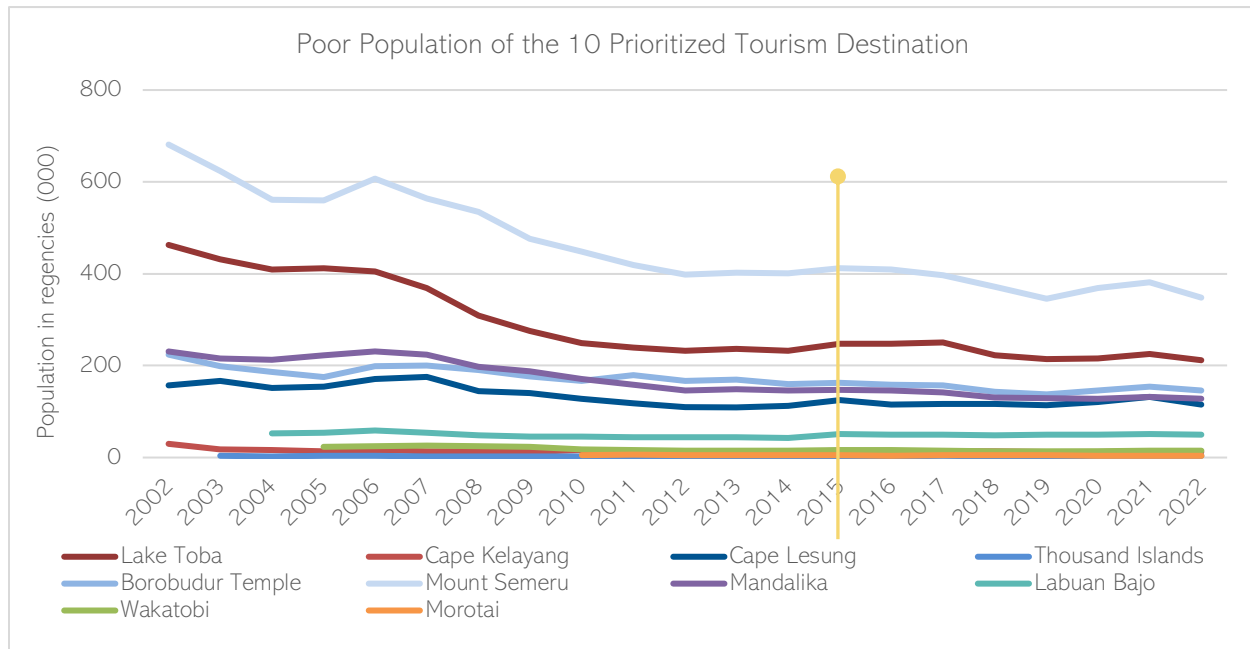


Fig. 6 Poor population in the regencies of the 10 prioritized tourism destinations

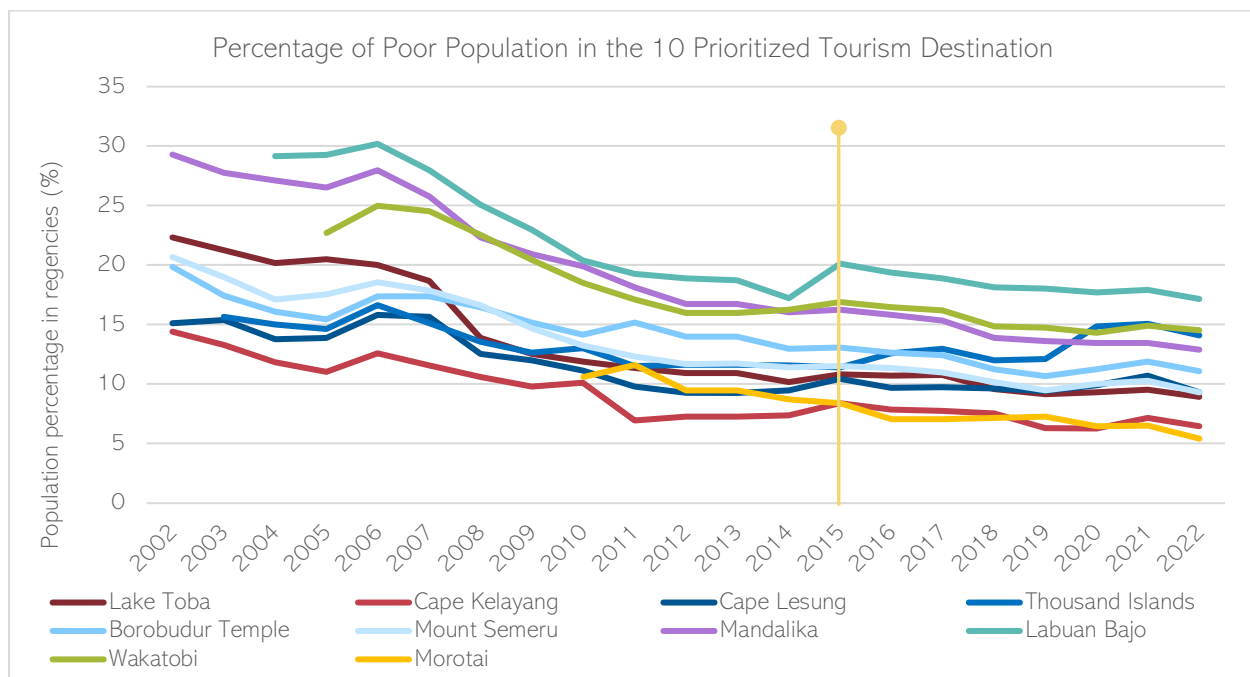


Fig. 7 Poor population percentage in the regencies of the ten prioritized tourism destinations



Fig. 8 Interviewee's house from the *sarbunta* project

In explaining the built design of the house, the interviewee said the roof was meant to be inspired by the Manggarai traditional houses, one of the local ethnic groups in the regency, but reinterpreted to a high-pitched hipped roof instead of a high-pitched conical roof. However, this design was adapted to the existing budget and ended with a considerably lower pitched hipped roof. The limited number of rooms was justified with the budget limit, and other functions such as the kitchen or bathroom should come from the recipient's own budget. The interviewee said the design was mostly focused on the basic elements, and the rest should be provided by the homeowner. Yet, the design insisted on providing unnecessary things, and left out the important ones with an example of providing three-meter walls but not providing any ceiling.

The informant needed to provide by themselves additional features to make it their version of a nice homestay and with local design elements. He added ceramic tiles to the bathroom walls, bathroom fixtures such as the shower and the small shower for the bidet, ceilings all throughout the house, light fixtures, curtains, and many other interior elements. Additional elements were then given to resemble more local vernacular designs, such as palm leaves roof as a small canopy, ornamental wood board, and one column on the outside painted with the Manggarai traditional fabric pattern. This house was then chosen for the official handover ceremony site due to the exemplary design. Some elements from his initiatives, the palm leaves canopy and wooden board, were even applied to other houses in the neighborhood.

The material selection process depends on the capabilities of the material stores in the neighborhood. This interviewee lives outside of Labuan Bajo, and their local store was not able to procure all the materials needed, hence having different processes with the recipients in Labuan Bajo. The informant said that the recipients in his neighborhood had to acquire their own sand and rocks for the concrete mixture, they even had to provide their own logistics to transport the materials to their neighborhood. They were also given the

freedom to choose the materials for their door and window frames. The recipients of this neighborhood were very involved in the material procurement process, and they were able to ensure the quality of the materials.

However, the design did not involve the interviewee. The choice of placement of the rooms, windows, bathrooms, were 100% from the local architect and was applied to almost all the homestays in three villages under his jurisdiction. The interviewee said that the style of the house depends on the assigned architect, whether they have experience in designing “houses with local elements” or “typical modern houses”. During the project, the interviewee checked on the architect's past portfolio and confirmed that they were not experienced in designing houses with local vernacular but tended to design modern houses which are more market oriented. This raises the question, what are the vernaculars of these local houses that distinguish them from the typical modern houses that these local architects are more familiar with? While discussing with the interviewee, there seems to be a common understanding for the distinction, which leads to another question, what is the definition of vernacular and traditional architecture in modern Indonesia? Additionally, with the implementation of this 'simplified' form of vernacular architecture in a massive scale, is there a possibility that the use of local design elements in new tourism infrastructure could lead to the loss of the original vernacular architecture identity?

Furthermore, the material and house types used in this project are the same mentioned in the decree published in 2002 regarding the previous cabinets' housing aid discussed previously⁴⁰. The decree said that in Nusa Tenggara Timur province, where Labuan Bajo is in, the type of house suitable to be built is landed house with brick-and-mortar walls, although only since the 2000s have the local houses shifted to that form and material, as told by the interviewee. Further explanation or statutes on this form and material selection is not easily accessed by the public, hence providing no answer to the investigation. However, it alludes to the hypothesis that these selections seem to be 'engrained' in the minds of both the government and the local architects who are experienced in designing government projects, as it seems that the houses were using the same materials and house types without question. The effectiveness of the workshop in spreading awareness of a healthy house in combination with the message conveyed during the poverty analysis may result in the inevitable future of Indonesian vernacular architecture. Avoiding the stigma of being poor, relation to the materials and the homogeneity of Indonesian vernacular architecture.

6. CONCLUSION

The transformation of vernacular architecture is a reflection of the sociocultural, political, economic or environmental context happening at a specific time within a specific geographical border. By using the definition coined by the trailblazers of the field, which refers to the buildings of and by people, with their production mostly reliant on natural elements, availability of materials and techniques of the time and place, it

has allowed ordinary buildings to be studied as records of the changing aspects in a community's history. This paper evaluated the physical evolutions of domestic and ordinary houses in Indonesia through the main materials used and through its image and identity perceived in society. This paper further showed the factors behind these changes of preferences in the nationwide perspectives. Here, it is concluded that there are three main findings behind the shifts.

The first shift relies on the perspective behind the meaning of vernacular architecture. 'Architecture without architect' by Rudofsky as the base of vernacular architecture definition has been adopted by many scholars and led to more studies in the efforts of understanding the built environment as a reflection of the history and values of a group of people throughout time. Nonetheless, these studies have different angles in seeing this definition, and all were chosen to better understand the context within their studies. In comprehending Indonesian dynamics throughout history, the terms vernacular and traditional and the political charge behind them are the main focus of the discourses. However, the term "traditional" in Indonesia is often seen as a 'cultural politics' product of the mid-1960s to late 1990s where built forms identified as "traditional" were preserved and reinterpreted to represent a national identity of cultural diversity. On the other hand, the use of "vernacular" is often linked with after the late 1990s where it includes everyday architecture that instead of prioritizing a hierarchy of architectural assessments, it is heavy with the sense of informality, memory, and practices of everyday life. This signified the shift of studying the history of architecture through the styles of monumental buildings to the physical and spatial order of everyday life, including the small mundane domestic houses within the scope of architectural knowledge.

However, these developments in architecture history remains in the academic realm as domestic houses' transformations in the nation scale are only officially recorded for poverty macro analysis, conducted by the central statistics bureau of Indonesia. Their analyses of domestic built environment evolution through its physical aspects were mostly aimed to understand the distinction between houses of the poor and non-poor in urban and rural contexts. The most obvious point was seen in describing the dominant floor material of the house, and the answers were binary options of soil or other than soil. Although they mentioned how in some cases soil floor is tied to the culture of the household, it is unmistakable that they are noting that a house with soil floor is either poor or having cultural value. This is understandable in relation to the aim of their analysis which is to depict the macro scale of poverty in Indonesia. Nevertheless, to have only this description of the nationwide scale transformations reflects the priority of the government in understanding the organic growth of the domestic built environment which is merely to classify poor-nonpoor households, without sufficient attention to the possibility of alternative reinterpretations.

The second finding is based on material shift of the houses. The overall message of the statistics was that the poor follows the trend of the non-poor, and eventually all houses will have brick-and-mortar walls, zinc roofs and other than soil floor. This is the future of Indonesian vernacular architecture for now. The everyday architecture changed from the “traditional” forms and materials, seem to be frozen in time, to the current adaptive vernaculars with preferred forms and affordable accessible materials in the present context. This raises further questions such as does this change signify the attachment of material features to the distinction between traditional and vernacular? Or does the contrast lie within the rigidity of the traditional and the flexibility of the vernacular?

Another point derived from the material transformations of vernacular houses is their relation to the degree of healthiness. It can be seen from the options given to categorize the materials found from their observation. For example, as mentioned before, flooring materials are divided into two: ‘soil’ and ‘other than soil’; while walls are grouped into ‘brick and mortar’, ‘wood’, ‘bamboo’, and ‘others’. These classifications imply there is a sense of order assigned for housing materials, from unhealthy to healthy ones according to their standards. For roofing materials, it is found that there is tendency to replace reinforced concrete, terracotta, and bitumen with zinc and asbestos, while natural materials are decreasing to the point of dying out especially in the urban context. This might need further investigation into whether such trends relate to the health standard of the government or are chosen out of other considerations.

The third finding is based on the impacts of power dynamics in government programs. The increasing understanding of vernacular architecture still faces resistance from scholars as its flexibility and practicality has an impression of low culture, primitive and uncivilized. Some scholars coined the term Nusantara architecture which has paved the way for a new wave of cultural politics as the government has adopted it into its tourism development scheme as image branding. Although the new term has not entered the domestic scene, interventions into the everyday architecture have started with the implementation of tourism residential facilities, or *sarbunta*. This program provides aid to partially help locals of prioritized tourism destinations to renovate their houses to support tourism-related business in their residences and also represent their local culture in its built form. This top-down approach has proven effective in spreading awareness of the healthy house standards from the government program in 2002 and is now branching into dictating how the contemporary local vernacular should look like. The concept might have promising ideas, yet the implementation needs to be investigated and evaluated further. The power disparity plays a big role in this project because the recipients of the projects are from lower income classes and the regions are also chosen in aims to alleviate poverty through mass tourism developments. Interventions from the government might be seen as a great and rare opportunity that needs to be followed along to gain benefits.

The effectiveness of this power dynamics is proven in the form and material selection for the houses of the interviewee's neighborhood. The house was brick and mortar house with zinc roofing and ceramic floors, with form and layout typical to the contemporary market-oriented houses. The locals only had the freedom to source the assigned materials and were not involved in the design process. Yet, the interviewee had the initiative to add local elements to the design and was praised by the government officials for his ideas. This proves there is an untapped potential stored in the minds of the locals, yet the format of these programs does not allow the discussion between locals and designers to happen. However, not all regions have similar outputs, as the interviewee mentioned, the *sarbunta* houses in other regions such as Borobudur outstandingly resemble the local architecture. It is found that the design falls completely in the hands of the assigned architect who might or might not have experience in designing with local vernaculars, yet they only need to be from the same province or island. This puts the limelight on the architectural education and the market trend. Has architectural education forgotten to include the importance of learning from existing vernacular architecture in proposing new designs? And why is the market trend showing preferences of brick walls and zinc roofs in these contemporary houses?

As this paper resulted with more questions, it is hoped to add more into the discourse on the vernacular architecture transformation in Indonesia, both of its definition or its physical appearance or the connection between. This paper is a small fraction of larger studies on the evolution of dwellings as recollected through the residents' memories and experiences in one of fastest tourism destination development region and the changes of domestic spaces with and without government intervention in the prioritized tourist destinations in Indonesia. By investigating and exploring this issue further, future architects should be able to learn and engage better with Indonesian vernacular architecture as narrated by the people who lived and shaped it.

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Traditional Dwellings and Settlements

Working Paper Series

MODERNIZATION FROM BELOW: TYPOLOGICAL CONTINUITIES IN THE WENRUITANG VALLEY, CHINA, DURING THE REFORM AND OPENING-UP

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MODERNIZATION FROM BELOW: TYPOLOGICAL CONTINUITIES IN THE WENRUITANG VALLEY, CHINA, DURING THE REFORM AND OPENING-UP



Chinese recent modernization and urbanization have been chiefly associated with large-scale, top-down demolition and centralized large-scale planning. As a translation of the European model prophesized by Le Corbusier, the late twentieth-century Chinese urban model has been seen as the ultimate version of the high-modernist city, an architectural and social-economic tabula rasa.

In this context, the case of Wenzhou, a geographically isolated city south of Zhejiang, is particular for having developed an indigenous economic model in the 1980s based on private household industries, leading to a small-scale urban transformation from below between 1970s to 2010. Given the scale and the nature of the Wenzhou economy, combined with the relative exclusivity of Wenzhou society and market, the modernization and urbanization didn't adopt the large scale and centralized version from better-connected cities in China but saw the emergence of a unique local transformation of its architecture with the slow absorption of industrial materials.

This paper focuses on Wangzhai village, located on the south urban fringes of Wenzhou and known to be the home of many overseas Chinese (Huáqiáo), and therefore for having been progressively abandoned from the 1980s onward. This progressive desertification of the village and its subsequent progressive absence of transformation left many houses in the state they had been when they were abandoned. This gave us a perfect opportunity to see the evolution of the housing type from the 1980s onward and how local inhabitants have progressively transformed their houses to fit new needs while making the most of the available structure and materials. This continuous transformation reflects a tradition anchored in what the historian Pierre Nora calls the "milieu of memory," contrasting with the "site of memory," which reflects a conscious break with the past. The slow evolution of Wenzhou's urban conditions reveals the Reform and opening up historical sequence happened in two phases: one slow and continuous "modernization from below," where architectural and typological continuity reflects the continuity of the building tradition, and where recent fast urbanization from above, which start to be identified by the central government as problematic.

Our research looks at this historical moment when economic growth and opening up impacted the traditional housing typology construction. These architectural transformations reflect the socio-economic changes and provide an example of progressive adaptation to industrialized construction, contrasting with the radical proposition of total demolition and reconstruction.

1. INTRODUCTION

During the "reform and opening-up" policy initiated by Deng Xiaoping in late 1978, the "Wenzhou Model" (Wenzhou Moshi) has been seen as one of the birthplaces of China's private economy, becoming in 1984 one of the fourteen coastal cities open to foreign investments and a national alternative model to the Sunan's one, based in Jiangsu's collective enterprises¹. This model has been at the heart of national controversies, seen on the one hand as a credible experiment to implement market economy in China, a national vanguard, and on the other hand, a form of an underground economy, spontaneous (ZiFā) and capitalist pariah². This economic development based on local initiative and small-scale private enterprises led to an industrialization of the rural areas rather than a development of its urban districts, an endogenous form of ruralization disconnected from any form of state planning³. According to Chinese scholars, this model founds its roots in

five key factors: the historical tradition of entrepreneurship and craftsmanship in Wenzhou, given its limited agricultural production and high population, the lack of state investment in post-1949 China, the weakening of the state control due to its geographical isolation, the collaboration and tolerance of local party cadres and the state reform policy⁴. Describing Wenzhou's conditions leading to the Wenzhou models, Liu Lianing talks about "weak infrastructural power," enabling the preservation of a private industry during the 1940-1978 period and its spectacular growth afterward.

In his 1998 work "Seeing Like a State," political scientist shows the relationship between the implementation of the high-modernist city and the centralized political authoritarian power. He demonstrates the correlation between the need for space legibility and control and the rational project of Le Corbusier, herald of the high-modernist city, and the urbanization of the second half of the twentieth century. Looking at the state-driven top-down transformation of the countryside in Indonesia, he adds:

"Cast in a discourse of development, progress and civilization, the plans are (...) a synoptic project of legibility and concentration."

James C. Scott⁵

Scott links modernization, state control, top-down process, and space transformation for the market economy, both through urbanization and ruralization. To this, based on his ethnological study of the Malay peasantry, he opposes bottom-up form of everyday resistance ⁶ to the centralized state on the one hand, and to the market economy on the other, to "those who seek to extract labor, food, taxes, rent, and interest in them⁷." In describing the Wenzhou model, Kristen Parris relates the Wenzhounese "'working' the state socialist system to their own advantage" to Scott's form of resistance.⁸

Our study looks at how this socio-economic model generated an alternative mode of modernization of the built environment: small-scale, unplanned, and transitional, which contrasts with the first-tier city urbanization and the large-scale, top-down planning of the most recent years. We are mainly focusing on the progressive integration of industrially produced materials in rural construction in a period starting a few years before the beginning of the Reform and opening up until the early twentieth century when the typological and tectonic continuities are lost and when a few years after, large scale demolition and construction started to impact rural and suburban settlements. Our research looks at the particular village of Wangzhai, located in the Wenrui plain, between the urban footprints of Wenzhou on the north and Rui'an in the south. First, we will look at the geographical and historical context of Wangzhai village, its settlement within the Wenruitang water network territory, and its surrounding landform. Secondly, we will look at its typology and its pre-industrial

construction culture. Thirdly, we will examine how industrialization has impacted the village, mainly focusing on the house transformation and typological continuity. And fourthly, we will show the break happening around the early twentieth century in terms of construction, building typology, and territorial transformations.

2. GEOGRAPHICAL CONTEXT

Wenzhou is located in the Southwest of Zhejiang, the most mountainous part of the province. Its historical core sits on the south bank of the Ou Jiang, the second-largest river in Zhejiang, about fifteen kilometers from the estuary. Its proximity to the sea made it an important trading port since the Tang dynasty⁹. The Wenruitang water network links the ancient city of Wenzhou to the one of Rui'an, twenty-five kilometers south. It is made of natural water streams and drainage canals built up since the Song dynasty. Between the two cities, the Wenrui Plain is the agricultural core of the region, with a network of settlements located along the water, in the lowland areas, and in the lower foothills of the surrounding mountains. If the villages along the water are similar to their northern Zhejiang counterparts, with building strips on a single or both banks of the water stream, sometimes with an arcade along them, the settlements on the foothills are more specific to Wenzhou's topography. Wangzhai village is one of them, located on the side of the plain. However, the southern part of the built footprint follows the Litang stream, a tributary of the Wenruitang going to Litang village. The Litang stream itself split before Wangzhai into a small tributary going toward the east part of Wangzhai: Xiawan. The current village of Wangzhai results from a synoecism between Wangzhai village in the west and Xiawan village in the east. Administratively, it evolved from a Mutual Aid Group Farmers' Association in 1949 to a Village Committee (Cun Wei Hui) in 1989. The village covers 1,95 square kilometers, including 0.11 of built-up surface, and comprises 256 households and 1,600 villagers, amongst which 1,100 live overseas (mainly in France, Italy, Netherlands, and Spain)¹⁰. This particular condition, where more than 60% of its population left within the last forty years since the Reform and Opening-up (and probably earlier as we find traces of Wenzhou emigration earlier in the century), led to a partial reification of its architectural condition, making it an excellent case study to look at the evolution of its construction over the same period.

The agrarian structure¹¹ is made of small plots of less than 100 square meters, with each household owning one or more. These small-holdings are mostly subsistence crops and are what Gillen et al. define as sub-livelihood holding¹², which "do not deliver an adequate living." The fields pattern on the north of the village is irregular, following the gentle slope and the irrigation channels harvesting the rainwater from the mountain on the back, and are more regular on the south part while

remaining oriented according to the slope direction. The settlement itself is clustered and located in the middle of the cultivated land. Its urban fabric built density is very high and follows the pattern of the northern agrarian land.



Figure 1: Wangzhai Village in 2005, with Litang Village on the west and Litang River in the south. (Source: Tianditu <https://tdt.wzmap.gov.cn/map.html#/>)

Its urban structure comprises two main streets oriented east-west and a series of north-south alleys forming an irregular gridiron. The street shape is given by its houses typology: the six to seven-meter-long south-facing courtyards of the houses visually open the three-meter-wide east-west streets while the sheer brick wall aligned on the irregular north-south alleys reinforce the narrowness. According to the satellite pictures from the 1960s and 1970s, we can see that the primary access to Wangzhai village was the north-south branch of the river, the Litang River, serving mainly Litang village. In the 1970s, Xiawan road was built to access Xiawan village, with a bridge linking the historical Han-wen road (linking Hangzhou to Wenzhou) and running along the Wenruitang. We can also learn from the pictures of the progressive and slow growth of both Wangzhai and Xiawan during the same period.

With its organic relationship between the landform, the agrarian structure, the urban form, and the house types, Wangzhai exemplifies the village landscape of the Wenruitang plain.

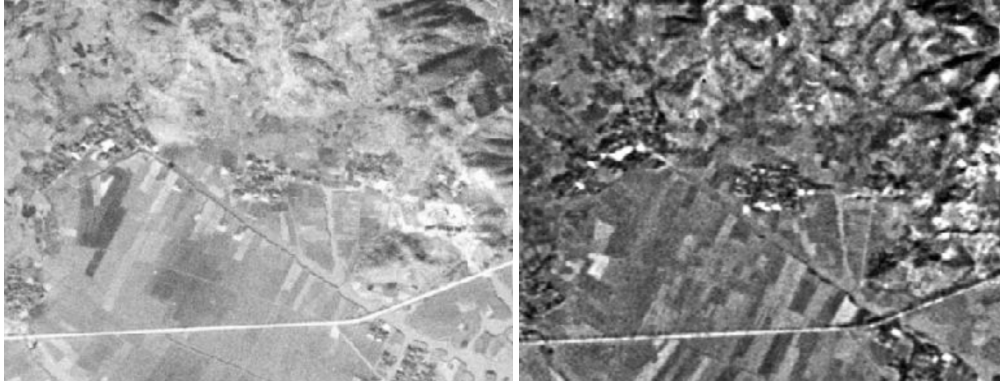


Fig. 2: Satellite Picture of Wangzhai and Litang villages in 1960 (left) and 1970 (right) (Source: Tianditu <https://tdt.wzmap.gov.cn/map.html#/>)

3. TRADITIONAL TYPOLOGY



Fig. 3: Elevation of the main housing types of Wangzhai Village. Houses 103, 40, 32, and 32-a are two-bay houses without transformations; houses 3-a, 102, 5-a, and 4 are three-bay houses with little or no changes; houses 11 and 7 are two Qing dynasty, one-floor wooden houses relatively well preserved. House 9 is a unique six-bay house combining two three-bay houses. (Drawing by Zhang Miao)

Except for the two temples and the ancestor hall, most buildings are dwellings in Wangzhai, like in most villages in Zhejiang. Three large houses dated by the locals from the Qin dynasty, probably due to their complete wooden structure, are one-story houses (Pingfang). Most other houses are two-story dwellings (Yangfang), characteristic of Zhejiang vernacular architecture.¹³ Typical of Chinese folk architecture, the houses are based on a modular unit, the bay (Kaijian), based on the structural system. The width of the bay is around three meters and a half, matching the typical width of ten

Chinese feet (Chi, one Chi being a third of a meter), and the span that the ten centimeters diameters wood joists or the thirty-centimeters-thick stone lintel of the loggia. Most houses have a frontal (South facing) width of three or five bays for the wealthiest households. Exceptionally, we also witness some two-bay houses and some four-bay ones, sometimes waiting to be completed by a fifth one. The primary materials of the construction are stone for the foundations, the bottom of the brick walls, the base of the wood columns, and the low wall enclosing the south courtyard; grey kiln brick is systematically used for the gable walls (Shanqiang), built using the traditional open-cavity bond (Kongtong qiang) for the majority of the upper part, and sometimes using common bond for the lower fifty centimeters to reinforce the foundations. For the inner bays, the same brick construction is used as shear walls or a wood structure, mostly pillar-and-tie-beam (Chuan Dou). The north wall is usually made of brick with small openings to insulate from the north wind, the south wall is made of brick piers and stone lintels on the first floor, and a small brick wall and pier-to-pier or punch windows on the second floor. The ground floor façade is either all wooden doors with chevron patterns and ventilation opening on the top for the wall on the back of the loggia or an infill brick wall with punch window covered by rendering if the wall is on the front of the façade.

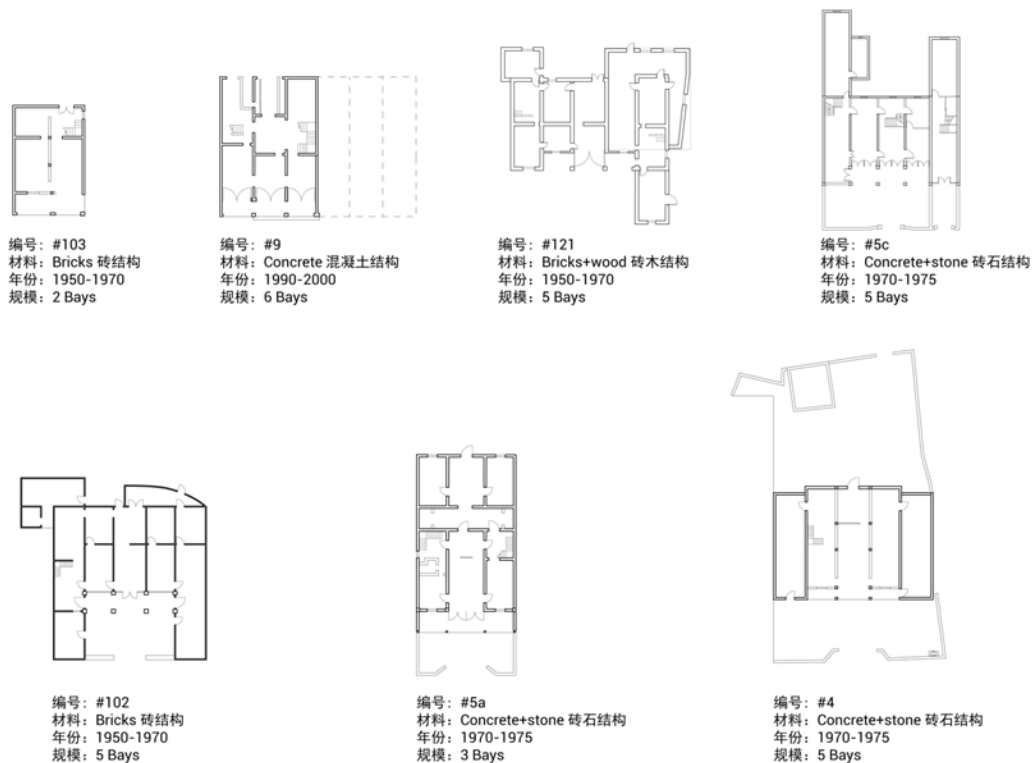


Fig. 4: Plans of the main housing types of Wangzhai Village. (Drawing by Zhang Miao)

Some houses have a portico instead of the loggia, providing a small terrace for the second floor. Facing this intermediate space, all the houses have a south-facing courtyard, approximately the size of the house footprint or slightly less (the distance between the house's south wall and the courtyard entrance is around seven meters). The courtyard is surrounded by a one-meter-high stone wall, slightly recessed to mark the entrance. In Wangzhai, less than ten houses have a high wall surrounding the courtyard, mostly built recently, and one traditional gate (built before 1949) is preserved.

Except for the kiln bricks, which need a proper factory and were able to be supplied through the river, and the need for advanced craftsmanship to carve the lintels, most of the construction does not require many skills and can be built by the local villagers. The absence of elaborate ornament reinforces this hypothesis.



Fig. 3: Picture of an unmodified original-type house (Picture by Huang Tieru)

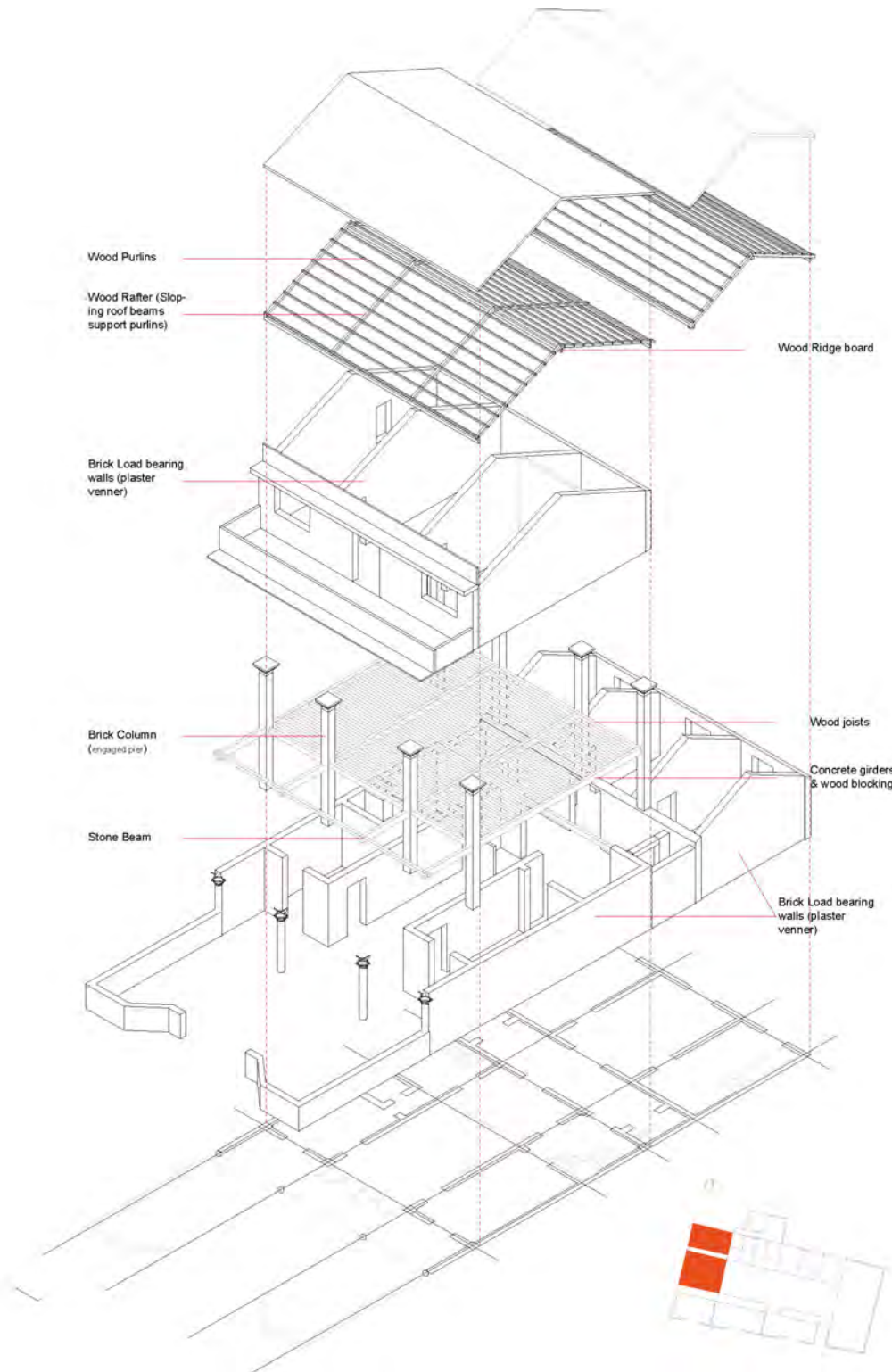


Fig. 5: Axonometric drawing of house 05-a (According to our village map). On top of the additional volume on the north part, the house is unique for using monolith columns for the loggia structure. (Drawing by Zhao Ruzhen)

4. MODERNIZATION AND INDUSTRIALIZATION

With the income increase in the late 1970s and early 1980s, the households in Wangzhai village started to transform their houses. The first transformation was the protection of the south facades by cladding the brick piers and walls with cement mixed with glass or gravel. Then, the wooden elements were replaced, as they need more maintenance, particularly the one exposed to the elements on the south loggia. Cast-in-place concrete beams and floors embedded in the brick piers are replacing the wooden purlin. Using concrete on the façade allows the villagers to change the fenestration, using thin concrete mullions (Figure 7, House 3-B) and opening the wall. Also, since the early 1980s, the usage of ceramic tiles to replace white rendering on the south façade started to spread on some of the houses (Figure 7).



Fig. 6: Façades modifications using cement (on the left) and ceramic tiles (on the right). Both are cladding the exterior brick pier. Reinforced concrete structures replaced the wood beams and stone lintels. (Picture by Huang Tieru)

Following the façade modifications came the floor transformation. As mentioned by Knapp¹⁴, "the shortage of timber, the high cost of wood, as well as government policies encouraging the substitution of other materials for wood, have led to the dramatic reduction in the use of wood in housing, not only for structural members but also decoration." For either the new construction or the renovation of the existing one, they replaced the wooden floor with hollow-core slab (Wu kong ban), a ten-centimeter pre-cast element that is easily handled.

One critical aspect of this period is that besides using industrial materials, the participative dimension of vernacular architecture¹⁵ is still present. As a matter of fact, industrialization should lead to a division of labor where the dweller is no more than a service consumer. According to Bernard Stiegler¹⁶, the service economy destroys the social game as it dismantles what Gilbert Simondon calls the "individuation," i.e., the biological, psychological, and social formation of the individual or the relationship between the individual (psychic) and the social (collective) through the technique¹⁷. The early industrialization of vernacular construction in Wangzhai preserved this participation and its social structure. We can observe in the years following a relationship between the graduate desertion of the village during the 1980s and 1990 and the loss of collective construction on the one hand and the loss of constructive ambition and quality on the other hand. The villagers we interviewed stressed the importance of their participation in the constructive process and the importance of this participation in their attachment to their dwelling. However, the last buildings villagers completed are over twenty years old. All the new constructions built after were designed and built by specialists or hired workers, given the drastic population drop and the aging or increased wealth of the remaining.



Fig. 7: Elevation of the house from two to three stories using the original grey kiln brick on the ground floor and fired red brick on the second and third floor (Picture by Huang Tieru)

If the usage of hollow-core slab could be used only in brick shear wall structures, the progressive use of cast-in-place concrete floors and beams needed a reconfiguration of the house structures. With this came a more in-depth transformation of the house types, usually raising to three or four floors, changing the floor height, adding cantilevered balconies to replace the loggias in the south, and in some cases, adding some balconies on the north façade. The load-bearing structure remains open-cavity bond brick wall. However, the fire-red bricks replaced the grey kiln. In many houses built during this period, we can see the superposition of the grey kiln brick for the first floor (original walls or rebuilt) with the red bricks for the second and third floors

(Figure 7). Given the modular nature of the construction (based on the Kaijian, the bay), the transformations are not necessarily done at the house scale but can be done bay by bay, according to the evolution of the family (Figure 6). In one case, a son can take two bays of the five-bay family house and rebuild them for himself, or in another case, the parents are staying in Wangzhai and decide to rebuild only part of the house, leaving the rest in its original condition.



Fig. 8: Elevation and plan of Houses 3 with the hypothetic reconstruction of their original state (left) and their modular transformations (middle) and extension (right) (Drawing by Zhang Miao)

In any case, the structural transformation involving the concrete didn't change the fundamental nature of the house types, preserving the bay system and dimensions, the courtyard and the loggia/balcony system, limiting the height extension to one or two floors, and keeping its pitched roof. In other words, the early transformations post-reform in Wangzhai, from the 1980s to the 1990s, preserved the typological integrity of the houses as well as the participative aspect of their constructions.

5. TYPOLOGICAL DISRUPTIONS

As mentioned previously, the late 1900s and early 2000s show the end of this continuity of the vernacular milieu, what French historian Pierre Nora would call a *milieu of memory*¹⁸, a "real environment of memory" which he exemplifies with the peasant culture, "quintessential repository of collective memory." He stresses the relationship between industrialization and the loss of this living memory, taking place in "the concrete, in spaces, in gestures, images, and objects."¹⁹ The progressive loss of this milieu of memory is due to two different factors: the progressive desertion of the village, reducing the inter-household solidarity for housing construction and jeopardizing the socio-cultural structure on the one hand, and the aging and gentrification of the population, leading to new comfort needs, the will to express the wealth of the individual household adopting exogenous constructive language and tradition and the possibility to outsource the design and construction of houses on the other. In addition, the partial desertification of the village and the loss of its

youth led to a wild form of adaptive reuse of the existing houses or village infrastructures, such as the village school, built in the 1970s and replaced by a wood factory in the 2000s (Figure 7)

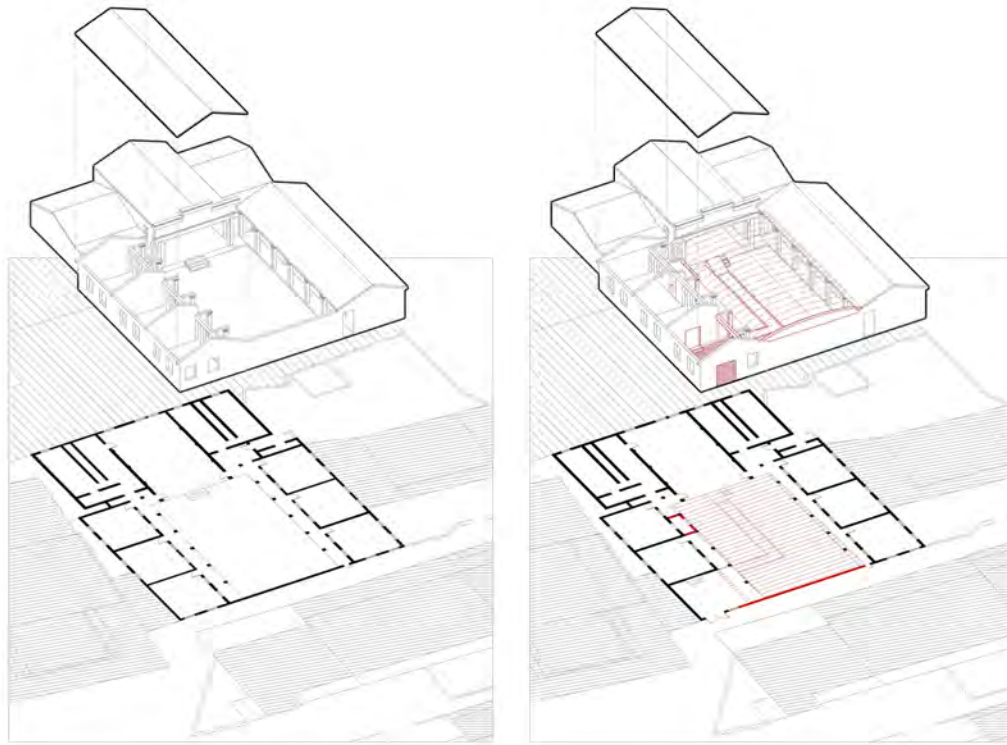


Fig. 9: Transformation of the unused village school (left) into a wood factory (right) (Drawing by Zhao Ruzhen)

From 2012 onward, Wangzhai has been part of the newly planned Wenzhou-Kean University campus. If the first phase of the construction led to the demolition of the neighboring village of Litang, the upcoming campus development jeopardizes the existence of Wangzhai. In 2017, in planning for its demolition and redevelopment, the local authority partially evacuated the villagers of the west district and relocated them to temporary relocation housing in the southern part of the village. In 2022, the definitive relocation towers built on the south bank of the Litang stream were completed, and some villagers moved in already, while most of them live around and in the remains of Wangzhai village. The social and environmental revolution that forces the villagers to live in groundless high-rises is annihilating the specificity of Wangzhai village, which preserved until now most of its urban fabric with high typological consistency.

6. CONCLUSION

Given the particular history of Wenzhou, whose bottom-up economic development during the 1980s and 1990s led to a slow architectural and urban transformation and delayed the large-scale territorial tabula rasa

found in other cities, we found in Wangzhai a remarkably well-preserved example of what French philosopher sinologist would call the "silent transformation."²⁰ contrasting with the radical modernization usually associated with Chinese recent development. As the translation of the Wenzhou model into the built environment, these architectures are historically and culturally significant. However, the progressive connection of Wenzhou to the hinterland, with the opening of the first train line in 2000, the high-speed one in 2011, the link through expressways, and so forth, led key national real estate companies to invest massively in Wenzhou from 2015 onward, replicating the ubiquitous urbanization found in other main cities, and leading to the massive demolition of the suburban villages. The future of Wangzhai, as part of the Wenzhou-Kean University master plan, is very uncertain, and its progressive desertification and abandonment are leading to the fast deterioration of its constructions. To the local authorities, the architecture of the Reform and opening-up lacks this age-value that Alois Riegl was talking about in his *Denkmalkultus*²¹, and only a few wooden structures from the Qin dynasty and isolated gates seem relevant for them to preserve, as they fit the image of what vernacular Chinese architecture should be. However, we defend the idea that the architecture of the Reform in Wenzhou demonstrates an alternative form of modernization, participative, from below and rooted in Wenzhou's history.

ACKNOWLEDGMENT

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Traditional Dwellings and Settlements

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THE DYNAMICS OF THE ROLE OF HEARTH IN RESIDENTIAL HOUSES IN INDONESIA

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THE DYNAMICS OF THE ROLE OF HEARTH IN RESIDENTIAL HOUSES IN INDONESIA



As one of the architectural elements, the role of hearth in Indonesia cannot be ignored. The ethnic diversity in Indonesia has formed the diversity of hearth and become an identity. The development of time brings changes in life, not only increasing economic conditions, but also changing cultures and having more advanced technology. The awareness of issues about health, the threat of fire hazards that often occur in Indonesia as well as the issue of preservation of historic buildings has brought many changes. These changes are addressed with the dynamics of hearth use in Indonesia houses in various ways.

1. INTRODUCTION

Issues about identity, endurance and continuity are increasing in this era. The shape of roof and ornament is often used to recognize the identity of traditional house in Indonesia. In fact, there is one element rarely discussed, it is the existence of hearth inside a house. The definition of the fireplace by Koolhaas is a place for a fire especially the partially enclosed space at the base of the chimney appropriated something resembling a hearth in function, location or a hearth. Whereas the definition of hearth is the part of the floor of a room where a domestic fire is made or located and often forming a focus in the room; the floor beneath the grate of a fire; also: the area, often paved or tiled, in front of a fireplace.¹

Previously, the author had shown the importance of hearth in a house in Indonesia, especially those who were still living in the village or inland. How a hearth can be an identity and can be maintained in the middle of modernity that affects the changes of human lifestyle will be shown in this paper. Learning the connection between fire and architecture in Indonesia is to understand how people from various tribes use, manage and give meaning to fire. Fire has been known since ancient times. In the present, fire may be the object that we normally see and take advantage of, therefore it is no longer considered as something extraordinary. However, if we rule back to the time of the origin of fire when newly known and found, the situation is much different. In the beginning, making and creating a fire is not easy. Humans should work hard for hundreds or thousands of years for it. Fire is an important discovery that changes human life, including the tradition of civilization.

According to Vitruvius, the discovery of fire originally gave rise to the coming together of men, to the deliberative assembly, and to social intercourse. And so, as they kept coming together in greater numbers into one place and they began in that first assembly to construct shelters.² As stated by Semper, the first sign of human settlement and rest area after hunting, fighting and traveling in the desert is to set up a fireplace for the lighting, heating, and fire for food preparation. It is the first and most important, the moral element of architecture. Around it were grouped the three others the roof, the enclosure and the mound, the protecting

negations or defenders of the hearth's flame against the three hostile elements of nature. According to how different humans developed under the varied influences of climate, natural surroundings, social relations, and different racial dispositions, the combinations in which the four elements of architecture were arranged also had to change, with some elements becoming more developed while others receded into the background.³

The connection between fire and architecture is explained by Galiano:

Fire is part and parcel of architecture. In the classical world, for example, fire was of utmost importance in the rites having to do with the city or the house. We must remember that, for both Greeks and Romans, the sacred fire of the city was "its prime altar, the origin of its identity and the fount of religious life". Hestia, the Greek goddess of the hearth, was "the 'focus' of the internal space of the city . . . the 'home you start from'". Fire is thus associated with the house and the city in foundation rites—the establishment of the city, the creation of the home—and in subsequent civic and domestic ceremonies requiring the continuity of the flame, but it is so by virtue of its role as an image of fertility and a metaphor of life. Matter and energy, architecture and fire, construction and combustion are once again placed in relation to one another through the thin thread of life, processes, and transformation, which links them together in an inextricable tangle.⁴

Indonesia is often referred as the State of Archipelago because it consists of thousands of large and small islands. It can also be called as maritime countries because of the area of water consisting of sea and strait turned out to be greater than its land area. Mainland typology consists of beach, lowlands, highlands, there are also valleys, hills and mountains; savanna and forest or jungle; there are also flat land, tilted land and cliff. As a country that has two seasons (rainy and dry), Indonesia is also in the earthquake path of both volcanic and tectonic earthquakes. With the diversity of the earth's surface, then every location selection and site plot settlement for villages is done by considering the characteristics, advantages and disadvantages of a location and site carefully. According to census of Central Bureau of Statistics (red. BPS Badan Pusat Statistik) 2010, there are 1.340 tribes in Indonesia. The Javanese tribe is the largest group in Indonesia with a total reach of 41% of the total population. Whereas Kalimantan and Papua have a small population with only hundreds of people. The division of ethnic groups in Indonesia is not absolute and unclear due to the migration, mixed cultures, and influences between each other.

As stated by Domenig, he belief that many traditional house types of Indonesia were derived from structures that were originally designed not as dwellings but as buildings for food storage, usually as granaries.⁵ This is slightly different from the previously presented theory. On this granary, Domenig does not explain the existence of hearth. The existence of new hearth appears in the transformation from Granary to Dwelling-Granary. The dynamics of the role of hearth in the house of various tribes in Indonesia will be discussed deeper in this paper. The discussion of Indonesia's region will be limited only to growing architecture of the tribes in Indonesia or is often known as Nusantara Architecture (according to Pirjotomo).⁶

2. HEARTH AS THE ARCHITECTURAL ELEMENT

As explained in Semper theory that hearth is one of four architectural elements that have been used from the beginning. Through cases in Indonesia, it can be explained that hearth is not only an element that must exist, but also able to give consideration in forming other architectural elements. In this paper, the architectural elements discussed is mound or called the 'Defined Area of Ground or Floor'; while the discussion of roof and enclosure will be explained in the 'Roof and Barrier or Wall' discussions. Along time, the development of technology has brought changes in the building method. According to Semper, a shelter / hut is enough with four architectural elements. However, the current buildings become more complex and larger because it should accommodate more people and activities. As a consequence, another element is needed, a certain structure that usually consists of columns and beams that can support the sturdiness of the building. It will be explained through the discussion of 'structures-constructions' in this paper.

According to Unwin, the definition of an area of ground is fundamental to the identification of many if not most types of place. It need not have a precise boundary but may, as it edges, blend into the surroundings.⁷ As Weston explained, the earliest floors probably involved no more than clearing and enclosing a piece of ground, and of all the primary architectural elements the floor may appear most tied to constructional necessity and least amenable to formal manipulation. Yet although highly constrained, floors offer a surprising range of expressive opportunities.⁸ Ground or floor is one of the elements of the building influenced by the existence of hearth. The fireplace's first intervention into architecture is in the floor, requiring the elevation of the entire building to allow access and oxygen. The fireplace is no longer an autonomous object in the middle of a room but starts to become a system embedded in the architecture it serves.⁹

Even though houses in Indonesia are dominated by stage floors, however, some places use floors on the ground. At non-stage house, ground as the floor of the building is still used in many houses in Indonesia. Hearth or fireplace which is only bordered and protected with rows of stones or digged soil can still be found in Papua. Both floors on stage house or non-stage house in Indonesia have various ways to protect the fire in order to keep it burning and to protect the building elements on fire hazards. The use of certain materials on the floor around hearth, especially on the stage house, is applied to avoid the burning floor due to sparks or fire from hearth. As shown in Figure 1, different floor materials are used in one room at Kajang's house in South Sulawesi and Kasepuhan Banten Kidul's house in Cipta Rasa - West Java. Aside from protecting floor materials from fire, it is also easy to clean from water use during the cooking process in hearth. Bamboo and wood are materials commonly used for floors. In Figure 1, the opposite condition is shown at Kajang's house, wooden board is used around hearth whereas the floor made of bamboo is used in Cipta Rasa's house.

This shows that those two materials are still easier to clean and are not flammable. Floors with two different materials is used to distinguish the activity zone between the kitchen (hearth as cooking area) and other areas (guests area or social areas).



Fig. 1: The differences in floor materials (Left) Honai house in Papua (Source: Researcher, 2014); (Center) Two floor materials in Kajang house (Source: Researcher, 2023) and (Right) The detail of floor materials in Cipta Rasa house (Source: Researcher, 2022)

The roof divides a place from the forces of the sky, sheltering it from sun or rain. In so doing, a roof also implies a defined area of ground beneath it. And a barrier divides one place from another. It could be a wall, but it might also be a fence, or a hedge. It could even be a dyke or a moat, or just the psychological barrier of a line on the floor.¹⁰ Derived from the Latin word *vallum*, an earthwork that formed part of a Roman fortification system, the English word 'wall' refers to any extended that encloses space or retains earth.¹¹ In the four-season building, the existence of the walls is the basic. Instead of using wall as a room divider, it is used as an insulator for indoor air from outdoor. Walls are intentionally built to separate people who live in the building from the outdoor climate. It is not surprising when wall is made airtight, tight, and massive.¹²

The architectural concept in Indonesia is shade, therefore roof becomes the main element of the architecture. It can be said that each architecture in Indonesia definitely shows the roof, thus there is no flat roofs because it will look like a roofless building. Prism, pyramid and cone are the basic structure of architectural roof. The diversity of walls can be seen from the observation in architecture of Indonesia. Some buildings are built with walls while the others has no walls.¹³

The role of hearth in a building with four seasons is very important as hearth is the first technology for climate changer from cold air outside to warm inside. In two-season buildings, smoke from hearth is used for preserving organic building materials. The room in the building is made dark, always smoky and stuffy on

purpose, and it is certainly uncomfortable. It is surely not used for daily activities. It is for storage room, not for someone to live in.¹⁴



Fig. 2: Openings - (Left) Opening space in the rooftop at Mamasa traditional house, West Sulawesi (Source: Researcher, 2013) and (Right) Opening space in the wall in Toraja traditional house, South Sulawesi (Source: Researcher, 2013)

In 4 season buildings, the smoke from hearth is vented through chimney. It is understandable that the building in Indonesia has a relatively small openings, therefore the smoke is still trapped in the building and worked as preservatives of the building materials (Figure 2). Besides affecting the size and place of opening on the roof or wall, the building materials used are also affected by the placement of a hearth. At house in Kampung Naga, different materials are used in the room that has a hearth (kitchen). Walls, openings (windows and doors) from bamboo woven are used in kitchen in Kampung Naga. Not only to facilitate the smoke to come out, it's also to facilitate the supervision from outside to the fire in hearth. Walls and doors from wood and windows from glass are used in other rooms (to receive guests). At Kajang house, windows are not required where hearth is placed (kitchen) because smoke can still come out between the loose wooden walls. The space on the opposite side is used to receive guests and given windows that can be opened (Figure 3).

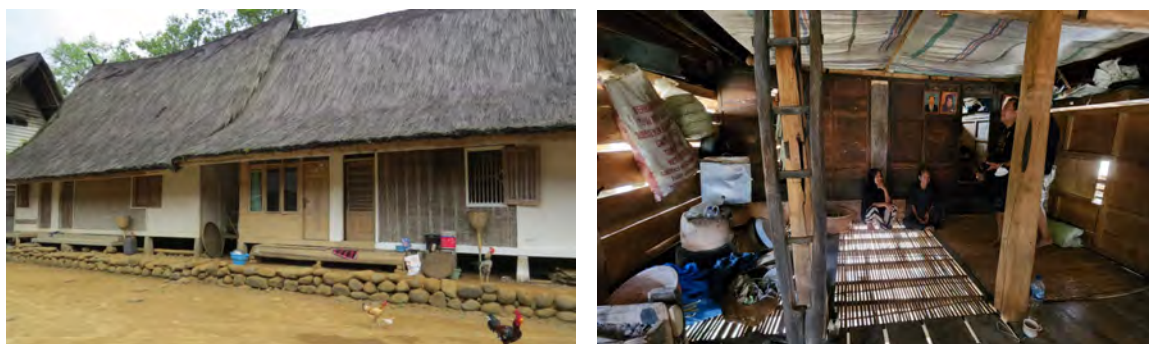


Fig. 3: (Left) Different facade materials on houses in Kampung Naga (Source: Researcher, 2016) dan (Right) Kajang house (2023)

The building structure system and the building construction refers to the strong and sturdy building when storms or earthquakes occurred, it is able to ensure life-safety for those who are in it, and is capable of maintaining stability by the possibility of force and load. Strength, sturdiness, stability and beauty are the concern of the structure system and building construction. Construction of architecture in Indonesia is rocking construction, it is a construction which connections between the building has the possibility of swaying, shifted, shuffled or changed place because of the external forces, such as an earthquake or windstorm.¹⁵

Hearth in Indonesia usually has connection with the structure or construction of the building. As shown in Figure 4, the fireplace in Yali house is in the middle of the room surrounded by four main poles of the house. In Bali house in Sidotapa, although the hearth is placed in the corner of the room but it has a connection to the roof structure. Similarly, in Javanese house in Magetan, as a part of a hearth, the loft used to put fuel or the preserved food also has connection with the building structure system.



Fig. 4: The connection between the fireplace and hearth is with columns - beams. (Left) Yali house in Yalimo - Papua (Source: Researcher, 2014); (Center) Bali house in Sidotapa - Bali (Source: Researcher, 2013) and (Right) Java house in Magetan - East Java (Source: Researcher, 2018)

The connection between fireplace or hearth with architectural elements can affect the layout pattern of the house. For example, the case of Yali house about fireplace that must be in the middle of sacred column (main column from the building) or the place of hearth cannot be under the main beam of the roof (Tengger House). The diversity of the house layout pattern connected to the place of fireplace or hearth is also affected by the diversity of social, economic and cultural conditions of the various ethnicities in Indonesia. From the house inhabited by main family to many families (communal). The use of fireplace or hearth together in some communities also determines the layout pattern of indoor room and even the form of the building. Like the

case in the Batak Karo, where one hearth is used by two families. Therefore, the form of the house is determined by the number of hearths, four hearths for eight families; six hearths for twelve families and eight hearths for sixteen families. The house in the Asmat tribe in Papua is also determined by the number of hearths according to the number of clan and is added a single hearth used together.

3. HEARTH – THE KILLER IN THE KITCHEN

The development of culture, economics and technology has made so many changes in the lives of society in Indonesia. The development of country sides to cities and small towns to metropolis can be seen in Indonesia. Before, house used to be the identity of a society, now the identity is based on its economic group in big cities. The availability of house in the cities is done by the developers who build the house en masse and focus on the economic side. It also makes the society who has had original cultural tradition adapt to the provided house. Hearth is replaced by the ease of use of modern technology; smoke from hearth considered making the room dirty and giving health issues make urban society eliminate the use of hearth. The role of smoke as the preservatives of natural materials of the building has also not applicable to modern buildings with brick walls and iron construction. This causes the role of hearth in house in cities considered not suitable and abandoned.

The influence of International Style can still be experienced in Indonesia in the 2000s, the value of locality and identity is no longer a priority. Opposite to the house in countryside, identity is still an important aspect compared to the function and economic value. To restore the longing of memory and bring back the identity especially regional identity, in 2002 the government in Indonesia made Laws of Building, one of which to accommodate the design that suits the disaster and to lift local wisdom as a building identity. Some activities related to the preservation of historic buildings (for museums) or the manufacture of traditional building prototype used as media of information in tourism or educational areas often ignore the interior of the building including the existence of hearth. Whereas the ethnic architecture in Indonesia has demonstrated the important role of hearth especially in the house.

One of the issues that develop today is an issue about health. Smoke from cooking activities is so dangerous that it has been called “the killer in the kitchen”. The World Health Organization (WHO) estimated that 3.8 million people have died prematurely from indoor air pollution associated with inefficient cooking practices. Of the four greatest risks of death and disease in the world’s poorest countries being underweight; having unsafe sex; having unsafe water, sanitation and hygiene; and smoke from solid fuel. More than a third of humanity, 2.4 billion people, burn biomass (wood, crop residues, charcoal and dung) for cooking and heating. When coal is included a total of 3 billion people – half the world’s population – cook with solid fuel. The smoke from burning these fuels turns kitchens in the world’s poorest countries into death traps. Indoor air

pollution from the burning of solid fuels kills over 1.6 million people, predominately women and children, each year. The most effective way to reduce smoke in the home is to switch to a cleaner fuel, such as liquid petroleum gas (LPG), kerosene or biogas.¹⁶

One study shows that the connection between the exposure of smoke from cooking activities with health problems is actually influenced by: ventilation in cooking area, method of cooking and cooking frequency. Poor ventilation, cooking method by frying and baking that raises a lot of smoke and cooking time in a long time tends to have a worse to health.¹⁷ It is also explained by Parinduri & Munir, smoke pollution generated from the hearth is very harmful to health and can cause various diseases, especially if the kitchen ventilation and physical condition of the kitchen does not meet health requirements.¹⁸ Other researches also explains the importance of ventilation in the kitchen to make the smoke comes out of the house directly. Kitchen without ventilation can cause CO₂ gas and the particulates comes into the house and increase the risk of ARI (Acute Respiratory Infections). The results research by Putri shows the proportion of the ARI incident in Kotagajah Village of 43.4%. Based on the results of data analysis, seven variables are found significantly connected with the incidence of ARI, which are the density of room occupancy, air temperature, air humidity, ventilation, floor conditions, and wall conditions. There is one variable that does not show connection, it is kitchen ventilation.¹⁹



Fig. 5: Hearth position outside the building. (Left) Matabesi house, Belu - NTT (Source: Researcher, 2015); (Center) Dayak Ngaju house in Central Kalimantan (Source: Researcher, 2012) and (Right) Bali house in Panglipuran - Bali (Source: Researcher, 2009).

As previously explained, ethnic houses in Indonesia were originally used only for granary and ancestral so that more time for activities was done outside the house. In some places, cooking activities are even done outside the house or at the back of the house in open conditions (figure 5). In the use of hearth inside the house, the natural material used on the wall, the roof or the floor in stage house is usually porous and has a good

ventilation. This is certainly reduce the smoke trapped inside the house and gives a good air circulation. The changing times and improving economic conditions usually bring changes in several houses in Indonesia. The house that used to be multifunction by having only a single room developed into many rooms and with more hearths. The development of new hearth is usually used especially for cooking or receiving guests (in house with cold climate) in different rooms. In addition, the use of modern technology has also been done without eliminating the existence of traditional hearth. The use of modern technology (gas stove or oil stove) is usually used daily while the traditional hearth is used for a ritual event (Figure 6). The use of modern technology in daily life will certainly reduce the use of biomass in a fairly harmful cooking process when done in a long time and in a room without good air circulation.



Fig.6: (Left) The 2nd hearth position outside the building in Bali house, Tenganan (Source: Researcher, 2013); and (Right) gas stove side by side with traditional hearth in Bali house in Tonja (Source: Researcher, 2021).

4. HEARTH - IDENTITY

Facts about frequent house fire in villages or traditional house in Indonesia make some people avoid the use of hearth in their houses. Based on the data collected, it is indicated that the fire often occurs due to electrical short circuit and causes sparks that burn natural materials of the building easily. This makes many traditional houses that have been preserved as museums or tourism objects has no longer presented hearth in the house, but put it in a different museum (Batak Toba traditional house, figure 7 - left). The historic building preservation program includes preservation of traditional village in Indonesia today also focus on the exterior of the building. The understanding of smoke as one way to preserve buildings are often ignored so that many preserved traditional houses only works as a dead museum that is no longer inhabited. Therefore, the hearth is gone or not used anymore. As the case in Bolon Simalungun House, traditional hearth is no longer used and there is no smoking process so that the building material becomes weathered and damaged easily (Figure 7- right).

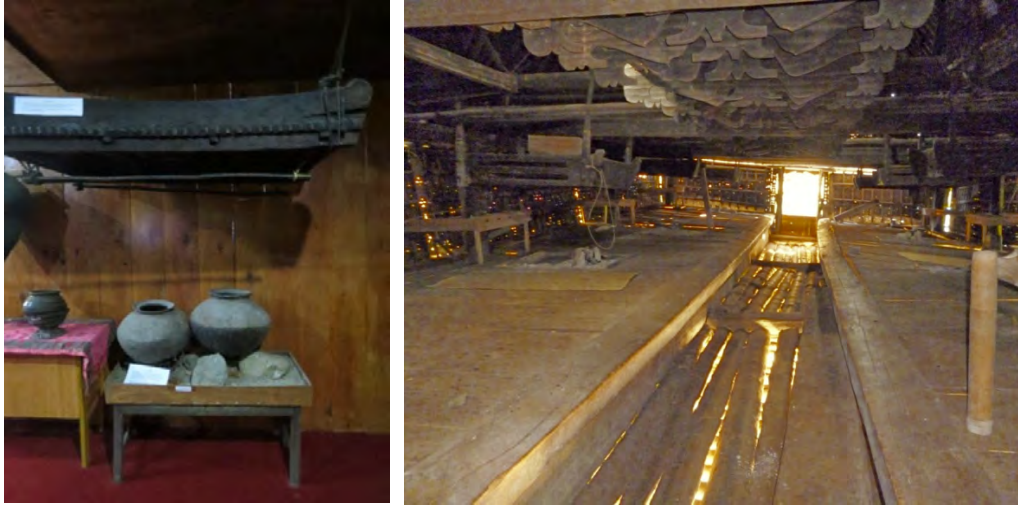


Fig.8: (Left) Batak Toba traditional fireplace in Museum (Source: Researcher, 2018); and (Right) A hearth that is no longer used in a Bolon house - Simalungun (Source: Researcher, 2018)

Until now, many people in Indonesia mostly lived in villages still maintain their traditions. Although there are lifestyle and technology changes, but local people have their own way to deal with them. As shown in Figure 6, traditional hearth has never been abandoned or eliminated although modern technology is used. Portable hearth has been started to be widely used in Indonesia. This is done to meet the incidental or new lifestyle needs. As shown in Tengger house and modern house in Banyuwangi (figure 8). Generally, each house has more than one hearth in Tengger. New hearth is sometimes made exactly the same as the old one and fixed (planted on the floor). However, portable hearth is now found with the same model but not planted on the floor in order to be easily moved when needed. Whereas in modern house in Banyuwangi, the use of portable hearth is found similar to their traditional hearth used as a symbol of identity for Banyuwangi people that still want to maintain the tradition.



Fig.8: The moveable hearth (Left) Tengger house, East Java (Source: Researcher, 2013); and (Right) Banyuwangi house, East Java (Source: Researcher, 2018).

In Bali, fire has a special position because it is a vital thing in the ceremonies and rituals performed. The belief in the God of Fire, Brahma, becomes the foundation of the Balinese preferential treatment of fire. One of the professions most closely related to fire is *Pandé besi* (blacksmith). *Pandé* works in a *perapen*, by lighting fires to melt or burn metal to create a variety of tools, ranging from ceremonial tools, agricultural tools, carpentry tools, daily tools, gamelan to *keris* (*keris*). In Bali, *perapen* is also seen as a sacred place because there is a temple in it which is believed to be a place to worship Brahma. *Perapen* comes from the word fire, *perapen* is *Pandé's* place of work as well as the basic organizational unit of iron *Pandé* industry. Thus, the word *perapen* does not only mean as a hearth and a workplace, but also as a "business" and "teamwork" of an iron *Pandé* production. Nowadays, not all *Pandé* descendants have *memandé* (metal processing or blacksmith job), in fact there are several generations who don't do *memandé* anymore. The loss of the *memandé* does not mean the existence of *perapen* in their house is removed. The profession as a *Pandé* besides being a main job is also a belief that has been inherited from generation to generation and is a form of respect for ancestors. Thus, *Pandé* residents cannot be separated from *perapen* even though not all *Pandés* carry out *memandé* activities on a daily basis. *Perapen* has become a symbol of strengthening the identity of *Pandé* residents. The existence of *perapen* which is still treated and maintained even though it is no longer used as a place of work can still be seen in several houses of *Pandé* descendants (figure 9).²⁰



Fig.9: *Perapen* that is no longer used to work *memandé* and is used as a symbol of identity for the *Pandé* residents in Bali (Source: Researcher, 2021)

5. CONCLUSION

Until now, some cases of the use of traditional hearth in most houses in Indonesia has shown the diversity of functions, shapes, placement, numbers and meanings. The diversity is strongly influenced by the variety of building site (topography) and socio-cultural condition. The role of hearth to architectural elements is shown through its connection to structures-construction, building materials, building facade, opening on the walls and roofs. The ethnic diversity in Indonesia also forms a diversity of shapes, placement, functions and meaning of the hearth that can affect the room layout pattern in the house. The development of time that brings changes to the lifestyle, the need for new activities and the technology used does not eliminate the existence of hearth but makes people use hearth side by side with modern technology. The understanding of developing issues (issues of health, fire hazard and building preservation) need to be responded wisely. Participation from the government is needed to provide the correct understanding (socialization) and make the right policies associated to the preservation of the traditional houses in Indonesia.

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THE OWNER, THE PRIEST, AND THE CARPENTERS' ROLE IN SHAPING THE PERSISTENCE AND CHANGE OF BELIEF SYSTEM'S ARCHITECTURAL EXPRESSIONS IN BALINESE URBAN VERNACULAR HOUSE

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THE OWNER, THE PRIEST, AND THE CARPENTERS' ROLE IN SHAPING THE PERSISTENCE AND CHANGE OF BELIEF SYSTEM'S ARCHITECTURAL EXPRESSIONS IN BALINESE URBAN VERNACULAR HOUSE



The study investigates how religious traditions manifest and are expressed within domestic spaces, specifically in the prevalent urban vernacular houses, amidst the increasing density of post-colonial cities. It examines the roles of the house owner, the priest, and the carpenter in the interpretation of religious norms, hence shaping the persistence and change of the belief system's architectural expressions in self-built urban vernacular houses, in the fast-paced urban settings, positing that religious traditions act as steadfast preservers of cultural heritage during times of spatial and social shifts.

The study employs a multi-sited ethnographic approach in the rural areas of Bali Island and traces their architectural translations in the urban vernacular setting of Denpasar City, Bali. The study argues that a comparison of genealogical groups' architectural adaptation may provide a deeper understanding of the spatial practices of religious society in dense urban vernacular environments. Examining the roles of the house owner, priest, and carpenter in both traditional and contemporary formations of vernacular houses in rural and urban villages, this observation interprets the way architectural production accommodates Balinese unfolding contestations of identity.

The findings highlight the different roles of the stakeholders in shaping identity, community building, and collective decision-making. The persistence and changes reflect the cultural values of intergenerational connection, community, and family. The efforts to understand the urban vernacular house require an appreciation of the fluid evolution of religious traditions and their resulting spatial arrangements, which are influenced by human actions.

1. INTRODUCTION

While studies on Balinese vernacular architecture can be easily found, we know very little about the roles of the house owner, the priest, and the master carpenter in the creation of a Balinese urban vernacular house; houses that are commonly seen as the 'ordinary houses.' Studies in Balinese architecture have generally ignored these houses, seeing them as peripheral to the research, and have put aside the fact that ordinary Balinese people's houses are the major physical elements that shape the environment. This article investigates the role of the priest, master carpenter, and the house owner in the transmission of traditional spatial principles.

The research employed an ethnographic approach to allow me to excavate meanings embedded in the spatial practices that took place in the construction of the urban vernacular house. I conducted interviews with the house owners, a master carpenter (an Undagi), and a priest who are involved in the building process of the urban vernacular houses that are being studied. Intense participant observations in the houses were also conducted. I was invited to stay in these houses and permission to be involved in the daily activities was given. Thus, my data primarily consists of interviews and observations during my stay in the houses. This

study presents the narratives that are given by the interviewees and spatial observations to capture their understanding and provide an interpretation of the dynamic reality of the ordinary, Balinese urban vernacular house.

2. BALINESE, GENEALOGICAL GROUPS AND PERSISTENCE OF BELIEF SYSTEM'S ARCHITECTURAL EXPRESSIONS

Various discussions regarding Balinese culture have been made, among them are works of Suartika, Zerby, and Cuthbert¹, Geertz², Hobart, Ramseyer, and Leeman³, Lewis⁴, Pringle⁵, and Vickers⁶. However, it is essential to note that assessing the term 'Balinese' is still challenging. Despite the common perception that Bali is a homogenous entity, it does not have a uniform culture. Pringle⁵, Hobart, Ramseyer, and Leeman³ mention that the division occurs between the lowland people and those of the highlands (Bali Aga people), and between the urban and rural groups. Vickers⁶ mentions that: 'ultimately there is no single 'real' Bali. When the package is unwrapped, we are left with something of a Pandora's Box of political struggles, individual glory and suffering, optimism and frustration – in short, both are a nightmare and "a daydream of a summer's afternoon.'

The most common dichotomy of Balinese Hindu population is between the common "Balinese," who proudly consider themselves descendants of the East-Javanese kingdom of Majapahit and their nobles who fled to Bali after the advent of Islam there in the sixteenth century, and "Bali Aga," the aboriginal inhabitants of Bali⁷. The Bali Aga are distinguished by their mountain environment and distinctive village style. Some writings also define the Bali Aga as an older substratum of the population conquered by the later wave of orthodox Hindus from the Javanese kingdom of Majapahit and their Balinese follower⁵. However, Pringle explains that there is no evidence that the ancestors of the Bali Aga arrived on the island earlier than other Balinese and there is no reliable historical document about how the Bali Aga people acquired their form of Hinduism. Regarding this diversity, it is crucial to note that the population of the Bali Aga is not large, compared to the Balinese.

In their daily lives, Cuthbert⁸ describes that the Balinese lived their lives as an unselfconscious process, where rituals, religion, craftsmanship, and their sense of space and time were enacted as integral to their sense of being. However, cultural tourism's focus convinced the Balinese people that they have a 'culture', something precious that they perceive as a capital to be exploited and as a heritage to be protected. As it was being manipulated and appropriated by the tourism industry, their culture became not only a source of profit and pride, but also a cause of anxiety for the Balinese, who started wondering whether they were still authentically Balinese⁹.

In the effort to reveal the translation of religious tradition to the dense urban vernacular environment, I recognize the importance of looking at the root, the place where religious tradition and belief system's architectural expressions are concentrated. However, a direct comparison between "the rural" and "the urban" seems to contain a simplification of the way the Balinese transmit their tradition, because based on the preliminary study and archival investigations during the formulation of the research questions, kinship groupings (and its relation to the temple system) among the Balinese society is significant.

There is a deep connection between the spatial (architectural) patterns and social patterns, and in this case, with familial relation and their temple system. This connection is strong beyond their conformity to the general rules as contained in traditional manuscripts. Some previous researchers who mention this point are Geertz¹⁰, Lucas¹¹, and Lancrer¹². These three researchers focus on various topics of kinship or genealogy; Geertz¹⁰ mentions the strong relation of genealogy to the spatial distribution of the traditional house; Lucas¹¹ includes kinship system in explaining the pattern of traditional villages; while Lancrer¹² mentions that the Balinese complete manifestation of the religious traditional rules (the spatial organization, architectural production techniques, and the uses) is concentrated on the origin house of the religious descent group. Preliminary conversation with Balinese sources and researchers confirms this phenomenon. Therefore, this genealogical theme is considered beneficial to the strategy of tracing the translation process.

Mead, Geertz, and Waterson's writings provide anthropological descriptions of Balinese culture and its indigenous principles, where kinship and the sacred practices tied the Balinese people to their root/ origin: familial bonds and their home villages. Preliminary observations and interviews indicate that the bond to the origin resulted in particular spatial arrangements and ways of occupying the space, whether domestic or urban. This observation corresponds to Lancrer¹² and Parimin¹³, who mention direct filiation relationships of the houses within the same family line. The family genealogical order corresponds to the genealogical order of the dwellings. As a family builds a new house, it directly relates to the house of origin. The new house is a descending house that is affiliated with the first house, in which the temple of the first becomes the original temple of the new house. Therefore, the dynamic development of spatial needs and spatial traditions is reciprocal to the ceremonies and rituals of the genealogical groups. As the family grows and the houseyard experiences overcrowding, a group of households could create a new house with a similar order. Even though the new house will have a new temple, the household maintains the sacred relational relationships with the temple in the central houseyard as the form of the "origin point" order¹⁴. The growth of the households will establish a compound of dwellings linked together by the sacred connection of collective worship, a web of micro temples, and religious spaces that are oriented to the origin-point temple. These physical patterns in every genealogical group may have differences and the patterns represent the basic variations of domestic

spaces that become the basis of house yards development in almost all parts of Bali Island, with exceptions in the palaces and the houses of the Brahmans that include deeper ceremonial and political considerations.

Observations and interviews corroborated this phenomenon. Within a group of religious descent, the complex architectural expressions of their belief (the spatial organization, the architectural production techniques, the rules of functions, and the building ornamentations) are concentrated in the original house¹⁵. Descending houses are anchored to the original house and may have a greater margin of architectural freedom. The houses that are built later are allowed to have altered architectural features as long as the original house remains consistent with the traditional model. This affiliation and strong attachment to the mother's house also helps keep the unity of each socio-religious group. The descending families would regularly return to the temple of origin for their religious rites and ceremonies. The architectural components of descending houses of different genealogical groups may vary and differ in their details. However, the descending house's design and construction may reflect the house of origin. As an additional note on dynamic architectural transformations: The Balinese may implement innovations, adaptations, and erasures of belief system's architectural expressions in the domestic and social spaces, particularly in the locations outside of the worship spaces. These changes are more commonly seen in descending houses, and less visible in the original house and in their temples.

The Balinese traditional house is built on the principle of free plan and stresses significant variations in the directions of the space. Pak Ketut rural house (fig.1) illustrates the house with a central courtyard/ natah, with buildings surrounding it and constitute a residential compound. The Natah unifies the residential area. The plan highlights three open spaces whose shapes, boundaries, and directions differ according to the walls and buildings around them. The locations of each function are based on nine traditional hierarchical sectors, in accordance with the cosmic model of the Sanga Mandala. This theoretical mode of structuring the space was put to the test in the surveys by comparing the location of the domestic spaces to the prescriptions of traditional architectural drafts. The plan of the house follows the horizontal hierarchization of space, and conceptual upstream and downstream direction which refers to the sacred Mountain Agung and east-west axis. Spatial observation of the rural and urban houses also confirms the vertical hierarchization of the domestic spaces. It is evident that the Balinese domestic space is not neutral. It is hierarchical and meaningful, representing Balinese Hindu religious order. Balinese houses are made up of a mosaic of spaces with different meanings which require boundaries that symbolize discontinuities and partitions of territories. It is also evident that the Balinese houses contain precise and complex rules that determine the location, range of measurements, and dimensions of the house and their constructive elements, calibrated on the body measurements of the essential figure of the family.



Fig. 1: Pak Ketut's rural house (left) and urban house (right). (Source: Dimas Wicaksono, 2023).

3. UNDERSTANDING THE UNDAGI AND THE PRIEST'S PERSPECTIVES

In recent days, the caste definition as “colors” (defined as “role”) is popularized, instead of the traditional definition that interprets caste as levels in a society. As a society, Balinese Hindu contain groups of people that have different “colors” that complete the society by playing each role and occupation. For a Balinese Hindu, an occupation is part of a religious responsibility that enables a person to contribute to the community. Balinese use the term *ngayah* to express this responsibility.

It is difficult to define, and it should not be defined as a singular meaning because a word, a term does not only have a singular meaning. It is more complicated than that and should be

influenced by our perspective. In the simplest definition, ngayah is an action that is done with sincerity.

Ratu, a Priest

Ngayah, is also a form of Yadnya (Balinese Hindu worship), Yadnya's deeper meaning is a holy sacrifice. We offer something without expecting anything in return. Worship and providing offerings are samples of yadnya. Furthermore, ngayah means doing something with sincerity, without expecting a reward. So, a person can do ngayah by playing a musical instrument gamelan at the temple, cleaning the temple, cooking or driving to support religious activities, and producing banten or offerings; those could be considered as ngayah. In the spiritual context, a priest is ngayah, giving spiritual service by doing his profession, by becoming the translator of Sang Hyang Widhi: the God. Ngayah is not a ritual. A ritual is a form of communication with God, while ngayah has a characteristic of helpfulness in society; a characteristic of helping each other without expecting a reward. In ngayah, everyone can participate in religious activities. The keyword is participation so that every part of the community can participate regardless of their background and abilities. It is not an egalitarian value because everyone still holds their status and social class. It is a way to invite people from different colors of the society to participate and be positioned based on their expertise and ability. From the perspective of Balinese spirituality, a person does not choose a profession. Besides hard work and the process of learning, people are having their profession because they are destined and cannot avoid their destiny. They do their work because they are destined, and they do it sincerely.

I would not acknowledge myself as an accomplished master carpenter. Because based on a Balinese saying "eda ngaden awak bisa, depang anake ngadanin." It means do not proclaim yourself, let others name and judge you based on your work. The philosophy behind the Balinese work is that they shall not proclaim themselves as great masters in their field, but they will let their work do the talking for them.

Pak Yan, a master carpenter

Ability and knowledge are blessings. If someone becomes an expert, it means that the person received a gift from the God. As I lead rituals and ceremonies, I ask a permission from the God to borrow God's mantra. I am not myself; I am here because God has kept me here. Balinese proverb mentions "eda ngaden awak bisa, depang anake ngadanin." Do not think that we are experts, we should let other people judge us.

Ratu, a Priest

In the contemporary world, people struggle to advertise and sell themselves. In contrast, the Priest in the interview mentioned that he always hoped that nobody would come. However, the Priest would happily help anyone who come and asks for help and answers. The Priest carries a big responsibility because a Priest's advice is mandatory. In the context of rituals and ceremonies, the Priest's words are God's voice, he is God's

extension in this human world. Some Priests are famous for different topics, although in general, they are the living source of Balinese Hindu knowledge. Any solution to any problem would be based on the basic philosophy.

Pak Yan, the master carpenter, gained his knowledge from his parents and through apprenticeship. His grandfather and his father were a carpenter, and experts of Balinese wood carvings. He answers my curiosity regarding the difficulties of finding an Undagi. There is not much available information about this master carpenter figure, despite the vital role they play as the keeper of traditional spatial principles, and commonly mentioned as a central actor in the construction of Balinese traditional buildings. According to Pak Yan, it is unlikely and would be extraordinary that a person will advertise himself as an Undagi, except if somebody else mentions or identifies you as an Undagi. No real master should advertise, and he would let people know him as they appreciate his work. As the building does not have any direct pointers to the master carpenter, a conversation with a local knowledgeable figure is needed for a foreign researcher to locate a prominent Undagi. Usually, people identify an Undagi from word of mouth. He states that only an overly proud person would advertise himself as an Undagi. He works for God, he does not want to go beyond His power, and he would rather be humble.

For me, I do not have the courage to face the consequences. Sometimes, when I do not pay attention to my ritual, I easily forget things and cannot concentrate on my work. It is difficult at work. I must ask for sacred permission, and the solution will be given, a way to solve my problem appears. This is based on our belief. I will be the one who constructs the building elements at the project site. It is my responsibility. During this construction process at the project site, the owner is not involved in the construction works. The owner only suggests good timings for the project and is not involved in the wood joinery works or other construction works.

Pak Yan, a master carpenter

In Balinese carpentry and building works, sikut, the traditional measurements, is known. Every measurement of the width and height of a building component has a name. The ancestors of the Balinese provided these measurements. Besides that, every profession/ occupation will have a shrine/ pelinggih for every type of occupation. In the workshop, the master carpenter also has a pelinggih. Before a carpenter dares to do a project as an independent carpenter, there is a ceremony called the mintanen mrajapati. Measurements are sacred, so before someone officially declares himself a carpenter, he will have to do this ritual/ ceremony. The objective of this ceremony is to request an intangible permit. The objective of the ritual is to ask the Gods and Ancestors for their permission before a person becomes a professional. This spiritual permit is mandatory for the carpenter. The main tukang, the carpenter must have this spiritual permit. After he gained this permit, every time he started his daily work, he also had to request spiritual permission, so every result

was permitted. The reason is that when the carpenters do the work, they do it based on our worship of the Gods and ancestors. We do the work without expecting a reward. By doing our profession, we are doing a spiritual service. Since most traditional Balinese are affiliated with sacred religious components, a Balinese cannot freely build and create such physical components. These traditional components are considered sacred and only the ones that hold the spiritual permit are allowed to create the components. Hence, the qualification is divided into two categories: the pragmatic qualification and the *niskala* qualification. The tangible and intangible qualifications.

In the work of a master carpenter, each component is based on a particular reference. The owner sometimes comes with a measurement. For example, an owner can come and request a specific height, plus the width of two fingers. It is called *urip-urip*. So, this measurement could come from the owner. *Urip Urip* means enliven. A person who understands will learn about his own *urip-urip* and request the carpenter to build according to this measurement. If the owner does not understand his own *urip-urip*, he could trust the carpenter to give the measurements. This measurement will be based on the size of body parts, and a carpenter could give his measurement. The measurements are intended so that a building will have a life, it will have a soul or spirit. Furthermore, ornamental patterns are not mandatory. If the owner asks for a particular pattern, the carpenter will make the ornament according to the owner's request. It depends on the owner. It could be based on two things: it could be based on the owner's wants, or it could be based on the owner's financial power. The owner could mention that he has budget limitations and ask for advice on the possible ornaments that are affordable and within his budget.

If a client has an empty land and wants to build a complete traditional building, the master carpenter will guide him from the beginning. He will start by enlivening the land with a ceremony. He will start measuring, or the client could come up with his own measurement and decide the size of each building. If the client is not ready with his measurement, the master carpenter may ask him to go to a *griya*, a priest's house, to ask for an appropriate measurement. The client usually has a priest that he is attached to. Hence, he should also communicate with this priest, particularly regarding the measurement. The client can also take his priest to the master carpenter's workshop, and they can have a conversation about the project. The master carpenter will not prefer to use a general measurement and would suggest the client communicate with his priest regarding measurement because each region in Bali may have different variants and different details of measurement. If they agree on the project, the master carpenter will come with the priest to the building site, and they may measure the site together to find an appropriate measurement for the owner/ client. Only afterward, the master carpenter can start the work.

The priest will philosophically measure things based on the priest's literature and based on the owner's body size. Pragmatically, in order to make a beautiful building it depends on the builder, the undagi. Within this process, negotiations may happen. For example, the undagi may have a professional argument and suggestion to modify the measurement. The width, or the length, makes the building beautiful. The priest may also communicate the undagi regarding the size and measurement, and ask the undagi his professional opinion, about the beauty and appropriateness of a set of measurements. An undagi may suggest an adjustment to a measurement, whether to add or reduce size. It is a common thing that a Balinese has a spiritual guru. This spiritual guru is their priest. The client should visit the priest in the griya and ask about a measurement. Within this measurement, the niskala, the intangible, is located. It is always about the balance between the skala and the niskala, between the tangible and the intangible. A project that is built in the Singaraja area will be different from the ones built in the Tenganan area. Hence a person may want to be approved or permitted by their spiritual guru, the priest that they believe, most likely by the priest from their place of origin. An undagi is the executor of the work and building consultant, equipped with the knowledge of workmanship.

An undagi may work anywhere. However, they have to follow local rules. When a master carpenter has a project in another village, he cannot bring my village custom/ habit with him. There will be a kind of negotiation with local customs. He needs to look at local habits and conventions. Sometimes it also depends on the owner's knowledge. If the owner has the basic knowledge, the conversation between me and him will be longer, because there will be much to be discussed. They may discuss the sikut, the measurement, and many other things. However, if the client does not have the basic knowledge, the conversation will be shorter because he will depend on master carpenter's knowledge and trust the master carpenter's decisions.

Usually, the conversation would start with the owner's description of his wants, and based on his description, the Undagi would suggest the height of the columns, the distance between columns, the width of the building, and other measurements. They would also discuss the roof materials. In general, the conversation would cover the topics of measurements and sizes, the building materials; the type of wood that is going to be used in the construction process. The design of the ornaments and carvings such as floral designs or other ornamental types. The price usually being discussed at the end of the discussion. Hence, the topics of the discussion include the dimensions, materials, design, and price. An owner who understands the Balinese principles may also suggest the dimensions, such as the heights and the type of wood. He may also discuss the good time to start the work. There is a generic term Nuasen in Bali, which means "starting an activity". For example, starting the activity of dancing, wood-crafting, playing a musical instrument, et cetera. Nuasen means starting an activity on a good day, to expect a good result. A big ritual in the temple also may include this nuasen activity. The point is choosing a good day to start working, expecting safety and success. Before the Undagi start the work, he would let the client know that he is starting my work. A client may also request

a particular date that the Undagi start the work. If he does not provide the date, the Undagi will decide for himself. At the beginning of the work, he personally starts the work, before he lets the workers help him or continue the work.

During the construction process, rituals and ceremonies are involved. Every morning the Undagi does a morning ritual and offering at the *pelinggih*, and every six months he does a major ritual, to respect and worship the God. This ritual is called the *tumpak landep*. The *Tumpak Landep* ritual is a ritual to respect the *Pasupati*/ weapons or tools which comes in different forms of weapons, or in modern times, in many kinds of equipment that people use to do their work. Hence, this ritual is for his work/ occupation as a master builder. The ritual for the client would be different. For the client, the Undagi provides a good date to start the work, and a good date to end the work. Whether the project will be finished in six months or a year, the Undagi will want the project to be finished at a particular date. There will be a good date to finish the works in his workshop, and a good date to finish the work on the project site. When the project is finished, the Undagi will also provide an offering, *ngebanten*. In the Undagi's everyday routine, he always provides offerings, *canang*, *ngebanten canang*, offering every morning to ask for safety and blessing.

I shape the building and woodwork and outsource the small details. These detailed decorative elements will be sent here, and I will be the one who is responsible for putting these building elements together. Hence, the finishing process of all woodwork is also done by my workshop. I will be the one who constructs the building elements at the project site. It is my responsibility. During this construction process at the project site, the owner is not involved in the construction works. The owner only suggests good timings for the project and is not involved in the wood joinery works or other construction works.

Pak Yan, a master carpenter

In the mass production of building parts, for industry, a Balinese do not need to set a good date. However, for custom, traditional projects, the Undagi shall follow the good day. He needs to arrange the good days to start, to finish, and the kinds of rituals that should be done. Clients who are aware of the traditional principles would also bring their *banten* or offerings to the workshop on the day the Undagi start the work. They may also have a good day to pick up their orders from the workshop. Even if the work in the workshop is finished, they will take the orders according to their good day. They will wait until the good day comes. After the building components are transported to the project site on a good day, the construction of the building will wait for another good day to start the construction works, and the construction works will need to be finished on another good day. There are many good dates that the stakeholders should pay attention to. However, according to the Undagi, most of the clients do not want to know the process and choose to let him decide the details. In the villages, people really care about the details of the work and the good timing. Most city people pay less attention to these traditional principles, and not considering good timings or good

days. In most cases, they only care about the good timing for the finalization of the project, the day to install the roof; during the purnama, the full moon.



Fig. 2: Pak Yan's workshop. The Wood is carved and decorated in the workshop. (Source: Dimas Wicaksono, 2023).

4. THE SACRED THINGS, BASED ON THE HOUSE OWNER'S KNOWLEDGE AND INTERPRETATIONS

In Bali, the seen and unforeseen, the tangible and intangible always construct the whole story. Balinese are tied to their origin place, and most Balinese know where they came from. Although they may not be able to describe each ancestor's detail, or how many generations have passed, they are able to describe the origin of their family. The family tree is not commonly recorded, but they can see the number of the older generations that lived in a house before them, by looking at the merajan/ house temple. The size of the merajan could also indicate whether the house is the main house of the family, or not.

To provide an illustration, I could describe my ritual places during Galungan day. I start at my own house. Since I also have a house in Renon, I visit the house and provide some offerings. Afterwards, because my family originated from Ubud, I take my family to visit the origin house in Ubud. The origin house has the main merajan for our family. I also have relatives in Gianyar. So, after the rituals in the family temple and Village temples in Ubud, our family do an additional visit to Gianyar area to some relatives' houses. The destinations are all known houses that my ancestors, the generations before me, lived in.

Bli Indra, a house owner

The affiliation of a Balinese to the Tri Kayangan Temples or the village temples is defined by the location in which the person is listed as a member of Banjar Adat (a hamlet or a subdivision of a traditional village). In the most common case, this banjar membership is at the location of the origin house of the family. However, a person could choose to be a member of another Banjar Adat. For example, if a person lives in the city, he could choose to be a member of the Banjar Adat based on the location of his house. A Balinese could have more than one Banjar Adat membership, but this is very rare because of the many obligations of being a member of one Banjar Adat. A Balinese should be involved in every communal activity of his Banjar Adat and Desa Adat. The activities could be religious rituals in temples, marriage, death, and many other communal activities. Most timings of these activities are not scheduled regularly, so people may have difficulties accommodating the time and schedule of Banjar's activities. Some people choose to pay the fine to local Banjar Adat or Desa Adat because they cannot provide the time to be involved in such activities. However, it is not the fines that worry the Balinese, but the social judgments from the other community members.

Some people may have different personal stories about their reasons. Religion has standards, but in practice, each individual may practice it differently based on individual belief and practice it based on personal ability. I try my best to follow the rules of tradition. However, if I could not accommodate the rules, I did not feel forced to accommodate those rules.

Pak Ketut, a house owner

Besides attachment to the village temples, Balinese Hindus also feel an attachment to smaller shrines and sacred natural elements in the public spaces. The attachment is different for each Balinese. For example, a trader will also do rituals at Pura Melanting, a local temple that is dedicated to traders. A farmer may do rituals at Pura Subak, a temple for farmers. People who live near the river occasionally put some offerings at a Tugu Penyawangan, which is a shrine that is located next to the river because they believe that the confluence of two water currents is 'tenget', angker, sacred. Each Balinese Hindu may have a different calling and attachments to these sacred points. Religiously, some places are considered as 'tenget'. The confluence of water currents, the intersections, valleys, these places are considered 'tenget'. Besides those places, a Perempatan Agung, the big intersection next to the market also considered sacred. The ngaben ritual, the ritual of burial, will include this big intersection in their route to the cemetery. People put offerings at these sacred locations. The priority is the sacred places within the house, in front of the gate, and the next priority is the sacred places surrounding our house. It is also helpful to understand that they will put offerings at the sacred points that they pass every day. The explanation should include the tangible and intangible, the skala and the niskala. The symbolization that the Balinese do, is related to the niskala, the intangible. It means that

the Balinese respect the external power that they believe in. The Balinese believe that the unseen exists, and the unseen has power that could influence human life. However, the placement of offerings in every Balinese Hindu house may have consistency. The owner will put offerings at their *pelinggih*, *pelangkiran*, and house temple.

Each house, each building, each *pelinggih*, has *pengurip*, the unseen content that is brought to life through rituals. There is a particular *banten*/offering that serves the function of bringing the unseen to life, to activate them. Hence, the Balinese structures have different qualities from regular ordinary structures. The Balinese sacred structures went through the rituals that animate these structures. The sacred structures have higher-level rituals and offerings and are treated differently. This influences the status of sacredness, and higher importance spiritually. The spiritual energy needs to be recharged regularly, through the offerings. Once a structure is brought to life, the Balinese believe that it could support the harmony of the owner's life. However, a lack of treatment could create negativity and conflicts.

A mistake in design, inaccurate measurements, and inaccurate *sikut*, would also create negativity. Hence the Balinese believe that they should consult the people who understand the religious spatial principles before they build an important structure. *Sikut* means measurements that are related to *pengurip*, the sacred measurements that animate or enliven the structures. It is not only about the measurement, but a measurement with meanings. The risk of negative spiritual energy and calamity may happen less in non-Balinese houses. These stories are more common in Balinese sacred structures. Balinese believe that wrong traditional measurements could cause conflicts. That is the reason for consulting a *sulinggih*/ a priest, and an *undagi* before the construction process started. These people are blessed people with spiritual abilities, formalized through ceremonies and rituals. They are the ones who have permission, and the ones who would be responsible and receive the risk if they made a mistake. Ideally, they lead the decision-making of any religious process, including the design of sacred elements, and are held responsible for design flaws, spiritually.

The minimum sacred components that a house should provide is a *Pelinggih Padma* as the house temple and a *Penunggun Karang* on the house yard. *Pelinggih Padma* is a representation of the God, while *Penunggun Karang* is the guardian of the house. Having these two components are enough for the owner to serve the daily spiritual life. Besides the *Pelinggih Padma* and *Penunggun Karang*, there are smaller common sacred components called *pelangkiran*, the micro shrines. These micro shrines are usually located in the kitchen, or in every separate building. Every individual building is animated, and this small shrine in every building is a symbol that the building is enlivened and is a place to put our daily offerings.

If a person cannot afford to conduct a ritual or ceremony, he does not have to do it. However, if a person is able and refuses to conduct the ritual and ceremonies, he has humiliated himself. A Balinese Hindu should fulfill the ritual and ceremonies accordingly. If a person is wealthy and only spends the minimum, he is being ungrateful. The rituals and ceremonies have their levels: Nista the lowest, Madya the middle, and Utama the highest. If a Balinese Hindu cannot afford a ritual, he could choose to do the simplest form of ritual, while a wealthy and abled Balinese Hindu should choose to do the Utama, the highest level of the ritual and ceremonies. So, it depends on the calling and ability. The rituals and ceremonies should not be a burden, there will be a solution to every context.

Bli Indra, a house owner

From the religious speech I heard, it is alright not to follow the traditional rules 100% because we have very limited conditions. If I refer to the rules of tradition, applying the spatial rules in such a small land is challenging. I try my best to follow the rules of tradition. However, if I could not accommodate the rules, I did not feel forced to accommodate those rules. The main thing that I follow is the rule regarding the location of the main sacred space of the house: the house temple. The traditional rules mentioned there this house temple should be located at the northeast of the house and that it should be in the highest place. Hence, in the house, the house temple is located on the third floor, in the northeast part of the house.

Pak Ketut, a house owner

If a Balinese live in an apartment or a small house, the minimum they can provide besides the Penunggun Karang and Padma would be one Pelangkiran in the kitchen. However, the Pelangkiran's function is not for ritual/ prayer. Balinese would put the offerings at the Pelangkiran. The ritual of prayer is done in the Padma, in the houseyard. The Pelangkiran, as a sacred space, is made by the owner so that the owner can place their offerings there. The owner purifies the place of the Pelangkiran and builds its sacredness by keeping it clean from pollution, and from unholiness. To understand the diversity in Balinese Hindu, we should understand the concept of Desa Kala Patra: context of place, time, and condition. What could be done in different contexts and situations? Balinese Hindus can build sacred places by themselves, based on their local situation and contexts, to fulfill their personal spiritual needs. The Yadnya, the rituals and ceremonies, should follow a person's condition and financial ability.

In Pak Ketut's case, his main consideration when he was designing his house was about the sacred place. Little or less consideration was given to other rooms because of the spatial limitation. He experienced confusion during the design process and the decision to build the house temple on the third floor, the highest floor of the house, was made in the middle of the construction process. The decision was made based on the extra building materials that he had after the second floor was built. He feels that the materials were a gift from God because he has detailed calculations of the materials that he bought. The decision was made by himself after a short discussion with the building construction workers.

Pak Ketut's decision to not strictly follow the traditional principles is based on the fact that his family already owned a traditional house in his origin village. Even if he had bigger land and financial power, he mentioned that he would not choose to construct a house based on the traditional principles in the city. He felt that the village house already applied the traditional principles, fully guided by an Undagi, so he did not need to construct a similar one in the city.

This is a simple house, but this is enough for me.

Pak Ketut, a house owner

"Enough" may be the conclusion, but at the same time, it implies that there are wide degrees of individual feeling of sufficiency. What is the nature of the sufficient amount of the belief system's architectural expression? Can we later describe the sufficiency of the belief system's architectural expression in relation to the increasing density?

5. CONCLUSION

It seems that the repository of tradition is not only located in the practical role of Undagi and the Priest, but also located in the daily ceremonies and rituals. Although not easily identifiable, the Balinese urban vernacular spaces are organized according to sequences of actions and routine religious performances.

In the literature, the traditional patterns of the Balinese traditional houses are guided by the sacred and profane. The traditional spatial principles are influenced by two axes: the cosmic axis which refers to the mountain (kaja) and the axis which refers to the sunrise. The two directions act as the basic guidance for the Balinese spatial arrangements, influencing the ways the Balinese arrange the space within their house, the surrounding environments, and their villages. In the daily life of a Balinese Hindu, the axis also orients their sacred and profane activities, such as their worship, ceremonies, or sleep. For example, the location of the Merajan/ house temple is always located at hulu kaja kangin, or kaja kauh (in the region of Tabanan). The case study illustrates the non-traditional consideration that adds to the ways the house owner arrange the spatial configuration of their houses. While (1) hulu/ upstream and teben/ downstream and (2) sacred and profane have always been a part of the traditional principles of the Balinese spatial arrangements, some additional themes appear and become additional factors to be considered. These additional themes are (1) the front and the back of the house, (2) divisions of clean and dirty areas, (3) higher and lower parts of the house, (4) public and private areas of the house, and (5) economic values of space. Some possible reasons of these considerations are the shifting values in the society, the shifting/ less control and authority from undagi/ traditional architects, and changes in social system and the Balinese culture. In the past, an undagi may have

the authority and influence in controlling the spatial configurations. Currently, this authority has been shifted and divided to many stakeholders, including the owner of the house, the builders, formal/ registered modern architects, contractors, government, and other external voices that may influence the decision in the design of the houses, the surrounding environment, and the urban spaces. This shifting authority may influence the decision-making process and create variations in spatial arrangements. Ambiguous spatial practices of traditional religious values in dense urban vernacular environments also exist because of the way these principles are translated, in time and space (from the past to the future, and from the rural agricultural to dense urban kampungs). These translations could be observed by looking at the way the rituals and ceremonies are practiced in the rural environment where the religious values are practiced and facilitated by the availability of space and resources. Rituals can be (1) performed and facilitated by space, (2) performed but not facilitated by a space, hence a borrowed flexible space, or (3) no longer performed. Space can (1) facilitate the rituals and ceremonies, or (2) provide ambiguity to facilitate rituals and ceremonies.

From the perspective of a house owner, a memory-based knowledge of the routine ceremonies and rituals justified their decision to limit the involvement of the Priest and the Master Carpenter in the planning and construction process of their houses. Hence, the communication that occurs during the planning and construction is not limited to a simplistic triangle of Priest – Undagi – House Owner. In the dynamic decision-making process of the construction of a Balinese vernacular house, the house owner decides his own degree of freedom in interpreting the memory-based information and other sources of information: social media, mainstream information channels, and close relatives. Contribution from family and community members also plays a significant part in providing solutions to the house owners' limitations. Inconsistencies are not as important as being consistent with one version. One needs to follow rules written in one version under the guidance of their priests. As people move from many rural villages to a city, they carry their rural principles and practice them individually, creating varieties and differences in house layout and spatial solutions. This practice illustrates the way the actors implement their knowledge in the construction of an ordinary Balinese urban vernacular. It is not a direct implementation of the theoretical principles of Balinese Hindu spatial organization. For ordinary people with financial and spatial limitations, spatial imperfections and dynamic negotiations are the solutions to challenging contexts.

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Traditional Dwellings and Settlements

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TRADITION AT A JUNCTURE OF GLOBALIZATION: A LITERATURE STUDY ON ADAPTABILITY OF VERNACULAR ARCHITECTURE

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TRADITION AT JUNCTURE OF GLOBALIZATION: A LITERATURE STUDY ON ADAPTABILITY OF VERNACULAR ARCHITECTURE



This study looks at tradition as a dynamic entity. It places tradition at a juncture of globalization where the needs to sustain vs. change, conserve vs progress and be practiced locally vs consumed globally intersect simultaneously. Acknowledging this juncture provides an opportunity to view tradition as a development of ideas recreated and redefined by global influences. This paper aims to review the progress of intellectual understanding of building tradition, vernacular architecture, to demonstrate the tradition's dynamic qualities as a response to global needs. By utilizing key literature in vernacular architecture, this study shows thematic developments of principal intellectual and historical advances in the field through how vernacular architecture continues, adapts, and adjusts to new ideas under the growing pressures and opportunities of globalization. The first part of this paper discusses concepts from originators of vernacular architecture, and the second part deals with developments that demonstrate dynamic changes in the focus of and approach to vernacular architecture practices as a response to the increasing concern on current issues, including the endangerment of tradition, both physical and cultural, and the urgency to achieve social and environmental sustainability. The last part focuses on the fast-growing global tourism phenomenon and how it emerges into vernacular architecture and shapes the practice of reproduction and recontextualization of the tradition into the global market. It further raises questions on the authenticity that is topical to ask, especially when, on the one hand, tourism demands tradition to maintain its originality, while on the other hand, it advocates simplifying it for global consumption purposes. Finally, using the perspective of tradition at the juncture of globalization allows one to understand the complexity of current situations faced by vernacular architecture that dictates its adaptability and the possibility of its future use and reinterpretation.

1. INTRODUCTION: BACKGROUND AND APPROACH

The study of vernacular architecture has changed and matured in the last hundred years. Views on its values and contributions to the field of architecture have greatly developed since its early recognition. From the rejection of its inclusion as a part of the architecture, “[a] bicycle shed is a building; Lincoln Cathedral is a piece of architecture,”¹ to the appraisal of its deservingness of “as much recognition as any palace, cathedral, or mansion designed by an architect for an elite”², and even to its promising inspiration for the contemporary and the future of sustainable architecture³. This paper aims to review the development of intellectual understanding in vernacular architecture to demonstrate its dynamic qualities in responding to new ideas and needs under the growing pressures and opportunities of globalization.

This study takes advantage of globalization as an intersection, a juncture, where “objects on motion” such as ideas and ideologies, people and goods, images and messages, and technologies and techniques to review how vernacular architecture as a discipline responds, influences, and develops. This approach is based on a theoretical understanding of globalization by Appadurai, one of the frontiers in globalization studies, that

fundamentally laid its definition of globalization on “objects of motion”⁴. To see globalization as a means of motion requires a shift away from “trait geographies,” with an assumption that values, languages, material practices and traditions are tied to specific localities, regions and traditions, to focus instead on “process geographies” which highlight various kinds of action, interaction, and motion manifested through trade, pilgrimage, invasion, exploration, or colonization⁵. Here, concepts of the locality have become blurred, just as King described that “everyone’s ‘local’ [is] becoming someone else’s ‘global’”⁶. Here, by situating vernacular architecture within the dynamic local-global influences, this study expects to retrace the developments of principal intellectual and historical advances in the field.

In terms of methodological approach, this paper used a literature review to build an understanding of the development of ideas on vernacular architecture. It relies on published archives and scholarly works that are selected purposively based on the focus of the study. To help identify conceptual developments, this paper divides the discussion into three parts: starting with a basic review of early understanding of vernacular architecture and moving forward towards more recent ideas. The first part demonstrates dynamic perspectives on the field of vernacular architecture. In contrast, the second part deals with emerging ideas related to the field in response to the increasing concern about globalization and modernization. Thematic developments on the emerging ideas of vernacular architecture cover discussion in the second part, including the endangerment of physical and cultural tradition and the urgency to achieve social and environmental sustainability. The last part of the discussion focuses on how vernacular architecture incorporates the fast-growing global tourism phenomenon and shapes the practice of reproduction and recontextualization of the tradition into the global market. It further raises a question of authenticity in a situation when tourism demands tradition to maintain its originality while at the same time promoting simplification for global consumption.

2. PIONEERING IDEAS ON VERNACULAR ARCHITECTURE

In its early development, vernacular architecture was associated with the impression of low culture, primitive and uncivilized, which is inherent in its terminology definition. Beginning this part, a short introduction of an etymological perspective on the term ‘vernacular’ will be necessary before moving forward to more recent findings and debates on the field. Merriam-Webster dictionary defines vernacular as “using a language or dialect native to a region or country rather than a literary, cultured, or foreign language.” The word is originally from Latin, Verna (slave born in the household) and -āculus (diminutive suffix), which altogether are perceived as “belonging to the household, domestic, native”⁷. Here, the term vernacular gives the meaning of ordinary, original to the noun following it. When vernacular architecture was recognized in the

1880s to the early 1990s, it was mainly influenced by Western colonialization. During this period, vernacular architecture referred to buildings and structures found in non-Western countries by the colonizers. The supporters of this view also came from travelers, explorers and anthropologists, mostly European, who described vernacular architecture in other nations as “barbaric”, “inferior”, “ugly,” and “ill”⁸. Therefore, the perception of vernacular architecture is not worth attention or admiration. During this period, practicing architects also shared the view that vernacular designs were primitive and underdeveloped, and architects should not refer to them as emulation or inspiration; instead, professionals should rely on their pieces of training, creativity, and systematically derived knowledge to design better buildings.⁹ Architects wanted to distinguish themselves and their work from those who built without appropriate education and degrees, and people wanted their buildings to be different, innovative, longer lasting and better than vernacular buildings. In this early development, the perception of vernacular architecture was unsurprising “to be despised and ignored”¹⁰.

However, such perspectives started to shift in the mid-20th century. The 1960s marked a general turn to ethnic identity in architecture in some parts of the world. As opposed to the despising view towards vernacular architecture, there was a growing interest in vernacular architecture that looks at vernaculars as an inspiration for creative use of locally available materials, ingenious structural design, innovative but simple technology, the captivating beauty of form, and fit with surroundings¹¹. This change of attitudes was tied to the intense economic growth in the West following the end of WWII, which led to the production of a mass consumption society. After the 1968 civil rights movements failed, critics on the left in the West began to address the domination of industrial mass production and consumer culture¹². These started to raise concerns about the encroachment of universal civilization, be they industrialization, globalization, free-market capitalism, or the effects of new technologies, as expressed by Ricoeur: “[t]o some extent, and in varying ways, everyone experiences the tension between the necessity for the free access to progress and, on the other hand, the exigency of safeguarding our heritage¹³”. Throughout much of his work, Ricoeur is concerned with cultural and individual identity regarding its formation and relation to history and culture. In fact, for him, the self is constituted by its relation to specific places, experiences, and situatedness within a specific social situation.

Such dynamics of universal vs. local-rooted identity and the increasing standardization of architectural form brought by International Style gave meaning to Bernard Rudofsky’s exhibition ‘Non-pedigreed architecture’. Rudofsky refers to vernacular buildings as “architecture without architect”, where specialized designers are not involved. With his collections of unfamiliar, ordinary, and anonymous structures from around the world exhibited in the Museum of Modern Art, Rudofsky contributed to the architecture field by “break[ing] down

[the] narrow concept of the art of building” and challenging how architectural history is written that “skip the first fifty centuries ... [by presenting] a full-dress pageant of “formal” architecture”¹⁴. The work of Rudofsky helped grow appreciation and empathy towards vernacular buildings and position them within the existing landscape of the architecture field, which later inspired many scholars. For instance, Schefold et al. argue that Rudofsky’s idea of vernacular architecture revolves around the appreciation of the humanness of ordinary buildings, emphasizing their organic integration with natural surroundings¹⁵. Likewise, Mazumdar calls such a perspective “the admiring view,” looking at vernaculars as an inspiration for a “creative use of locally available materials, ingenious structural design, innovative yet simple technology, the captivating beauty of form, and fit with surroundings”¹⁶. This highlights the close relationships between architecture and its local environment that become the basis of reference when earth and sustainable environment issues surface.

Amidst the increasing appreciation towards vernacular architecture, as explained above, around the same period as Rudofsky’s exhibition influencing the discourse of vernacular architecture, other early works that left significant marks on the field were those of a folklorist Henry Glassie. He challenged the way of seeing vernacular architecture. Rather than viewing it as an inspiration with the eyes of admiration, he offered to look at it as a vehicle to understand something else. Glassie strongly argues that what is crucial in studying vernacular architecture is not the artifact per se but the factors shaping it: “A building may enhance the landscape, but it remains a heap of old wood and stone until it is analyzed. The analysis leads away from a concern with the fabric itself toward the ideas that were the cause of the fabric’s existence”¹⁷. In his ‘Folk Housing in Middle Virginia’, he demonstrates that folk buildings are the products of deliberate and often complex design processes that possess linguistic and philosophical analogies and are strategically situated in nuanced and fluid contexts¹⁸. Some argue that this work has guided the vernacular field to become increasingly engaged in discovering the mind and meaning in architecture and architectural systems that acknowledge the complexity and significance of vernacular buildings¹⁹. In the following years, the work of Rudofsky helped shape the development of the vernacular architecture field. The new interest in the social and natural surroundings of architecture by people, as posed by Rudofsky, then became manifest in various attempts by architects and anthropologists to describe and compare specific building traditions and interpret them in their natural and social contexts²⁰.

Paul Oliver strongly reflects and further pursues this more anthropological direction. With his works, Oliver continues to popularize the term vernacular architecture. He traveled the world in the 1980s (including Indonesia) to find contributors for his multi-volume studies of vernacular architecture. In 1997, Oliver finally published his work ‘The Encyclopedia of Vernacular Architecture of the World’ and divided it into three volumes of 750 contributors from 80 different countries. While Rudofsky focuses on the absence of

specialized knowledge in producing architecture, Oliver proposes a more anthropological definition highlighting the know-how process of constructing buildings and how these building skills are passed along through generations. In his first volume, Oliver defines vernacular architecture as stated below:

“Vernacular architecture comprises the dwellings and all other buildings of the people. Related to their environmental contexts and available resources, they are customarily owner- or community-built, utilizing traditional technologies. All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of living of the culture that produce them.”

Paul Oliver²¹.

Here, Oliver advances the way vernacular architecture was previously understood. Firstly, Oliver gave a better realization of the intricate relationships between architecture, society, and culture, which leads to a better understanding of why architecture takes the form it does. Such a perspective challenges the previous idea of vernacular architecture, which was seen as artifacts—the products from the past—to become a living culture, nurtured and inhabited by certain groups of people and therefore understood as “[t]he buildings of and by the people”²². It also raises awareness of its potential for a “more culturally appropriate contemporary design”²³. One of Oliver’s main intentions was to increase architects’ awareness of the cultural embodiment of architecture. Concurrently, the attention embraces symbolic aspects of how architectural structures express relationships within the social and cosmic universe, which gives a strong foundation for an anthropological approach to architecture – architectural anthropology – which later widely being used to study relationships between people, ideas of the world, and the creation of a sustainable built environment²⁴.

Before the 1960s, anthropological interest in material culture was restricted to a museum context and diffusionist studies, just like in the field of vernacular architecture. Studies on vernacular architecture concentrated on the documentation and classification of the traditional forms of houses and their decoration, with the final aim of reconstructing the historical spread of building types. In his book, on the other hand, Oliver largely discusses cultural characteristics and attributes of the vernacular, ranging from everyday life aspects to social structure, gender, meaning, language, belief systems, symbolism and how they are reflected in special arrangements of the house and its surroundings²⁵. These attributes serve as a conceptual abstraction to identify, classify and compare cultural phenomena from one vernacular community to another. In this sense, Oliver’s contribution to the field of vernacular architecture is to treat cultural attributes as “research topics on their own” and allow “comparative perspectives on the topics”²⁶. Vellinga, as one of Oliver’s supporters, further argues that as vernacular architecture is an architectural expression of the societies and cultures that produced them, “these buildings therefore deserved as much recognition as any palace, cathedral, or mansion designed by an architect for an elite”²⁷.

Another protagonist in the vernacular architecture field supporting the intertwining of architecture and anthropology is Rapoport, who consistently positions architecture within cultures and the practices²⁸. As discussion on vernacular architecture is more prevalent, the definition evolves and engages with wider scopes. Rapoport proposes a continuum classification of building tradition with four points, marked by primitive architecture at one end, then vernacular architecture, followed by popular architecture, and finally high style architecture at the other end²⁹. He distinguishes vernacular architecture as a folk-building tradition with an emphasis on direct relationships with the users and growing directly out of the needs, means and natural order of users. This manifests a critical view in looking at vernacular architecture as the consequence of a whole range of socio-cultural factors rather than a mere result of physical forces or any single causal factors.

Here, I believe that Rapoport's work provides at least two points of understanding contributing to the current discourse of vernacular architecture. Firstly, it emphasizes natural attributes closely attached to the house form and building tradition, which offer a close look at the local climate, the use of local materials and building techniques shared by community members. Secondly, it closely engages the field to the idea of authorship on the building that "everyone in the society knows the building type and even how to build them"³⁰. This consequently puts the builders into the frame and in the context of vernacular architecture, either 'owners' or 'the tradesmen' participate in the process of producing the house, which furthers Rudofsky's 'architecture without architect' and Oliver's 'building of and by people'. Although they share similar ideas on the absence of specialized skills in defining vernacular architecture, Rapoport, however, to some degree, signals that there are special building skills and techniques involved that are specific to and shared within community members only. This skill specialization in vernacular building production increasingly grows due to global influences such as modernization, urbanization, and globalization that change the way people live. This is branching out ideas in different directions of vernacular architecture development that enriches understanding and open reinterpretation of the field within the global contexts.

3. VERNACULAR ARCHITECTURE IN THE CHANGING WORLD

The late twentieth century marked a significant turn in the development of vernacular architecture. The contributions of Glassie, Rudofsky, Rapoport and Oliver, to name a few, resonated with wider scholars and resulted in increasing attention to discuss and advance the knowledge. During this period, there were various international conferences held in the northern part of the world discussing intellectual and historical advances in vernacular architecture. It highlighted the growing interest, debates, and concerns about the future direction of vernacular architecture. I will dedicate this part to revisiting emerging ideas following the first shift of foundational publications on vernacular architecture.

One of the frontier responses to the complex and stimulating qualities of the subject came from The Vernacular Architecture Forum, a North American organization established in 1980 to promote the study of vernacular buildings through multiple approaches³¹. Its starting position was seeing vernacular architecture as an unstable and indefensible mixture of evidence, method, and theory; therefore, essays presented in the forum shared a spirit “that every established scholarly convention needs careful reevaluation and every new perspective needs a fair chance”³². The works published in the forum represent various contributions to the field of architecture studies, which, according to Wells’ categorization, include descriptions and comparisons between buildings (presented by Ken Breisch and David Moore), the process of recording buildings using graphic systems of representing the complex information (by Edward Chappel, Tom Hubka, Joe Wood); questions on the common assumptions of relationships between culture and built form (Bill More, Arlene Horvath); and limits on the type of structure, domestic or public, that are more appropriate for vernacular studies (Mark Wenger and Dell Upton).

Similarly, in 1999, ICOMOS (International Council on Monuments and Sites) took a part in defining and advancing the field. The ICOMOS’ 12th General Assembly in Mexico issued a Charter on the Built Vernacular Heritage. It posed a definition that vernacular architecture is a “traditional and natural way by which communities house themselves...[including] a continuing process of ... necessary changes and continuous adaptation as a response to social and environmental constraints”³³. This definition implies a progressing nature of vernacular architecture in response to the current social and environmental situations. At the same time, during this adaptation process, there is a growing concern toward the continuity of vernacular architecture as “[t]he survival of this tradition is threatened worldwide by the forces of economic, cultural and architectural homogenization”³⁴. Here, the study of vernacular architecture began to engage with discussions on change and continuity and faced the dynamics of social, political, and environmental dimensions of the contemporary world.

Similarly, Davis works his definition of vernacular architecture around the idea that buildings need to adapt and change continuously or rapidly. Around his three points of definition on the term, he attached “the ability to change” to the most accepted definition of vernacular architecture around this time: “its relative stability over time and its repetitive nature in particular place”³⁵. Furthermore, he added that in the context of building culture, which is where vernacular architecture belongs, the ability to change is an ingredient to have a healthy building culture, “that stability is tempered by the ability to change when necessary”³⁶. This quality is inevitable when looking at vernacular architecture in a progressing nature. It implies that the rules governing the form of the built world as a dynamic system can change over time and promote the maximum fit between form and the culture or place where it exists.

A similar view positioning vernacular architecture in the context of changes comes from AlSayyad & Tomlinson, pointing out that “tradition [is] not so much an instrument preventing change, but one that incorporates change in order to sustain itself through space and time”³⁷. More views reflecting this understanding are from Memmott & Ting, Schefold et al., and Vellinga. While Memmott & Ting emphasize the need to change the perception of vernacular architecture as static, resistant to change, and lacking modern relevance³⁸; Schefold et al. and Vellinga raise concerns about the eroding culture and traditional architecture in most parts of the world, which beg a solution particularly to its possible adaptations and reinterpretation to the present time³⁹. In response to such adaptability and resistance abilities of vernacular architecture when confronted by the changing nature of the contemporary world, inherent in these dynamics is a concept of sustainability emphasizing the balance between change and persistence. The following parts explore different aspects of vernacular architecture developments in relation to the growing attention on sustainability in the globalization era.

3.1. Conserving the Artifacts

Globalization is a process or a set of processes involving the compression of space and time and the intensification of economic, social, political, and cultural interdependence on a global scale⁴⁰. Situating tradition and vernacular in such a connected world touches upon the issue of authenticity that in a world “increasingly subject to the forces of globalization and homogenization, ... the essential contribution [is] made by the consideration of authenticity in conservation practice”⁴¹. As concerns regarding the vulnerability experienced by vernacular structures all around the world intensified in the late 20th century, the conservation of vernacular architecture has become a global joint effort to achieve the sustenance of vernacular buildings⁴². It brought the first global common goal to the documentation of vernacular buildings as a way to maintain the sustainability of the vernacular heritage⁴³. In fact, in 1999, ICOMOS advertised the importance of documentation for a full analysis of vernacular forms and structure as a guideline for conservation⁴⁴. In addition, ICOMOS’s Charter also highlighted the need to ensure the continuity of traditional building systems and craft skills by retaining, recording, and passing them onto new generations, as they are fundamental for vernacular expression and essential for repair and restoration purposes⁴⁵.

As one of the core characteristics of vernacular architecture is for sets of building skills and knowledge to be shared within the community, it raises a question of how to conserve it when the community is gradually leaving their cultures. Reflecting on studies and practices conducted in this focus, it shows two emerging phenomena: 1) active involvement from conservation organizations and professionals in the reconstruction of buildings⁴⁶, and 2) a growing number of built traditional environments as heritage sites⁴⁷. In terms of the first,

UNESCO plays an important role in assisting countries and communities around the world to preserve and conserve their building culture. Until the nineteenth century, master craftsmen and builders used to train their apprentices as successors to transmit knowledge of the traditional skills. Unfortunately, as modernization and globalization take place, this process becomes more difficult and consequently creates a need for conservation associations to assist the process⁴⁸. Assistance offered by these organizations can be in the form of financial support, documentation of the building and the knowledge, training and workshops, and re-constructing buildings as a way to pass on the skills and record the process for conservation purposes⁴⁹.

Meanwhile, for the growing number of heritage sites, various vernacular built- and natural environments gained attention and received status as living cultural heritage sites, in situ conservation, or dismantling and re-erection in open-air museums⁵⁰. Although having such titles can be an honor and prestige, communities often cannot escape the worrying issues of poverty, limited access to infrastructures, and lack of development⁵¹. Besides regional support for these communities, either coming from governments or non-profit organizations, the sustainability of vernacular communities is still at risk until the interest in cultural tourism starts to surface. Here, tourism plays a major role in the preservation and development of small towns and villages in heritage sites, which, in turn, sustains landscape, collective memory, and identity⁵². In addition, Gao and Wu argue that rural tourism, with its distinctive vernacular structures and traditions, has been recognized as a key approach to rural sustainability and poverty alleviation⁵³. Similarly, a study from Latter demonstrates how cultural tourism catalyzes local economic improvements that enliven communities' livelihoods and ensure their sustainability under the pressing issues of globalization⁵⁴.

Finally, from the perspective of sustaining the artifacts of vernacular cultures and traditions, there are several points of lessons learned that help resituate the understanding of vernacular architecture in the changing world. The first point is that documentation became the starting point for retaining and understanding the building culture and traditions of vernacular communities⁵⁵. Although the degree of retaining the form and structure of vernaculars in conservation varies, the influence it brought to vernacular knowledge and building techniques is invaluable as it provides the records of the buildings serving as a reference for the architectural intervention. In addition, collaborative training and workshops between professional architects and un-institutionalized local builders have become more important. The growing cross-learning process, coupled with the gradual decline in the roles of master builders and traditional craftsmen in producing vernacular buildings, identifies an increasing recognition of traditional building skills⁵⁶. At the same time, this creates a specialization and professional image of traditional knowledge, building skills, and techniques—which previously was communally owned; hence, an increasing distinction between the terms 'owner' and 'builder'

eventuates as no longer everyone master the art of building, instead “[i]t has become a specialist practice” within the vernacular communities⁵⁷.

3.2. Embracing the Socio-cultural Changes

In the last decades, the increasing attention to the study of modern developments of vernacular architecture has introduced the dialogue between concepts of static and dynamic in vernacular architecture⁵⁸. Although, in most parts of the world, traditional social patterns and cultural systems are eroding, scholars do not see it solely as the cost of being static and resistant. In fact, the early 21st century historians and theorists started to consider it as a sign of progressing and adapting to the current dynamics, which thus led to the traditional-modern binary opposition⁵⁹. Upton articulates a trenchant expression of the modern/tradition binary as “artifacts of modernity [that] tradition did not exist until it was imagined as the defining complement of modernity”⁶⁰. In similar intention, AlSayyad responded to such traditional-authentic relations and dispelled the assumptions that tradition is always the ‘authentic’ product of a group of people, and instead proposed in the context of globalization, tradition can also be cataloged, packaged, imagined, and sold⁶¹.

Debates on this binary perspective also come from the conservation field, that in the rise of documentation projects on vernacular architecture, the focus was on buildings with an ideal form of vernacular structure, with no signs of significant changes from the distant past⁶². These lead to an extensive practice of documentation and conservation of historical buildings frozen in time, which are often incomplete and lack actual representation of recent realities, ignoring their active reuse, reinterpretation, and adaptation in the present⁶³. Vellinga further proposed that studies in this field need to use a more “dynamic approach ... acknowledge[ing] the dynamic and dialectic nature of vernacular traditions by explicitly attempting to understand how such traditions, through human agency, change and adapt to the cultural and environmental circumstances and challenges of not just the past, but of the present and the future⁶⁴. The criticism of the modern-traditional binary also mellowed with historians who have attempted to decolonize history by bringing out the ordinary, forgotten people of minorities into the mainstream of history⁶⁵. Here, vernacular architecture as a living heritage provides an opportunity for historians to exercise a methodological approach in rewriting the history of architecture; as Carson stated, “all-aboard view of society is fundamental to the New History perspective”⁶⁶.

Moreover, embracing changes and transformation as a nature of vernacular architecture offers a medium to understand a more complex cultural phenomenon embedded in it, bringing the field closer to anthropological discussion⁶⁷. Here, the study of symbolism becomes unavoidable when attempting to understand vernacular architecture as a part of current social and cultural dynamics⁶⁸. Knapp, for example, studies Chinese rural

houses and argues that they “do not only communicate folk beliefs, but also express the conjoined cosmological and technical practices of China’s imperial tradition [organized] in palaces, temples, and even grave sites”⁶⁹. Another extensive study on the symbology of vernacular architecture comes from an anthropologist, Roxana Waterson, conducting research in Southeast Asia and demonstrates vernacular houses as a manifestation and crystallization of cosmology and world view of the people, represented in the spatial organization and configuration, the shape of the building and the system of inhabiting the house⁷⁰.

In a more recent work, scholars address symbolism in different manners. Although vernacular traditions are decreasing globally, the need to engage with the past identity is still evident and therefore, symbolism is used and reproduced in a whole different way. In this regard, Mazumdar makes an interesting observation that the recent architectural practice uses some aspects of a culture as a symbol of the whole society⁷¹. The author further argues that this attitude allows a borrowing, rereading and reuse of symbolic meanings and representations of vernacular architecture, usually fragmented, to make a connection to the given society. After the independence movement, such practices were prevalent in the global South countries to create a collective identity by cultivating a visual semblance of vernacular architecture⁷², and it is evident that this phenomenon is still favored today, including in Indonesia. In 2016, research conducted on an architect’s creative process in producing a provincial mosque design in one of the provinces in Indonesia, West Sumatera, shows that the architect approached the design by reflecting and reinterpreting a worldview shared by the community and translating it into spatial movements and the form of the building⁷³.

Here, it is safe to argue that such an approach to symbolism has two sides to it. Firstly, one can see it as a new interpretation and adaptation of vernacular architecture and values in the contemporary world, and that it becomes “a place where culture can be appropriated, translated and read anew”⁷⁴. In this sense, what sustains the past and progresses it to continue is not the structures and cultures shared within the community, but their ideas, images, and memories often related (and translated in) to visual characters. In other words, sustaining the visual image of a culture derives from what designers believe as values and ideas of a culture and helps situate vernacular architecture in the present. Similarly, the positive response voiced by Canizaro and Salama that the visual resemblance of vernaculars in contemporary buildings fosters an opportunity to enrich our understanding of tradition and culture⁷⁵. Secondly, this approach, however, can become a selective accentuation of local ethnic peculiarities. In this sense, benefiting visual expression to re-contextualize vernacular architecture into contemporary designs is often conspicuous. Hence, many see this as an excuse for indulgence in neo-vernacular kitsch and the formulaic⁷⁶ or considered as an oversimplification of cultural readings and exaggerated assertion of identity⁷⁷. Despite such criticism, although this resemblance approach

produced buildings under the guise of still being ‘traditional’, they contend a pride in a group identity that imparts a special weight to the brand-new traditions, as what Hobsbawm called the “invented traditions”⁷⁸.

3.3. Sustaining the Environment

The environmentally friendly characteristics of vernacular buildings. Contemporary processes of globalization, followed by rapid developments and urbanization, have caused serious problems to the environment. Susetyarto claims that vernacular-built environments are among those that are impacted scarcely by such rapid developments⁷⁹. Moreover, Oliver expressed his frustration that environmental issues “are largely the outcome of the neglect or ignorance of the impoverished rural regions of the world,” and therefore, learning from the vernaculars, as he defined as a ‘sustained architecture’, became inevitable⁸⁰. This brought attention back to the values of vernacular architecture centered on ecological consciousness that implies “both the development of a sense of being indigenous to a place and a responsibility for protecting landscape and ecosystems from disturbance”⁸¹. They suggest that contemporary architecture should, therefore, draws inspiration from indigenous and vernacular building approach to achieve sustainability.

One aspect of vernacular architecture used for a reference to sustainability is its structural resistance. UNESCO conducted a study on the inheritance of the vernacular architecture traditions of the past and present from the aftermath of natural disasters⁸². The report shows that buildings constructed with modern materials and techniques are much more affected by the cyclone than those constructed using local materials and traditional building skills⁸³. In addition, earlier recognition of the building performance of vernacular architecture proves the effectiveness of passive cooling devices, shading devices, and climate control in vernacular buildings, which becomes the main reference when discussion on sustainability and energy efficiency takes place⁸⁴.

The positive attitudes towards environmentally friendly elements of vernacular architecture resonate with many other recent studies, including Bhardwaj & Singh, Liu, and Chowdhoree & Das. Bhardwaj and Singh, through their computational modeling, demonstrate how traditional buildings in Uttarkashi, India, can resist earthquakes⁸⁵. Liu took an interest in examining damaged historic buildings in China and showed that damage to historic buildings is primarily related to the combination of building materials and the construction used: “wood and brick combination withstood the seismic forces better than those of wood and mud”⁸⁶. Meanwhile, Chowdhoree and Das use a historical approach to illustrate how historic mud architecture in Bangladesh has survived multiple natural hazards⁸⁷. In addition, another study favoring environmental sustainability aspects of vernacular architecture is from Susetyarno et al., using building performance

assessment to prove that vernacular buildings are more sustainable compared to contemporary ones in terms of energy use and CO₂ emission⁸⁸.

Finally, the increasing concerns about the environment, pressured by claims of how major architecture contributes to environmental damage, have brought attention back to vernacular architecture techniques and close relations to nature. Various studies conducted in this manner have paved the way for the advancement of building knowledge for the vernaculars while also making a significant contribution to modern innovation. These studies, as discussed above, show a great deal of contribution of vernacular architecture to the advancement of building materials, building performance, and techniques that help fine-tune an understanding of sustainable architecture in present times. In other words, experiments conducted on vernacular buildings using the latest technology have further situated the vernacular traditions into the contemporary needs as a source of aspirations to achieve environmental sustainability.

4. TRADITION IN THE AGE OF TOURISM

The globalization era has opened doors for worldwide travel, exchanging ideas, and experiencing different cultures around the world. The ever-increasing flow of tourists has brought an unprecedented opportunity for countries with cultural richness to take part in the global economic system⁸⁹. Through the lens of the global world, AlSayyad problematizes a long-standing concept of tradition as an authentic legacy from the past and shows how, in the contemporary world, built environments are often packaged and sold in a global economy of image consumption through a process of global tourism⁹⁰. Robinson further put global tourism into the perspective of economic powers, that there are outstanding interrelated issues of tourism's role in the process of globalization, vice versa, and "the dominance of First World capital, and the expansion of the culture and ideology of tourism as a leisure activity"⁹¹. To be able to compete globally, many nations, regions and cities attempt to put themselves on the map of the world's global economy by exploring their unique and distinctive characters and identities, including natural resources and traditions (tangible and intangible) to attract international investors and tourists. This approach of providing a different experience for tourists is a crucial step to entering the global tourism competition; as stated by Williams & Morrissey, "tourists are modern people in search of an authenticity they do not find in their own lives"⁹².

When looking at relations between tradition and tourism, the relations between the two are nuanced. In relation to vernacular architecture, the tourism industry has become a key approach to sustaining and conserving such dying building traditions⁹³. On the one hand, integrating tourism into vernacular environments gives economic value to the vernacular communities that have suffered from poverty⁹⁴, as well as stimulates developments and construction in rural areas⁹⁵. On the other hand, it also causes problems for

communities, be it social, cultural or environmental⁹⁶. Robinson argues that cultural conflicts can occur between individual tourists and representatives of the host culture; between, and within, host cultures themselves; and between the tourism industry and host communities/cultures⁹⁷. Shen et al. voice a similar view, focusing more on issues between guests and hosts⁹⁸.

Responding to such dynamic relationships between tourism stakeholders, many studies paid attention to the social structures of host communities within tourism programs and management. An extensive study by McComb and Boyd examines the structural organization of rural tourist sites and proposes a collaborative framework between all agencies to ensure the success of the programs⁹⁹. The authors investigate collaboration between stakeholders in developing and managing tourism in a rural region. Based on interviews with various stakeholders, they create a collaborative framework to map the roles and involvements of stakeholders. Although they start with acknowledging potential issues identified by community members, most framework organizations capture aspirations from governments, architects, and planners, with little space for local community participation¹⁰⁰. In other words, ethnic groups and host communities are still perceived as passive actors, or borrowing Buzinde et al. term, only to have “entertainment roles”¹⁰¹. Meanwhile, Robinson shows that the absence of indigenous/local representation in tourism management will potentially lead to cultural commodification and exploitation¹⁰². In this sense, concerns about the socio-cultural impacts of tourism in vernacular communities have shed some light on the acknowledgment of host communities’ involvement to be a part of the planning and development process. It also opens doors for host communities to engage and exchange ideas with a wider circle of community, including governments, NGOs, tourists, and other private tourism stakeholders.

Furthermore, besides socio-cultural impacts, tourism also puts pressure on the environment. Countries and regions where the tourism industry drives the economy have inevitably become increasingly concerned with the environment, and therefore, sustainable tourism is increasingly essential¹⁰³. Some concerning environmental derived from tourism activities are the degrading condition of natural landscapes and heritage sites, land conversion to build infrastructures and tourist accommodations, and increasing water and energy use, to name a few¹⁰⁴. When situating the impacts of tourism on the environment, including on vernaculars, it is important to consider the planning process of tourist destinations and how local communities consult their tourism development with land-use planning of the area, whether they are faithful to the regulations¹⁰⁵. Such on-ground environmental data are crucial, especially when one attempts to put vernacular architecture within a sustainable tourism framework. UNWTO conducted a set of pilot studies in 10 countries and showed that although tourism claimed to have severe environmental impacts, its accumulation of environmental data over time is really poor, which makes it difficult to take preventive measures¹⁰⁶. Therefore, by referring back to the

concept of change, it is apparent that vernacular architecture should embrace environmental changes and record and analyze such changes as part of its development and journey to sustainable development¹⁰⁷.

A relatively different view of how tourism impacts the vernacular architecture field comes from Kusno¹⁰⁸. He embraces political aspects of the vernacular that “it operates within a constellation of power relations” and, in turn, shapes their interaction in producing the vernacular as the site of contestation¹⁰⁹. Similarly, Lan criticizes the conventional thinking on sustainability that is based on three legs or pillars, economic, environmental, and sociocultural, and argues that it is somewhat misleading, as there is a very powerful fourth element, namely politics, expressed in power or control¹¹⁰. This is to emphasize that political power is urgent to support development, including tourism, and in the case of vernacular architecture, this has rarely been the indigenous population, and therefore, new arrangements of power and approaches are needed to endure the development progress¹¹¹. In addition, reflecting on the trend in academic research projects, Chambers and Buzinde also express their concern that tourism studies have failed to elaborate on the problematic nature of researching oppressed and marginalized communities from a position of privilege and further emphasize the need to “engage with structural analyses of power and inequality in the tourism industry”¹¹². In a similar spirit, policy developments on vernacular heritage and tourism reflect the same logic that one strategic approach to make cultural tourism a sustainable industry is to invite collaboration between stakeholders in managing the tourism programs, with special attention to the voices of local communities as one of the main stakeholders, along with aspirations from other different sources¹¹³. Thus, this indicates the future direction of vernacular architecture as it is inevitable to be closely incorporated with the dynamics of global tourism.

5. CONCLUSION: PATHWAY TO SUSTAINABILITY

This study is mainly built on two main discourses: vernacular architecture and globalization. Relations between the two embrace discussions on globalization, conservation, and sustainability. In its chronological development, vernacular architecture as a field of study has experienced several transformations and developments to this present time. Since being initially considered a low culture, vernacular architecture has gained more appreciation for its potential, especially in its organic relationships with nature and its surroundings. As called “admiring view,” this perspective looks at vernaculars as an inspiration for the creative use of locally available materials, ingenious structural design, innovative yet simple technology, the captivating beauty of form, and fit with surroundings¹¹⁴. It highlights the close relationships between architecture and environment and human agency, which later resonates with contemporary issues in the globalization era.

Looking at the recent development in the global world, dialogues between continuity and change in vernacular architecture discussions become more pivotal, particularly when considering its present and future sustenance. Scholars such as Davis, Vellinga, Schefold and AlSayyad, to name a few, argue that vernacular architecture, therefore, should incorporate changes as a part of its nature to achieve sustainability. It opens the possibility of a new reinterpretation of tradition in the contemporary world. In other words, embracing the notion of changing and transforming in studying vernacular architecture allows one to safeguard its sustainability by controlling the balance between the need to continue and change. This study showed that policies surveilling the use of vernacular heritage in the mass tourism industry, such as those issued by UNWTO, ICOMOS, and UNESCO, gradually boil down to the concept of sustainability¹¹⁵. In addition, these policies point out that one strategic approach to the sustainable development of vernacular heritage in the era of global tourism is to invite collaboration between agencies, with special attention to the voices of host communities. Finally, this study showed that incorporating global tourism into the study of vernacular architecture touches upon the idea of authenticity as it intersects the need to present ‘authentic’ experiences for tourist consumption while allowing an easily digestible depiction of traditions and the everyday life of the community. There are two contradicting concepts embedded here, ‘authentic’ and ‘consumable’, that need to be addressed when understanding vernacular architecture in the tourism context, which begs a comprehensive approach from all stakeholders involved to achieve a successful and sustainable vernacular architecture.

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