

THE SEPARATION OF ACTIVITY SPACES IN RESIDENTIAL ENVIRONMENT AS AN ADAPTIVE HOUSING CONCEPT STRATEGY

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Abstract: The residential environment of the Mandailing community in the rural mountainous areas demonstrates adaptability to its surroundings, especially during the COVID-19 pandemic. This can be seen from the latest data, which indicates that only about 12% have been potentially exposed. This fact suggests that there are specific strategies employed by the local community in addressing the pandemic, making a significant contribution to minimizing the spread of the COVID-19 virus. This paper aims to reveal several facts related to the strategies used in facing the pandemic. It is a small part of its main research related to the concept of pandemic-adaptive spatial planning.

The research findings indicate that there are several strategies used as a concept for a pandemic-adaptive residential environment. One adaptive approach is to separate the activity spaces for men and women, including work activities, religious activities, and social activities. The activity areas for men are spread in the western part of the residential environment, while the activity areas for women are in the eastern part of the residential area. The central reference point for these activity areas is the public space or open area located in the Big House (Bagas Godang), called "Halama Luas" (Bolak yard).

INTRODUCTION

The phenomenon of the COVID-19 pandemic in early 2020 left behind many unique stories. Starting from the hoax news related to the pandemic that was engineered for political purposes by allied countries in Europe to issues related to data manipulation to exploit pandemic relief funds in several regions of the world, including Indonesia. These issues escalated, but there were also some facts that revealed that certain places in Indonesia had their own strategies in dealing with the pandemic. This provides an understanding that, fundamentally, architectural products in the form of residential environments and local community settlements in various regions of Indonesia have had

adaptive concepts to their environment since the beginning, including adaptability to pandemics.

The Mandailing community in North Sumatra has a unique generational tradition in responding to pandemic issues within their residential environments and settlements. Nuraini et al. (2022) revealed that, at the housing level, the concept of separation in the form of providing transit areas outside the house is one of the strategies employed by the Mandailing community in dealing with the pandemic. Before entering their homes, all household members who have been engaged in activities outside the house, such as work and others, typically clean themselves in the transit area first. Therefore, when entering the house, each family member is already in a sterilized condition. The concept of separation in the form of transit spaces is also found at the neighborhood level.

Another study by Nuraini and Suprayetno (2021) uncovered that the residential environment of the Mandailing community applies three out of six adaptive-responsive concepts, namely permeability, robustness, and richness. Permeability is an adaptive-responsive concept that is distinguished by its ease of access and mobility. Robustness is typically represented as designated temporal spaces or areas for different activities, illustrating its adaptability and responsiveness. Thus, richness as an adaptive-responsive concept, typically denotes the flavorful diversity resulting from variations, leading to a wide array of environmental and architectural forms.

Previous research that has revealed various forms of environmental responsive characteristics serves as the foundation for this subsequent study, particularly concerning the types of spatial separation for community activities that can serve as indicators of adaptability to pandemics at the residential neighborhood level. This research aims to uncover how the separation of spaces for community activities is carried out and how it influences the adaptive nature of pandemics.

RESEARCH METHODS

This is a qualitative research study that describes and depicts the existing conditions of a residential environment among a group of people that has been arranged in such a way as to be adaptive to pandemics. Qualitative research involves the interpretation of the current conditions/situation. In qualitative research, the researcher's role is significant in interpretation and may be influenced by their perspective. As an assumption, pure

objectivity is not possible in this world, especially in socio-cultural environments (Howell, 2013, Groat and Wang, 2002, Yin, 2003)

This research incorporates field data obtained directly during surveys and also utilizes data from several recent literature studies. The data acquired from various sources are subsequently analyzed using an adaptive matrix related to the community's activities within their residential environment. The results of the analysis are then presented in the form of a process activity diagram that illustrates the adaptive nature of the residential environment based on the community's habits, especially in the village of Singengu.

RESULTS AND DISCUSSION

Residential Environment of Singengu Village

The landscape of Singengu village is organized into spaces for dwelling, spaces for gathering, spaces for working, spaces for circulation, and spaces for worship. The spaces for dwelling are structured based on family clans. According to the explanation provided by Asharhani and Sari (2021), in a living community, the relationships within the clan are very strong, as evident from the use of the clan name behind one's personal name. The clan refers to a group name that identifies kinship bonds, patrilineal descent, and shared ownership of ancestral land. Clans are used for personal and group identity. In Mandailing, clans have a unique characteristic as they are passed down from one generation to the next and rarely get interrupted unless a new clan is formed. Clans are not the same as the "faam" or "surname" used in Western cultures. The concept of "se-marga" carries the same meaning as "se-darah" (blood-related), as it is inherited from ancestors who serve as the unifiers and are regarded as the clan's "proclaimers."

In the village of Singengu, there is a regulation regarding the position and role of clans based on two factors: (a) agreements in accordance with customs and traditions, and (b) agreements based on deliberation. According to customary agreements, the original clan refers to the clan that has been established since the time of ancestors who lived in this village, and it is then passed down to descendants who also reside in the same village. The original clan can only be inherited by male descendants and is only valid in the original village. If a woman from Singengu village marries a man from another village and wishes to settle in this village with her husband, they are considered newcomers or "halak na ro." They (the husband and wife) must seek permission from the king or village

elders to be accepted into a specific group called "kahanggi." This is an agreement reached through consultation and consensus. This illustrates that the character of the residential environment in terms of its settlement patterns is strongly influenced by the social system, particularly in the form of the distribution of family groups known as kahanggi.

The landscape of residential settlements in Singengu village is also influenced by the inheritance system. The housing inheritance system in Singengu village is based on the male lineage, particularly the youngest son. Only the youngest son or the smallest male child has the right to the ancestral house, which is an inheritance from the parents. Married daughters are required to move and live in their husband's village. If a daughter wishes to stay in Singengu village with her family and husband, both will be considered newcomers. The youngest son's right to the ancestral house cannot be transferred to anyone else, including his siblings. If the youngest son cannot occupy the ancestral house, with his permission, other siblings may occupy it, but only as a place of residence.

As for the characteristics of the residential environment in Singengu village as a product of vernacular architecture created by the Mandailing community's ancestors in this village, it possesses several traits. These characteristics have affirmed the existence of vernacular architectural products in the context of the Mandailing community's residential environment. The two main characteristics of Singengu village's residential environment are:

- a. Separation of activity spaces for men and women in the residential environment.
- b. The presence of a central point in the form of an open courtyard as the central element of the residential environment with a large house within it.

The spaces for women's activities include pancur paridian (bathing area) in the prayer room, parjagalan (small shops), pancur (water source), saba (rice fields), river, and market. Meanwhile, spaces for men's activities include pancur paridian (bathing area) in the mosque, lopo (coffee shops), the big house (Bagas Godang), kobun (gardens) and fields, fishing ponds, and a large courtyard (alaman bolak).

Through in-depth research in Singengu village from 2010 to 2014, has revealed that the residential environment's character is based on the bincar-bonom concept. The results of several studies indicate that the setting for men's activities is spatially oriented towards the sunrise. Conversely, the setting for women's activities is spatially oriented towards

the sunset. The residential environment's characteristic of segregating the activity spaces for men and women can be seen in Figure 1 along with related space schematics.

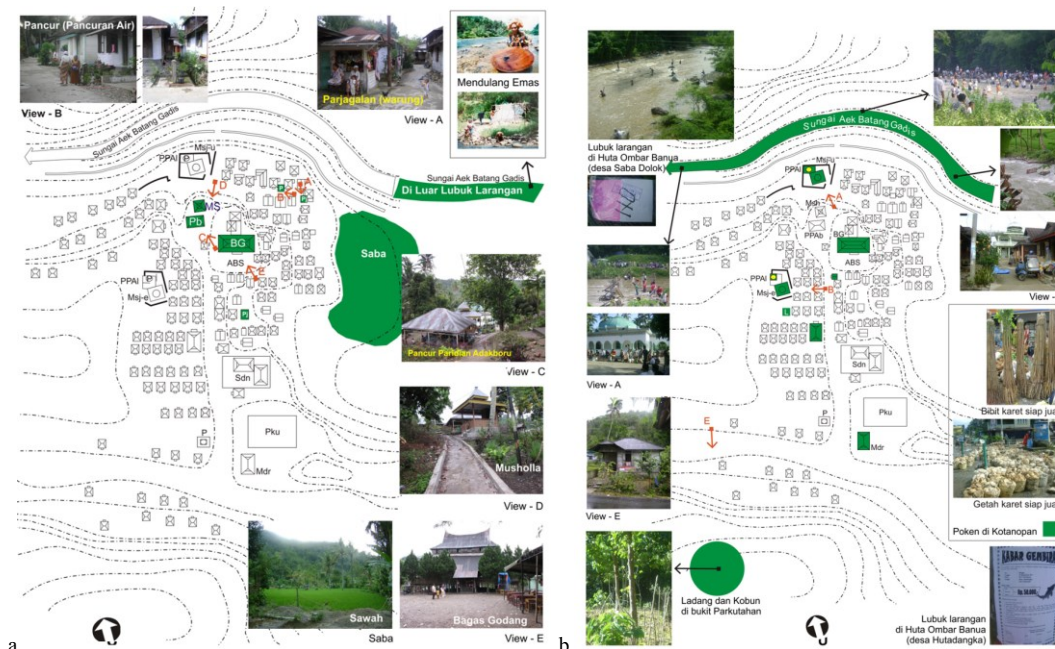


Figure 1. a. Spaces for the activities of women; b. spaces for the activities of men

Residential Setting Designed for Pandemic Resilience

The residential land in Singengu village is mostly relatively flat, with slight sharp contours towards the upstream or inland direction. The residential environment in Singengu consists of houses facing each other, forming layers of house clusters with facilities separated for men and women. It has been a tradition in Mandailing that places of worship for men are mosques, while women worship in prayer rooms (musholla). There are two mosques and two mushollas scattered throughout the residential environment of Singengu, equipped with water fountains for bathing, washing, and hygiene (MCK) purposes. Villages in Mandailing always utilize the natural springs in the hills surrounding the residential environment. These water sources are used in mosques, mushollas, and perpetual fountains (water constantly flowing without taps) that are directly supplied from the hills located to the north and south of the residential area. The arrangement of these two worship facilities and their water fountains is also closely related to the adaptive and responsive nature of the COVID-19 pandemic.

The residents of Singengu village, upon returning from activities outside the community, typically head straight to the bathing area to cleanse themselves. For men, this facility is

available in the mosque area, while a separate bathing area for women can be found in the prayer room (musholla). The process of cleansing oneself at these bathing areas serves as the first step in sterilization or is referred to as a transitional space-1. After cleaning up at the bathing area, individuals then proceed to the communal water fountains or taps located in each residential building block. Apart from personal cleansing, these communal water fountains in each building block also serve as a shared source of clean water. The water from these residential area fountains is directly supplied from natural springs in the northern (Tawar hill) and southern (Parkutahan hill) hills of the village. This means that the continuously flowing water is clean and uncontaminated.

The water used by the Mandailing community in Singengu is clean, continuously flowing, and uninterrupted. This water is directly sourced from springs in the surrounding hills. This indicates that water, as one of the tools for personal hygiene, is sterile due to its constant flow. The residential environment in Singengu village has a lower population density compared to other villages. Most of the residential land in Singengu is relatively flat, although there are some areas with sharp contours towards the upstream or inland direction. In Singengu, there are also clusters of houses facing each other, forming layers, with facilities differentiated for men and women. According to Mandailing tradition, mosques are places of worship for men, while prayer rooms (musholla) are used by women. In the Singengu residential environment, there are two mosques and two prayer rooms scattered throughout, equipped with bathing, washing, and toilet facilities (MCK). The presence of these two places of worship and bathing facilities is also highly relevant in addressing the challenges of adaptation and response to the COVID-19 pandemic."

The process of entering the residential areas in Singengu village, related to the daily activities of their communities in facing the COVID-19 pandemic, can generally be described as follows:

- (a) The Mandailing community in Singengu village have a habit of entering residential areas by first cleansing themselves at the water fountains located in mosques and prayer rooms (musholla). For women, especially mothers who work in fields, rice paddies, and some in local government bodies, before heading to their respective homes, they will first cleanse themselves at the water fountains in the prayer rooms. After achieving a sterilized condition, mothers proceed to cleanse themselves again at the water fountains in the residential blocks. Once sterilized, they finally go to their

own homes and go through the processes as explained earlier, at the household level.

(b) For men, especially productive heads of households returning from work, whether it's from the fields, gardens, or offices, they typically, at the community level, cleanse themselves at the water fountains in the mosques. After sterilization, before entering their homes, men cleanse themselves again at the water fountains in each residential block. Afterward, they enter their homes and go through the processes as explained earlier, at the household level (see explanations in the previous edition-1 at the household level).

The flow of activities of the residents in Singengu village, related to the procedure of entering the residential areas after activities outside, can be seen diagrammatically in Figure 2 below:

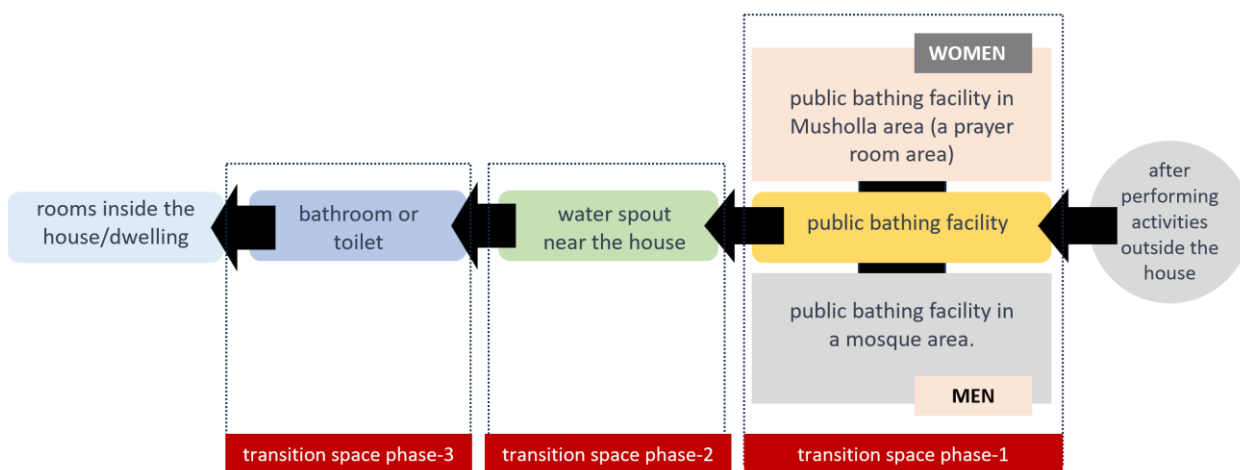


Figure 2. Schematic diagram of the space in the process of entering the residential area after activities outside.

CONCLUSION

The Mandailing community, with a strong socio-cultural background, possesses both implicit and explicit knowledge in the layout and spatial organization of their residential environment. As a distinct ethnic group with its Mandailing characteristics, their understanding of the production of living spaces within their surroundings is also uniquely Mandailing. Each space is produced according to the needs of the community, with a longstanding tradition of personal hygiene. The separation of spaces for male and female activities is also highly distinctive within the Mandailing community. This spatial

separation of activities has indirectly supported the adaptive nature of the residential environment towards the pandemic.

The concept of boundaries in the spatial layout of the Manambin and Singengu residential environments reflects the passive efforts of the community in creating social and physical distancing that are highly responsive and adaptive to the COVID-19 pandemic. For a long time, the Mandailing community has recognized and applied control over social and physical distances, resulting in beneficial habits. This teaches us that traditional communities have their own ways of passively addressing a pandemic disaster, even before it reaches the residential environment. During the research conducted in the Mandailing housing areas, especially in Kotanopan (including Singengu village), only four people were reported to have died from COVID-19 infection. Furthermore, all four individuals had comorbidities.

As advocated by the government through the Ministry of Health of the Republic of Indonesia, several strategies to combat the COVID-19 pandemic involve efforts to slow down, stop transmission/spread, and delay the virus's dissemination. The Mandailing communities in Manambin and Singengu had already implemented measures to control the spread of the COVID-19 virus, particularly within their residential environments. Throughout the pandemic, their good habits in adhering to health protocols, such as cleansing themselves in residential facilities before entering their homes, made the Mandailing community better prepared to address and rapidly reduce the spread of COVID-19."

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