

Physical Transformation of Local Residences into Homestays in Gampong Nusa Aceh Besar

Haifa Suhaira* and Ardhya Nareswari

Department of Architecture and Planning, Faculty of Engineering, Gadjah Mada University, Yogyakarta 55284, Indonesia

Keywords:
Physical Transformation,
Homestay,
Tourism Village,
Gampong Nusa,
Residential House

ABSTRACT

This research aims to enhance the potential of tourism amenities in Gampong Nusa, specifically focusing on homestays. The houses used as homestays possess significant local value and include permanent residences of individuals affected by the tsunami, which adds to their appeal as a physical attraction. Consequently, it is essential to study the physical transformation of local dwellings into homestays in Gampong Nusa, Aceh Besar. The research employs a deductive qualitative methodology, involving field observations and the collection of data on the physical transformation of homestays in Gampong Nusa, Aceh Besar through observation, documentation, and interviews with homestay managers. The study aims to describe the physical transformation process and identify the changes that occur in local dwellings when they are converted into homestays. This includes examining the transformation of residential houses at various stages: before becoming a homestay, during the transition, and after the conversion. Three types of houses are analyzed: heritage houses, residential houses, and heritage-permanent houses. The study identifies changes in space expansion, zoning, spatial elements, and functions. The most significant spatial expansion occurs in heritage houses, including the addition of three kitchen and bathroom spaces, a living room, a sleeping room, a homestay bedroom, and a warehouse. Spatial zoning transformation in heritage houses involves substantial changes in public, semi-public, and private zones, often resulting in mixed-use spaces within a single building. The addition of furniture elements is prevalent in ten houses that serve as research objects, particularly in homestay bedrooms. The spaces that have changed include bedrooms, family rooms, kitchens, and bathrooms. This study provides a detailed account of the physical transformations in residential houses converted into homestays in Gampong Nusa, Aceh Besar, contributing valuable insights into the adaptation process and its implications for tourism amenities.



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1. Introduction

The transformation of Gampong Nusa into a tourist village began in 2005, focusing on attractions, accessibility, and tourist amenities [1]. Ministry of Tourism [2] define a tourist village as a rural community that exhibits rural authenticity through socio-cultural elements, daily activities, and economics. In addition to unique architectural designs and village layouts, tourist villages require various tourism-related facilities, including housing, food, and beverages.

Village tourism is one type of alternative tourism. Over time, Gampong Nusa has developed attractions such as natural charm, agrotourism, environmentally conscious communities, culture, religious tourism, and local wisdom. The village boasts excellent accessibility with a robust road

network and various private and public transportation options. Tourist amenities include homestays, camping facilities, unique culinary offerings, bakery home industries, and public facilities.

This research focuses on enhancing the potential of tourist amenities in Gampong Nusa, specifically homestays. According to Middleton [1], the three main components of tourism are attractions, accessibility, and amenities, with homestays falling under tourist amenities. ASEAN [3] describes a homestay as an accommodation managed by village communities to improve sustainable economic, sociocultural, and environmental value. The houses used as homestays in Gampong Nusa, particularly those affected by the tsunami, enhance the village's attractiveness and serve as part of its physical appeal. To compete and stand

*Corresponding author.

E-mail: haifasuhaira@mail.ugm.ac.id

<https://doi.org/10.21831/inersia.v21i2.72266>

Received 28 March 2024; Revised 12 June 2025; Accepted 25 June 2025

Available online 21 December 2025

out, homestays must consider the completeness of facilities and visual style [4][5]. The aesthetic quality and new experiences provided by homestays positively impact tourists' satisfaction and the memories they create [6]. The transformation of homestays in Gampong Nusa supports the development of the tourist village and offers better economic opportunities for residents.

As homestays develop, they undergo physical transformations, including building renovations and changes in layout and function. These transformations can involve changes to inner and outer spaces [7][8][4]. Based on Turner [9], space additions often occur when residents feel a lack of space for activities. This research aims to understand these physical transformations in Gampong Nusa's homestays to facilitate sustainable tourism development. The study of space use in residential buildings and the development processes at micro, meso, and macro scales has been the subject of previous research. Therefore, this research is unique because it discusses new emphases, substance, and locations.

Previous research has used deductive qualitative methods but focused on different aspects and locations. For example, a study in Subang identified the spatial transformation of homestays in tourist villages using architectural typomorphology [10]. Transformations can be observed through changes in size, shape, and the harmonious arrangement of building elements. Research in Borobudur Village examined changes in housing due to the development of settlements into tourism areas, using physical, territorial, and cultural transformation variables [11]. Another study noted that adding space positively affects resident activities without compromising privacy [12]. Transformations in previous research included physical and territorial changes [13], additional building space, spatial use strategies, and comprehensive changes [14]. Studies found physical changes such as adding rooms for commercial functions and building expansion [15]. Research on rural homestays highlighted material and social space perspectives [16]. In Tengkudak Village, Bali, changes included space additions to accommodate new activities, such as toilets, kitchens, bedrooms, and laundry areas, driven by resident needs and comfort [17][18].

Based on the previous explanation and description of the problems, the research aims to identify the physical transformation of local residences that have become homestays in Gampong Nusa Aceh Besar. This research hopes to contribute to architectural science, particularly in housing and settlement, spatial planning, and tourism architecture. For researchers, it serves as a reference in architectural science regarding the transformation of homestays in Gampong Nusa Aceh Besar. For the

government, it offers insights for preparing better tourism village programs and provides a vision for developing improved homestays for homestay managers.

2. Methods

The research method employed in this study is a deductive qualitative approach. Qualitative research focuses on providing descriptions or explanations rather than seeking relationships between variables [19]. This study was conducted by performing field observations and tracing physical transformation data at homestays in Gampong Nusa, Aceh Besar. In-depth data collection used various information sources, including field observation, documentation, and interviews to trace the physical transformation of the homestays (see Figure 1).

The research location is Gampong Nusa, Lhoknga District, Aceh Besar Regency (see Figure 2). The analysis process involved examining the profiles of the homestay owners, the homestay profiles, and the physical conditions of the homestays. The floor plans were recorded in three stages: before and after the residences became homestays and during their development as homestays. The residential houses used as homestays were categorized by their type, while changes, reductions, and additions in space were identified, along with changes in space function and zoning for each type of residential house.

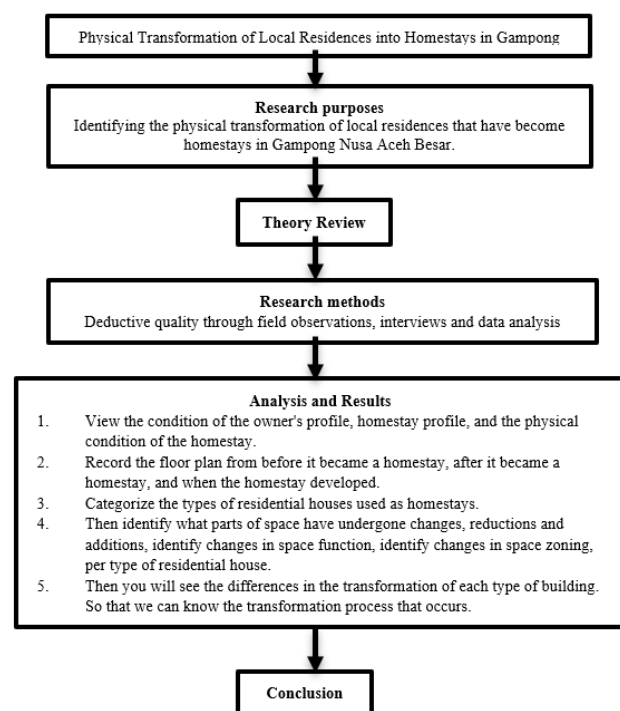


Figure 1. Research flow chart

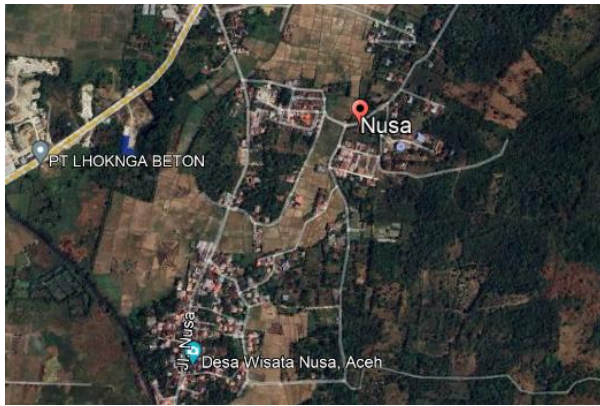


Figure 2. Gampong Nusa location [20]

These changes were then compared to the current conditions of the spaces to observe differences in the transformation of each building type. This allowed for an understanding of the transformation processes. By analysing the functions used between residences and homestays, the dominant functions that facilitated both residents and guests were identified. The percentage differences between the space functions before and after the transformation were then highlighted.

The researchers recorded 10 homestay houses in Gampong Nusa Aceh Besar which were categorized based on the type of house (Table 1). There are three types of houses, namely heritage houses, temporary residence houses, and a combination of both.

Table 1. Homestay category in Gampong Nusa

No	Homestay name	Category house type	Code
1	Ade Homestay	Inheritance	W1
2	Yuni Homestay	Inheritance	W2
3	Dirza Homestay	Inheritance	W3
4	Izza Homestay	Inheritance	W4
5	Pijah Homestay	Inheritance	W5
6	Bunda Homestay	Inheritance	W6
7	Idah Homestay	Inheritance	W7
8	Rahina Homestay	Permanent residential settlements	H1
9	Nada Homestay	Heritage-Permanent residential settlements	WH1
10	Oji Homestay	Heritage-Permanent residential settlements	WH2

3. Results

3.1 Space Expansion

In the heritage house type, expanding the area of the house is a transformation to meet the increasing need for space by expanding the house horizontally and vertically based on the land area. In the heritage house type, the transformation is horizontal and vertical expansion. Vertical expansion refers to the top position of the building while horizontal expansion to the front, back, left side and right sides of the building.

Table 2 shows a horizontal expansion of the dimensions of the house towards the front, back and side of the building such as transformations on W1, W2, W3, and W4. Homestay W1, in 2017 when it became a homestay, transformed the pattern of adding space to the right side of the original building before becoming a homestay. Homestay W2, in 2012, underwent an expansion on the right side of the original building. Homestay W3, in 2012 gained an expansion at the back of the building. Homestay W4, in 2017 developed at the back of the building. The transformation was carried out to meet homestay requirements so that the house feels more spacious due to a lack of bedrooms and inadequate cooking facilities.

Table 2. Transformation of horizontal expansion of heritage house type






Code	Transformation horizontal expansion	Space addition pattern
W1		right side
W2		right side
W3		back side
W4		back side

Table 3 shows the transformation of vertical expansion of heritage house type. Vertical expansion was carried out to meet the space need by expanding the house upwards due to limited land. There is one heritage-type homestay house that has undergone vertical changes, i.e. W5. Homestay W is the first homestay in Gampong Nusa. In 2005, when it became a homestay, an extension was made to the top of the building.

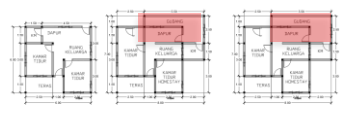
Table 3. Transformation of vertical expansion of heritage house type

Code	Transformation vertical expansion	Space addition pattern
W5		On

In the residential house type, the transformation of space expansion only occurs horizontally because there is sufficient land to expand the front, back and sides of the building. It is a lack of available space. It made the owner intend to change the layout. It is also done when the house is used as a homestay, the owners add some space.

This horizontal expansion occurred in H1 (see Table 4). The pattern of adding space was carried out on the right side of the building in 201 to fulfil the homestay requirements due to inadequate kitchen facilities for cooking and a warehouse for storing goods.

Table 4. Transformation of horizontal expansion of permanent residential settlements

Code	Transformation horizontal expansion	Space addition pattern
H1		right side



In the heritage-permanent residential settlements type, the transformation of space expansion only occurs horizontally because there is sufficient land to carry out expansion to the front, back and sides of the building. The owner wants to expand the house because it supports becoming a well-facilitated house.

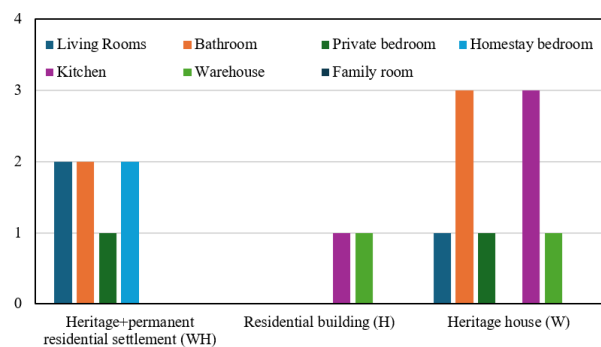
The horizontal expansion occurs in WH1 and WH2 (see Table 5). In 2015, when it became a homestay, WH1 transformed, adding space to the front of the building, combining a heritage house and a 2004 tsunami aid shelter house. This was done to make the house feel more spacious, and also to meet the homestay requirements.

Figure 3 illustrates the changes in space expansion patterns. It was found that the most spaces added in this type of space expansion transformation were in heritage houses, namely the expansion of 3 kitchen and bathroom rooms, 1 living room, a bedroom, a homestay bedroom, and a warehouse. In the heritage-permanent residential settlements, the expansion occurred in 2 living rooms, a

homestay bedroom, and a bathroom and 1 private bedroom. For the residential building type, expansion focused on 1 kitchen and warehouse.

Table 5. Transformation of the horizontal expansion of the heritage-permanent residential settlements type

Code	Transformation horizontal expansion	Space addition pattern
WH1		Front
WH2		To the right side

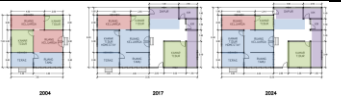






**Figure 3.**Space Expansion Diagram

3.2 Space Zoning

In the heritage house type, the space zoning transformation tends to change a lot in the public, semi-public and private zones. As shown as Table 6, the most visible changes that dominate are the public zones at W1, W2, W3, W4, W5, W6 and W7, almost all of the houses can be accessed publicly after the house becomes a homestay. All spaces that were previously semi-public have become public. These spaces are used by every visitor who stays in the house. Meanwhile, private zones such as the owner's bedroom cannot be used by visitors and are only accessed by the homestay owner.


In residential-type houses, the transformation of space zoning can be seen in the public zone after the house undergoes expansion and after the house becomes a homestay (see Table 7). Every guest who stays in the homestay house can access all the rooms available in the house except the homeowner's private bedroom. Privacy is only applied to private bedrooms, but other rooms can be freely accessed by guests.

Table 6. Transformation of the space zoning of a heritage house type

Code	Space zoning transformation	Note
W1		
W2		
W3		
W4		
W5		
W6		
W7		

Public
Semi-public
Private
Service

Table 7. Space zoning transformation of permanent residential settlements type

Code	Space zoning transformation	Note
H1		



Public
Semi-public
Private
Service

In the heritage-permanent residential house type, the transformation is in public and private spaces. Based on Table 8, the changes do not tend to mean that all houses can be accessed publicly because the houses used as homestays tend to be part of residential housing. The heritage houses are used for semi-public, private and service zones. This shows the differences in space between the two buildings.

From the results of the explanation above, the pattern of zoning changes in heritage house types tends to change a lot in public, semi-public and private zones. It mixes public and private zones. In contrast to heritage-permanent residential settlements type houses, public zoning tends to be in the permanent residential settlements house section.

This change occurs when the house functions as a homestay. Public zoning is more dominant because every room of the homestay can be accessed by staying guests. This equality highlights the difference from other homestays.

Table 8. Transformation of the horizontal expansion of the heritage-permanent residential settlements type

Code	Space zoning transformation	Note
WH1		
WH2		

Public
Semi-public
Private
Service

3.3 Space Elements

The transformation that occurs in heritage-type houses tends to involve the addition of bedroom furniture elements, to facilitate homestay bedrooms and support activities both inside and outside. As shown in Table 9, every house W1, W2, W3, W4, W5, W6, and W7 added furniture in the homestay bedroom. The difference can be spotted in the W1 house which changes the arrangement of the living room elements during guests' visit. There is also a difference in the W6 house in the arrangement of the family room furniture by placing the dining table.

On the other hand, the transformation in the type of residential house as shown in Table 10, only occurs in the addition of bedroom furniture for the homestay. This is done to facilitate homestay bedrooms and visitor satisfaction. The extra furniture occurs when the house is registered as a homestay to meet the requirements such as cupboards, beds and mattresses.

In-house type inheritance-permanent residential settlements transformation occurs in the same way as with permanent residential settlements type houses, namely the addition of furniture for the homestay bedroom (see Table 11). The addition of furniture occurred in the year of the homestay registration. This change in the function of the building causes changes in the existing spatial elements in the house.

Transforming space elements is a physical adjustment effort that is easy to do and takes a short time. The addition of furniture elements tends to occur in the 10 houses as the object of research, namely in homestay bedrooms to facilitate homestay bedrooms and support activities. Changes in furniture arrangements create a new space, namely space in the building in house W6. There is also furniture only used when guests visit, as in the case of W1. After that, the furniture is stored and the space is reused as space for the homeowner's needs.

Table 9. Transformation of space elements of heritage house type








Code	Space element transformation	Space element type
W1		2017 Addition of room furniture and changes to the arrangement of living room furniture
W2		2012 development of room furniture
W3		2012 Supplement of room furniture
W4		2017 Extra room furniture
W5		2017 Increment of room furniture
W6		2017 Extension of room furniture and 2017-2024 changes to family room furniture arrangements
W7		2015 Addition of room furniture

Table 10. Transformation of room elements of permanent residential settlements house type




Code	Space element transformation	Space element type
H1		2015 Addition of room furniture

Table 11. Transformation of space elements of the heritage-permanent residential settlements type

Code	Space element transformation	Space element type
WH1		2015 Addition of room furniture
WH2		2015 Supplement of room furniture

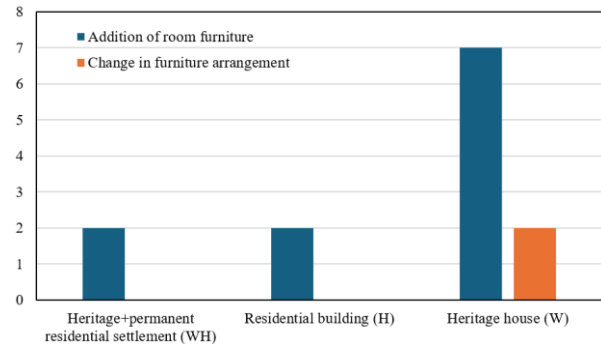
**Figure 4.** Space Element Changes Diagram

Figure 4 depicts the space element changes. Changes in spatial elements tend to occur, namely the addition of furniture to 7 heritage houses, 1 house to a residential residence and 2 houses to a heritage and residential apartment. Changes in furniture arrangements only occurred in 2 inherited houses. It shows that changes in furniture arrangement occur in inherited houses because inherited houses already have good furniture but are not well organized. Meanwhile, the addition of furniture tends to occur due to the lack of available furniture in each house which changes the elements of the house.

3.4 Changes in Space Function

Changes in the function of space that occur in the heritage house type are changing the function of space due to the increase in new activities in the house and changes in the function of the house, in 7 houses, where the function of the bedroom to a homestay bedroom. Based on Table 12, in W4, the kitchen is converted into a family room. in the case of W6, the family room is designed into a dining room and family room.

Changes in the function of the residential housing type also impact the bedroom to a homestay bedroom and the function of the bathroom to a private bedroom. From Table 13 we can see that it is to expand the room and to fulfil the homestay facilities and to make the house well accommodated. It can improve guests' comfort and safety.

Table 12. Transformation of the space function of a heritage house type

Code	Usual function	During homestay occasion	Homestays development
W1	1 Bedroom	1 Homestay bedroom	1 Homestay bedroom
W2	2 bedrooms	2 Homestay bedrooms	2 Homestay bedrooms
W3	2 bedrooms	2 Homestay bedrooms	2 Homestay bedrooms
W4	2 bedrooms Kitchen	2 Homestay bedrooms Family room	2 Homestay bedrooms Family room
W5	2 bedrooms	2 Homestay bedrooms	2 Homestay bedrooms
W6	2 bedrooms Family room	2 Homestay bedrooms Family room+dining room	2 Homestay bedrooms Family room+dining room
W7	1 Bedroom	1 Homestay bedroom	1 Homestay bedroom

Table 13. Transformation of the function of a permanent residential house-type room

Code	Usual function	During homestay occasion	Homestays development
H1	1 Bedroom	1 Homestay bedroom	1 Homestay bedroom
	Bathroom	Bedroom	Bedroom

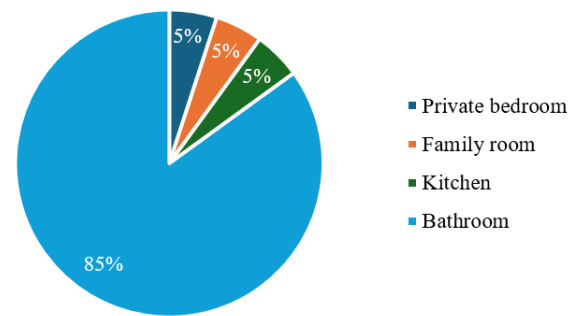
Changes that occur in heritage-permanent residential houses also tend to influence the function of the bedroom to a homestay bedroom (see Table 14). In the WH1 house, the function of the bedroom is multiplied into a living room, to expand the room. It supports residential houses that are converted into homestays but are still shared by the homeowner.

Table 14. Transformation of the space function of the heritage-permanent residential house type

Code	Usual function	During homestay occasion	Homestays development
WH1	2 bedrooms	2 Homestay bedrooms	2 Homestay bedrooms
	Bedroom	Sitting room	Sitting room
WH2	2 bedrooms	2 Homestay bedrooms	2 Homestay bedrooms

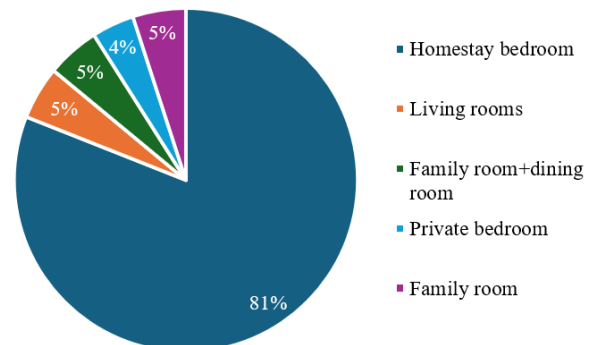
According to three tables above, 10 houses have changed the function of private bedrooms to homestay bedrooms due to the change in the function of the house into a homestay, the addition of new activities in the house to

fulfil the homestay facilities. The converted rooms are the bedroom, family room, kitchen and bathroom.

**Figure 5.** Diagram of a Space Change

As presented in Figure 5, the space that experienced the most changes was 85% of the bedrooms which were used for homestay needs and fulfilling household needs. There were 5% family room, 5% kitchen, and 5% bathroom to meet the needs and facilities of the house.

The rooms have transformed into well-equipped homes because the homestay owner wants his house to meet the needs of his household. Guests can feel comfort when staying and doing activities at the homestay.

**Figure 6.** Added Room Diagram

Meanwhile, as shown in Figure 6, the space added is 81% of the homestay bedroom to fulfil homestay facilities, another 5% is for the bedroom, 5% of the living room, 5% of the family room as a gathering space, and 5% of the family room double as a dining room to facilitate guests when staying at the homestay. Changes in the function of space occur significantly in every residential house that becomes a homestay in Gampong Nusa. The space previously used privately for the household becomes the space for the homestay owner and guests. Usually, the owner's private bedroom is designed as a guest's bedroom.

4. Conclusions

The physical transformation of a house can be defined as changes or developments made by the owner over time to

meet their wishes and aspirations. The homestays in Gampong Nusa, Aceh Besar, have undergone significant physical transformations. These transformations were undertaken by homestay owners to ensure their residential buildings met the requirements for a well-facilitated homestay and household needs. The local residences in Gampong Nusa that were converted into homestays underwent physical transformations closely linked to changes in the building's function. This research focuses on identifying these physical transformations, based on observations, documentation, and interviews with homestay managers.

According to Zhao et. al. [6], there are three basic forms of transformation in a building: addition, subtraction, and displacement. The research identified transformations at several stages: before becoming a homestay, during the conversion, and subsequent changes after becoming a homestay. The physical transformations observed in the Gampong Nusa homestays were triggered by expansions, changes in elements, changes in space function, and space zoning to meet the needs of homeowners and the requirements for operating as a homestay. This transformation was observed in three types of houses: heritage houses, permanent residential houses, and heritage-permanent residential houses. The transformations included changes in space expansion, space zoning, space elements, and space functions. The most extensive transformations in heritage houses involved the expansion of kitchens and bathrooms, living rooms, bedrooms, homestay bedrooms, and warehouses.

The findings indicate that expansion transformations tend to occur horizontally, with additional space often being added towards the back of the building. These additions were necessary to meet the needs of both the homestay and the homeowners, given the limited space in the original building.

Transformations of building elements included the addition of fixed and semi-fixed elements. Furniture additions were common in the 10 houses studied, particularly in homestay bedrooms. Concrete walls were added to integrate the old house with the government-provided aid house post-tsunami, and wardrobe elements were added to enhance privacy between rooms. Spatial zoning transformations in house types showed significant changes in public, semi-public, and private zones within a single building. Rooms that changed functions included bedrooms, family rooms, kitchens, and bathrooms.

Residential houses underwent many changes to accommodate residents' needs due to the limited space in the original buildings. Additions such as living rooms,

family rooms, kitchens, and bathrooms were necessary to provide adequate facilities. The addition of a living room allowed both homestay guests and homeowners' guests to engage in social activities more freely. Kitchens were essential for daily cooking activities, and the addition of bathrooms improved the facilities for homestay guests. The physical transformations at the homestays in Gampong Nusa, Aceh Besar, included expansions, additions of new spaces, changes in space elements, changes and additions to room functions, and spatial zoning adjustments. This diversity and adaptability in creating new spaces were driven by the transformation from residential houses to combined residences and homestays.

This research contributes to the field of architectural science, particularly in housing and settlements, spatial planning, and tourism architecture. For researchers, it provides scientific work that can serve as a reference in studying the transformation of homestays in Gampong Nusa, Aceh Besar. For the government, it offers insights for developing better tourism village programs. For homestay managers, it provides a vision for future development. Future research should expand to macro and meso scales of residential areas related to tourist villages.

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