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Research paper

The Typology of the Gayo Traditional House Facade is Reviewed Based on the Context of the form Element Analysis

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Abstract

The building facade is an important element in the delivery of functions, meanings and a period of culture when the building stands. This study was carried out to dig deeper into the typology of the facade of the traditional Gayo house which is a heritage house of Reje Baluntara. The purpose of this study was to identify and analyze the facade typology of Gayo traditional house buildings in an effort to explore historical data and as a data inventory that would later be useful in developing the scientific treasures of traditional architecture which became the archipelago's architectural cultural heritage. The typology of facades in the Gayo traditional house was carried out with the aim of: classifying the formation of facade-forming elements, obtaining a dominant formation on each element forming the facade so that it can be found in the traditional Gayo house inherited from *Reje Baluntara* which still retains its authenticity. In this study, the method used was descriptive-qualitative. The analysis used is by classifying facades based on the shape elements of the facade field, namely the basic field, the wall area and the upper field or roof area. The findings of this study are found that the basic field facade typology which is the base area of the building becomes the most important part, because it relates to the transition to land, so the foundation of the building is the most important element to stand the building, there are 26 columns in a gayo traditional house arranged in a grid 3 meters with an umpak foundation system using large and strong stones. There are not many openings in the facade on the wall, this is done as a context for the temperature of the relatively cold Gayo area. Typology of roof formation is a roof shield that extends and is the main roof.

Keywords: Typology; Building facade; Element façade;Tradisional house; Gayo

1. Introduction

Traditional houses have a variety of forms. The diversity of traditional architectural forms of an area becomes a distinctive design characteristic inherited from the predecessors to ethnic descendants or local communities. The rapid development of the wave of globalization hit all aspects of people's lives today. The reasons for this include the rapid development of modern information technology that exists in the community environment which has a major impact on the neglect of local wisdom values. An area that must be preserved as an identity and characteristic of an area in this case the characteristic design of an area concerned.

The Gayo Highlands is in the Central Aceh region, which has a culture that deserves to continue to grow and be preserved. With the current developments both in terms of science and technology, this affects many people's mindsets and many think that a cultural heritage such as Gayo traditional house is no longer important and attractive to the community. On the contrary, learning and knowing the history of masalalu is the stage of the development process of a region.

The traditional house of Gayo is a legacy of the kings who led the Gayo area before developing into a modern area with leadership coming from the regional government. The traditional Gayo house is also called Umah Pitu Ruang in Indonesian means a house of seven spaces, because it has seven rooms.[11]

The traditional Gayo house which is still standing today in the Gayo highlands is the property of one of the Kings who ruled in his time of "Reje Baluntara". This Gayo Traditional House has been built since 1686. It was built by working together, assisted by local people by cooperating with each other in the construction of the traditional house. This house was built using Medang wood material, which is one of the woods in the Gayo plateau which has a durability as a building material and its existence is very rare nowadays.

This study was carried out to delve deeper into the typology of the facade of the traditional Gayo house which is a heritage house of *Reje Baluntara*. The choice of object of study in this study is based on several reasons including, that this object is a historical building and has very deep historical value. It is also the only Gayo traditional house that is still intact as the original without any renovation or renovation.

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The results of this study are expected to be used as a tool to answer the problem of how the typology of Gayo traditional house facade is based on the context of form element analysis. The purpose of this study was to identify and analyze the facade typology of traditional Gayo house buildings in an effort to explore historical data and as a data inventory that would later be useful in developing the scientific treasures of traditional architecture which became the archipelago's architectural cultural heritage.

2. Literature review

2.1. Typology viewed from architecture

Architectural typology of activities to start from architectural activities and classify them in behavior that is classified in certain things done by the object of architecture. That similarity can be in the form of;[7]

a. The similarity of the basic form / basic properties in accordance with the basic shape of the object.
b. The similarity of functions of these objects
c. The similarity of origin/development and the social background of the community of the object are located, including style or style

Typology can identify changes that occur in an object and analysis of these changes concerning the basic form of the object, or basic elements, the nature, function of the object and the process of transformation.

Typology analysis is divided into three, namely. [7]

a. Analyze typology by digging from history to find out the initial idea of a composition; or in other words know the origin or occurrence of an architectural object.
b. Analyze typology by knowing the function of an object
c. Analyze typology by searching for a simple form of a building through the search for basic buildings and their basic properties.

2.2. The form element that defines facades

Facades are elements in architecture that can express the function and purpose of a building. Existence of historical buildings is able to form the values of locality in an architectural form that gives its own image to a building or city [10].

Form is an inclusive term that has many meanings that can refer to an external display that can be bridged, such as objects and aliens[4]. The form has properties that determine the pattern and composition of elements, namely: Position, Orientation, visual inertia. Position is defined as a location relative to a form of the existence of its environment or visual area where it is viewed visually. Whereas orientation is the direction of something that forms on the basic plane that is used as a foundation and how people see the shape.
The creation of a form model is caused by several factors, namely primary and secondary factors. Primary factors include culture and social, while secondary factors include climate, material, technology, land and construction [9].

2.3. Components of building facade composition

The development of the asad of a building depends heavily on socio-cultural changes in society. The diversity of the appearance of building facades is a modification of various design elements. Visual capture of forms that become objects of transformation and modification of the shape of elements in building facades includes shape, size, color, texture, position, orientation and visual inertia [4].

To identify building facade architecture typology can be done by classifying facade shape elements, is the basic field, wall plane and upper plane. Facade is an architectural term which means that the front of a building is generally facing the road environment [1].

The facade is a face that reflects the image and expression of all parts of the building, it can even be the soul of a building. Facades are a very important part of an architectural work, because facades are the first elements to be visually appreciated by connoisseurs of architectural works. Thus the facade becomes an inseparable element of an architectural design product.

3. Methodology

In this study, the method used was descriptive-qualitative. The analysis used is by classifying facades based on the shape elements of the facade field, is basic field, wall area and the roof plane. Analysis was carried out on the composition of shape configurations in each classification of field shape facades of traditional Gayo house buildings. The analysis carried out was qualitative analysis. Has a study objective on identifying typology of facade elements in gayo traditional houses. Data analysis and conclusions based on background and problem identification. The parameter used as a reference for assessment is the suitability between the theory and the objects in the field.

4. Results and discussion

4.1. Typology is based on basic field elements

Gayo traditional house also called umah pitu ruang in gayo language is defined as a house that has seven spaces. The house belonging to King Baluntara is in the village of Toweren, Central Aceh. This house is located in the Gayo highlands in the mountainous region of central Aceh, Bener Meriah and Gayo lues which have extraordinary natural beauty and are very typical of the best quality coffee plantations in the world.

Basic field elements consist of foundations, columns and floors. The results of identification of column shapes and foundations in gayo traditional houses are swear foundation systems. Uumpak foundation functions to hold the load of the building through a column or suyen which means a pole. *Suyen* is a rectangular beam with the same dimension.

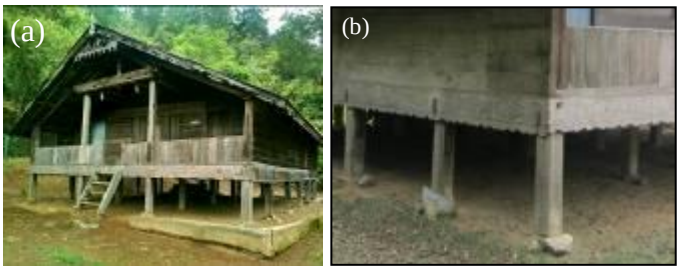


Fig. 1:(a). View the traditional Gayo *Reje Baluntara* house; (b) Cross section of foundation and column

With the form of a wooden beam column that continues the vertical force against the pedestal foundation that comes from natural stone, so that it can withstand the main burden of the entire physical structure. The shape of the stone is the foundation of the Umpak in the form of haphazard, but meets the criteria as a barrier to the establishment of a pole as a column of a building.



Fig. 2:(a). The umpak foundation system; (b) Foundation view

The foundation in the Gayo Ethnic designation is *Atu kekunulen Suyen* which means the stone is occupied by a pole. *Atu Kekunulen Suyen* was chosen by local customary elders who understood the stone and its place in the forest. Through traditional ceremonies, indigenous elders who are experts in choosing stones will go to collect stones together in groups. The foundation form of the Gayo Traditional House is the Form of the umpak foundation, the stone as a pillar so as not to channel direct load to subgrade. **Fig.2**

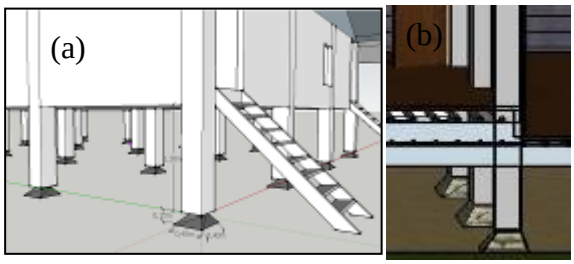


Fig. 3: (a)foundation and colums **(b).** foundation or *Atu Kekunulen Suyen*

The shape of the foundation with irregular geometry to prevent the occurrence of moisture in wood caused by water contained in the soil which will make the weathering process on wood. There are 26 columns in this traditional Balinese Gayo gayo house. The type of stone used for the footing foundation is not known to date, but the people call it *Atu Teger* in Gayo language meaning stronger stone. The foundation stone is not the result of the breakdown of larger stones but the Whole Stone of the forest. Whole Stone *Atu Rawan* is believed to be a stronger stone, **Fig.3**.

Size of Foundation Stone *Atu Kekunulen Suyen* It is estimated that if the stone is placed on the ground, it reaches the calf of an adult male. The size of one side and the other side has the same geometry and is enough to hold the column above it.

Typology based on the floor of the building, in the Gayo traditional house uses a wooden floor covering. Gealap colored floors like natural wood. The wood material used is medang wood, this type of wood only exists in the gayo plateau. But now the wood is rare and difficult to obtain. The height of the building floor from the ground.

4.2. Typology is based on form elements in the plane of the wall or open façade

The building envelope in this gayo traditional house is dominated by wood material. Parts of the wall includes boards originating from *Medang* wood which are arranged horizontally covering the entire wall at the Gayo traditional house. In the basic field section of the Gayo traditional house are wooden boards that are arranged on the frame of the floor and the main floor beams which make the floor of the Building Above the basement. The wood compilation system on the wall is arranged horizontally attached to the column, with an average grid column of 3 meters distance.



Fig. 4: Door typology as an entry access opening

In this traditional house, entrance access is located in two building areas, namely in the front and rear areas. The door on the entrance area has a terrace. Whereas the entrance access from the back door is directly connected to the stair access. At the front of the door lies the right and left side of the terrace area, followed by two window openings, as seen in Fig. 5. The shape of the door with one type of door made of madeng wood material.
The shape of this traditional house door, the shape of the outside and inside is the same as the other conventional house doors which are rectangular, but the door shape of the Gayo traditional house is composed of 3 to 4 wooden boards from the Medang tree arranged vertically. The high size of a doors from the floor is 1.49m, while if from the top of the stairs is 1.66m with a thickness of 6cm x 15cm with a width of 89cm. Between door one and the other has a measuring difference of 1 centimeter to 3 centimeters, **Fig.4.**

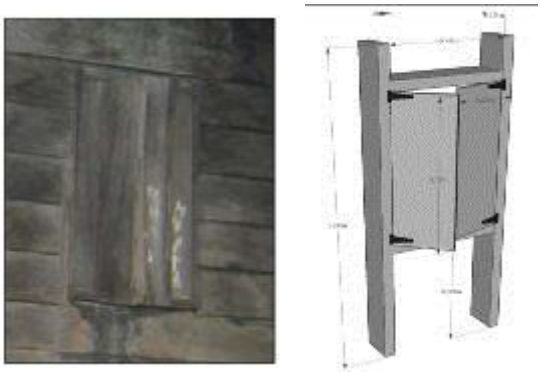


Fig. 5: Window view that does not have a grid for ventilation

The window system in this traditional house does not have a system of stacking fins as ventilation, but only a horizontal stacking system without ventilation. this is done to keep the room temperature warm, because the temperature in the gayo area is relatively cold, **Fig.5**

4.3. Typology based on elements of the shape of the roof

The uppermost facade element on the building's façade is the roof. Based on the theory of the roof is the crown of the building as proof of its function as a manifestation of the pride and dignity of a building that is supported by the body of the building.
In traditional Indonesian house architecture, a longitudinal roof is often found as the main element of occupancy. The elongated roof means that the main roof of the house tends to be "long" away from the walls of the building. Gayo traditional house is a traditional house in the form of a stage, with an elongated roof. In principle, the concept of the stage house is guided by traditional wisdom that requires harmony between the macro cosmos and the micro cosmos, thus reflecting the values of religion and self-alignment [1].

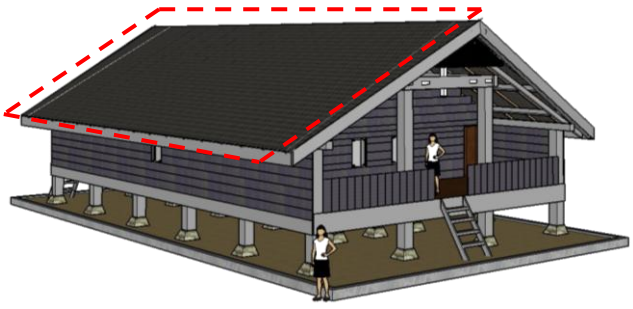


Fig. 5: The shape of the gayo traditional house roof

Gayo traditional house has upper field *Bagien Ulu* is an elongated roof attached to gording and wooden horses without a ceiling. Initially the roof covering at the house of Raja Baluntara has palm fiber roof material, but because the fibers have long been used so that they experience weathered and damaged As a substitute for using zinc material as a roof cover. The roof cover underwent a renovation without changing the shape of the original roof.

5. Conclusion

Based on the analysis of facade typology in gayo traditional houses, it was found that the facade typology of the base plane which is the base of the building becomes the most important part, because it relates to the transition to the ground, so the use of material for this base must be more durable. The foundation of the building is the most important element to stand firmly on the building, on the foundation and column has a very distinctive embodiment. For umpak foundations use large stones that become the foundation of the column. In the typology of facade walls that are open facades, not many ventilations or windows are found. This is because gayo traditional houses adapt to the surrounding natural environment. Gayo is a mountainous area with relatively cold temperatures. So that the walls avoid ventilation, to get a comfortable temperature in the room. The position of the openings is on the north-south side of the building, access to the entrance to the east area of the building. Sometimes the position of the entrance gives the role and demonstrative function of the building. The typology of roof formation is the dominant form found in each stage house, which is an elongated gable. The sheath of the roof covering cursed palm fiber, then renovated and replaced with a zinc roof, because it considers the reason for the age of old and damaged palm fiber material. Gayo traditional houses that are hundreds of years old still look beautiful today. The facade of the building which is still maintained as the original gives a sense and characteristic of identity and continues to be maintained for its uniqueness.

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