

Shophouses Façade Typology on Corridor of Gagak Hitam and A.H. Nasution Street

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ABSTRACT

The façade as a representative element of an architectural work can be an indicator of environmental character apart from socio-cultural, spiritual, and economic conditions at a certain time. The emergence of new buildings in the city of Medan is facing a rapidly changing face of the city, accompanied by the increasing need for space utilization and variations in building façade designs, where this phenomenon occurs in outer ring roads. Gagak Hitam and A.H. Nasution street, as the outer ring road of the city of Medan, is growing rapidly with various types of functions with the dominance of modern shophouses, which produce a façade typology that can be grouped and looked for differences according to certain indicators in the existing theory review. This study aimed to find a typology of shophouse façades in the corridor of Gagak Hitam and A.H. Nasution street, which became their character. The researcher collected data from literature sources, observed the research area, and redrawn the two-dimensional façade model to identify, in general, the elements and composition of the façade of the research object. According to the findings, there is no special type that becomes the standard for the character of the shophouses in the two road corridors.

Keywords: façade, ring road, shophouse, typology

1 Introduction

The facade or face is an element that cannot be removed from a building design product and is even the most crucial part because this element represents an architectural work. By observing and studying the facade design and socio-cultural conditions, one can know spiritual life, even the economic and political conditions at a specific time [1]. The emergence of new buildings in the city of Medan exposes it to a change in the city's face. These new buildings are being constructed quickly due to the increasing need for space utilization. Along with the growing use of space, building facial designs' needs and tastes are increasingly varied. Gagak Hitam and A.H. Nasution Street, as the outer ring road of the city of Medan, are overgrowing with various functions. These road corridors are space utilization applications with the dominance of shop-type buildings. This variety of shophouses will produce a facade typology. Typology is a characteristic of the structure and form of architectural objects grouped, searched for differences, and repeated.

2 Literature Review

Typology

Typology is a science or study activity or theory to find types and classify things on the relevant variables that can explain the phenomenon of architecture in this context [2]. Typology refers to the concept and consistency that makes it easier for people to identify architectural parts [3]. Researchers carry out typology studies to find the similarities of the elements owned by an object [4]. Typology is a concept that describes a group of objects based on the similarity in character of its primary forms. This concept is based on the possibility of grouping several items because they have similar basic properties. Thus, architecture can be interpreted as forming typological elements, including the structure of forms, to characterize a complete work [5]. Researchers must follow four stages in typological analysis: determining the scale, formulating a classification, elaborating the identification results based on the category to produce concept types, and building a relationship between types to acquire types. Furthermore, the resulting type can be discussed (interpreted) based on the research's character to find a design solution.

Building Façade

The word 'façade' (façade) originates from the Latin word *facies*, which is a synonym for 'face' (face) and 'appearance'. The rear is considered a semi-public exterior space or private exterior space that relates to the unity of right proportions, harmony, the arrangement of structured horizontal and vertical elements, materials, colours and other decorative elements [6]. The supporting elements of the facade are the roof, entrance, window, and ornament. Roofs act as a crown carried by the building's body, so visually, they are the facade's end and the building's endpoint [7]. Entrances play an essential role as access and sign of transition from the public area to the private part. Windows are openings located in a building's walls that function as air and light circulation in a room or building. As one of the facade components, the window figure provides its articulation as the character or image. Ornaments are often referred to as decorative designs or decorative designs that increase the aesthetic value, which will ultimately add to the building's financial value [8]. Ornaments also show the architectural style contained in the design of a building.

Evaluating or carrying out studies on the facade's composition can be observed by making a classification through the principles of constructive ideas that emphasize: geometry, symmetry, rhythm, proportion, and scale [9]. Geometry embodies geometry principles on the plane or object of a built environment, triangle, circle, rectangle, and variants [10]. Symmetry directs building design through a balance that occurs in the forms of the built environment applying the most common type of symmetry, called reflectional symmetry, which is reflected across an axis [11]. Rhythm shows building components in the form of repetitions both on a large and small scale which is the continuity of elements acquired through repetition, progression, radiation, gradation and contrast [12]. The elements in question may be columns, doors, windows or ornaments, which the less repeating scale size, categorized as monotonous rhythm, the more it is classified as dynamic. Proportion is the ratio between one part and another on one of the facade elements. Scale adjusts to human beings' requirements and certain boundaries that show the ratio between a building or space elements

with a particular feature and its size for humans [13]. The scale determines the facade elements' size and dimensions.

Shophouse

Shophouses went into plenty of evolution, representing the Chinese and hybrid cultural influences. The transitional changes are part of adapting climates, local cultural, economic demands, and fashion influence [14]. In Indonesia, shophouses generally have a height of two to five floors and have a dual function. The lower floor is usually used as a business or office, while the upper floor is used as a residence [15]. In Medan, shop houses' appearance arose due to developments in the trade sector in the early 20th century, especially in the Chinatown area [16]. One of the mentioned Chinatowns is Kesawan, as shown in figure 1. Nowadays, shophouses in Medan are generally built with more superficial facades and modern materials (Figure 2). Shophouses are no longer only inhabited by Chinese but also other ethnicities and can find on almost all city corners.



Figure 1 Shophouses on Old Kesawan, Medan



Figure 2 Modern Shophouses

3 Methodology

The research locations are on the corridor of Gagak Hitam and A.H. Nasution Street in Medan. These two ring roads function as primary arterial roads and are alternative roads for traffic movement directed not to pass through the city center [17]. Through observation, the researcher collects data to see the current shop façade on one side of each road facing the main road through a visit to the research site (Figure 3 and Figure 4).



Figure 3 Samples on Gagak Hitam St.

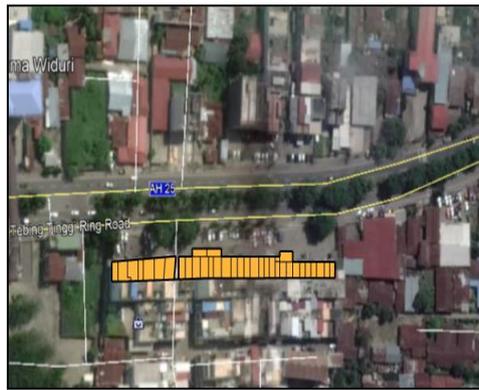


Figure 4 Samples on A.H. Nasution St.

Following the research objectives, selecting a qualitative research method with a descriptive analysis approach is the most suitable specific method. The table 1 is the determination of the variables for the typology research of shopfronts on the corridor of Gagak Hitam and A.H. Nasution Street based on the interpretation of the theories review:

Table 1 Variable Determination Method

No	Theory Interpretation	Research Variable
1	The building facade is the outermost physical element of a building at the front facing the road.	Identify the facade of the shop front facing the street.
2	The building's facade comprises roof elements, entrances, windows, arcades, and ornaments.	Identify the elements of the shop's facade.
3	The composition of the building facade consists of geometry, symmetry, rhythm, proportion and scale.	Identify the composition of the shop facade.

4 Results And Discussion

Based on the analysis results, the shopfronts' typology on Gagak Hitam and A.H. Nasution Street's corridor, namely, modern shophouses, is supported because it is a new outer area arterial road. The shop façade tends to be a homogenous result of each sample road's shopping complex development design. On both streets, it is

found that all the facade elements are irregular (Figure 5 and Figure 6). There are no specific types of shophouses that can reflect the character of each of them.

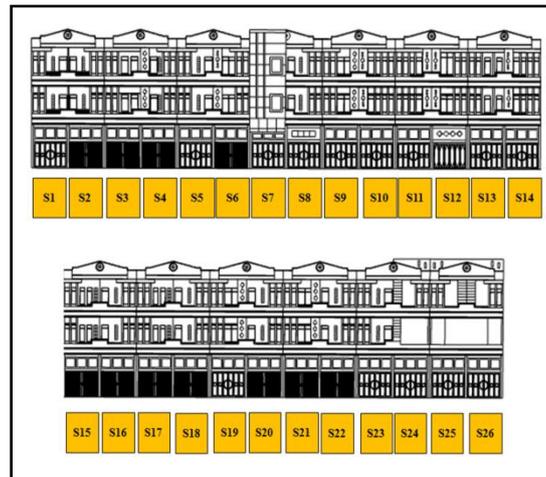


Figure 5 Existing facade of sample shophouses on Gagak Hitam St.



Figure 6 Existing facade of sample shophouses on A.H. Nasution St.

Gagak Hitam Street

Samples have flat roofs and no concrete. However, the observer cannot see the entire top because the triangular façade accents cover it. In 12% of models, the wall blocked roofs on their tops, as shown in figure 7. Meanwhile, the researcher can identify all the windows; they are different in the frame's shape and style (Figure 8). From its shape: 19% combine single and two coupled forms, and 81% of samples are only in a single state. There are 54% samples of casement frames, 35% samples of casement and fixed combinations, 3% fixed samples, and 8% samples of the combination of eight-framed louvre and fixed.

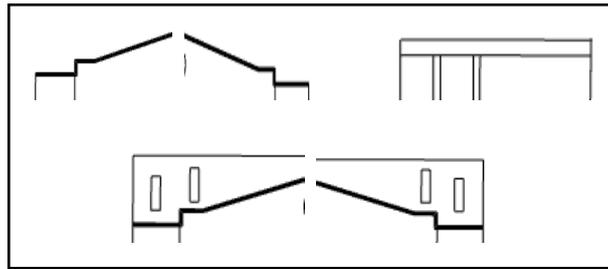


Figure 7 Existing roofs

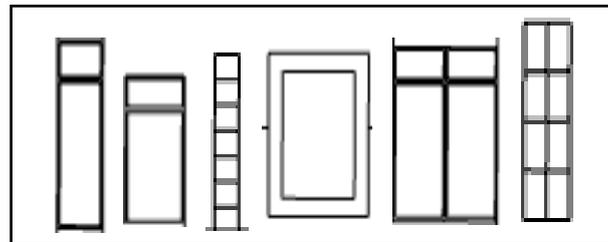


Figure 8 Existing windows

The type of door observed from all samples is different models (Figure 9). The profile shows 58% samples of the folding door with radial motif (87% casement vents and 13% fixed frame vents) and 42% folding gate shapes. The radial shape at the top of the façade accent that connects the two shophouses shows a prominent ornament of all samples (Figure 10). This radial shape consists of a pile of circles that become semicircular when two sample units are separated. Also, the researcher found 35% of diamond patterns (congruent and irregular patterns) and 15% of samples in linear array patterns (vertical and horizontal patterns).

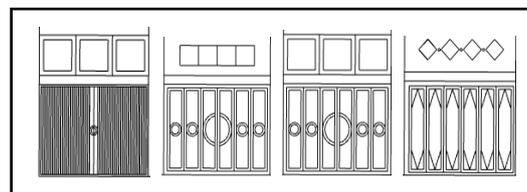


Figure 9 Existing doors

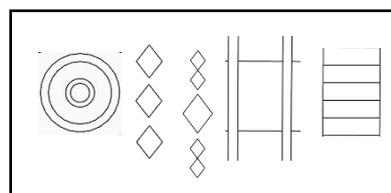


Figure 10 Existing ornaments

Ninety-six percent of samples have a combined triangle-rectangular geometric shape, and rectangular shapes for the rest of them. Triangles-rectangles formed on the accent of the façade, which creates an acute 60° angle to connect the two sample units, and the vertically rectangular form the walls that are congruent with the other samples. The connection of the two sample units by visible accent creates an impression of irregularity in the dimensions of the walls' height on the right and left of each shop. The types, numbers, and placement of facade elements on the axes also appear asymmetrical (Figure 11). All building façade rhythms

have a dynamic rhythm form (A-B-C), with 58% of buildings in windows and doors, both in three repetitions of shapes with different layouts distances and repetition of different dimensions of elements. Heights and widths are the average proportion of the human body (160 cm of body height) with an average size per floor of 3 meters and 4 meters (Figure 12). However, the buildings gave a distorted impression in proportion, with window facade elements covered by pulled-up horizontal accents on the facades. There is a case in 15% of samples where the size and number of windows are not proportional to the wall's plane.

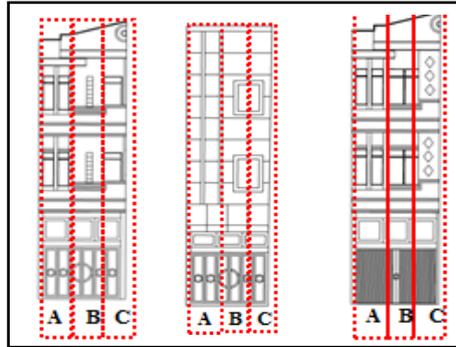


Figure 11 Rhythmic Forms

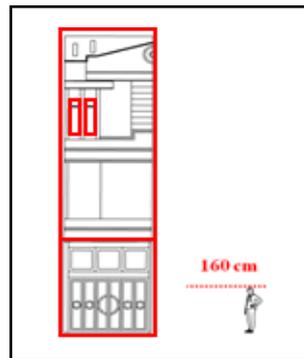


Figure 12 Height comparison

A.H. Nasution Street

Visibly, all samples have a flat roof and no concrete. Roofs are exposed to the observer from the human eye's angle of view, making the upper bound of each building so easily seen. In 32% of the sample, there are variations in the mass's height, which creates a dynamic impression on the roof (Figure 13). The exact nature applied to the unsurprisingly various type of windows: it is found that 39% of samples have windows with a combination of single and two-coupled forms, 55% of samples are triple-coupled, 3.2% sample combination of two and three-coupled, and 3.2% samples only in a single form (Figure 14). From the types of frames: there are 23% samples of casement frames, 71% samples of casement and fixed framed combinations, 3.2% fixed frame samples, and 3.2% sample combination of eight-framed louver framed and the fixed framed.

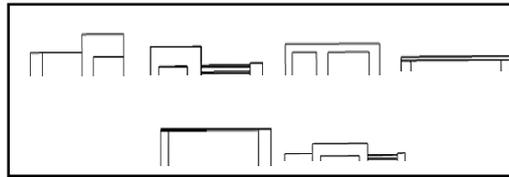


Figure 13 Existing roofs

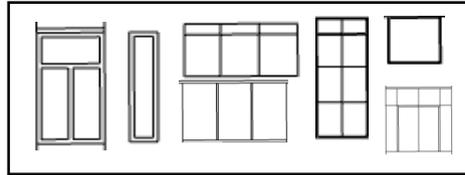


Figure 14 Existing windows

Typical folding door shapes with roster ventilation are also seen here. However, there are differences in the motif of the door alone. There were 39% samples of square motifs and 45% rectangular motifs with no unique ornaments (Figure 15). The characteristic seen is formed from the elements that make up the facade.

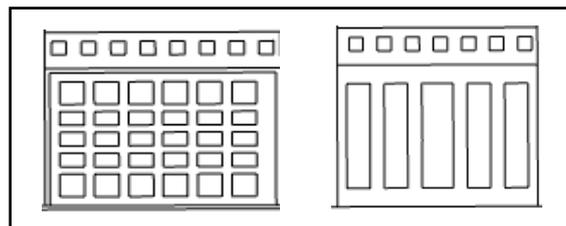


Figure 15 Existing doors

Mainly, the bodies are rectangular with a vertical orientation congruent with the others, whereas the shapes are harmonious as the accent of the façade. There are 52% with asymmetric elements, more than symmetric ones (Figure 16). The most prominent cause is unbalanced in the type and number of facade elements. There are additional cases in the 32% samples in which there are façade accents that give the observer a decent detail of difference in dimensional height view. All door elements are balanced by filling both sides of the symmetry mirror with regular shapes. Samples are noticeably even in order and tend to have a monotonous rhythmic form (A-A-A), with 48% of buildings in windows and doors, both in the repetition of shapes with the same placement, distance, and outlines with the exact dimensions. The fact that some samples formed not only two and three sequenced patterns but also four made this corridor more likely has less consistency in rhythm compared to the other (Figure 17).

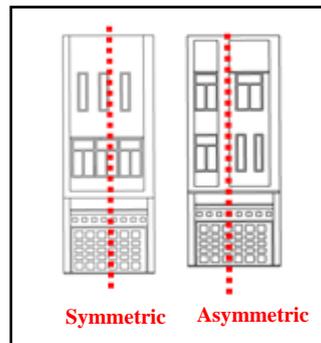


Figure 16 Symmetry

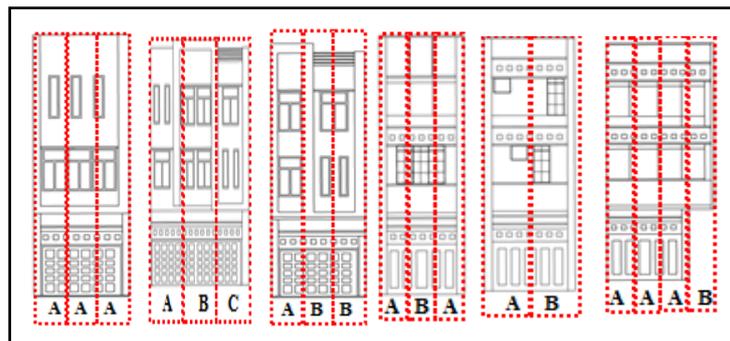


Figure 17 Rhythmic Forms

Considered proportional with the human body (160 cm of height) with an average size per floor of 3 meters and 4 meters, on the other hand, the buildings in the 52% samples are contrary to the statement, with the leading cause of the facade elements being stand out due to being immense. The facade elements in the 32% sample are tiny compared to the wall plane. Samples are classified as proportional as many as 48% already have the facade elements' number and size balanced with the wall's plane.

5 Conclusion

Based on the analysis results, the observer concludes that the typology of shopfronts on Gagak Hitam and A.H. Nasution Street, namely modern shophouses found on them. It is caused by the fact that this area is a new area resulting from the development of outer arterial roads. The shop façade, which tends to be similar, results from the development design of the shopping complex for each street sample. On both streets, all the facade elements are of a rare type. This finding means that there are no specific types of shophouses that can represent the character of each street.

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