Building facade components in a historical corridor. Case study: Karet Street, Surabaya

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Abstract. Today's cities are developing at a breakneck pace, resulting in physical modifications to buildings. This growth can also be witnessed in the presence of new structures designed to house city-related operations. This research was conducted in the corridor area of Surabaya's Karet Street, a historical district. Numerous historical structures may be seen along Karet Street, including surviving colonial and Chinese-style structures. Historically, this Karet Street corridor region served as a commerce hub due to its proximity to the Kali Mas (Mas River) trade route. However, as the era progressed, the buildings in the corridor of Karet Street became abandoned, many were neglected, and other structures were added, resulting in inconsistency between buildings. Thus, this research aimed to characterize the building facade components along the Karet Street corridor. The research technique used was descriptive qualitative research. Sixty-two structures along the Karet Street corridor comprise the sampled area. The factors consisted of the building's door/entrance, windows, walls, roof, and the style of the building—a qualitative descriptive analysis based on the state of the building's facade in the field. Direct observation, existing literature, and documentation were employed to obtain data. The study's findings revealed inconsistencies in the building's exterior components, particularly in the structure's modern style. In an area that contains colonial and Chinese-style buildings, this contradiction might undermine the area's historical assets. Additionally, modifications and damage to facade components might obliterate the authenticity of existing historical value.

1. Introduction
The growth of cities is accelerating at the moment, as seen by the rise of new structures to fulfill urban people's requirements. Its growth also brings a number of effects, one of which is the outward appearance of structures. One of the consequences of these changes happened in Surabaya's Karet Street corridor, which is lined with old colonial and Chinese-style structures. A corridor is defined as the use of space for commercial activities within a complex, road, office, or shopping mall in a city [1]. The Karet Street corridor runs across the city of Surabaya and is lined with several historical structures. This corridor was once known as Chinsevorstraat, a street populated by Chinese people. Chinese people had resided on the banks of the Kali Mas (Mas River) during the Majapahit era of the 15th century, long before the Dutch invaded Surabaya in 1746. The Kali Mas, which runs beside the Karet Street corridor, was historically a commercial route. The influence of the city's rapid expansion may be observed in the Karet Street corridor, as evidenced by modifications to the facades of existing buildings and the
appearance of new structures that replaced the existing structures with new facades. According to Krier [3], the facade is the most critical architectural feature because it explains the purpose and meaning of the structure. The facade is a visual feature inside a corridor comprised of components such as doors/entrances, windows, building types, and roofs [2]. The Karet Street Surabaya Corridor is home to several historically and culturally significant structures. Along with the community's fast growth, the once-bustling Karet Street corridor is beginning to deteriorate.

The issue is that many abandoned structures are neglected and suffer deterioration as a result. Another issue is that many new buildings replace older structures that do not conform to the surrounding architectural styles, particularly in regard to the facades, in an area like the Karet Street corridor. Numerous historical structures in colonial and Chinese architectural styles line Karet Street's route. These structures are utilized for storage, places of worship, offices, and residential purposes. The visual picture of a city may be given by the visual connection created by visual similarities between one structure and another [4]. The shape, size, color, and texture of a building's exterior impact its look [6].

The facade of a structure is composed of the following components: windows, doors/entrances, walls, roofs of buildings, and architectural styles [2]. Architectural characteristics found on the facade of colonial buildings include the tower, level (gable), dormer, windwijzer, nokacroterie, a variety of decorations, and balustrade [7]. Traditional Chinese architecture had four distinct roof styles: Wu Tien, Hsuan Shan, Hsieh Shan, and Ngan Shan [8].

The objective of this study was to establish the characteristics of the facade components of buildings along Karet Street. The objective of this research was to determine the status and characteristics of facade components in the Karet Street corridor that have affected or injured the building's facade, as the facade is the essential architectural feature of a structure because it communicates the building's purpose.

2. Methods

This study used a descriptive qualitative research method grounded on positivism. This study used a rationalistic approach since it was motivated by a phenomenon seen in Karet Street's corridor associated with the building facade. The qualitative descriptive research method was utilized in this study. The qualitative technique is a research process that verbally generates descriptive written data regarding observed human behavior [16]. The survey sampled 62 buildings in Surabaya’s Karet Street corridor. Thus, this study could subsequently ascertain the features of the building facade components throughout Surabaya's Karet Street corridor. The variables were the doors/entrances, windows, walls, and roofs of structures and the style of the building, which is a component of a building’s facade [3]. Primary data, secondary data from literature findings, and thorough documentation of building facades were used to gather data.

This study was conducted in phases, starting with direct observation and detailed documentation of the building facades. Following that, the data was examined using characteristics identified in the 62 buildings along the Karet Street corridor. Finally, a descriptive qualitative analysis was used to determine the state of the building's facade in the field.

3. Results and Discussion

This research is in the corridor of Karet Street, Surabaya, and is a corridor that is interconnected with the Kembang Jepun Area. Karet Street is the oldest road in the city of Surabaya, which has been around since the 1700s. In the 1740s this road grew when the Vereenigde Oostindische Compagnie (VOC) controlled the city of Surabaya. It was formerly called Chinesevorstraat and was inhabited by Chinese citizens in the 15th century. Subsequently, in this Karet Street corridor, many colonial and Chinese-style buildings still exist and provide historical value to the area.
Karet Street is a trading area due to its proximity to the Kali Mas (Mas River), a commercial route. The Karet Street corridor in Surabaya contains historical structures that are over 50 years old and possesses historical significance. Existing structures include Chinese and colonial-style structures along the Karet Street area. Over time, the existing Karet Street corridor is being phased out. Numerous historical structures were neglected, resulting in destruction. Numerous loading and unloading operations occur in Karet Street's corridor since several buildings serve as warehouses. Additionally, a colonial-style structure is still intact and is owned by a Dutch corporation, including a State-Owned Enterprise (BUMN), particularly the Dutch trading company Nederlandsche Handels Maatschappij (NHM). Then there is the Han Bwee Koo family's Chinese-style building, which is still in use today as a place of worship for Chinese residents. The presence of a new building in the Karet Street corridor area contradicts the area's historical architectural styles, potentially resulting in the corridor's loss of historical significance. The buildings on Karet Street are used for warehouses, retail, services, place of worship, offices, and commerce.

3.1 Observation analysis
This study aimed to ascertain the characteristics of building facade components in the corridor area of Karet Street, Surabaya. A facade is a visual element in a corridor that consists of building facade components, such as doors/entrances, windows, walls, roofs of buildings, and building styles [3]. The buildings in the Karet Street area serve various purposes, including offices, warehouses, retail, services, homes, and places of worship. As a result, the facade components of buildings will be evaluated with the total number of structures situated along Surabaya’s Karet Street corridor. The following is a description of the components of the Karet Street corridor's building facades.

3.1.1 Door / Entrance
As many as 29 buildings in Surabaya’s Karet Street corridor have doors made of iron material. However, there is also the use of wood, aluminum, and a mix of wood and iron doors, and damage to the building's door, resulting in 12 holes and fading paint.
Additions and improvements to the interiors with iron doors occur due to the building’s conversion to warehousing purposes. The damage to the building’s door, which began to perforate due to neglect, might result in a loss of authenticity and the features of historic buildings along Karet Street.

![Figure 3. A building located on Karet Street](Source: Analysis, 2021)

### 3.1.2 Windows
Windows with rectangular shapes are mostly found in 45 buildings in Surabaya’s Karet Street corridor. There are also windows with circular shapes, as well as a mix of rectangles and semi-circles. However, buildings in the Karet Street corridor also suffered damage due to fragile windows.

![Figure 4. Building facade](Source: Analysis, 2021)

The use of windows in buildings in the Karet Street corridor with colonial building styles has a combination of semi-circular- and square-window formations; whereas, for Chinese building styles, it has circular and square-shaped windows, while modern buildings have rectangular shapes.

![Figure 5. A building on Karet Street](Source: Analysis, 2021)

### 3.1.3 Wall
Brick walls dominate the buildings in the Karet Street corridor, as many as 58 buildings. Moreover, the wall color is dominantly white. However, there was also damage to the building’s walls, which began to perforate and almost collapsed because they were not maintained. The color of the building’s walls also have colors that are not in harmony, and the most striking ones were yellow, green, red, grey, and beige.
The damage visible on the walls of the buildings on Karet Street was caused by the negligence of the building’s owner. The damage can undermine the authenticity and eliminate the historical values of the buildings.

3.1.4 Building Roof
The buildings in Surabaya’s Karet Street corridor mostly consisted of buildings that use a gable roof, with a total of 27 buildings. However, there were also buildings with shielded roofs, flat and buildings without roofs. The building does not have a roof.

The apparent damage to the roof of the collapsed buildings due to the lack of maintenance is regrettable because it can eliminate the authenticity of buildings that have historical values that characterize the Karet Street corridor.
3.1.5 Building Style
Twenty-eight modern-style buildings made up Surabaya’s Karet Street corridor, though there were also colonial and Chinese-style buildings that are considered historical buildings in the Karet Street corridor area. The styles of the buildings can be seen from the formation of windows, roofs, doors, and ornaments of existing buildings.

![Figure 10. Building view](Source: Analysis, 2021)

The large proportion of modern-style buildings in the Karet Street corridor causes inconsistency among buildings and eliminates the historical value of the Karet Street corridor, mainly due to the characteristics of a historical corridor with historical buildings in it. The visual image of a city may be presented from a visual liaison through the visual similarity between one building and another that creates a particular image [4].

![Figure 11. Buildings on Karet Street](Source: Analysis, 2021)

4. Conclusion
According to the research and analysis findings, the characteristics of the building facade components in the Surabaya’s Karet Street corridor include the predominance of iron doors, rectangular windows, brick walls and white wall color, and roofs. The buildings have a gable roof, and the predominant architectural style is modern. The facade is the essential architectural aspect in a structure, as it may communicate its function.

This study examined buildings in the corridor of Karet Street, which is dominated by warehouses and is a historically significant area with numerous historical structures. This, however, is inconsistent with the current state of the existing facade components. Additionally, where current architectural forms dominate the area, inconsistencies between historical structures might obliterate the area's historical assets.

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