

Original Article

Strategy of Building Facade Design as a Visual Image for Merdeka Street, Lhokseumawe City

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Abstract: Merdeka Street in Lhokseumawe City is a primary urban corridor that plays a strategic role in the city's spatial structure, functioning as a hub for trade, services, and socio-cultural activities. As a protocol road, the buildings along this corridor significantly shape the city's visual identity. However, the uncoordinated variation in building forms, scales, colors, and architectural characters has resulted in visual disharmony, diminishing both the aesthetic quality and distinctive identity of the area. This study aims to formulate a building façade arrangement strategy to enhance the visual image of the urban landscape, using the Merdeka Street Corridor as a case study. The main problem addressed is the absence of clear visual regulations and the limited incorporation of local architectural values in existing façade designs. A descriptive qualitative approach was applied, involving field observations and visual element analysis grounded in theories of urban legibility, visual character, and local identity. The findings reveal that the corridor's visual character is primarily determined by façade elements such as building scale and proportion, massing, color, materials, openings, signage, and integration between building units. A façade design that is targeted, contextually appropriate, and responsive to local cultural values is essential to reducing visual clutter and reinforcing regional identity. The proposed strategy includes developing design guidelines based on functional zoning, integrating local architectural ornamentation, standardizing opening patterns and dimensions, and managing signage and canopies proportionally and harmoniously. These measures are expected to strengthen the visual coherence and urban identity of Merdeka Street.

Keywords: Building Facade, Visual Image, Planning Strategy, Urban Architecture.



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1. Introduction

Merdeka Street in Lhokseumawe City is a strategic urban corridor designated for trade and services, as outlined in Qanun Number 1 of 2014 on the 2012–2032 Lhokseumawe City Spatial Planning (RTRW). Functioning as a major arterial and protocol road, it plays a vital role in the city's structural framework. Beyond its function as a transportation route, Merdeka Street serves as a hub for economic, commercial, service, social, and cultural activities. Every city possesses distinctive characteristics that differentiate it from others, and these are often reflected in its physical elements, such as building facades and open spaces, which significantly influence the city's image and identity. In architectural terms, the facade represents the

building's visual expression. More than just an external surface, it is the primary visual interface, conveying aesthetic and functional qualities while projecting the building's character and message. As the most visible element, the facade is a focal point that shapes first impressions. For buildings along Merdeka Street, facade design plays a critical role in expressing local identity and reinforcing the corridor's significance.

The visual image of a city is not formed by chance but through deliberate and integrated design of its physical components. A city's image reflects the mental perception people develop of its urban environment. According to Lynch (2020), a strong and positive image is closely linked to legibility. The ease with which a city can be understood and navigated (Eash-Gates et al., 2020), argued that urban designers should create places that are not only functional but also imbued with a deep sense of identity and meaning. Strong visual characteristics contribute to the "spirit of place," as visual perception is the primary means by which humans experience their surroundings (Cullen, 1995), in *Townscape*, introduced the concept of serial vision, highlighting that the urban visual experience unfolds as a sequence of scenes, each contributing to the overall sense of place. He emphasized the role of optical focus, place focus, and content focus in shaping the observer's emotional response.

Drawing from these perspectives, it can be inferred that strong visual characteristics in a city or road corridor are established through several key aspects: a distinct identity, visual legibility, harmony and coherence among physical elements, and a memorable visual appeal. As the primary corridor in Lhokseumawe City, Merdeka Street not only supports intensive economic activities but also connects vital urban areas. Its strategic location and high level of community engagement make the arrangement of building facades particularly important. Effective facade design requires careful consideration of materials, colors, scale, and architectural details to produce a cohesive and visually appealing urban character.

However, the diversity of building forms and styles along Merdeka Street presents a risk of visual clutter, which can diminish aesthetic quality and weaken the representation of local identity. While studies on building facades and urban imagery are abundant, research specifically addressing facade design strategies for Lhokseumawe's main corridor remains limited. This study addresses this gap by examining facade design in the Merdeka Street corridor through the lens of building facade theory, townscape principles, visual character, and regional identity.

The limited regulatory framework for controlling the visual quality of urban corridors further underscores the urgency of this research. Without effective design strategies, facade development risks producing low aesthetic quality and a weakened regional identity. Therefore, this study aims to explore in depth the characteristics of building facades along Merdeka Street and to formulate facade arrangement strategies that can enhance aesthetic elements and strengthen the corridor's visual image. The findings are expected to contribute both theoretically and practically, offering insights for city government, planners, and designers in developing effective guidelines for creating an aesthetically coherent, distinctive, and sustainable urban environment. The study is guided by two main research objectives, namely (i) identify the distinctive characteristics of building facades in the Merdeka Street corridor and (ii) formulate facade arrangement strategies that can strengthen aesthetic quality and support the formation of a cohesive and distinctive urban image for this key area of Lhokseumawe City.

2. Literature Review

The façade is the most visible architectural element of a building and plays a crucial role in shaping the visual identity and character of urban spaces. According to Priatman (1999), the façade functions not only as a protective covering for the building's interior but also as a medium of architectural expression that reflects its function, style, and aesthetic values. Elements such as shape, color, material, texture, openings (windows and doors), and ornamentation significantly influence public perceptions of the built environment's quality. In commercial and service areas, façades are especially strategic because they can attract public attention, create a strong first impression, and enhance the visual image of the entire city corridor.

As the outermost part of a building, the façade serves as the boundary between interior and exterior spaces while acting as the "face" that conveys visual messages about function, structure, and aesthetics to both users and the public. Proportion, color, materials, and openings are key components in defining a building's visual character and in shaping the identity of the surrounding area. Ibrahim & Ashadi (2020) emphasized that the façade is the first visual element that forms the initial impression of a building and greatly influences the image of its environment. Similarly, Krier (1996) noted that façades directly interact with public spaces such as streets and squares. He highlighted that façades are not merely aesthetic but also hold social and cultural significance, reflecting the relationship between the building and the broader urban landscape. Noraduola et al. (2024) further explained that façades shape a building's identity through elements such as proportion, rhythm, materials, color, and ornamentation. Thus, façades not only enhance

visual appeal but also mediate interactions between interior and exterior spaces and between the building and its surrounding context.

A review of relevant previous studies provides the conceptual foundation and comparative references for this research. Sinambela & Nareswari (2020) examined the visual character of the Merdeka Square area in Medan City, identifying uniform building height, architectural harmony, and façade shape as the main determinants of visual character, particularly as a colonial heritage area. This study shares similar variables with the present research, especially regarding the visual character of urban areas. Mahendra et al. (2022) analyzed the visual quality of the Veteran Street corridor in Surabaya City using (Lynch, 2020) urban form qualities framework, focusing on community preferences. Their findings highlight the importance of visual quality in shaping regional identity. Although their emphasis is on community perceptions rather than façade design, the relevance lies in the shared concern for the visual quality of street corridors.

Sumayku et al. (2016) investigated serial vision fragmentation in forming regional imagery along the Pierre Tendean Street corridor using Gordon Cullen's serial vision theory. The study found that the Manado Town Square area achieved the highest visual quality due to its high legibility. This research demonstrates the relationship between visual perception and the character of urban corridors. Huda & Pramitasari (2022) studied the visual characteristics of building façades along Jalan Dr. Rajiman in Surakarta using a qualitative "views and spaces" approach. They found that single-story commercial buildings with wide openings and a modern tropical architectural style dominated the corridor's visual character. The focus on façade characteristics offers clear parallels with the current study.

Rizqiyah (2016) explored façade design in the Jalan Songoyudan corridor as a means of strengthening the visual image of Surabaya's historic trading area. Employing a qualitative descriptive approach, she proposed design criteria that included color, texture, pattern, and scale. This aligns with the present study's emphasis on visual arrangement to enhance an area's image, albeit in a historical context. Similarly, Fikroh et al. (2016) examined the visual character of Tanjungpura University's building façades as part of campus identity, finding that façade design serves as a unifying element between old and new buildings.

Pradaning, (2018) focused on the visual arrangement of the Nonongan trade corridor in Surakarta City, aiming to identify building character and develop a visual arrangement concept based on local identity. Her work provides a useful reference for strategies to develop regional visual criteria. Meanwhile, Ronarizkia & Giriwati (2020) identified façade elements of colonial buildings along Jalan Suroyo in Probolinggo City, classifying dominant forms through a qualitative descriptive approach. Their emphasis on façade element identification is also central to this study. Thus, existing studies share common ground with the present research in their focus on visual elements such as façades, regional character, and corridor visual quality. However, this research distinguishes itself by specifically emphasizing strategies for arranging building façades along the Merdeka Street corridor in Lhokseumawe City to enhance the city's overall visual identity. By synthesizing previous findings, this study aims to address a gap in the literature regarding contextual and sustainable façade design strategies for main road corridors.

3. Materials and Methods

This study was conducted along Merdeka Street in the Banda Sakti District, Lhokseumawe City. The corridor was selected due to its role as one of the city's main trade and service zones, as well as a strategic route that accommodates social, economic, and governmental functions. It also hosts the Islamic Center Mosque, a prominent city landmark. The study area extends from the Kuta Blang Intersection to the Sukaramai Intersection (Pendopo Bupati Aceh Utara) and is geographically bounded by Village Jawa to the north, Village Keude Aceh and Mon Geudong to the south, Village Keude Aceh and Village Kota to the east, and Village Kuta Blang and Mon Geudong to the west. The research was carried out over a three-month period, from July to December 2023. The study adopted a qualitative descriptive approach, aiming to present a systematic, factual, and accurate description of the visual characteristics of building facades along the Merdeka Street corridor. According to London & Ostwald, (2004), qualitative research emphasizes the interpretation of meaning within a natural context, positioning the researcher as the primary instrument for both data collection and analysis. This approach was deemed appropriate for understanding the interplay between social context and visual phenomena in an urban environment.

The primary focus of the research was the building facades that contribute to the corridor's visual character. Key observed elements included facade features such as form, color, materials, and openings, as well as the immediate surrounding environment. The analysis covered various building types, including commercial establishments, banks, and government institutions located along the study area. To facilitate a more detailed examination, the corridor was divided into four segments based on the dominant activity patterns: (1) Kuta Blang Intersection to Taman Riyadhah Intersection, dominated by office activities; (2)

Taman Riyadhah Intersection to Empat Intersection, characterized by shops and public facilities, including mosques and open fields; (3) Empat Intersection to Jam Intersection, consisting primarily of shops and service facilities such as gas stations, DPRK offices, and banks; and (4) Jam Intersection to Pendopo Bupati Intersection, dominated by government offices and city service centers.

Data were collected through direct observation, documentation, and document analysis. Observations involved recording the physical and visual characteristics of buildings and the urban streetscape. Documentation included photographs, sketches, and field notes to supplement visual descriptions. The document analysis comprised a review of the Lhokseumawe City Spatial Plan (RTRW) and other relevant regulatory documents. Data analysis was conducted using three complementary techniques. First, synchronic reading analysis was employed to examine visual characteristics of building facades using an index card format, enabling both vertical and horizontal evaluations to identify structures with potential as visual landmarks. Second, a walkthrough analysis was carried out using two sub-approaches: (a) serial view analysis, which documented the sequential visual experiences along the corridor, and (b) spatial analysis, which assessed the spatial impressions formed by building rows about the street corridor. Third, character appraisal was applied to evaluate and synthesize the overall visual character of the area, with results tabulated according to building facades, pedestrian pathways, and vegetation.

4. Results

4.1. Position of the Corridor on Merdeka Street, Lhokseumawe City

The Merdeka Street corridor in Lhokseumawe City holds a highly strategic position within the urban structure. As a major thoroughfare, it connects various vital activity centers and forms a vital part of the city's trade network. This road not only serves as a primary circulation route connecting residential areas, office areas, and public spaces such as town squares and mosques, but also represents the city's visual identity. The architectural character and spatial layout along the corridor reflect the cultural and social life of the Lhokseumawe community. Due to its strategic role, Merdeka Street has significant potential for optimal development, both in terms of public spaces and building facades, to enhance the visual quality and strengthen the city's overall image.

4.2. General Overview of the Merdeka Street Trade Corridor, Lhokseumawe City

The commercial corridor along Merdeka Street is an area of intense economic and social activity. This street serves as both a commercial center and a main route connecting various important zones in the city, making it one of the main features of Lhokseumawe. The buildings along this street are dominated by commercial functions, such as shops, shop houses, restaurants, as well as places of worship, offices, and banks. This diversity of functions creates a dynamic atmosphere, with a variety of shapes and facades reflecting the development of commercial architecture in the city. To understand the visual character of the corridor more comprehensively, this study uses a qualitative descriptive approach through field observations, visual documentation, and interviews with sources from academics, local architects, business actors, and local government representatives. The main objects analyzed are building facades and street space elements, which are examined segmentally to map patterns and differences in character between sections of the street. The analysis is also conducted using the Synchronic Reading method to assess visual unity or disharmony between buildings within a single view. Overall, Merdeka Street has great potential to be developed as a functionally efficient and visually aesthetic trade corridor. Its strategic role in the city's network, the intensity of economic activity, and the diversity of its buildings make this corridor crucial in shaping the visual image of Lhokseumawe City.

4.3. Identification of Building Characters

On the basis of field observations, the Merdeka Street corridor can be divided into four main segments based on the characteristics of the buildings on the right and left sides of the road and the presence of supporting elements in the street space. Each segment has a dominant function that influences the area's activities and visual image. Segment I covers the area from Kuta Blang Intersection to Taman Riyadhah Intersection. This segment is dominated by service buildings, particularly on the left side of the road, which has 23 buildings, while the right side only has 6 buildings. In the middle of the corridor is a city park that positively contributes to the quality of public space Segment II, which stretches from Taman Riyadhah Intersection to Empat Keude Aceh Intersection, shows a more diverse building composition. On the right side are large-scale public buildings such as the Islamic Center Mosque, the mayor's pavilion, and Hiraq

Field. On the left side, there are more commercial buildings such as cafes, fast food restaurants, and supermarkets, with a total of 36 buildings. The difference in function between the two sides creates a complex visual and activity dynamic and reflects a dual zoning pattern.

Segment III, from Empat Keude Aceh Intersection to Jam/Post Office Intersection, is a mix of religious, service, and commercial buildings. The right side consists of 23 buildings, such as the Baiturrahman Mosque, a cafe, and the Grapari office. Meanwhile, the left side has 33 buildings, including an Acehese-style building that now functions as a health service by the Lhokseumawe Police. The presence of this traditional architecture provides a distinctive visual character that strengthens local identity. Segment IV, from Jam/Post Office Intersection to Pendopo Intersection, is dominated by public service buildings such as the Post Office, the Mayor's Office, KPPN, BSI Bank, BTPN Bank, Suzuya Mall, and the Regent's Pendopo. The number of buildings on the right side is 7 units, and the number on the left side is 5 units. The administrative functions concentrated in this segment indicate the strategic role of the area in the city's service system.

In total, there are 137 building masses along the corridor, consisting of 40 buildings on the right side and 97 buildings on the left side. This corridor is separated by a median planted with vegetation, functioning as a lane divider and visual element that provides a shading effect while enhancing the ecological and aesthetic quality of the street. The dominant activity along the corridor is trade, followed by the banking sector and government offices, strengthening Merdeka Street position as a crucial axis in shaping the visual image of Lhokseumawe City.

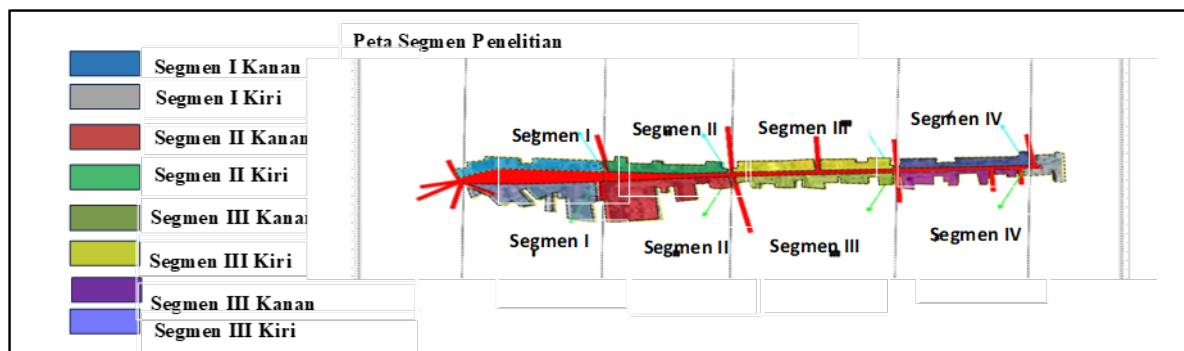


Figure 1. Map of Research Segment I and II



Figure 2. Segment I and Segment II Merdeka Street Corridor, Lhokseumawe City

Figure 2 shows the existing condition of building facades in the Merdeka Street Corridor, particularly in Segments I and II, exhibiting quite striking visual character diversity. On the right side of Segment I, buildings such as the Pratama Tax Building, the BPKAD Building, and the BSI Building are characterized by large-scale institutional buildings, a formal appearance, and a predominance of solid colors such as blue, maroon, and cream. The facade elements of these buildings are relatively orderly, with the use of plaster and glass materials that convey a formal and functional impression. Meanwhile, on the left side of Segment I, rows of shops and bank buildings such as BSI, and Bank Indonesia display more varied and busy visual elements. There is irregularity in the use of signage, opening shapes, and non-uniform architectural ornamentation. This creates a visual impression of clutter and interferes with the visual readability of the corridor.

A similar situation is also found in Segment II. On the right side, the Islamic Center Mosque stands as an iconic building with a monumental architectural style characterized by domes and strong Islamic ornamentation. However, its presence is adjacent to a row of shops that have a dense visual appearance and contrast in terms of color, signage size, and facade design. On the left side of Segment II, the visual character is increasingly disorganized, with rows of shops, cafes, banks, and fast-food restaurants such as Pizza Hut featuring striking colors and facade designs focused on visual promotion. Differences in building scale, canopy models, and inconsistent opening patterns exacerbate the disharmony of the area. Overall, the analysis results indicate that the lack of design coordination between buildings and the dominance of commercial elements on the facades have resulted in a decline in the aesthetic quality and visual cohesion of the Merdeka Street corridor. Therefore, a contextual and directed facade arrangement strategy is needed that considers the integration of local character, uniformity of visual elements, and the development of design guidelines based on functional zoning.

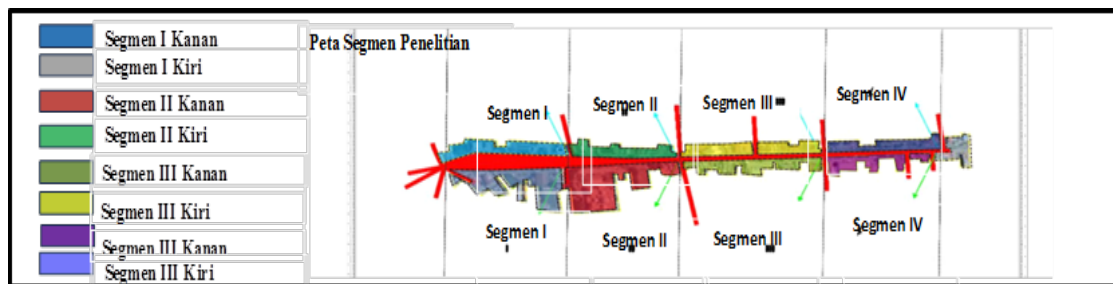


Figure 3. Map of Research Segment III and IV

Figure 3 shows the condition of the building facade in Segment III and Segment IV Merdeka Street Corridor, Lhokseumawe City on Segment III, the character of the building facade is still dominated by commercial and institutional functions, which shows a dense and inconsistent visualization. On the right side, there are rows of shops, markets, banks, gas stations, the DPRK Office, and the Bank Aceh Office. The facade elements in this segment show significant variations in the form of mass, color, and size of openings. Irregularities in the installation of signage and canopies create a chaotic impression (visual clutter). Meanwhile, on the left side of the segment, the Baiturrahman Mosque building is a strong visual marker with a typical Acehese religious architectural style. However, its presence adjacent to a row of shops, the Telkomsel Building, and the National Police Health Building, which display a contemporary architectural style and commercial visual dominance, causes overall visual disharmony. This indicates a lack of harmony between building functions in one area and a weak influence of local architecture on the arrangement of the facade.

Continued to Segment IV, there appears to be a shift in the area's function, emphasizing public facilities and government institutions. On the right side, large-scale commercial buildings such as Suzuya Mall and the BSI Building stand are designed with a modern approach using reflective glass materials and a predominance of geometric shapes. While reflecting contemporary trends, these facades contrast with other buildings, such as a row of smaller shops with simple and uneven designs. On the left side, there are government buildings such as the Post Office, the Mayor's Office, the KPPN Office, and the Regent's Hall. The building facades on this side tend to be more uniform, embracing a modern colonial style with gabled roofs and traditional Acehese elements such as neutral colors and wooden window openings. However, the visual impression created is not yet strong enough to establish a unified regional identity between the commercial and institutional zones.

Observations in Segments III and IV indicate an unbalanced visual dominance between modern commercial buildings and government or religious institutions. The absence of a unified design guideline results in undirected visual diversity, necessitating a facade arrangement strategy that considers functional zoning, the integration of local architectural values, and the uniformity of visual elements to strengthen Merdeka Street visual image as the city's main corridor.



Figure 4. Segment III and Segment IV Merdeka Street Corridor, Lhokseumawe City

A serial view analysis of the Merdeka Street corridor reveals a diversity of visual expressions of building facades representing various functions, ranging from institutional, commercial, and religious buildings (see Figure 4). Each segment of the area displays its own visual characteristics, but overall, a dualism of visual character can be identified: commercial buildings tend to display functional and dynamic expressions, while institutional and religious buildings prioritize a formal, symbolic, and monumental approach. Government institutional buildings generally adopt an architectural approach that combines local elements, such as traditional Acehese roof shapes, symmetrical facade compositions, and distinctive regional ornaments with modern geometry and the use of contemporary materials. The rooflines of these institutional buildings are generally characterized by pyramid-shaped roofs and gable roofs with moderate slopes, reflecting continuity with Acehese architectural traditions while also providing a representative image. Several institutions such as the Mayor's Office, the Regent's Pendopo, Bank Aceh, and the BSI Main Building consistently display these elements to strengthen regional cultural identity. In contrast, institutions such as the Post Office, the Telkomsel Building, and the KPPN display flat rooflines or modern lightweight

roofs that reflect structural efficiency and a minimalist design approach, in line with the image of a modern, practical institution.

Meanwhile, commercial buildings such as shopping malls emphasize a more general and contextual visual approach, with a primary orientation towards optimizing economic functions and brand visibility. This is evident through the use of large signage, striking colors, and lightweight materials. The facades of these buildings tend to be repetitive, without a coherent design that binds them together. In terms of rooflines, commercial buildings generally have flat roof lines that vary in height and shape, creating different visual silhouettes along the corridors. Although symmetrical horizontal patterns are quite dominant, there is no regularity in proportion, rhythm, or supporting decorative elements. Transitions between buildings do not produce a continuous sequence of views, as each building stands as a separate entity.

On the other hand, religious buildings, such as mosques Islamic Center and the Baiturrahman Mosque, appear as monumental and striking primary visual markers in the series view. The architecture of both mosques is characterized by typical Islamic elements such as large domes, minarets, symmetrical compositions, and neutral colors that reinforce the spiritual and religious impression. The roofline of the mosque is very distinctive and dominant, consisting of a main dome and smaller domes around it, creating a strong visual silhouette that is easily recognized from a distance. The orderly massing, curved roof shape, and distinctive ornamental details make the mosque not only function as a place of worship, but also as a cultural icon and a visual symbol of regional identity.

4.3.1. Character Appraisal Analysis

Character appraisal in this study is used to examine and understand the visual quality of building facades formed along the Merdeka Street corridor in Lhokseumawe City. This approach emphasizes the identification of distinctive elements that form the visual character in each segment, from this analysis it is hoped that it can be used as a basis in formulating contextual facade design guidelines, as well as strengthening the visual identity of the area as a whole. Thus, this approach is not only analytical, but also applicable in supporting efforts to create a harmonious visual order of the area and have consistent aesthetic value.

Observation

Based on observations, the building facades along the Merdeka Street corridor display a diversity of visual characters that reflect differences in function and architectural approaches. In general, these characters can be classified into three main categories: institutional, commercial, and religious buildings. Institutional buildings such as the Mayor's Office, the Regent's Hall, Bank Aceh, and the BSI Main Building exhibit a monumental and formal image. The use of local elements such as traditional Acehnese roof shapes, symmetrical facade arrangements, and the presence of distinctive regional ornaments strengthen the symbolic value and cultural identity, as well as emphasize the representative role of government institutions in the visual structure of the area.

In contrast, commercial buildings such as shops and gas stations are dominated by a functional and efficiency-oriented approach, characterized by the use of large signage, bold colors, and lightweight materials such as ACP and glass. Their facades are generally minimally ornamented and lack visual cohesion, reflecting the area's development that took place without integrated design planning. On the other hand, religious buildings such as the Islamic Center Mosque and the Baiturrahman Mosque stand out in the visual landscape of the area, with their monumental and spiritual character, both displaying typical elements of Islamic architecture such as large domes, minarets, symmetrical compositions, and a neutral color palette.

Overall, it can be concluded that there is a dualism of visual character between commercial buildings that emphasize functional and economic expression, and institutional and religious buildings that emphasize symbolic value, identity, and visual splendor. Differences in geometric form, scale, roofline, and material selection indicate that a complete visual harmony has not been achieved along this corridor. This finding provides an important basis for formulating a contextual facade arrangement strategy, namely considering the building's function and local cultural values, and the continuity between architectural elements in forming a complete and representative image of the area.

Character appraisal

The study of building facades along the Merdeka Street corridor demonstrates that each segment of the area possesses potential visual characteristics that can be developed to strengthen the region's overall

identity. Institutional buildings, such as the Mayor's Office, the Regent's Hall, and Bank Aceh, have significant potential to direct the area's character through their monumental, symmetrical appearance and the inclusion of elements of local wisdom. Elements such as traditional Acehnese roofs and distinctive regional ornaments provide symbolic value that can serve as a reference for contextual facade design in their surrounding areas.

Meanwhile, religious buildings such as mosques or Islamic Center the Baiturrahman Mosque serves as a dominant visual element, serving not only as a center of worship but also as an architectural landmark that reinforces spiritual and cultural identity. This potential needs to be supported through the arrangement of surrounding elements to create a more harmonious spatial and visual relationship. Commercial buildings tend to be pragmatic and non-uniform, which is highly conducive to visual revitalization. The presence of rows of shops with dynamic economic activity can be directed to create a more organized corridor through rearranging signage and designing building facades to be more open, selecting harmonious materials, and arranging facades that consider rhythm and proportion. Thus, each segment has the potential for visual characteristics that can be strengthened and synergized, thus supporting the formation of the Merdeka Street corridor's image as a representative area.

4.4. Design Criteria and Building Facade Arrangement Strategy

The design criteria and building facade arrangement strategy are compiled based on the theoretical studies discussed previously, then directly linked to field findings through the results of facade analysis on the Merdeka Street corridor, Lhokseumawe City. The visual characteristics of the observed buildings serve as the initial basis for formulating an appropriate arrangement approach. The designed strategy aims to strengthen the visual identity of the area through the revitalization of the facade appearance, both on institutional and commercial buildings. By considering the existing context, visual value, and potential for replication, applicable and sustainable design directions are formulated. The following presents the design criteria and building facade arrangement strategy on the Merdeka Street corridor, Lhokseumawe City as a reference for the visual development of the area (see Tables 1 and 2).

Table 1. Design criteria and strategies for arranging building facades on the Merdeka Street corridor in Lhokseumawe City

Aspect	Building Criteria	Design Criteria	Facade Visual Design Strategy
Scale and Proportion	The buildings consist of 2 to 3-story shop houses and large-scale institutional buildings up to 4 stories high. There is a marked difference in height between buildings within a block.	The facade needs to be designed with vertical and horizontal balance, so that it looks proportional as a whole and does not dominate the urban space.	Gradual adjustment of height between buildings in one block to create a harmonious visual rhythm and maintain the balance of street space.
Shape and Mass	The dominant building masses are rectangular and close together, creating a monotonous and dense impression.	The building mass is designed with a simple, proportional and firm form, and takes into account the limited space in the corridor.	The re-arrangement of roofs and mass forms to clarify the boundaries between buildings and create a dynamic yet harmonious skyline variation.
Color	The use of building colors varies greatly, without harmony between units, often striking and without regard for the surrounding context.	The color palette must be adjusted to be harmonious, not excessively contrasting, and reflect the uniqueness of local culture or regional identity.	Determination of color regulations based on functional zones (commercial, institutional) and implementation of repainting to create visual harmony in the area.

Aspect	Building Criteria	Design Criteria	Facade Visual Design Strategy
Material Facade	The main materials include concrete, glass, ACP, and zinc, with varying quality and appearance; some appear neglected.	The facade design uses materials that are weather-resistant, easy to maintain, and have good aesthetic qualities.	Establishing recommended material standards, encouraging the use of local and environmentally friendly materials that strengthen the identity and durability of buildings.
Architectural Ornaments	Most of the buildings lack local ornamentation; modern elements and commercial signage predominate.	It is necessary to integrate typical Acehnese architectural ornaments such as geometric motifs, calligraphy, and other visual cultural elements into building facades.	Encourage building owners to apply local ornaments, especially on major institutional and commercial buildings as visual markers of the area.
Opening Elements (doors/windows)	There are differences in the size and pattern of openings between buildings; many are irregular and do not take into account natural lighting.	Facade openings (doors and windows) need to be designed rhythmically, proportionally and functionally to support aesthetics and air circulation.	Standardization of patterns and dimensions of openings between buildings in one block to maintain visual rhythm and optimal natural lighting.
Canopies and Protectors	Many canopies are made of zinc/light metal, the shape is not uniform, and some are damaged, thus disturbing the appearance of the facade.	The canopy is designed to blend with the building, functioning as a protector without covering important architectural elements.	Reorganization and redesign of the canopy to ensure it is functional and fits with the facade composition; use of durable and visually uniform materials.
Signage / Advertising	Signage is very dominant; its size, shape, and position vary, even covering the main facade and disrupting the building's appearance.	Signage should be proportional, not cover the facade, use a neat font, and be in harmony with the overall appearance of the building.	Signage arrangement and regulation includes position, maximum size, color, and font type, so that it appears neat and supports the image of the area.
Harmony Between Buildings	Buildings within a block have different heights, shapes, and colors, creating a striking visual irregularity.	It requires a design that takes into account uniformity of rhythm and visual harmony between buildings, especially within a row of blocks.	Preparation of block design guidelines for each road segment to create a uniform visual, not monotonous but still orderly in the overall composition.
Local Character & Identity	Lack of local cultural expression; most modern buildings do not reflect Acehnese architectural identity.	The building design needs to reflect the architectural identity of Aceh, both in terms of motifs, roof shapes, and other facade details.	Integration of typical Acehnese elements in new buildings and revitalization, especially in the main public and commercial zones as a symbol of the city's visual culture.

Aspect	Building Criteria	Design Criteria	Facade Visual Design Strategy
Vegetation / Supporting Elements	There's a lack of greenery; some simply place potted plants on the sidewalk.	Vegetation and green elements are designed to enhance visual comfort and the quality of the microenvironment.	Adding potted gardens, vertical gardens, or shade plants along sidewalks and in front of buildings as elements to strengthen the city's green corridors.

4.5. Design Concept for the Facade Arrangement of the Merdeka Street Trade Corridor in Lhokseumawe City

To create a well-organized, harmonious visual image that reflects local identity on the Merdeka Street Corridor, a comprehensive design approach is required for each element of the building's facade. The following table summarizes the visual arrangement strategies that can be applied to each aspect of the facade, along with the arrangement strategies and design concepts (see Table 2).

Table 2. Visual arrangement strategies that can be applied to each aspect of the façade

Aspect	Visual Arrangement Strategy	Facade Design Concept
Scale and Proportion	Realigning building heights to avoid stark contrasts between units within a block. This adjustment is being implemented gradually, prioritizing key zones.	Arrange vertical elements (floor height, columns, openings) and horizontal elements (fascia's, canopies, signage) to balance, creating a rhythmic impression that blends with the corridor.
Shape and Mass	Directing changes in roof shape and massing to create a more varied appearance and avoid monotony. Boundaries between buildings are clarified through distinguishing shapes and heights.	The building's massing is designed to be simple yet distinct in each unit in a controlled manner. The roof shape is adjusted to provide variation while maintaining compositional order.
Color	Determine the primary and secondary color palettes per functional zone (commercial, institutional, transitional), as well as establish repainting requirements for distorted or faded facades.	The colors were chosen from a scheme that represents the city's identity and local culture: neutral, soft, and non-clashing, representing the city's calm and tidy image.
Material Facade	Establish a list of recommended core materials—for example, exposed concrete, limited reflective glass, engineered local wood, and environmentally friendly materials with certain aesthetic standards.	Facade materials are focused on clean, durable, and aesthetic value effects. The compatibility between surface, color, and texture is Key in the formation of the image of the area.
Architectural Ornaments	Encourage building owners to integrate local ornaments into existing building facades and make it mandatory on new buildings.	Using Acehese architectural elements such as vines, rencong motifs, or calligraphy on walls or opening barriers as markers of the local identity of the area.
Aperture Elements	Reorganize the layout, dimensions, and shapes of openings to be rhythmically uniform and support natural ventilation. Prioritize ground-floor openings for public interaction.	The design of the openings is adapted to the rhythm of the facade; windows and doors are placed in proportion to the shape of the facade and maintain the balance of the visual elements.

Aspect	Visual Arrangement Strategy	Facade Design Concept
Canopies and Protectors	Ban the use of cheap zinc canopies; adjust the height, shape, and color of canopies to avoid covering important elements and maintain visual harmony.	The canopy is integrated into the facade design using a lightweight frame and sleek shape. It must provide protection without disrupting the overall appearance of the building.
Signage/ Advertising	Developing signage regulations covering maximum size, placement height, lettering color, and shape. The regulation is being implemented thoroughly to create a clean appearance.	Signage It is designed to be minimalist, with clean fonts and harmonious colors. It should not obscure ornaments, openings, or protrude excessively from the building's facade.
Harmony Between Buildings	Create design guidelines per block so that buildings in a row have conformity in height, color, opening shape, and ornamentation.	The design is aimed at ensuring visual continuity between units even though they are built by different owners, with flexible boundaries that maintain identity while remaining harmonious.
Local Character & Identity	Require the application of local elements in new buildings and encourage the revitalization of existing buildings to include visual elements typical of Aceh.	Contemporary Acehnese architecture is implemented through the use of pyramid roofs, Acehnese motif moldings, and simple yet symbolically strong wood textures or carvings.
Vegetation/ Supporting Elements	Add vegetation elements such as shade plants, vertical gardens, or potted gardens along sidewalks and public areas.	Vegetation is positioned as a connecting element between facades and a visual refresher. It can be designed to follow a specific pattern to create a new corridor identity.

5. Conclusions

This study concludes that the building facades along the Merdeka Street Corridor in Lhokseumawe City, which is divided into four segments can be concluded as lacking consistent visual harmony in shaping the area's image. The diversity of building shapes, colors, scales, and materials indicates weak visual regulations and the minimal application of contextual and responsive regional design principles to the environment and local identity. In Segments I and II, the dominance of commercial functions and financial institutions results in a facade appearance that tends to be dense and uncoordinated. There is no uniformity in signage, colors, or opening elements, resulting in visual clutter. Meanwhile, Segment III exhibits a mixed character between religious, governmental, and commercial functions, but is not accompanied by harmonious visual integration. The mosque as a regional marker (landmark) has not been maximized in terms of visual readability. In Segment IV, the difference between modern and traditional style buildings without proper arrangement actually adds to the disharmony of the corridor's appearance. Facade arrangement that is directed, integrated, and sensitive to local values is essential to create a strong, aesthetic, and representative regional identity as one of the city's main roads. This can be done through the design of zoning design guidelines, standardization of visual elements (color, signage, openings), and integration of local architectural ornaments as part of the city's image-building strategy.

6. Research Implications and Further Research

This research has several important implications for architectural practice and urban planning, as well as social dimensions, and it contributes to the development of theory. From a practical perspective, the research results provide practical guidance for architects, urban planners, and local stakeholders in redesigning building facades based on the principles of visual legibility and strengthening local identity. Systematic facade arrangement can be integrated into spatial regulations and the Detailed Spatial Plan (RDTR), to control the physical growth of the city while still reflecting the desired character of the area.

From a social perspective, a more aesthetic and harmonious facade arrangement has the potential to improve the visual quality of an area while strengthening the community's sense of ownership of its surroundings. A visually organized city can increase residents' pride in its identity and create a more comfortable atmosphere for road users, both pedestrians and vehicle users. Theoretically, these findings also enrich the literature in the fields of urban architecture and urban design, particularly in the context of shaping regional imagery through facade elements. The results of this study strengthen the relevance of Kevin Lynch's legibility theory and visual character theory in the local context, and encourage a contextual approach that integrates local cultural values into more humane and sustainable urban design.

As a basis for further research, this study opens up opportunities for comparative studies with major corridors in other cities to understand how facade planning strategies are implemented in different contexts and what best practices can be adapted for Lhokseumawe City. Furthermore, a participatory approach involving the community, building owners and business actors in the facade planning process is also a potential direction to ensure the resulting design is inclusive and sustainable. Further research could also use quantitative approaches such as visual preference surveys or eye-tracking methods to capture the public's visual perception of facades that are considered attractive and representative. Furthermore, the application of urban design software to simulate design interventions before and after facade planning could be an effective visual aid in examining the direct impact on spatial perception and the overall visual quality of the area.

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