



Impact of Colonialism on Urban Development in Indonesia: A Case Study of Medan

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ABSTRACT

This study explores the historical buildings in Medan, which serve as vital cultural heritage from the Dutch colonial era in North Sumatra. These well-preserved structures stand as monumental evidence of the past and are legally recognized as heritage sites. Over time, the area that once served as the administrative center has undergone significant transformations, evolving into a commercial hub. This shift has resulted in physical modifications, functional repurposing, and the emergence of new constructions that disrupt the architectural harmony of the colonial-era landscape. Employing a historical research method—encompassing heuristic analysis, source criticism, interpretation, and historiography—this study investigates the impact of colonialism on Medan's urban development. The findings indicate that the visual identity of Lapangan Merdeka is predominantly defined by its physical elements, particularly the enduring presence of Dutch colonial buildings. The area's architectural character is shaped by key design principles, including uniform building heights, structural alignment, roof typology, and spatial arrangements between buildings. This research underscores the growing threat posed by urban modernization to Medan's historical integrity, emphasizing the urgent need for conservation strategies to preserve its colonial architectural heritage and cultural significance.

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INTRODUCTION

Medan is the third-largest city in Indonesia in terms of both population and land area (Anwar, 2016; Sinar, 1991). Since the Dutch colonial era, it has served as a thriving center of industrial and economic activity (Batubara, 2022). Passchier describes Medan as one of the exemplary cases of urban development in the late 19th century (Passchier, 1995). This transformation began with the establishment of Lapangan Merdeka, which was initially part of the Deli tobacco plantation zone (Rambe et al., 2021).

The colonial buildings that still stand today reflect Medan's identity as a plantation city while also serving as historical witnesses to its past, shaping its urban character (Rafiqi & Marsella, 2021; Wertheim, 1993). The colonial-era development aimed to establish Medan as an administrative and commercial hub with infrastructure supporting the plantation economy. Many of these colonial structures remain well-preserved, though some have undergone functional repurposing or land expansion (Khairani, 2022; Scholten, 1992). The Lapangan Merdeka area, for instance, still retains its colonial architectural ecosystem, characterized by historical landmarks such as the Post Office, Grand City Hall Hotel, London Sumatra Building, and Medan Railway Station (Suhanda & Pane, 2015).

Colonialism profoundly influenced urban development in Indonesia, particularly in Medan, which became one of the key administrative and economic centers under Dutch rule (Perret, 2010). As a rapidly growing city since the late 19th century, Medan experienced significant transformations in spatial planning, architecture, and socio-economic structures. These changes not only reflected Dutch colonial policies oriented toward economic and political interests but also left behind an urban legacy that remains visible today (Bremen, 1997).

Despite the distinctive colonial heritage shaping Medan's urban landscape, unregulated modern development often threatens the preservation of these historical elements. The construction of new buildings that fail to harmonize with colonial architectural styles, along with the functional changes of several historic structures, risks erasing the city's



centuries-old urban identity. Consequently, conserving Medan's colonial heritage poses a critical challenge that requires urban planning policies that balance modernization with historical preservation (Reid, [2011](#)).

Medan initially developed as a tobacco plantation hub managed by Dutch enterprises, particularly the Deli Maatschappij (Pelzer, [1985](#)). Within this framework, the colonial government expanded urban infrastructure to support the plantation sector, including the construction of roads, railways, and commercial facilities to facilitate agricultural exports. The city center, including Lapangan Merdeka, stands as a testament to a well-planned colonial urban design. This spatial organization demonstrates how colonialism not only shaped the economic landscape but also influenced architecture and urban planning, elements that persist to this day (Sitepu, [2024](#)).

The impact of colonialism on urban development extended beyond infrastructure and city planning, leading to social segregation that persisted into the postcolonial era. During colonial rule, Medan was divided into zones based on ethnicity and social status, with elite neighborhoods dominated by Europeans, while indigenous and immigrant communities, including Chinese and Indian settlers, were confined to designated areas (Sabrina et al., [2021](#)). This segregation reflected colonial policies that restricted indigenous access to economic and social resources—an inequality that continues to influence Medan's urban social structure today.

As modernization accelerates, Medan has undergone rapid transformations, with many colonial buildings repurposed or demolished to accommodate new infrastructure. These changes often disregard the historical and aesthetic values embedded in the city's colonial-era urban fabric (Muhajir et al., [2020](#)). Lapangan Merdeka, for example, originally designed as a colonial administrative center and public space, has now evolved into a commercial hub, with modern structures altering its visual character. This phenomenon underscores the challenge of maintaining a balance between urban development and cultural heritage conservation (Maulana, [2011](#)).

Understanding the impact of colonialism on Medan's urban development is crucial for analyzing how colonial legacies continue to shape the city's physical, social, and economic structures. This study seeks to examine Medan's colonial-era urban planning, how colonialism influenced its urban identity, and its long-term impact on postcolonial urban development.

Several scholars have previously explored the impact of colonialism on urban development in Indonesia, focusing on different aspects of urban transformation. Wihardyanto and Rahmi (2020) analyzed the influence of Dutch colonial policies on urban centers in Java, noting that coastal cities were predominantly shaped by European architecture, whereas inland cities retained indigenous architectural elements through acculturation (Wihardyanto & Rahmi, [2020](#)). Rakhmanita et al. (2021) discussed how indigenous communities adopted European architectural styles as a symbol of social status, often without sufficient knowledge transfer, leading to the erosion of original cultural identities (Rakhmanita et al., [2021](#)). Aulia et al. (2021) examined the morphological evolution of Jakarta's Old Town, demonstrating the role of Dutch colonialism in reshaping urban structures, including street networks, land use, and parcel compositions (Aulia et al., [2021](#)). Veronica and Siregar (2018) specifically studied Medan's spatial structure, revealing how colonial economic policies influenced urban patterns and infrastructure development that remain intact today (Veronica & Siregar, [2018](#)). Meanwhile, Naimah (2022) explored the continuity of colonial-era policies in modern Indonesian urban planning, particularly in economic aspects that continue to impact contemporary society (Khairina & Rahmania, [2023](#)). These studies affirm that colonial legacies in Indonesia extend beyond architecture and urban planning, affecting social, economic, and developmental policies in the present era.

This research addresses two key issues regarding the impact of colonialism on Medan's urban development. First, it examines how colonialism shaped the city's spatial and architectural landscape through the construction of infrastructure such as roads, railways, and ports, which primarily served colonial economic interests. The introduction of European-style buildings transformed the cityscape, replacing traditional settlements, yet unregulated modernization now threatens their preservation. Second, this study investigates the socio-economic impact of colonialism, particularly the social segregation that divided urban zones based on race and class, limiting indigenous access to economic resources and public facilities. The colonial economy, which was largely driven by exploitation and global trade, created economic disparities that remain evident today.

This study aims to analyze the impact of colonialism on Medan's urban development, focusing on spatial planning, architecture, and socio-economic structures. It seeks to identify how colonial policies influenced urban design through infrastructure expansion and colonial-era architecture, as well as how this legacy continues to shape the city's dynamics.

Additionally, this research examines the socio-economic segregation and economic inequalities resulting from colonial policies and the challenges of preserving colonial heritage amid rapid modernization. The findings are expected to contribute to more inclusive and sustainable urban planning policies while supporting the conservation of Medan's historical legacy.

METHODS

This study employs historical and architectural analysis methods to examine the impact of colonialism on urban development in Medan. The historical method follows four key stages: heuristics, source criticism, interpretation, and historiography (Kuntowijoyo, [2013](#)). The heuristic stage involves collecting primary and secondary sources, including colonial documents and municipal archives. Source criticism is applied to assess the validity and reliability of historical data by cross-referencing multiple sources to ensure factual accuracy (Gottschalk, [1986](#)). Interpretation is conducted by analyzing how colonial policies influenced urban planning, architecture, and socio-economic segregation in Medan. Finally, the historiographical stage synthesizes these interpretations into an analytical narrative that comprehensively examines the impact of colonialism on the city's development.

In addition to the historical method, this study integrates an architectural analysis approach to understand the physical characteristics of Medan's colonial buildings. This approach includes an examination of colonial building typologies, spatial patterns, and the functional transformations of structures from the colonial period to the modern era (Nas, [2007](#)). The study also explores visual elements and colonial design principles that have either been preserved or modified over time (Soeroto, [2007](#)). By combining historical analysis with architectural studies, this research not only reveals the extent of colonial influence on urban planning and socio-economic structures but also provides an in-depth understanding of the preservation of colonial architectural heritage in the context of Medan's urban development.

RESULTS AND DISCUSSION

Transformation of Medan's Spatial Planning and Architecture During the Colonial Era

During the colonial period, Medan underwent significant transformations in its spatial planning and architectural landscape due to policies implemented by the Dutch colonial administration. Infrastructure developments, such as main roads, railway networks, and ports, were designed primarily to support the colonial economy, particularly the booming tobacco plantation industry. The railway system, which connected plantation areas to Belawan Port, facilitated the transportation of agricultural commodities to international markets, establishing Medan as a key trade center in North Sumatra (Sinar, [1991](#)). In addition to transport infrastructure, urban planning was designed with a rigid social segregation system that categorized neighborhoods based on racial and economic status. The European elite resided in exclusive areas with superior infrastructure, while indigenous communities and ethnic minorities such as the Chinese and Indian populations were relegated to more densely populated districts with limited access to urban amenities (Batubara et al., [2020](#)).

Beyond transport infrastructure, colonial architecture played a crucial role in shaping the city's landscape. Government buildings, commercial centers, and European residential districts were constructed in a distinctive European architectural style, replacing the traditional settlements that had previously dominated the area. Some of the most historically significant colonial buildings in Medan include:

London Sumatra Building (Lonsum)

Built in 1909, the London Sumatra Building originally served as the office for Harrisons & Crossfield Plc, a prominent trading and plantation company. This five-story structure was the first building in Medan equipped with an elevator, which remains functional to this day. Its architectural design reflects late 19th-century European transitional styles, characterized by symmetrical facades and intricate ornamental details. Today, the building continues to function as the headquarters of PT PP London Sumatra and is recognized as one of Medan's cultural heritage sites (Bintarto & Lestari, [2020](#)).



Figure 1: PT. London Sumatera (Lonsum) Building

Source: kompasmedan.com

Old Medan City Hall (Grand City Hall)

Constructed in 1908 by architects Hulswit & Fermont and later renovated in 1923 by Eduard Cuypers, the Old Medan City Hall was initially designed for De Javasche Bank before being acquired by the local government and repurposed as the city's administrative center. The building showcases a classic colonial architectural style with grand pillars and high ceilings. Today, it is incorporated into the Grand City Hall Hotel complex and functions as a café, preserving its historical elements while adapting to modern commercial use (Sinambela & Nareswari, [2020](#)).



Figure 2: Medan Old City Hall Building

Source: medanreview.com

Medan Railway Station

Originally constructed to support the transportation of plantation products, Medan Railway Station is one of the few colonial relics that remains operational today. Its architecture features characteristic colonial elements, including high ceilings and intricate ornamental details. While the station has undergone renovations, parts of its original structure have been preserved to maintain its historical significance (Andriana et al., [2023](#)).



Figure 3: Medan Railway Station today
Source: detik.com

Pos Bloc Medan (Medan Post Office)

Opened in 1911, the Medan Post Office was designed by Ir. S. Snuyf of the Burgelijke Openbare Werken (BOW). This building is an exemplary model of colonial architecture, with its grand facade and elaborate decorative details. Recently revitalized as Pos Bloc Medan, the building has been transformed into a creative hub, integrating modern amenities such as cafés and exhibition spaces while preserving its historical essence (Ningtyas, [2019](#)).



Figure 4: Medan Post Office Building
Source: detik.com

Gedung AVROS (*Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatera*)

Built in 1918, this structure originally functioned as the headquarters of the East Sumatra Rubber Planters' Association. Its colonial-style architecture is distinguished by its detailed ornamentation and classical design. The building remains intact today, serving as a historical landmark of Medan's plantation industry (Veronica & Siregar, [2018](#)).



Figure 5: AVROS Building
Source: detik.com

The spatial planning model implemented by the colonial government also reflected strict social segregation. European elites were strategically placed in the city center, with easy access to public facilities and infrastructure, while indigenous communities and other ethnic groups were relegated to the periphery, where amenities were far more limited (Sianipar, [2016](#)). Medan Railway Station, constructed to facilitate the transportation of plantation commodities, remains one of the few colonial relics that has largely preserved its original form despite undergoing several renovations. Additionally, the Pos Bloc Medan (formerly the Medan Post Office), which was inaugurated in 1911, serves as an important symbol of the colonial era. Its architectural design reflects strong European influences, evident in its grand façade and intricate ornamental details. Today, the building has been revitalized into a modern creative space while carefully maintaining its historical essence.

Colonial spatial planning and architectural heritage are still visible in various parts of Medan, including the AVROS Building (*Algemeene Vereeniging van Rubberplanters ter Oostkust van Sumatera*), which was established in 1918 as the administrative headquarters of the rubber plantation association in East Sumatra. Its distinctive architectural style and role as a central hub for plantation administration underscore the deep connection between urban development and colonial economic exploitation. However, rapid modernization and insufficient attention to historic preservation have increasingly threatened the survival of these heritage structures. Many colonial buildings have been repurposed or, in some cases, entirely demolished to make way for new developments, leading to the loss of valuable historical elements. Recognizing the importance of preserving colonial architectural heritage is crucial for safeguarding the city's identity and historical legacy.

In the context of contemporary urban development, striking a balance between modernization and historical conservation is essential. A sustainable and inclusive urban planning approach can ensure that the spatial and architectural transformations that took place during the colonial period remain an integral part of Medan's identity while accommodating the city's ongoing growth and development in the modern era. One effective strategy is the concept of adaptive reuse, which involves repurposing historic buildings with new functions that align with the city's evolving needs. This approach has already been successfully applied to structures such as Pos Bloc Medan, which has been transformed into a creative hub while preserving its colonial architectural elements.

Urban planning policies should place greater emphasis on heritage zoning, which designates historically significant areas for special protection. The successful implementation of this policy in major cities such as Singapore and Penang, Malaysia, demonstrates how the integration of heritage conservation and modern urban development can be achieved harmoniously. With the right planning strategies and collective awareness from various stakeholders, Medan can preserve its colonial heritage as a defining aspect of its urban identity while simultaneously adapting to the dynamic demands of modern urbanization.

The Transformation of Medan's Spatial Planning and Architecture During the Colonial Era

During the Dutch colonial period, Medan experienced a rigid social segregation system, with residential areas divided based on race and social class. The European elite occupied exclusive districts equipped with superior infrastructure and facilities, while indigenous communities, the Chinese, and other ethnic groups were confined to peripheral areas with limited access to economic opportunities and urban amenities. This policy reinforced a strict social hierarchy, institutionalizing racial segregation that influenced various aspects of daily life, including education, housing, employment, and access to economic resources.

The ethnic residential segregation in Medan was evident through the formation of distinct ethnic enclaves. This phenomenon was driven by factors such as colonial policies, economic stratification, and discriminatory practices that restricted interactions between different ethnic groups. For instance, the Indian community resided in Kampung Madras (formerly known as Kampung Keling), the Chinese community concentrated in Kesawan, the Karo people settled in Padang Bulan, and the Mandailing community established themselves around Jalan Letda Sujono.

This colonial legacy continues to shape Medan's socio-economic structure to this day. Disparities in land ownership and access to public services remain visible, with certain ethnic groups enjoying better opportunities than others. Furthermore, social segregation based on religious and ethnic identity remains a sensitive issue that can fuel societal tensions.

The effort to create a more inclusive and sustainable Medan involves addressing the inequalities inherited from colonial policies. This requires redistributing resources, improving access to public facilities for all ethnic groups, and formulating policies that encourage social integration. Such approaches are crucial to ensuring that all residents benefit equitably from urban development.

Developing an inclusive and sustainable city demands a multidimensional approach that considers social, economic, and environmental factors. Medan's inherited colonial-era socio-economic structure has led to persistent disparities in land ownership, access to education, and the distribution of urban infrastructure. Addressing this historical legacy necessitates systematic urban policies focused on social justice, ensuring that development benefits not just the privileged but also marginalized communities affected by colonial segregation.

One of the greatest challenges in achieving urban inclusivity is rectifying disparities in access to public facilities. Many former colonial elite neighborhoods continue to have better infrastructure than areas historically designated for indigenous and minority communities. To bridge this gap, the government must ensure equitable infrastructure development, including public transportation, healthcare services, and educational institutions across all urban districts. This initiative aims to reduce long-standing inequalities dating back to the colonial era and provide equal opportunities for all residents to access high-quality public services.

Economic resource redistribution is a crucial step in addressing historical inequalities. During the colonial period, the economic sector was dominated by foreign companies and select groups, leaving a legacy of disparities in asset ownership and wealth distribution. Local governments can adopt policies that support micro, small, and medium enterprises (MSMEs), particularly for communities that historically lacked access to capital and economic networks. This support could include financial assistance, streamlined business licensing, and broader market access through inclusive economic policies.

Beyond economic restructuring, fostering social integration remains a key challenge in building a harmonious city. Medan is an ethnically diverse city, home to Chinese, Malay, Batak, Indian, and other communities living side by side. However, historical social segregation imposed by colonialism continues to influence patterns of social interaction today. To encourage greater cultural exchange and cooperation, programs such as shared cultural festivals, multicultural education in schools, and inclusive housing policies should be promoted to prevent ethnic-based residential clustering.

Another major challenge in fostering an inclusive and sustainable city is ensuring that urban planning policies reflect the voices of all social groups. Public participation in the urban planning process is crucial to prevent policies that favor elite interests while neglecting broader community needs. The government must create open platforms for dialogue, such as urban forums, regional development discussions, and collaborations with academics and local communities in policy formulation.

A more equitable housing system must also be developed to address historical disparities in land ownership dating back to the colonial era. Much of Medan's land remains controlled by large corporations or individuals with privileged access to legal and financial systems, while low-income communities struggle to secure adequate housing. Inclusive housing policies, such as subsidized housing programs, land price controls, and social housing initiatives, should be implemented to ensure access to safe and affordable housing for all residents.

Sustainable urban development must also integrate environmental considerations. In Medan, rapid urbanization has led to air quality degradation, inadequate waste management, and diminishing green spaces. To foster a more environmentally sustainable city, urban policies should prioritize public green spaces, eco-friendly transportation systems, and stricter regulations on pollution-emitting industries.

Both the private sector and local communities play an essential role in fostering an inclusive city. Private enterprises can contribute through corporate social responsibility (CSR) programs, focusing on community empowerment and social infrastructure development. Meanwhile, local communities can serve as active partners in cultural preservation, environmental advocacy, and the protection of residents' rights in urban development. With collaborative efforts from multiple stakeholders, urban planning can become more responsive to the real needs of the population.

Technology-driven solutions can help reduce disparities in access to information and public services. Integrating digital platforms into urban administration, such as e-governance systems for healthcare, education, and business permits, can enhance transparency and efficiency in public services. Medan's government could adopt smart city principles, not only to drive technological advancement but also to ensure accessibility for all segments of society. Digital innovation should serve as a tool for fostering social and economic inclusion, rather than exacerbating existing inequalities.

Building an inclusive and sustainable Medan requires a comprehensive approach that acknowledges and addresses the colonial legacy that has shaped the city's socio-economic structure. Through well-planned policies, social justice-oriented development strategies, and the active participation of communities and private stakeholders, Medan has the potential to transform into a more equitable, harmonious, and sustainable urban center. By prioritizing heritage preservation, equitable infrastructure distribution, social integration, and environmental sustainability, the city can navigate modern urban challenges while maintaining its unique historical and cultural identity.

CONCLUSION

Colonialism has left a profound impact on the urban development of Medan, shaping its spatial planning, architecture, and socio-economic structure. Colonial policies institutionalized social segregation, dividing the city based on race and social class. This resulted in the establishment of exclusive districts for the European elite while restricting economic opportunities and infrastructure access for indigenous communities and other ethnic groups. The legacy of colonial urban planning remains visible in Medan's city structure today, where the central district continues to preserve historical buildings, while unregulated modernization threatens the conservation of colonial architecture. Furthermore, economic disparities inherited from the colonial system continue to influence the distribution of resources and societal well-being. Therefore, efforts to build a more inclusive and sustainable city must encompass economic redistribution, socially just urban planning, and policies that support the preservation of historical heritage amid rapid urbanization.

Future research should focus on concrete strategies to integrate colonial heritage conservation with the demands of modern urbanization in Medan. A deeper analysis of the effectiveness of urban planning policies, the role of local communities in preserving historical buildings, and the socio-economic consequences of colonial-era segregation remains crucial. Additionally, comparative studies with other Indonesian cities that share a similar colonial history could provide broader insights into developing comprehensive approaches to address the challenges of urban development in the modern era.

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