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RESEARCH ARTICLE

CANALS TO STREETS: POSTCOLONIAL STUDIES ON THE URBAN TRANSFORMATION OF COLONIAL BATAVIA

Euis Puspita Dewi^a, Siti Sujatini^b, Fitri Suryani^a, ST. Trikariastoto^a, Ari Wijaya^a^a Architecture, Universitas Persada Indonesia YAI, Indonesia^b Civil Engineering, Universitas Persada Indonesia YAI, Indonesia*Corresponding Author Email: euis.pd75@gmail.com

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ABSTRACT

Jakarta, Indonesia's capital city, is constantly improving its infrastructure. Besides being filled with buildings, Jakarta is now very colorful with roads and various modes of transportation. The highway is a city facility that serves as the development's orientation. Whereas in its history, Batavia, as the forerunner of Jakarta, was once a canal city. Canals were an important part of city life in the 17th century, functioning as a source of transportation, pleasure, defense, and water supply, among other things. The Batavia canal city, on the other hand, is no longer visible. Jakarta is today a congested city with clogged roads. The purpose of this study is to describe Batavia's transformation during the colonial period and identify the factors that influenced it. A historical-postcolonial approach was employed in conjunction with the descriptive qualitative method. Data was acquired through critical discourse analysis by tracking historical data from archives in the form of maps, images, artwork, and textual sources. According to the conclusions of this study, Batavia evolved from a canal city to a street city. The transformation was due to the failure of the colonial rulers in managing the canal system and the euphoria of the new invention of transportation technology. The discovery of material technology and transportation modes has changed the lives of the Batavian people which in fact created an asymmetrical power in their society. This exploring the transformation become the knowledge and consideration to promote the sustainability of the city of Jakarta.

KEYWORDS

Infrastructure, development's orientation, transportation, historical-postcolonial

1. INTRODUCTION

According to terms of the temporal dimension, a city must be examined and valued as something that is built over time (Rossi and Eisenman, 1982). The city over time as the building and permanence of what, having been imagined and achieved in the past, still lives, and experiences the crystallization of its own construction through changes (Bellicíni, 2020). The city can serve as a reminder of the past. Jakarta, as a capital city, is experiencing developments that cannot be separated from its past. It is difficult to describe Jakarta's morphology because the city is continually developing and consequently unexpected. According to some academics, the city's space is layered (Santoso, 2006). Jakarta's shape is the result of a number of contextual elements that were important at various stages in its history. The city's continual evolution is proven not just by how masterplans have historically visualized it, but also by how proposed the solutions to the Jakarta's problems and have shaped Jakartans' identities and aspirations. (Martinez and Masron, 2020).

At first, Jakarta developed from a royal city called Jayakarta, and then has been linked to the entrance of Dutch colonial power as a canals city and now filled with many streets (Abeyasekere, 1987). The quantity of roadways is always accompanied by the number of automobiles. Every day, over 20 million vehicles use the streets. Each year, roughly 11% more cars, motorcyclists, buses, and trucks use the roadways (BPS, Provinsi DKI Jakarta, 2018). During rush hour, motorists use more than half of their daylight hours stopped in traffic and their speed is just approximately 5 km/h (Tempo.co, 2015). Jakarta's traffic congestion is worsening due to somewhat improved roadways and a rise in the number of private vehicles

of 8-10% per year (Asvial et al., 2018). This means that the roads in Jakarta are already heavily burdened by vehicles exceeding their capacity.

Jakarta's current state cannot be divorced from the passage of time in its past. The growth of Batavia, as the forerunner of Jakarta which was initially a canal city and then expanded into a city with roads, becomes a fascinating subject to examine as part of Jakarta's long trip in its past. It is envisaged that historical studies and critical discourse analysis will form part of the solution concept for Jakarta's future growth. As a result, the purpose of this study is to investigate the change of Jakarta since the colonial period, which can be considered the starting point for the development of Jakarta today. As a result, this study is limited to the colonial era as one approach of proposing ideas for future development.

2. LITERATURE REVIEW

2.1 Transformation of The Cities

In simple terms, transformation is defined as a change from one condition as the initial form to another. This can happen continuously or repeatedly and is influenced by the time dimension which can occur either sooner or later and is not only related to physical changes but also to social, cultural, economic, and political changes said the religion, the environment, and politics influenced the development and alteration of the city's distinct architectural and urban structures (Dewi, 2018; Farhan et al., 2019). Cities are always changing through economic, demographic, social and ecological processes along with significant changes in their functions and structures (Bakir, 2019).

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Exploring the transformation of the city as a long journey in its past, not just a form of returning the romance of the past, but, as a need to focus on how resources brought from the past (history, artifacts, and places) can be used to promote the sustainability of the city (Lilleveld and Haarstad, 2019). From a long-term perspective, the city should use its heritage and historical heritage as knowledge and experiences to provide some references for the sustainability of other cities and serve as a practical basis for breaking through the road to resource-based cities (Zhao et al., 2021). In the postcolonial perspective, the transformation towards a new urban formation and politics as a form of reconfiguration of urban space and the reshaping of the social geography of a city can produce, promote, or intensify the geographical fragmentation and social segregation of the city.

2.2 Canals and Roads as Urban Infrastructures

In urban space, canals and roads are important elements as urban infrastructure that determine city life. In relation to the city system, Cohen mentions that the canal provided a defense system and trade route for the city (Cohen, 2001). If Moore likens canals as vessels in the blood that flow city life, Engström mentions that roads in the transportation system as the lifeblood of modern society, Roads are an essential component of the transportation system (Moore, 2011; Engström, 2016). This means that the two elements of the city become an important part and are able to revive the city. Canals, like roads, can functionally act as traffic channels, facilitate the development of commercial zones, and serve as elements that serve the development of urban areas (Moughtin, 2003). Canals and roads are manifestations of social and daily life, formed as a function of extensive and complex human activities and accumulated over time (Rossi, 1982).

In addition to their physical function, canals and roads are also capable of providing an image and symbol for a city. Dewi mentions that canals are able to act as symbols of power and glory, apart from being an element of community segregation (Dewi, 2017). In Dubai, canals are designed as symbols of freedom and create navigation routes that highlight the city's image. The canal is shown as part of an urban space with a technologically advanced infrastructure system, which offers a new panorama of the city (El Amrousi et al., 2019). The road, as an element of the city, is not only a determinant of the physical development of the city, but it is also frequently an act of power, aimed at various times at smoothing relations, securing borders, (disconnecting) people, enabling trade, creating space for contestation, or thinning boundaries between various parties. ethnic group Road construction was used to carry out the objective of forming a colonial state (Ziipao, 2020). In the context of contestation, roads become contested spaces in which various interests compete, where the seizure of public space occurs as a result of the habitus of actors and networks of illegal and informal activities (Harjoko et al., 2012).

In the context of roads as a network, urban roads have a strong correlation with socio-economic and environmental factors. Road network growth encourages local urban expansion to some extent; yet, it could also be a result of urban development. It cannot be overlooked that fast urbanization has already been in a slew of "city ailments" that have had negative consequences for public health (Shi et al., 2019). The expansion and widening of the road network has a dilemmatic impact, on the one hand it can reduce congestion and emissions, on the other hand bring more vehicles on the road and extend the average driving time. Therefore, careful consideration in determining various aspects of the road network is necessary.

2.3 Urban Infrastructures in Postcolonial Perspectives

Infrastructures serve as society's backbone. Technical infrastructure allows us to communicate with one another, supply power, light, and water, dispose of rubbish, travel quickly and comfortably, and monitor humans and the environment. Soft infrastructures, to mention a few, systematically address our societal needs in areas such as health, education, culture, and recreation. Van der Straeten and Hasenöhr, argue that we take these public services for granted. Infrastructures were also part of global technical exchange processes, and uneven power relations as well as global processes such as capitalism, imperialism, and colonialism influenced their dispersion and appropriation (Van der Straeten and Hasenöhr, 2016). In the postcolonial perspective, infrastructure as the implementation of technology has a certain importance. Daniel Headrick from 1981, relates the account of how European colonial forces effectively subjugated and exploited locals, man, and nature by employing modern technologies and tactics such as steam engines, machine guns, and quinine prophylaxis (Hasenöhr, 2021).

As a part of infrastructure, like road or canal construction has always been an act of power, aimed at various times at smoothing relations,

safeguarding borders, (disconnecting) people, enabling trade, creating contestation areas, or thinning barriers between diverse ethnic groups. The construction of roads was used to carry out the objective of forming a colonial state (Van der Straeten and Hasenöhr, 2016). Kooy identity that urban water supply infrastructure is also a material artefact of governmentality and technologies of infrastructure systems' creation, treatment, and distribution are the result of contentious and contradictory rule relations (Kooy, 2008). Technological infrastructures aided colonial resource exploitation by easing large-scale access, harvesting, and transportation, resulting in massive ecological changes as well as the birth of "modern" environmental consciousness. In addition to their functional role in colonial endeavours, technology and science have been investigated as a source of self-affirmation for colonial subjects (Van der Straeten and Hasenöhr, 2016).

3. RESEARCH METHOD

The study is qualitative and employs a historical method as well as critical discourse analysis. The information was gathered through scouring historical materials such as maps, pictures, paintings, and manuscripts. The maps were derived from ANRI and Nationaal Archief and were compiled in the Dutch United East India Company's Grote Atlas van VOC and Comprehensive Altas. Photos were acquired, selected, and categorized through a gathering, selection, and classification process from a variety of sources, including ANRI, KIT Library, KITLV, and COLLECTIE TROPEN MUSEUM. Through critical discourse, various written documents, such as trip records, newspapers, affidavits, decrees, and other pertinent objects, were assessed.

4. FINDINGS AND DISCUSSION

4.1 Transformation of Batavia: Canals to Streets City

Based on a search of the city based on historical data, the transformation of Batavia is divided into 3 periods, namely the period of the canal's heyday, the era of the disappearance of canals, and the period of Batavia as a city filled with roads.

4.1.1 Batavia as Canals City in 17th Century

Jakarta was built on a deliberate plan to develop a canal metropolis known as Batavia during the colonial period. The city was designed and built by J.P. Coen, the Governor-General of the VOC, as a canal metropolis influenced by Amsterdam. Batavia's waterways morphologically resemble a grid pattern filled with constructions intended for Batavia residents or visitors. Batavia faces a number of threats as a result of colonialism, so the canal was developed to serve as a defensive barrier. In addition to providing safety, Batavia's canals supported city activity and gave the city a distinct Dutch flavor (Blackburn, 2011).

During this time, the VOC began construction on the citadel with the canals, a spatial reference identified as the beginning of colonial Batavia. Both of the elements acted as a boundary and a form of protection Figure 1 displays the whole construction of the Batavia canal from start to end. According to maps from 1622 and 1627, the Ciliwung River served as the starting point for canal building. On maps from 1632 and 1635, the three sides of the castle (Kasteelgracht) were already encircled by canals, which comprised the second tier of European society's defense after fortification. The canal construction continues to the southern portion of the castle or the eastern side of the Ciliwung River. New canals were dug in order to create rectangular building units. According to the canals were first used about 1645, when the work on the east and west sides of the Ciliwung River was completed (Abeyasekere, 1987). On the 1650 Map of Batavia, a flawlessly finished canal is depicted as a city surrounded by gridded canals (Haris, 2007).

After 1650, the canal had started to operate and played a big role. At the beginning of construction, the purpose of the canal was as an element of protection. However, to meet all the needs of the city, the canal performs another function. Practically the canal acts as a means of urban transportation, flood control and water supply. During its utilization, the canal was not only used to meet the physical and practical needs of the community. However, the canal also provided a need for pleasure and pride for the people of Batavia. Reguleth's story, based on a statement letter retrieved from the National Archives of the Republic of Indonesia (ANRI) on July 28, 1694, claims that "*They're having fun along the Ciliwung River, complete with food and drink, as well as colorful umbrellas to protect their faces from the sun.*" Based on the declaration of 17 November 1698, Abeyasekere, according to the Cornelis Veenendaal Archives of 1846 "*They built the canal as a place to relax at night, on Sundays, or during holidays*" (Abeyasekere, 1987; Reguleth's, 1679). *They used to look for pleasure*

outside of the house, even outside the municipal limits.". The number of Johannes Rach's paintings in Figure 2 describe the number of canals with various activities in the 17th century taking place on the canals and on their banks.

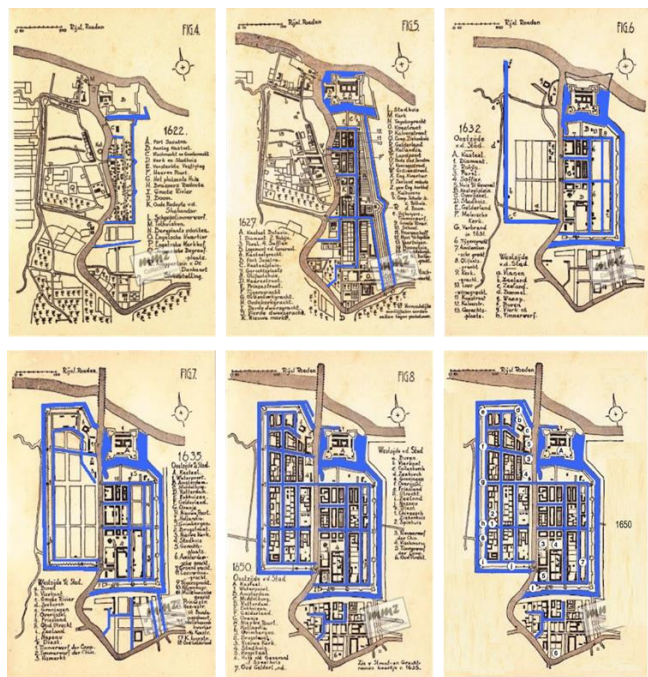


Figure 1: Map of the Jakarta Transformation as a Canal City (Source: KIT Library)

construction of canals began to be weighed against the disadvantages (De Haan, 1922). Nas and de Vletter said that the VOC was blocked by various problems (Nas and de Vletter, 2009). Between 1730 and 1780 the advantages of the VOC as a trading partner were no longer sufficient. Then the canals were buried one by one until finally Batavia became an abandoned city. This condition was further exacerbated when Daendels decided to demolish almost the entire existing building and its debris was used for construction in Weltevreden. The castle and some of the buildings, canals within the city are gone. Weltevreden became a new dream city created by Europeans with a new concept and arrangement. Figure 3 shows the transformation of Batavia starting as a city within a wall that has many canals and then expanding to the south with the remaining canals. Table 1 shows the number decrease of Batavia canals between the 17th and 20th centuries.

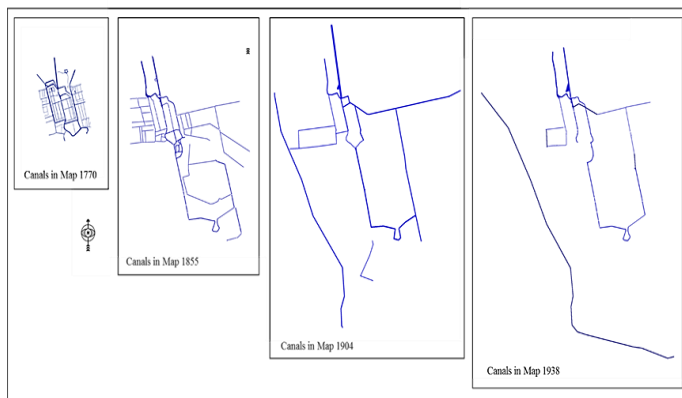


Figure 3: Batavia as Canals City and Disappearance of Canals Existence

Table 1: The Number decrease of Batavia Canals

Map of 1770		Map of 1887	Map of 1920
1. Javache gracht	18. Amanus gracht	1. Javache Kaasjes	1. Javache Kaasjes
2. Vrymans Haaven	19. Sury gracht	2. Groote Rivier	2. Bucheragt gracht
3. Groote Rivier	20. de Norsyding gracht	3. Buiten gracht	3. Rinoetos gracht
4. Tyger gracht	21. Over water weg gracht	4. Bucheragt gracht	4. Groote Rivier
5. Bucheragt gracht	22. De Arreckgracht	5. Rinoetos gracht	5. Buiten gracht
6. Rinoetos gracht	23. Kaaimansgracht	6. Molenliet	6. Molenliet
7. Buiten gracht	24. De Leeuw innengracht	7. Kali Ancol	7. Kali Ancol
8. Molenliet	25. Groningegracht en weg	8. Mokervaart	8. Mokervaart
9. Moorschegracht	26. Verburghs gracht	9. Kali Pasar Baru	9. Kali Pasar Baru
10. Stad binnen gracht Barat	27. Wynands gracht	10. Kali Soenter	10. Kali Soenter
11. Amsterdamschegracht	28. May gracht	11. Kanal Gunung Sahari	11. Kanal Gunung Sahari
12. Kali Antjol	29. River Angiol	12. Kanaal van (Banjir Kanal Barat)	12. Kanaal van (Banjir Kanal Barat)
13. Mallebaresgracht	30. Titus Anthony gracht		
14. Maleidschegracht	31. Carnaals River		
15. De Roa Malacca of Jonker'sgracht	32. Ciappus River		
16. Rincamagracht	33. Buiten tyger gracht		
17. Kerste Dwars gracht	34. Tweede Dwars River		

4.1.3 Batavia as The Streets City in 19th - 20th

Batavia began its transition from a canal city to a road city once the city center was relocated from Batavia to Weltevreden. Weltevreden is a new fantasy metropolis made by Europeans with a distinct perspective and design. When Batavia's core was relocated to Weltevreden, Sunda Kelapa Port in old Batavia became swampy and difficult to access. Because this port made it impossible for ships to dock, the major port was moved to Tanjung Priok. The construction of this port began in 1877 and was completed in 1886. Roads, canals, and trains connected Pelabuhan Tanjung Priok to old Batavia. (Figure 4). The port of Tanjung Priok has catapulted Batavia into a new era, as the port region has grown in terms of transportation and housing options since then. Around the turn of the century, connecting roads began to appear in the area surrounding the port.

Batavia's modes of transportation continued to increase at a rapid rate, paralleling global transportation technology development. Residents and visitors of Batavia were offered several land transportations options (mylord, bendi and palanquin, horse tram, steam tram and car) (Figure 5). Horse trams were a common means of transportation in Batavia from 1869 until the development of steam trams and were phased out in favor of steam trams in 1881. The road is the most common form of transit between sites. From 1830 to 1900, Batavians relied on dusty dirt roads in the summer and muddy roads during the wet season for land transit. Horse-drawn carriages remained an alternative mode of transportation, particularly for Europeans, until later, when, in tandem with the development of asphalt as a road material, cars and electric trams evolved into more modern vehicles as a result of vehicle contact with asphalt and rail (Figure 6).



Figure 2: Batavia as The Canals City (17th -18th century) (Source: KITLV)

4.1.2 Canals' Disappearance in 18th Century

The beginning of the 18th century, in 1730 to be exact, was a time when the canal had begun to show ecological damage. The city is getting denser in population with the unhealthy lifestyle of Dutch immigrants, coupled with cholera and mumps outbreaks which reduce the population in the city. Batavia then became a lackluster city and even became a "ghost town". The canal system is increasingly unable to solve the city's drainage problems. Tidal water carrying sand and mud carried from upstream hinders the flow of water in the canal. The increase in population also adds to the blockage of canals due to bad behavior by throwing garbage and waste into the water (Blackburn, 2000). The drainage system is not well managed. As a result, Batavia was in a bad environmental condition (Stockdale, 1786; Stavorinus, 1812). Travelers who know the beauty of Batavia when it was once the "Queen of the East" feel disappointed. The canals that were once beautiful and clean have become dirty, smelly, and black. A deadly disease had hit Batavia (Brug, 1994).

In this period, De Haan stated that all the positive impacts of the

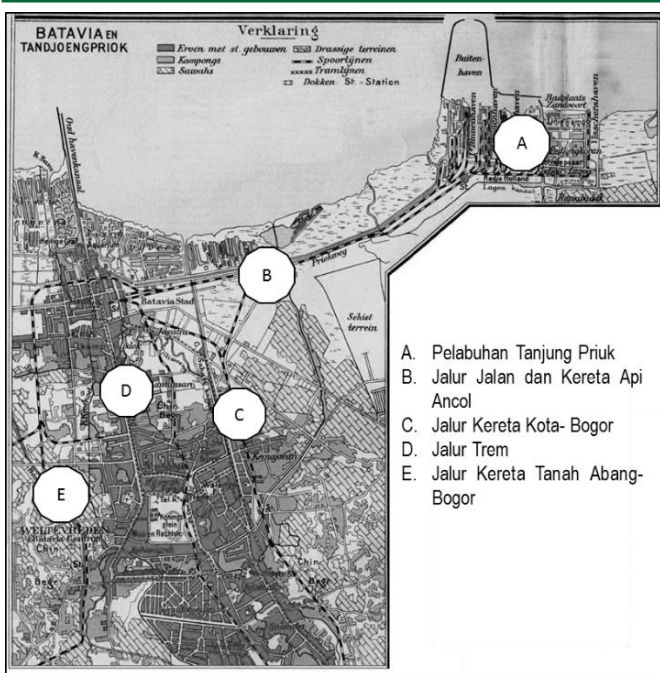


Figure 4: The Existence of Tanjung Priok Port and the Development of Transportation in Batavia (Source: ANRI, 1935 Batavia map)



Figure 5: The alternative means of land transportation in the 19th century (Source: KITLV)

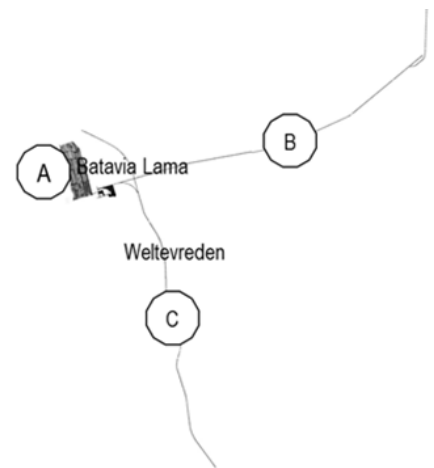


Figure 6: Horse Carriage Transportation Facilities in Batavia (Source: Collectie_Tropenmuseum TMnr_608910905.jpg)

Migration influenced the rise of Batavia, the expansion of the road network, and the city's population. Batavia (including Weltevreden) had a population of 435,000 in 1930, which was three times the population in 1900. Surabaya, which had previously been a contender, was surpassed by Batavia as the largest city in the Dutch East Indies (Blackburn, 2000). The volume of traffic on the route is increasing, and it now includes at least

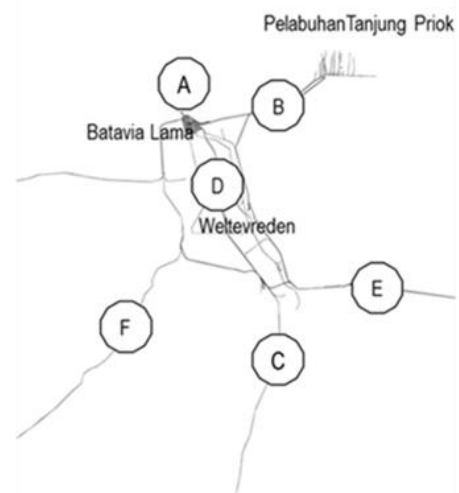
three previously unknown modes of transportation: thousands of bicycles, hundreds of autos, and pedicabs. Ground transportation has expanded in both variety and quantity since the turn of the century. Population expansion increases the volume of traffic on the roadway, which includes at least three previously unknown forms of vehicles, including thousands of bicycles, hundreds of cars, and tricycles (Blackburn, 2000).

Land transportation has been increasingly diverse and numerous since the turn of the twentieth century. Tanjung Priuk Port influenced Batavia's transportation development significantly. The graphic depicts the evolution of transportation between the maps of 1878 and 1920 (Figure 7). The 1878 map shows transportation which is only road on the Ancol line and the Batavia-Bogor railway option, which is known as the Middle Line, built in 1871. In the 1920 map, after Tanjung Priuk Port was built, a line connecting Tanjung Priuk Harbor and Old Batavia which was built in 1885. Staatsspoorwegen got the right to manage the railway line from Old Batavia to Tanjung Priok port and in 1887 served the transportation of personnel and building materials to the port which was under construction, as the development of the Sunda Kelapa Harbor, which was referred to as the North Line (Figure 7).



1878

- A. Old Batavia Canals Transportation
- B. Ancol Railway
- C. Batavia-Bogor Railway



1920

- A. Old Batavia Canals Transportation
- B. Ancol Railway
- C. Batavia-Bogor Railway (North Railway)
- D. Tram Railway
- E. East Railway
- F. West Railway

Figure 7: The Extention of Road Network in Batavia Colonial based on Map of 1878 and 1920) (Source: Het Nationaal Archief, the Netherlands)

4.2 Infrastructures in Batavia Colonial Urban Space: The Purpose of Power and Civilization

4.2.1 Batavia as Canals City: Dreams Become Failure

Batavia was built through a process in which there was a tendency for security and defense. Physically, the canals in Batavia were made as a form of defense from overflowing water and from enemy attacks. Culturally, canals are made as an effort to maintain the culture of their home country which is a canal city. The two forms of defense became a discourse that wanted to be formed during the development process and until Batavia was completely completed. The exclusive and enclosed canals of Batavia have clearly demonstrated an opposition between the inner and outer areas of the city. Apart from being a scope, the canal also has a function as a separator. The guard posts at several points along the canal, have shown a separation between the two spaces, a safe area and a threat area.

In the Victory Stage, the canal served as a marker for community segregation (Kehoe, 2015). the formation of an opposition between the safe and comfortable life of European society and the unorganized and unsecured life of European society outside. The canal in Batavia during the Victory Round underwent a transformation in the process of its formation. Step by step in the process of construction, the existence of canals and other elements of the city has reflected a great goal of European society. From the beginning of the arrival of the VOC, the canal was built as a means of self-defense, continuing to display its role in the construction process. Batavia with its beautiful, clean, safe and comfortable canals shows the creation of a European nation in the East and a show of the power that has been invested.

The nickname "Queen of the East" not only describes the beauty of the city, but a discourse that is built to express the greatness and excellence of European society in building cities. However, the destruction of Batavia as a canal city shows an experiment in organizing cities in the colony. This is evidenced by the failure to apply the concept of a canal city which was initially considered ideal. Various infrastructures built in order to support Batavia as a canal city also failed to support urban life. The walls that surround the city and the canals that divide the city must finally be demolished to maintain the continuity of a healthier, cleaner and more comfortable city life.

4.2.2 Transportation Infrastructure in Batavia: A New Discovery of Civilization

The advancement of transportation in Batavia had a significant impact on the city's life. The street, which was first quiet and lonely, soon became busy. The hustle and bustle of diverse vehicles coloured Batavia's life. Van Eysinga in Blackburn described Old Batavia with its multi-ethnic society and various statuses, distinguished apart from appearance and occupation as well as from the vehicles used., as the following story: *"Hundreds of horse-drawn carriages carrying European officials and merchants plowed through the streets, kicking up dust. Rich Arabs and Chinese drove on the highways. Old ladies sell cakes, bare-chested Javanese carry heavy loads, and an Indian eats rice wrapped in banana leaves contentedly"* (Van Eysinga, 1830; Blackburn, 2011).

Other texts have also described how Europeans mobilized indigenous people to shift their work from farmers to sand diggers, as in the following text: *In our time, the car is the vehicle most beloved by high-ranking officials and capitalists; what is deemed most powerful now determines which direction and time is spent. The roads are becoming better, more beautiful, and more treacherous. Farmers are no longer digging fields; instead, they are digging sand for roads* (Doenia Bergerak, Indonesian Magazine, 1914 dalam Mrazek, 2006).

The advancement of vehicle and road material technology has a considerable impact on the process of changing the existence of roads and modes of transportation. They were also involved in global technological exchange activities, and their diffusion and appropriation were influenced by asymmetrical power relations and global processes such as capitalism, imperialism, and colonialism. The transportation infrastructures used eventually determined the social position of the Batavian community. According to Blackburn, automobiles were successful in distinguishing the civil status of Batavian society in the twentieth century (Blackburn, 2011). In 1939, there were 51,615 cars in the Dutch East Indies and 7,557 in Batavia. Most of the cars in Batavia were owned by Europeans, in contrast to the Dutch East Indies trains, many natives were behind the wheel (Mrazek, 2006). Cars, which are private vehicles, are becoming more prestigious than trains, which are mass vehicles. Bicycles and rickshaws, among other non-powered vehicles, have taken up space on Batavia's roads and became the dominant means of transportation used by

indigenous people.

The rise of alternative vehicles has also had a significant impact on the role of canals as a mode of transportation. People relied on canals as the only mode of transportation in comparison to the former situation, when there was no alternative to motorized transportation. However, when confronted with a choice, the canal became an abandoned location, particularly for Europeans who had better access to transit. The canal is no longer a popular route of transit among Europeans. Aside from the issue of time efficiency, how they use the car eventually becomes a criterion for demonstrating class. However, the canal remains the simplest and cheapest option for the indigenous people. They continue to rely on canals to transport them from one location to another.

The development of transportation technology in Batavia has been dominated by those who can afford to pay, in this instance wealthy Europeans and non-Europeans. The expansion of transportation in Batavia had a significant impact on the city's existence. The path, which had been peaceful at first, grew congested. Batavia's life was colored by the hustle and bustle of innumerable automobiles. The introduction of alternative vehicles has had a significant impact on canal use as a mode of transportation. In the past, when alternatives to motorized transportation had not yet been discovered, people relied primarily on canals for mobility. However, when given a choice, canals became a forgotten place, particularly among Europeans who had better access to transit. Canals are no longer used.

Canals, on the other hand, remain to be the most practical and cost-effective choice for indigenous people. They continue to rely on canals to transport commodities from one location to another. Canals remain an important mode of transportation for indigenous people. People who could afford to pay, in this case wealthy European and non-European inhabitants, dominated Batavia's transportation technology. Essentially, technology is a tool for making it easier for humans to execute activities in order to achieve their goals, but it never lives in isolation. According to Adas, under colonial and imperial notions, technology is intrinsically tied with knowledge and the purpose of civilization and no perfect in its ability to meet human needs (Adas, 1989; Kooy, 2008; Kooy and Bakker, 2008). In a colonial Batavia, technology revealed a moral tendency behind a policy, and its influence on a community may be uneven.

Hasenöhr's narrative "Tools of Empire" relates the account of how European colonial nations used modern technologies and practices to colonize the world (Hasenöhr's, 2021). Finally, technology can be separated into two poles that symbolize a civilized party and a party that is not civilized. Transportation technology in Batavia was established towards the end of the nineteenth and beginning of the twentieth centuries, resulting in a variety of driving options for the inhabitants. As a result, transportation alternatives based on social and economic levels contributed to the construction of a narrative about a schism in Batavian society's position. This contrast is between people who can drive modernly and those who can only walk or drive outdated, cheap cars.

5. CONCLUSION

Batavia has undergone a transformation from a canal city to a street city. The transformation that occurred was caused by the failure to manage the canal system. The destruction of Batavia as a canal city shows an experiment in organizing cities in the colony. This is evidenced by the failure to apply the concept of a canal city which was initially considered ideal. Various infrastructures built in order to support Batavia as a canal city also failed to support urban life.

Migration influenced Batavia's growth, the expansion of the city's population and the road network. The advancement of vehicle and road material technology has a considerable impact on the process of changing the existence of roads and modes of transportation. The discovery of material technology and transportation modes has changed the lives of the Batavian people which in fact created an asymmetrical power in their society. Colonial practices like that should be a lesson for the development of Jakarta. Development is project oriented. Development should not actually create social inequality for the people. Knowledge because of this research can be the basis for consideration for further research on urban development in Jakarta to promote the sustainability of Jakarta.

LIMITATION AND FURTHER RESEARCH

The research was only carried out in the colonial period with methods that were limited to historical methods and critical discourse analysis with a postcolonial approach to dissect the motivations behind urban transformation. This research is expected to continue with research that

can provide conceptual and practical solutions in carrying out the revitalization of Jakarta, especially those based on spatial justice.

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