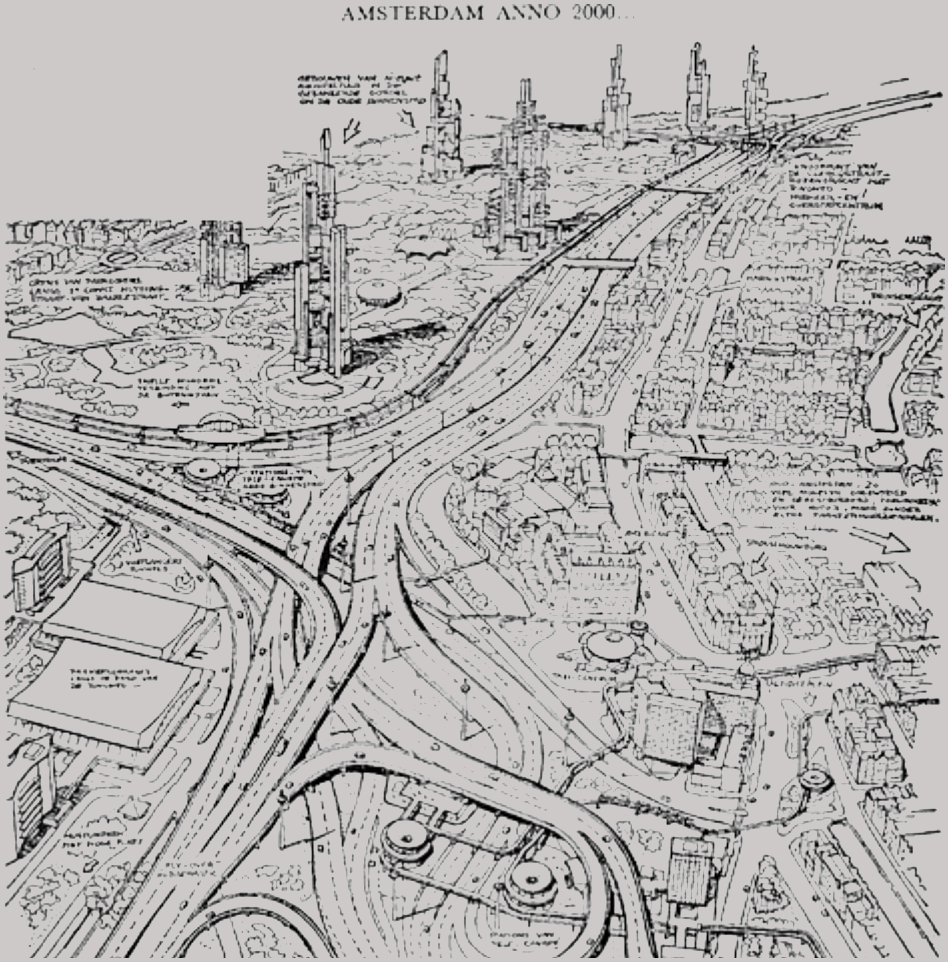
Amsterdam's Journey

Changing the urban fabric



Architectural History Thesis

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18.04.2023

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ABSTRACT

The urban history of Amsterdam has changed a lot over the past centuries, with the city's streets and waterways serve as conduits of transformation. From its modest origins amidst peat bogs to its emergence as a bustling hub of commerce and culture, Amsterdam's story is intricately connected with the evolution of transportation.

At the heart of Amsterdam's narrative lie its iconic canals, once vital arteries of trade that shaped the city's growth and identity. The evolution of transportation modes across centuries, from the rhythmic clatter of horse-drawn carriages to the seamless efficiency of electric trams tell a story about the urge to adaptability and change. Amsterdam's landmarks, like Central Station, emerged as symbols of progress against a backdrop of changing urban landscapes forever. Progress is never without challenges. Tensions between modernization and preservation arise as ambitious projects like the Ring of Amsterdam (A10) reshape neighborhoods, leaving behind scars that highlight the delicate balance between development and heritage.

By examining historical maps, paintings, and archival records, information has been gained on how transportation has shaped Amsterdam's urban fabric, illustrating the city's dynamic evolution over time. Transitioning from growth and expansion to integrating car traffic into Amsterdam's existing urban landscape, thereby enhancing accessibility throughout the city.

KEYWORDS

Urban fabric, infrastructure, development of Amsterdam, urban planning, transportation

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INTRODUCTION

Cities are like living, breathing organisms, with their urban fabric woven from a mix of main arteries and side streets that define their character and function. Even during Amsterdam's peak, challenges persisted beneath its prosperous exterior, particularly the struggle with inadequate sewer systems. Yet, amidst the city's charm, the canals stand out, their origins tracing back to the 15th century when they teemed with trade, turning Amsterdam into a vibrant hub. However, today, their significance has evolved, no longer serving as the primary conduits of transportation.

The impact of transportation modes on reshaping urban landscapes is evident in places like Bos and Lommerplein. Once a quiet neighborhood, the arrival of the A10 motorway in the 1960s tore through its heart, transforming it into a bustling thoroughfare flanked by towering apartment blocks. This change reflects a broader trend: the city's shift towards prioritizing car-centric infrastructure, epitomized by projects like the Ring of Amsterdam (gemeente Amsterdam, 2020).

Image 0.1 How the A10 the city intersects (Gemeente Amsterdam, 2020). The Bos and Lommerplein around the 60's when the construction of the Ring of Amsterdam where just starting.

Image 0.2 Google Maps location of the Bos and Lommerplein, Amsterdam (Google, n.d.). The Bos and Lommerplein in 2024, the appartment buildings are still existing but are heavily affected in a negative way by the Ring of Amsterdam.

But cars aren't the only catalysts of change; historical transport methods have also made their mark. From the 13th to the 18th century, Amsterdam's skyline was dominated by boats and horse-drawn carriages. Then, with the dawn of the industrial revolution in the 18th century, trains, trams, and cars reshaped the cityscape, with icons like Central Station symbolizing this transformation. Amsterdam's urban fabric, therefore, is a testament to its constant adaptation to evolving transportation dynamics.

This paper seeks to explore the nuanced interconnection between transportation modes and the urban fabric of Amsterdam, investigating their profound impact on both the flow of goods and the movement of people. Central to this inquiry is the overarching question: "How has the evolution of transportation modes shaped the development and transformation of Amsterdam's urban fabric throughout various historical epochs?"

Chapter 1
The making of Amsterdam

Amsterdam lay submerged beneath peat bogs until the 11th century, when a coalition of bishops and earls reclaimed the land through canal construction. These waterways birthed Amsterdam, becoming vital trade routes. In the 17th century Amsterdam experienced its peak, propelled by the Dutch East India Company. Over the centuries, Amsterdam evolved through the industrial revolution and modernization. Today, it stands as a vibrant hub, testament to resilience and growth.

Chapter 2
The floating canals of progression during the 13th till 18th century

In the quaint alleys of Amsterdam, where cobblestones echo with the tales of the past, the flow of water served as the lifeblood of the city's growth and layout from the 13th to the 18th century. Canals snaked through the city, connecting it to distant lands, fostering trade and commerce. Merchants thrived as ships docked along the bustling quays, unloading goods from

far-flung corners of the world. With each passing year, Amsterdam expanded its reach, its streets and buildings organically growing around the intricate network of waterways, shaping the city's unique character.

Chapter 3
The revolutionary 19th century

Fast forward to the 19th century, and Amsterdam was on the brink of transformation once again. This time, it was the public transportation that heralded change. Buses, trains, and trams breathed new life into the city, revolutionizing how people moved and interacted. With improved accessibility, Amsterdam blossomed into a bustling hub of commerce and culture, drawing in droves of eager inhabitants seeking opportunity and adventure.

Chapter 4
Reshaping Amsterdam to the modern 20th century standards

With the dawn of the 20th century, Amsterdam stood on the cusp of transformation once more. The introduction of bicycle lanes, cars, and airplanes heralded a new age of mobility and modernity. Cyclists zipped through the streets, weaving past cars and pedestrians, as bicycles became synonymous with Dutch culture. The automobile reshaped the urban landscape, as roads were widened and bridges expanded to accommodate the influx of cars. Meanwhile, airplanes soared overhead, connecting Amsterdam to the farthest reaches of the globe. Amidst these changes, the city evolved, adapting its infrastructure to meet the demands of a rapidly changing world, yet never losing sight of its rich history and enduring charm.

METHODOLOGY

The sub-questions delve into specific periods mentioned above, with each period dedicated to its own chapter. Within these chapters, historical literature on Amsterdam's past, alongside topographical maps, will be scrutinized to discern the implications of embracing new modes of transport on the city's landscape. Additionally, each chapter will feature a reflection, comparing the perspectives of the era under examination with contemporary viewpoints, as our understanding of urban environments has undergone significant evolution in recent years. Ultimately, the research aims to provide a comprehensive overview of the transformations within Amsterdam's urban fabric resulting from the integration of novel transportation methods throughout its history.

CHAPTER 1
THE MAKING OF AMSTERDAM

Centuries ago, Amsterdam faced an uncertain existence. Roughly a millennium prior, much of North-Holland, including Amsterdam, lay submerged beneath the challenging terrain of peat bogs, rendering it largely uninhabitable (Abrahamse & Rutte, 2021). However, in the 11th century, the bishops and earls of Utrecht and Holland embarked on a concerted effort to reclaim these lands. This ambitious undertaking involved extensive canal construction to drain the peatlands, transforming them into habitable and arable areas. Interestingly, these newly created waterways not only served the purpose of drainage but also emerged as alternative shipping routes, thereby bolstering trade throughout Holland. By the 1500s, Amsterdam began to emerge, gradually evolving into a pivotal hub for the Netherlands due to its strategic waterborne connections (Abrahamse & Rutte, 2021).

In Cornelis Anthonisz's painting of Amsterdam from 1538 (image 2.1), the profound influence of the city's waterways is skillfully depicted. The canals take center stage, dominating the eyeline and reflecting the pivotal role these water routes played in Amsterdam's growth and its rising importance in the Netherlands. Additionally, the encircling barrier portrayed in the painting underscores the city's commitment to fortifying its boundaries. However, as the population expanded, the scarcity of housing within the city walls necessitated outward expansion, leading to the emergence of settlements beyond Amsterdam's traditional confines. The painting depicts several ships scattered throughout the city center and along the IJ. Smaller boats can be seen ferrying goods from the larger vessels to the inner city for distribution.

Image 1.1 Painted birds-eye view from Amsterdam seen from the south-west, made by Cornelis Anthonisz, 1538 (Abrahamse, J. E., Rutte, R., 2021, p. 12). In this painting, the portrayal of the water teeming with ships conveys the significance of the harbor during the 16th century.

The 17th century stands out as the "Golden Age" of Dutch history, characterized by the significant influence of the Dutch East India Company (V.O.C.) on global spice trade. This era propelled Amsterdam to unprecedented wealth and prominence, earning it the reputation of the world's epicenter. The subsequent influx of visitors fueled a burgeoning tourism industry, further driving the city's growth. The resulting prosperity led to a remarkable expansion of Amsterdam's urban landscape (image 2.2).

As the 18th century unfolded, the industrial revolution emerged as a transformative force, ushering in an era of innovation and progress. This period revolutionized production methods and introduced numerous novel materials and technologies, sparking unprecedented advancements across various industries worldwide. In Amsterdam, this wave of industrialization brought about significant changes, particularly in transportation. The city witnessed the advent of modern transportation modes such as cars, buses, trains, trams, and eventually airplanes, which reshaped its infrastructure profoundly. These innovations not only improved the city's connectivity and accessibility but also facilitated the movement of goods and people, fostering economic growth and societal development. The bustling streets and waterways of Amsterdam became conduits of progress, facilitating the flow of commerce, ideas, and culture, further solidifying its position as a vibrant hub of activity in the heart of Europe.

Approaching the 20th century, Amsterdam looked towards its northern banks across the IJ River, envisioning new possibilities. Initially conceived as an extension of the city's bustling harbor, Amsterdam-North underwent a remarkable transformation into a dynamic residential and commercial center. The gradual departure of heavy industries paved the way for the development of residential complexes and office buildings, catalyzing the area's evolution into a flourishing urban enclave. Despite being initially perceived as a peripheral region of Amsterdam, Amsterdam-North has steadily gained recognition and prominence over the years. Today, it continues to attract increasing attention and appreciation, evolving into a vibrant and integral part of Amsterdam's diverse urban landscape.

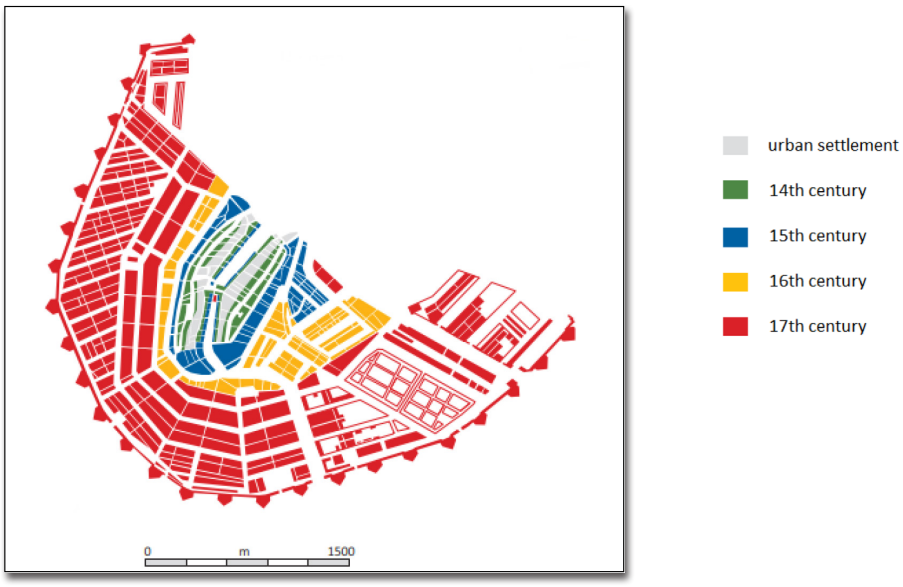

Image 1.2 Selected city expansions of the Nothern part of the Netherlands (Abrahamse, J. E., Rutte, R., 2021, p. 33).

CHAPTER 2
THE FLOATING CANALS OF PROGRESSION DURING THE 13TH TILL 18TH CENTURY

Around the year 1200, Amsterdam's humble beginnings traced back to a small community residing along the banks of the Amstel River and the IJ, marking the inception of the city's foundation and subsequent growth. During this period, the waterways primarily served as vital conduits for travel to neighboring towns and villages, rather than being utilized for local residents themselves (see image 3.1)

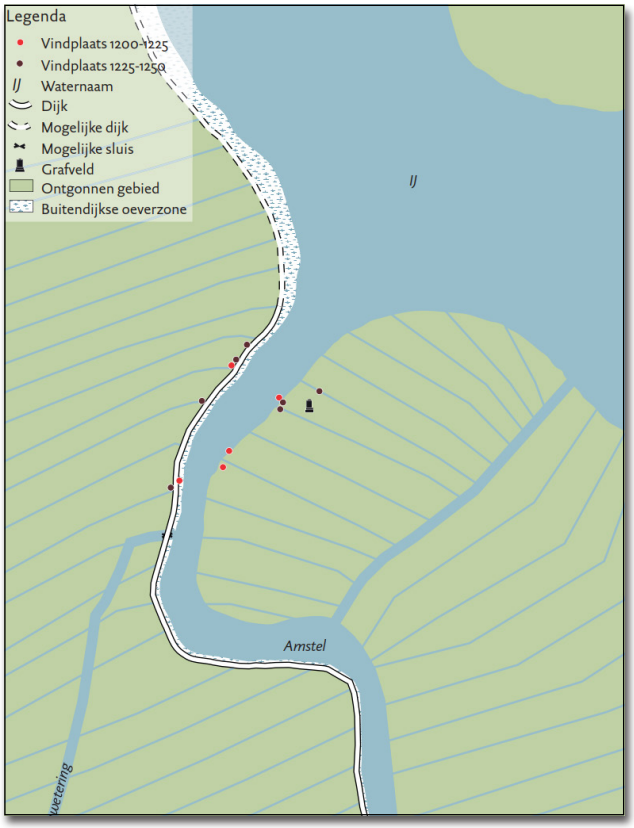

Image 2.1 Pre-urban map of Amsterdam before 1250 (Abrahamse, J. E., Rutte, R., 2021, p. 6). With potentential locations of a dike, sluice and some houses.

The urbanization of Amsterdam was largely spurred by the utilization of its existing water infrastructure, a characteristic feature that remains discernible to this day. This unique aspect of Amsterdam's development is attributed to its incremental expansion, which involved the reclamation of new land from the surrounding peat landscape.

The earliest known depiction of Amsterdam dates back to 1560, captured in a map meticulously crafted by Jacob van Deventer (see image 3.2). This map vividly illustrates the city's layout, with the Amstel River forming a central artery around which Amsterdam began to take shape on both its eastern and western banks. Prominent roads leading into and out of the city are evident, showcasing the strategic importance of Amsterdam as a hub of trade and commerce. Surrounding the city are formidable barriers constructed for defense against potential invaders. At the heart of the map lies a square, now

Image 2.2 A cut-out of the map of Amsterdam by Jacob van Deventer, 1560 or 1561 (Abrahamse, J. E., Rutte, R., 2021, p. 8). The city grew on both sides of the Amstel, with the Dam as the connector of both sides of the Amstel.

known as the Dam Square, featuring what appears to be two significant structures. Notably, large vessels had to circumnavigate Amsterdam, necessitating the presence of a sluice on the western side of the barrier. To transport goods and materials to the city center, smaller vessels capable of navigating the canals were employed.

The year 1585 marked a pivotal moment in Amsterdam's history with the fall of Antwerp, prompting a mass exodus of thousands of individuals to Amsterdam, resulting in a rapid population surge.

Image 2.3 Birds eye-view of Amsterdam seen from the south-west, made by Pieter Bast, 1597 (Abrahamse, J. E., Rutte, R., 2021, p. 14). Over 30 years, Amsterdam experienced almost a twofold increase in size, primarily driven by extensive harbor expansion to the left. This expansion not only facilitated a larger harbor but also led to the creation of more employment opportunities and housing for workers. On the right and upper sides of the depicted scene, the painting showcases the development of residential areas, known as grachtengordel.

By around 1620, Amsterdam's population had swelled by 70,000 within just 50 years, reaching a staggering 100,000 residents. A map from 1600, crafted by Pieter Bast (see image 3.3), illustrates the profound impact of this population influx, with a significant portion of inhabitants compelled to reside outside the city walls due to space constraints.

The map of 1652 vividly portrays the remarkable growth that Amsterdam underwent within a span of 50 years. Notably, on the eastern side, an expansive harbor emerges, catering to the burgeoning demands of a pivotal city within the Netherlands. Conversely, on the western side, particularly to the right, a significant expansion of residential areas is evident. Interestingly, in this newly developed sector, the integration of canals into the streets is notably absent, distinguishing it from the characteristic canal-lined neighborhoods found elsewhere in the city.

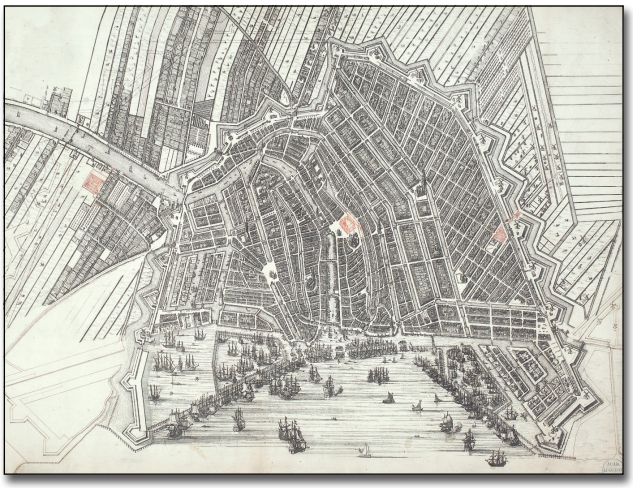

Image 2.4 One of the first plancards (southwest on top) of the fourth expansion in 1652 (Abrahamse, J. E., Rutte, R., 2021, p. 22). A new harbor emerges on the right side of the painting, accompanied by a housing initiative known as 'The Jordaan', on the left side are houses built on the vacant ground from the drawing of 1597.

In 1680, a significant expansion of the city's boundaries was evident, particularly on the southern and eastern perimeters surrounding the city center. Notably, the harbor on the southern side underwent considerable enlargement. Unlike the expansion observed in the 1650s, this growth primarily comprised residential areas, albeit with a notable difference: the incorporation of sluices into the streets. This engineering addition marked a departure from previous expansion efforts and aimed to manage water flow more effectively within the city.

The city's prosperity during this period is evident in the bustling harbor depicted in contemporary drawings. This surge in maritime activity occurred towards

Image 2.5 Urban plan of Amsterdam around 1680, south-west on top (Abrahamse, J. E., Rutte, R., 2021, p. 40). A significant new expansion unfolds on the left side of the drawing, spurred by a financial crisis gripping Amsterdam, resulting in the halt of construction for many houses.

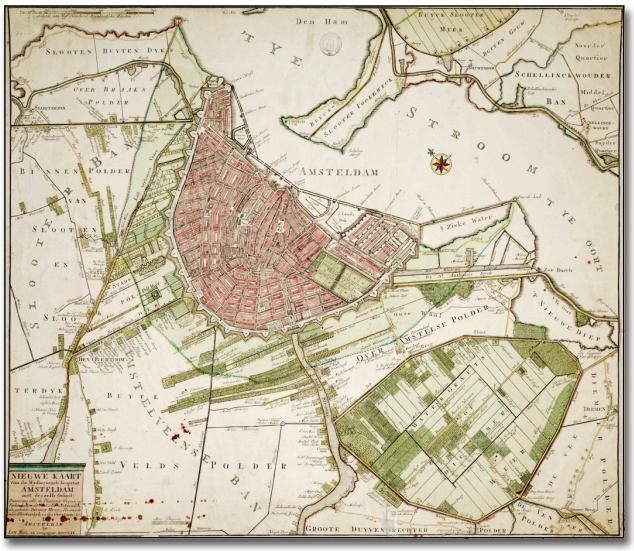

Image 2.6 Map of Amsterdam, made by Pieter Mol, 1770 (Abrahamse, J. E., Rutte, R., 2021, p. 48). Pieter Mol dubbed his map 'the new map of the world-renowned shopping city Amsterdam,' reflecting a city where economic growth had been stunted for nearly a century. The key disparity between the 1680 map and this rendition lies in the gradual completion of certain housing projects over time.

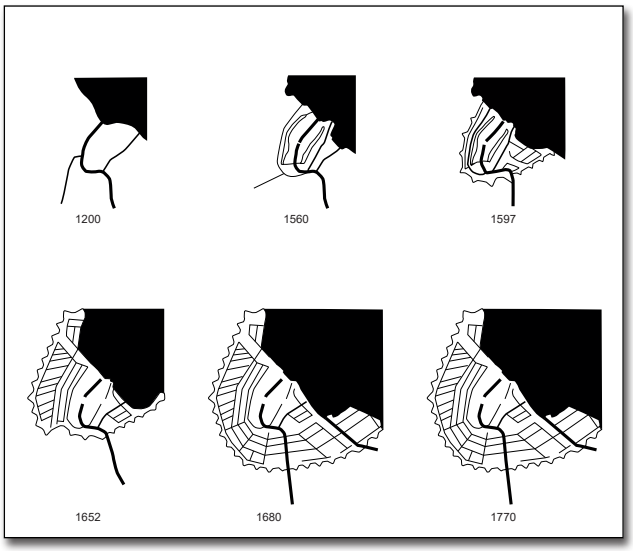

Image 2.7 Portrayal of the evolving canals of Amsterdam illustrates the exponential expansion of the city's water infrastructure over time. (Own analyse)

the end of the Golden Century, a period when the Dutch East India Company (V.O.C.) and Amsterdam played pivotal roles in global trade, particularly in the transportation of spices, foodstuffs, and raw materials.

As the 18th century progressed, subsequent maps of Amsterdam revealed minimal alterations to its urban layout. A notable example is Pieter Mol's map from 1770, which illustrates that the city's architectural fabric remained largely unchanged for over a century. This stability can be attributed to the waning of the Golden Century's economic prosperity, resulting in reduced financial resources and a diminished impetus for further expansion.

Through an examination of maps spanning centuries, a fascinating narrative of Amsterdam's development emerges. The waterways, notably the IJ and Amstel, have remained remarkably consistent over five centuries, serving as vital arteries for the city's growth and connectivity. From the 12th century to the mid-16th century, Amsterdam burgeoned along both banks of the Amstel, utilizing its canals for internal transportation and trade with neighboring cities. Subsequently, the waterways assumed a defensive role against potential invaders, shaping the city's expansion strategy. A discernible shift in expansion patterns is evident around 1600, with the city center's orthogonal growth giving way to expansion through peat landscape reclamation. By the late 18th century, Amsterdam had evolved into a fully-fledged city, boasting multiple harbors that underscored its significance as a maritime hub across the centuries.

To conclude, the evolution of Amsterdam from its modest origins along the Amstel River to a bustling urban center by the 18th century is comprehensively explored. Through the strategic utilization of waterways for travel and trade and meticulous urban planning, Amsterdam gradually expanded and prospered over the centuries. Illustrated by maps spanning from Jacob van Deventer's 1560 depiction to Pieter Mol's 1770 representation, the city's growth and transformation are vividly portrayed. Events such as the influx of residents following the fall of Antwerp in 1585 and the subsequent development of the harbor and residential areas underscored Amsterdam's strategic importance and rapid population growth. Engineering innovations, such as the incorporation of sluices into streets, showcased the city's adaptability in managing water flow and accommodating expansion.

CHAPTER 3
THE REVOLUTIONARY 19TH CENTURY

In the bustling city of Amsterdam, the presence of two train stations, one to the north and the other to the south, presented a logistical puzzle for travelers journeying between North Holland and destinations like Utrecht. The need to navigate between Haarlemmerpoort in the north and Weesperpoort in the south often meant passengers had to switch transportation methods within the city, creating inconvenience and inefficiency.

To tackle this challenge, the Mayor and City Council Members of Amsterdam took a pioneering step in 1839 by granting the first license to an Omnibus company known as Fa. Jonker & Comp. This innovative move aimed to provide accessible transportation for all. Fa. Jonker & Comp. initiated ten bus lines, with five specifically connecting Haarlemmerpoort and Weesperpoort stations, easing the burden on travelers (Leideritz, 1966).

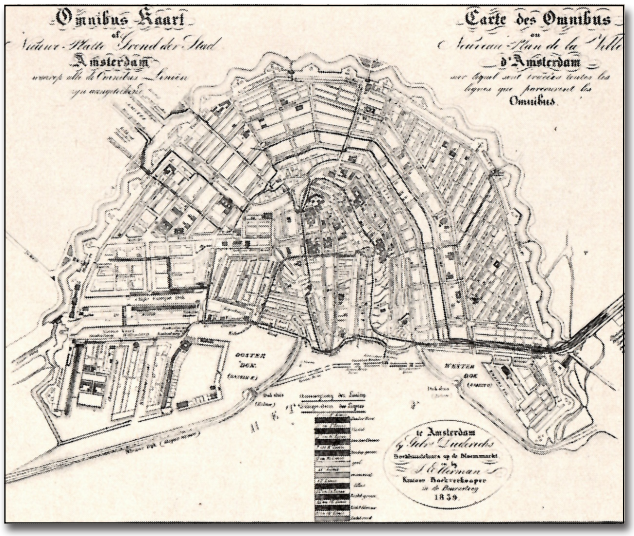

Image 3.1 Omnibus card of the Amsterdamsche Omnibus Onderneming in 1839 (Leideritz, W. J. M., 1966, p. 31). A total of 10 bus lines were introduced in Amsterdam, ensuring accessibility to the entire city for people of all socio-economic backgrounds.

The Omnibus card, a visual representation of these bus routes, highlighted the strategic connections across the city. Notably, one line traced along the IJ, marking the future site of the Central Station. It also emphasized links from the harbor to the heart of Amsterdam and its working-class neighborhoods.

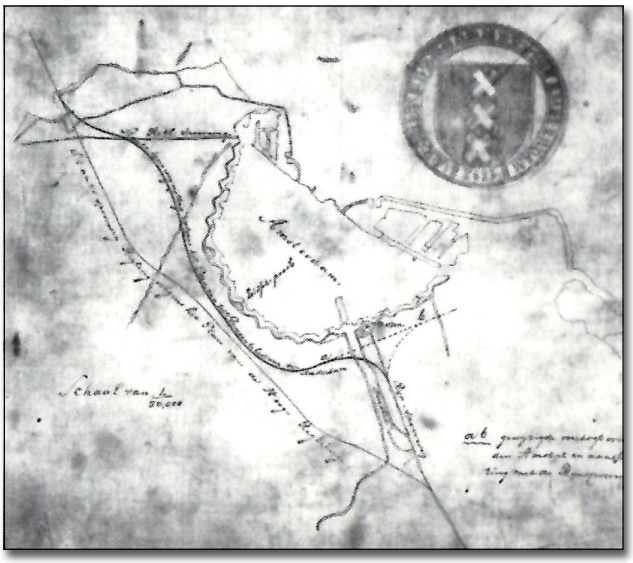

Image 3.2 The proposal skecth from the municipality of Amsterdam, the thin line was the proposal of the Dutch government. (Oxenaar, A., 1989, p. 14). Both proposals are going around the city, making the heart of the city less accessible as other cities.

Initially, horse trams were employed, necessitating sand between certain rails to support the horses' performance. However, the evolution of technology brought about a shift to steam locomotives, which proved more economical and required less maintenance. By the late 19th century, the groundwork for electrical trams was laid, heralding a new era in urban transportation. Integration of electrical trams necessitated significant infrastructural changes, including the installation of electrical cabling along the routes.

The pressing need for a central train station in Amsterdam became evident during discussions in 1860 among the Dutch government, local authorities, and urban planners. The existing disjointed train lines terminating separately at Haarlemmerpoort and Weesperpoort posed challenges for travelers, who had to rely on separate bus services or endure long walks between stations. Recognizing the potential benefits of a central station, particularly in enhancing accessibility and bolstering trade, local authorities welcomed the idea (Oxenaar, 1989).

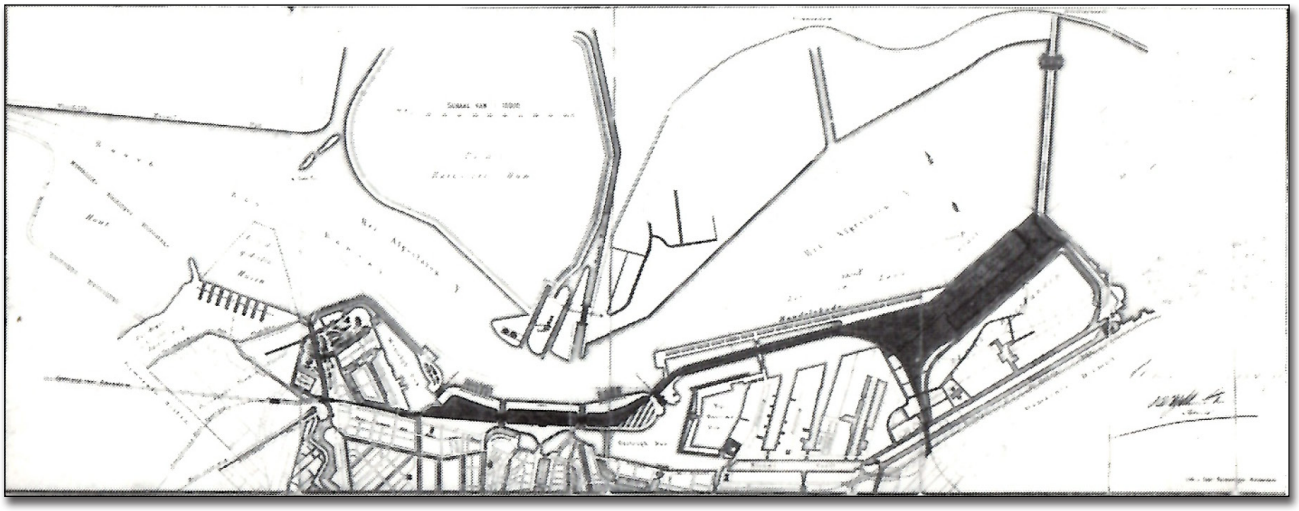

Image 3.3 A.J. Prehn, design of a central station in the Open Harborfront, revised version, 1868 (Oxenaar, A., 1989, p. 14). A black hatch marks the path of the train station, intended to obstruct the view across The IJ. On the right side, an end station is depicted, serving the maintenance and storage needs of the trains.

Despite initial reluctance from certain circles, advocates such as Thorbecke, Waldorp, and van Prehn championed a forward-thinking approach, proposing a station adjacent to the IJ. They contended that while passenger transport might appear less significant at present, it would undoubtedly shape the city's future. Despite facing resistance, particularly regarding concerns over altering the "Open Harbor front," the central train station was eventually embraced and built, marking a crucial moment in Amsterdam's transportation history (Oxenaar, 1989).

The establishment of the central train station stood as a pivotal moment in the city's evolution, symbolizing its rise as a key transportation hub in Europe. Despite initial hesitations and debates over its placement, the station ultimately became a vital nexus in Amsterdam's transportation grid, facilitating not only passenger journeys but also the movement of goods and commerce.

At the end of the 19th century, the municipality embarked on planning a new tram network for electrical trams. These trams required an overhead line for electricity transfer, necessitating a comprehensive overhaul of the existing tram network. This ambitious undertaking took more than six years to complete, but ultimately resulted in a robust public tram network connecting the entire city, including the Central Station. As the city continued to grow and evolve, so too did its tram network. The expansion and modernization of tram lines mirrored

Image 3.4 Tensioning the overhead lines in the Marnixstraat on 2 augustus 1900 (Oxenaar, A., 1989, p. 88). The entire street observed how this innovative mode of transportation took shape.

Image 3.5 Dam Square with the tram cars with the Bisschop cafe in the background (Oxenaar, A., 1989, p. 51). Depicting the bustling crowds on Dam Square around 1890, with Central Station visible in the far distance.

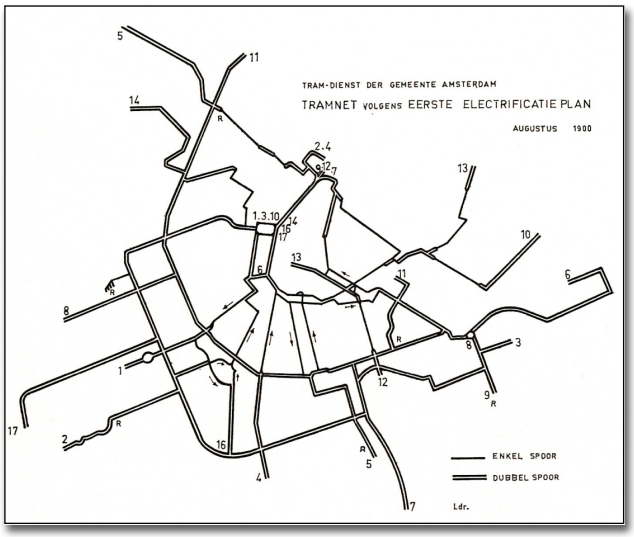

Image 3.6 According to the first electrification plan, the Amsterdam tram network will look like this, including tram tracks in Spiegelstraat and on the Reguliersgracht initially to be filled in (Oxenaar, A., 1989, p. 127). The municipality's ambitious plan to initiate numerous electrical tram lines across the entire city signifies a bold undertaking.

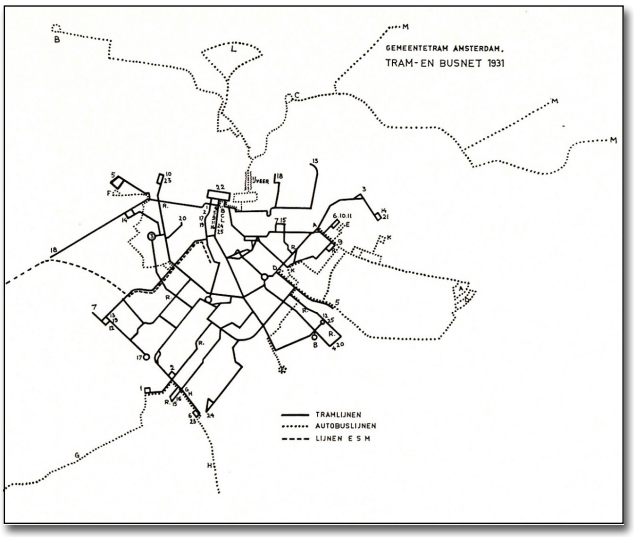

Image 3.8 The size of the tram and bus network in 1931, the last year before the major reduction (Oxenaar, A., 1989, p. 127). This map represents the municipality of Amsterdam's first inclusion of a tram and bus network extending into Amsterdam-North.

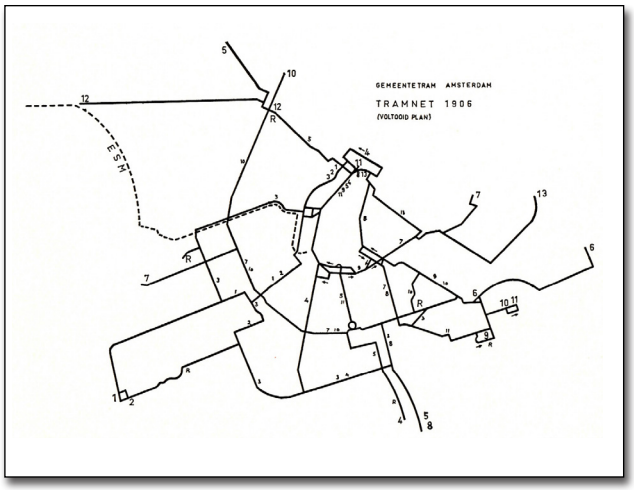

Image 3.7 A map of the complete tramnet in 1906 (Oxenaar, A., 1989, p. 127). When comparing the initial plan to the executed tram network, numerous connections were eliminated to simplify the integration of the entire electrical tram system. While the main lines remain consistent with the original plan, some addiitional connections between these routes have been removed.

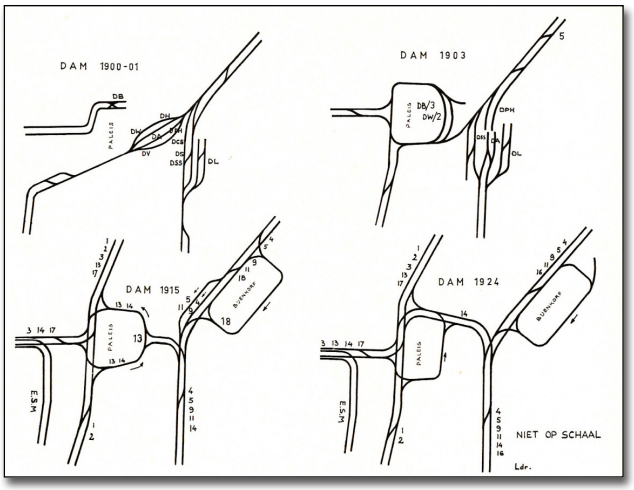

Image 3.9 The Dam Square as tramway junction (Oxenaar, A., 1989, p. 127). Over time, four distinct approaches were taken to integrate the new buildings, the Palace and Bijenkorf, into the area. Additionally, efforts were made to connect all tram lines, transitioning away from the terminal-like setup that characterized the network in 1900.

Amsterdam's urban development, connecting new neighborhoods and landmarks while adapting to the changing needs of its inhabitants. De Dam, with its historical significance and central location, served as a microcosm of this evolution, witnessing the transformation of both its physical landscape and the intricate web of tram routes that crisscrossed its vicinity.

It's intriguing to note that the 1931 public transport map marks the first appearance of public transport routes in Amsterdam-North, situated across the river. Previous maps had omitted any depiction of this area, indicating a prolonged period of underdevelopment. This absence underscores the historical neglect of Amsterdam-North and highlights the significant shift in urban planning and infrastructure development during this period.

In the annals of Amsterdam's urban history, the narrative of its transportation evolution emerges as a captivating saga of ingenuity and transformation, particularly against the backdrop of the revolutionary 19th century. From the inaugural routes of Fa. Jonker & Comp.'s omnibuses, ingeniously navigating the city's disparate train stations, to the monumental construction of the Central Station, each milestone underscores Amsterdam's relentless pursuit of modernization amid the revolutionary fervor sweeping across Europe.

The transition from the clattering hooves of horse-drawn trams to the whispering efficiency of electric networks epitomizes not only technological advancement but also a profound commitment to progress connectivity and accessibility. These tram lines, once mere conduits of movement, have blossomed into vital arteries pulsating with the vitality of a dynamic metropolis, uniting neighborhoods and fostering a sense of communal cohesion.

Yet, amid this narrative of growth, shadows loom over the neglected precincts of Amsterdam-North, where decades of oversight have shrouded potential in obscurity. The emergence of public transport routes on the 1931 map signals a long-awaited dawn, promising inclusivity and renewal for this overlooked quadrant of the city.

CHAPTER 4
RESHAPING AMSTERDAM TO THE MODERN 20TH CENTURY STANDARDS

At the dawn of the 20th century, the automobile began its ascent into the mainstream, gradually opening its doors to the working class and leaving an indelible mark on urban infrastructure. What once were exclusive privileges of the wealthy now found their way into the hands of the common citizen, sparking a transformation in the very fabric of cities.

As automobiles proliferated, urban planners faced the daunting task of retrofitting existing roads and constructing new thoroughfares to accommodate the burgeoning traffic. This marked a significant departure from an era where cars were symbols of affluence, now weaving themselves into the everyday lives of ordinary people.

The 20th century bore witness to an era dominated by the fervent belief in the automobile as the harbinger of urban transportation. This conviction manifested in ambitious initiatives such as Jokinen's 1966 masterplan, a blueprint that advocated for sweeping demolitions to prioritize car connectivity. However, this vision was met with widespread dissent, as exemplified by Jokinen's audacious proposal to fill in the Singelgracht to make way for a six-lane highway. Sponsored by the influential car lobby group, Foundation Road, Jokinen's plan underscored the profound influence of vested interests in shaping urban development agendas.

Preceding Jokinen's controversial proposal, Hendrik Kaasjager presented a similarly radical plan in response to the urgings of Mayor d'Ailly. Kaasjager's blueprint called for the infilling of iconic waterways like the Kloveniersburgwal, Singel, and Singelgracht, along with the wholesale destruction of the historic Jordaan neighborhood. Despite initial municipal support driven by the desire to enhance the city's accessibility, these plans were ultimately thwarted by the impassioned activism of groups like the Amsterdam Society of Urban Recovery, committed to safeguarding the city's cultural heritage through preservation efforts (Gemeente Amsterdam, 2021).

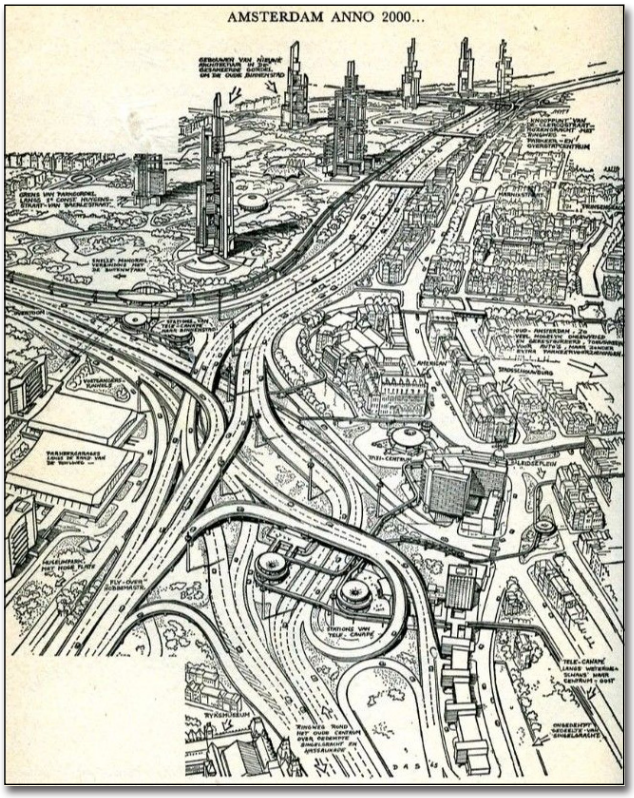

Image 4.1 Amsterdam anno 2000 (Schuyt, C. J. M., Taverne, E., 2000, p. 181). Conceived by Jokinen in 1966, the Masterplan of Amsterdam in 2000 entailed demolishing 19th-century neighborhoods to create space for a sprawling highway structure encircling the entire city, aimed at enhancing accessibility to the city center.

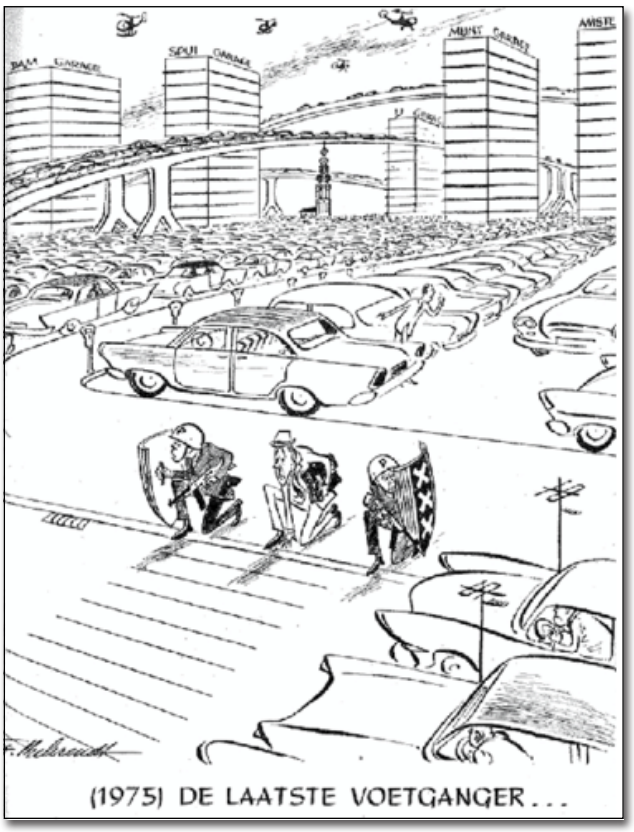

Image 4.2 The last pedestrian (Behrendt, F., 1965). A comic drawing in De Telegraaf of how Amsterdam would look like in 1975 if the car and urban planner was given its freedom.

Image 4.3 The city around 1945 (Gemeente Amsterdam, 2019). Made by the public works official Wiessner L.J.B.

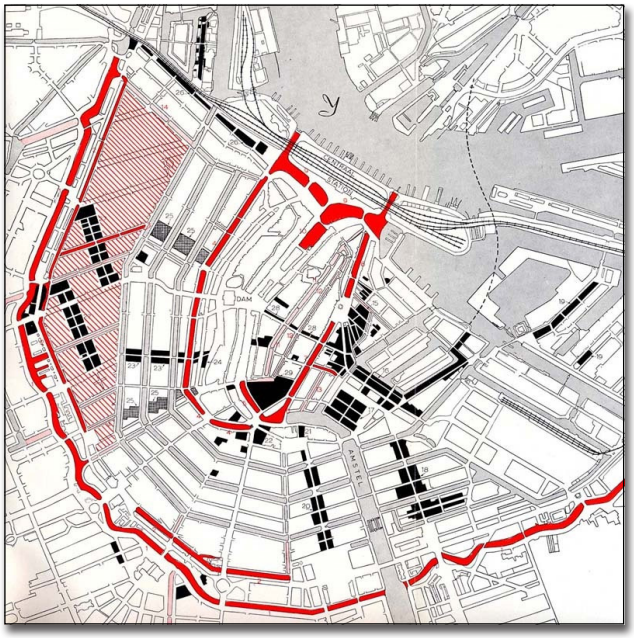

Image 4.4 Plan Kaasjager (Gemeente Amsterdam, 2021). The red hatch marks the proposal to fill in the canals, creating space for roads to improve access to the city center. This plan was made by Police Commissioner Hendrik Kaasjager in 1954.

In the absence of wholesale canal infillings, existing neighborhoods had to adapt to accommodate the demands of a burgeoning automotive culture. The proliferation of wide highways and roads became emblematic of efforts to improve Amsterdam's accessibility, culminating in the ambitious Ring of Amsterdam (A10) project initiated by both municipal

Image 4.5 Aerial photo of Bos and Lommer (Gemeente Amsterdam, 1986). The Amsterdam Ring road cuts directly through Bos and Lommerplein, leaving a significant impact on the area.

and national authorities. Stretching 32 kilometers and intersecting with five other major highways, the A10's construction, spanning from 1962 to 1987, heralded a new era of transportation infrastructure characterized by tunnels, bridges, and extensive alterations to the urban landscape.

Yet, the implementation of the A10 came at a profound cost, as entire neighborhoods were cleaved apart by its imposing presence. The Bos and Lommerplein, once a thriving urban enclave, found

itself dissected by a six-lane artery, forever altering its character and sense of community. While the Ring of Amsterdam undoubtedly improved the city's accessibility, hindsight reveals its detrimental impact on local environments and public health. In an age increasingly attuned to the harmful effects of exhaust emissions, it becomes apparent that such large-scale infrastructure projects would face greater scrutiny and resistance in today's context.

Schiphol Airport traces its origins back to its humble beginnings as a military airfield in 1916, originally named Fort Schiphol. Initially established to serve military purposes during World War I, the airport quickly outgrew its original dimensions. Recognizing the need for expansion, the authorities expanded the airport fivefold to accommodate the growing demand.

By the conclusion of World War I, the military's requirements for Schiphol diminished, paving the way for its transition into a civilian airport. Passenger flights began to take off, marking the airport's evolution into a hub for commercial aviation. The dawn of commercial air travel saw the inauguration of the first airline route connecting Schiphol to London around 1920, heralding a new era for the airport.

Image 4.6 Where does the name Schiphol come from (Schiphol, 2018). Old map of Amsterdam with in the middle Fort Schiphol.

In 1926, the municipality took ownership of Schiphol, embarking on an ambitious agenda to enhance its accessibility and infrastructure. Investments were made to improve road and rail connections, ensuring convenient transportation to and from the airport. Simultaneously, the airport's facilities were expanded, with the construction of a larger platform to accommodate the increasing volume of flights. This period also witnessed the inauguration of a modern control tower, centralizing air traffic management operations.

The onset of World War II brought about another phase of transformation for Schiphol, as it expanded under German occupation to serve as a strategic hub for military operations. The airport played a pivotal role in the German Luftwaffe's operations, serving as a base for bomber planes and facilitating logistical support for their campaigns.

Post-war, the Dutch government reaffirmed Schiphol's status as the preeminent airport in the Netherlands, setting the stage for further growth and

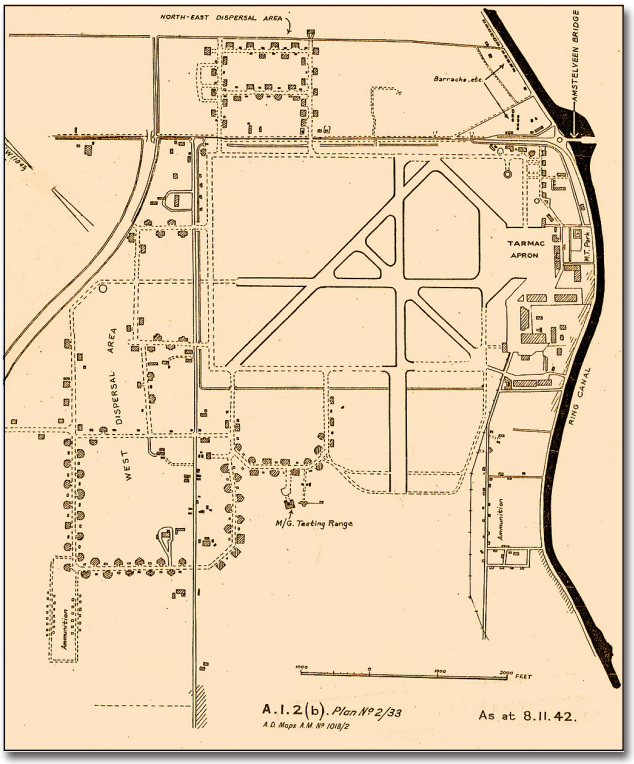

Image 4.7 A british map of Schiphol of 1942 (Ministry of Defense, 2015). A British-made map of Schiphol during German occupation, designed to provide an overview of targets for bombing raids.

development. Throughout the latter half of the 20th century, Schiphol underwent numerous expansions and modernizations to meet the evolving demands of air travel.

In a significant milestone, Schiphol relocated to a new site west of its original location in 1967, marking a pivotal shift in its infrastructure. The new airport was purposefully designed to accommodate the larger jet planes that had replaced propeller aircraft, reflecting advancements in aviation technology. The former airport site transitioned into a dedicated hub for cargo operations, facilitating the efficient movement of goods and separating passenger and cargo traffic.

The continuous evolution and expansion of Schiphol Airport underscore its enduring significance as a vital gateway to the Netherlands and a pivotal node in the global air transportation network. With each phase of development, Schiphol has adapted to meet the changing needs of travelers and the aviation industry, cementing its reputation as a world-class airport.

The 20th century marks the technological marvel that reshaped the very essence of cities. The advent of mass-produced cars democratized mobility, propelling urban planners into a frenetic scramble to accommodate the burgeoning traffic that flooded the streets. No longer confined to the elite, automobiles became ubiquitous symbols of modernity, driving a paradigm shift in urban infrastructure.

As the automobile's influence burgeoned, ambitious schemes emerged, driven by a fervent belief in its supremacy as the linchpin of urban transportation. Visionaries like Jokinen and Kaasjager proposed audacious plans, advocating for the wholesale demolition of historic neighborhoods and iconic waterways to make way for sprawling highways. However, these proposals were met with fervent resistance from groups like the Amsterdam Society of Urban Recovery, whose impassioned activism safeguarded the city's cultural heritage from the rapacious appetite of progress.

In the absence of wholesale canal infillings, existing neighborhoods underwent a metamorphosis to accommodate the demands of an automotive-centric society. The construction of arterial roads like the Ring of Amsterdam (A10) exemplified the era's aspirations for improved accessibility, albeit at the expense of cohesive urban fabric and community cohesion. The scars left by such projects, like the cleaving of Bos and Lommerplein, serve as enduring reminders of the inherent trade-offs between progress and preservation.

Meanwhile, Schiphol Airport emerged as a testament to the era's relentless pursuit of modernity and connectivity. From its humble origins as a military airfield, Schiphol evolved into a bustling hub of commercial aviation, navigating through tumultuous periods of war and occupation to emerge as a beacon of Dutch resilience and ingenuity. The airport's relentless expansion and modernization mirrored the exponential growth of air travel, culminating in its relocation to a new site optimized for the age of jet propulsion.

CONCLUSION

Deep within Europe, amidst sprawling peat bogs, Amsterdam embarked on a remarkable journey—one that defied nature's barriers and left an indelible mark on history. It all began in the 11th century, with determined hands taking on the audacious task of reclaiming land from marshy depths. Through unwavering determination, they carved canals, transforming inhospitable terrain into fertile soil. These waterways, more than mere channels, became the lifeblood of Amsterdam, weaving a tapestry of connectivity destined to endure.

From its early days nestled along the Amstel River to its emergence as a bustling hub of trade and commerce, Amsterdam's urban tale unfolds seamlessly. Historical maps reveal its narrative—a story of growth, expansion, and resilience. The once-silent waterways now echo with the sounds of progress, paving the city's path since the 12th century, stitching together neighborhoods and industries alike. Pieter Bast's 1600 map vividly portrays Amsterdam's spatial confines, a canvas upon which expansion unfolded.

The pivotal moment arrived with Antwerp's fall in 1585, ushering a flood of humanity to Amsterdam's doorstep. The city swelled with newcomers, sparking urban development beyond its borders. Through history's lens, we witness Amsterdam's zenith in the 17th century—a beacon of trade, innovation, and prosperity. Sprawling harbors and burgeoning neighborhoods attest to the city's economic vigor, while engineering marvels like street sluices reflect its adaptability.

Embark on a journey through Amsterdam's transportation evolution, from omnibus clatter to electric tram hum. In 1839, Fa. Jonker & Comp. pioneered streamlined travel, laying the groundwork for Amsterdam's transportation network. Omnibus services revolutionized accessibility, bridging distant corners of the city. From horse-drawn trams to steam locomotives, Amsterdam embraced technological progress, with the central train station standing as a symbol of forward-thinking.

Jokinen's 1966 masterplan reflects faith in automobiles to shape the city's destiny, sparking debate on preserving cultural heritage. The Ring of Amsterdam, an encircling ribbon of asphalt, symbolizes progress and urban scars. Schiphol Airport emerged as a global gateway, a reflection of Amsterdam's commitment to connectivity, evolving from a military airfield into a commercial aviation hub.

As progress wheels forward, Amsterdam's transportation evolution echoes through history—a saga of resilience, adaptation, and progress. From hoof clatter to engine roar, Amsterdam's journey persists. Its transportation infrastructure stands as a symbol of indomitable spirit, bridging past and future. Amsterdam's transformation from humble origins to metropolitan splendor showcases human ingenuity, environmental harmony, and economic prowess. Unraveling Amsterdam's history offers insights for navigating urban challenges, laying foundations for future cities.

DISCUSSION

THE ROLE OF CANALS

Amsterdam's initial transformation from marshy terrain to a bustling cityscape was largely facilitated by the construction of intricate canal systems. These waterways not only provided vital transportation routes but also served as arteries for trade and commerce, fostering the city's economic growth and cultural exchange. The canals acted as the backbone of early urban planning, dictating the layout of neighborhoods and influencing the spatial organization of the city.

EXPANSION AND CONNECTIVITY

The influx of immigrants following Antwerp's fall in the late 16th century marked a significant turning point in Amsterdam's urban development. This population boom necessitated the expansion of the city beyond its original confines, leading to the emergence of new neighborhoods and infrastructure. The implementation of omnibus services in the 19th century further facilitated urban sprawl, enhancing connectivity and accessibility for residents across Amsterdam.

TECHNOLOGICAL ADVANCEMENTS

The adoption of new transportation technologies, such as horse-drawn trams and later, steam locomotives, revolutionized mobility within the city and beyond. These innovations not only accelerated the pace of urbanization but also reshaped the physical landscape of Amsterdam. The construction of the central train station, for instance, not only served as a transportation hub but also catalyzed the development of surrounding areas, contributing to the city's spatial expansion and economic growth.

MODERN CHALLENGES AND OPPORTUNITIES

The 20th century brought about new challenges and opportunities for Amsterdam's transportation infrastructure. Urban planning initiatives, such as Jokinen's 1966 masterplan, reflected evolving attitudes towards automobiles and the need for comprehensive transportation networks. The construction of the Ring of Amsterdam and the transformation of Schiphol Airport underscored the city's commitment to enhancing connectivity and embracing its role as a global hub.

LESSONS FOR THE FUTURE

In conclusion, Amsterdam's journey from its marshy origins to its present-day metropolitan splendor is intricately intertwined with the development of its transportation infrastructure. Through centuries of innovation and adaptation, the city has not only overcome geographical barriers but has also forged a unique urban identity shaped by its interconnected waterways, bustling streets, and forward-thinking transportation networks. As Amsterdam continues to evolve, its transportation evolution will serve as inspiration for cities around the world seeking to navigate the complex intersection of history, mobility, and urbanization.

BIBLIOGRAPHY
BOOKS & WEBSITES

Abrahamse, J. E., Rutte, R. (2021). Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

Gemeente Amsterdam (2019). Amsterdam in prachtkaarten. Retrieved from https://www.amsterdam.nl/nieuws/achtergrond/prachtkaarten/

Gemeente Amsterdam (2020). Hoe de A10 de stad doorsnijdt. Retrieved from: https://www.amsterdam.nl/nieuws/achtergrond/a10-stad-doorsnijdt/

Gemeente Amsterdam (2021). 65 jaar Stadsherstel: 5 hoogtepunten. Retrieved from https://www.amsterdam.nl/nieuws/achtergrond/65-jaar-stadsherstel/

Gemeente Amsterdam Stadsarchief (2024). Beeldbank. Retrieved from: https://archief.amsterdam/

Leideritz, W. J. M. (1966). Van paardentram naar dubbelgelede; De roemrijke geschiedenis van de Amsterdamse tram en bus in vogelvlucht. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

Schuyt, C. J. M., Taverne, E. (2000). Welvaart in zwart-wit. 's-Gravenhage, Netherlands: SDU uitgever

Oxenaar, A. (1989). Centraal Station Amsterdam; het paleis voor de reiziger. 's-Gravenhage, Netherlands: SDU uitgeverij

BIBLIOGRAPHY
IMAGES

IMAGE FRONTPAGE Planner S.J. (2019) The 1960's when the dutch imported american planners [image]. Retrieved from https://viewpointvancouver.ca/2019/10/27/the-1960s-when-the-dutch-imported-american-planners/

IMAGE 0.1 Gemeente Amsterdam (2020) Hoe de A10 de stad doorsnijdt [photograph]. Retrieved from: https://www.amsterdam.nl/nieuws/achtergrond/a10-stad-doorsnijdt/

IMAGE 0.2 Google. (n.d.) [Google Maps location of the A10, Amsterdam]. Retrieved February 28, 2024, from https://www.google.com/maps/@52.3818048,4.8446077,3a,60y,164.71h,89.78t/data=!3m6!1e1!3m4!1sDSWnJrhtpdODvFvHSyZ-Gw!2e0!7i16384!8i8192?entry=ttu

IMAGE 1.1 Abrahamse, J. E., Rutte, R. (2021). Geschilderde vogelvlucht van Amsterdam gezien richting het zuidwesten, door Cornelis Anthonisz, 1538 [Painting] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 1.2 Abrahamse, J. E., Rutte, R. (2021). Selectie stadsuitbreidingen in de Noordelijke Nederlanden [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.1 Abrahamse, J. E., Rutte, R. (2021). Kaart van prestedelijk Amsterdam voor 1250 [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.2 Abrahamse, J. E., Rutte, R. (2021). Uitsnede uit de kaart van Amsterdam door Jacob van Deventer, 1560 of 1561 [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.3 Abrahamse, J. E., Rutte, R. (2021). Vogelvlucht van Amsterdam gezien richting het zuidwesten, door Pieter Bast, 1597 [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.4 Abrahamse, J. E., Rutte, R. (2021). Een van de eerste plankaarten (zuidwest boven) van de Vierde Uitleg uit 1652 [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.5 Abrahamse, J. E., Rutte, R. (2021). Stadsplattegrond uit ongeveer 1680 (zuidwest boven) [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.6 Abrahamse, J. E., Rutte, R. (2021). Kaart van Amsterdam, door Pieter Mol, 1770 [Image] Nieuwe historische atlas van Amsterdam; Een wereldstad in zestig kaarten 1200-2025. Amsterdam, Netherlands: THOTH

IMAGE 2.7 Own analyse

IMAGE 3.1 Leideritz, W. J. M. (1966). Omnibus kaart van de Amsterdamsche Omnibus Onderneming in 1839 [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 3.2 Oxenaar, A. (1989). Schetskaartje met het tracée voorgescteld door de gemeente Amsterdam (dunne lijn: het voorstel van de regering) [image] Centraal Station Amsterdam; het paleis voor de reiziger. 's-Gravenhage, Netherlands: SDU uitgeverij

IMAGE 3.3 Oxenaar, A. (1989). A.J. Prehn, ontwerp voor een centraal station in het Open Havenfront (herizene versie, 1868) [image] Centraal Station Amsterdam; het paleis voor de reiziger. 's-Gravenhage, Netherlands: SDU uitgeverij

IMAGE 3.4 Leideritz, W. J. M. (1966). Het spannen van de bovenleiding in de Marnixstraat op 2 augustus 1900 [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 3.5 Leideritz, W. J. M. (1966). De Dam met de tramwagens met de op de achtergrond het café Bisschop [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 3.6 Leideritz, W. J. M. (1966). Volgens het eerste electrificatieplan hou het Amsterdamse tramnet er zo gaan uitzien, met o.a. tramsporen in de Spiegelstraat en op de (aanvankelijk te dempen) Reguliersgracht [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 3.7 Leideritz, W. J. M. (1966). Een kaartje van het voltooide tramnet in 1906 [image] Centraal Station Amsterdam; het paleis voor de reiziger. 's-Gravenhage, Netherlands: SDU uitgeverij

IMAGE 3.8 Leideritz, W. J. M. (1966). De omvang ven het tram- en busnet in 1931, het laatste jaar voor de grote inkrimping [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 3.9 Leideritz, W. J. M. (1966). De Dam als tramwegknooppunt [image] Van paardetram naar dubbelgelede. Zandvoort aan zee, Netherlands: Minerva Boekuitgaven

IMAGE 4.1 Schuyt, C. J. M., Taverne, E. (2000). Amsterdam anno 2000 [image] Welvaart in zwart-wit. 's-Gravenhage, Netherlands: SDU uitgever

IMAGE 4.2 Behrendt, F. (1965) De laatste voetganger [image] published in De Telegraaf. Amsterdam, Netherlands: UMT

IMAGE 4.3 Gemeente Amsterdam (2019) De stad rond 1945 [image] Amsterdam in prachtkaarten. Retrieved from https://www.amsterdam.nl/nieuws/achtergrond/prachtkaarten/

IMAGE 4.4 Gemeente Amsterdam (2021) Het plan Kaasjager [image] 65 jaar Stadsherstel: 5 hoogtepunten. Retrieved from https://www.amsterdam.nl/nieuws/achtergrond/65-jaar-stadsherstel/

IMAGE 4.5 Gemeente Amsterdam Stadsarchief (1986) Luchtfoto Bos en Lommer [image] Retrieved from https://archief.amsterdam/beeldbank/detail/783e8d8e-ba04-5152-c4b5-fa033ddf2e93/media/541dfffc-5230-cdbf-9f71-b94e495f4a78?mode=detail&view=horizontal&q=bos%20en%20lommerplein&rows=1&page=38

IMAGE 4.6 Schiphol (2018) Waar komt de naam schiphol vandaan? [image] Retrieved from https://nieuws.schiphol.nl/waar-komt-de-naam-schiphol-vandaan/

IMAGE 4.7 Ministry of Defense, (2015). A british map of Schiphol of 1942 [image] Retrieved from https://www.defensie.nl/onderwerpen/vliegvelden-tijdens-de-tweede-wereldoorlog/vliegveldenoverzicht/schiphol/topografische-kaarten