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Amsterdam Extension Plan

Greenery organising the city

How have the strategies applied to the urban greenery tackled the vast expansion of Amsterdam?

What factors have contributed to the successful urban plan of the city of Amsterdam?

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Introduction

The widely known General Extension Plan of Amsterdam (*Algemeen Uitbreidingsplan van Amsterdam (AUP)*) from 1935, with Cornelis van Eesteren as its head architect, is one of the most famous schemes of this kind even today. It is known for its unique and sophisticated system of the urban greenery which can be reached within a 10 minutes radius from any point in the city. How was it achieved in such a large and dense urban area? Why was such an intricate greenery system introduced in the first place? What was it inspired by? How was it devised? These are merely a few questions that come up when one sees the original plan for the first time. The answer to these questions are as fascinating as the history of the expansion plan itself which is directly related to them, as the AUP is a sophisticated, clearly layered, harmonised and hierarchal system of urban elements. What elements contributed to such a success of this plan? What adjustments the pre-war plan had to undergo in order to answer the needs of the society in the post-war world? In order to answer all these questions, a wide research has been done in an attempt to uncover the long and complicated history of AUP, and all the events, societal factors, brilliant individuals that have shaped the city of Amsterdam into what it is today.

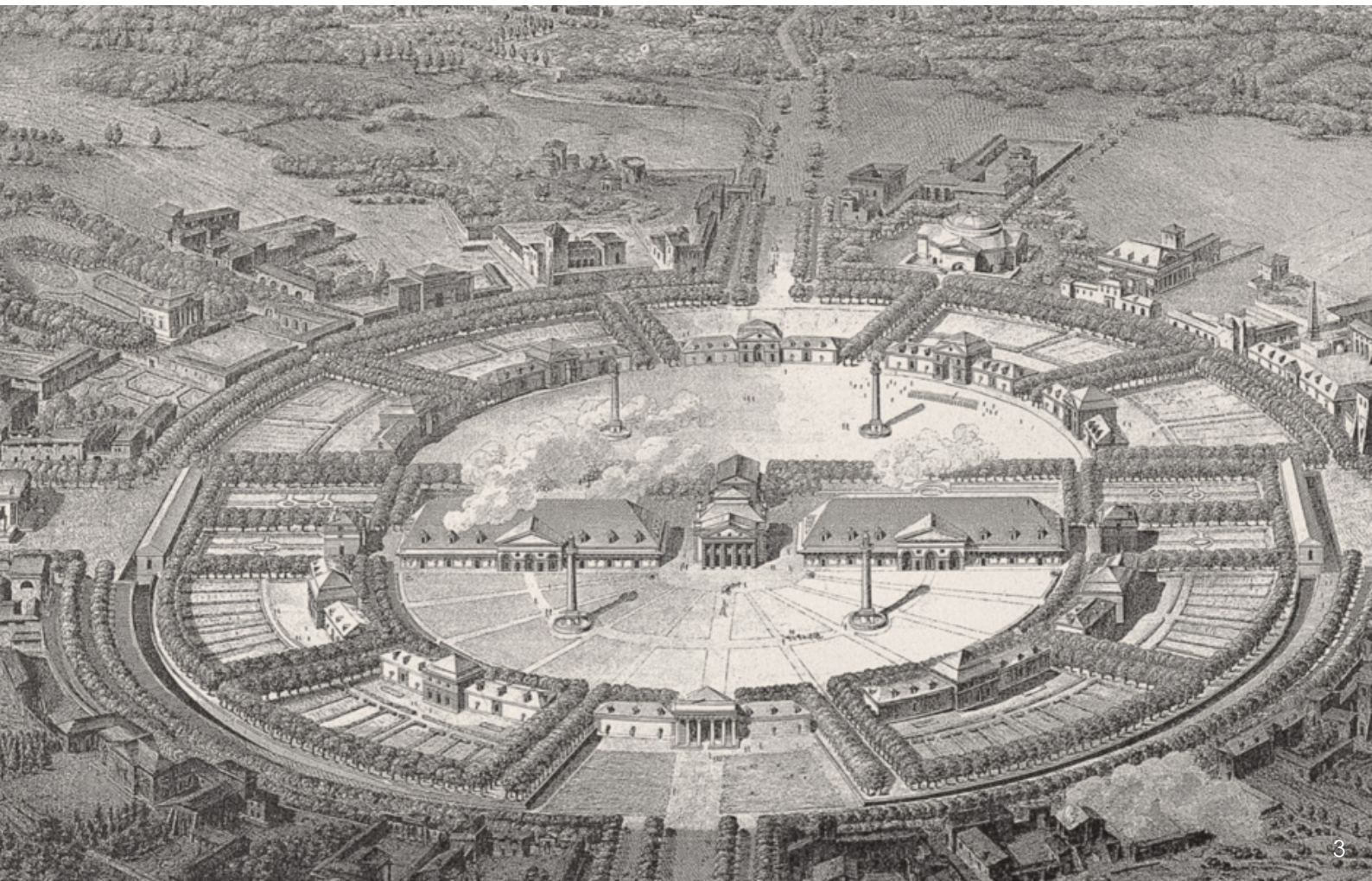
The first section of this paper takes on the historical background relevant to the AUP. It explains the ideas of the pioneers of urban planning and greenery planning, which inspired the planners of the Amsterdam extension plan. In the second part, we will look closely at the AUP itself and at its history. It will be shown what factors contributed to its creation, and what was the system on the big scale. The third part will focus on the smaller scale, looking closely at the details and particular strategies applied, and at how the new neighbourhoods were planned out. This will be shown with the example of the Sloterveer district, as out of all the neighbourhoods planned in AUP, that one was the most successful as the designers were more free in their processes. Finally, in the last section, the greenery system of AUP will be analysed in detail. It will be shown how the ideas behind it were developed and how they have influenced the city.

Historical background of the green planning ideologies The zeitgeist and the first pioneers of the urban green ideologies

The gradually increasing population and cities growth of the 17th century prompted the architectural theorists and planners to analyse the way the cities were built. The age of the Enlightenment was characterised by the urge to rethink the relationship between human and nature, the contrast between reason and sentiment, city and countryside. The inspiration from ancient Greece and Rome resulted in the recurrent belief in geometry as the nearly saint, organising and harmonising factor. It determined the first attempts for alternative urban proposals in the 16th century, for instance the plans of Karlsruhe from 1721 or les Salines de Chaux by Ledoux from 1773 (Figure 1). It was thought that nature should be seen through the lenses of a rational mind, and that nature should be brought to the city in an ordered manner. The main estates were surrounded by concentric circles of radial, smaller estates with neighbouring gardens. This way of thinking would immensely influence the planners of the subsequent century that had to manage much more drastic social changes. The industrial revolution of the 1840s-1860s has forever changed the world. The growth of industry prompted the growth of population and the development and expansion of cities. Since the industrial revolution up until the 1950s, the population nearly doubled and the urbanisation increased fivefold (Figure 1), causing the densification of cities and urban issues that have never been seen before. New and more efficient strategies for urban planning were necessary in order to control the rapid development.

¹ Claude Nicholas Ledoux, *L'Architecture considérée sous le rapport de l'art, des mœurs et de la législation* (Paris: H.L. Perronneau, 1804).

Figure 1. Perspective of the les Salines de Chaux by Ledoux from 1773.¹



¹ Peter Hall, *Cities of Tomorrow. An Intellectual History of Urban Planning and Design in the Twentieth Century* (Oxford: Basil Blackwell, 1988).

² Françoise Choay, *The Modern City: Planning in the Nineteenth Century* (New York: George Braziller, 1969).

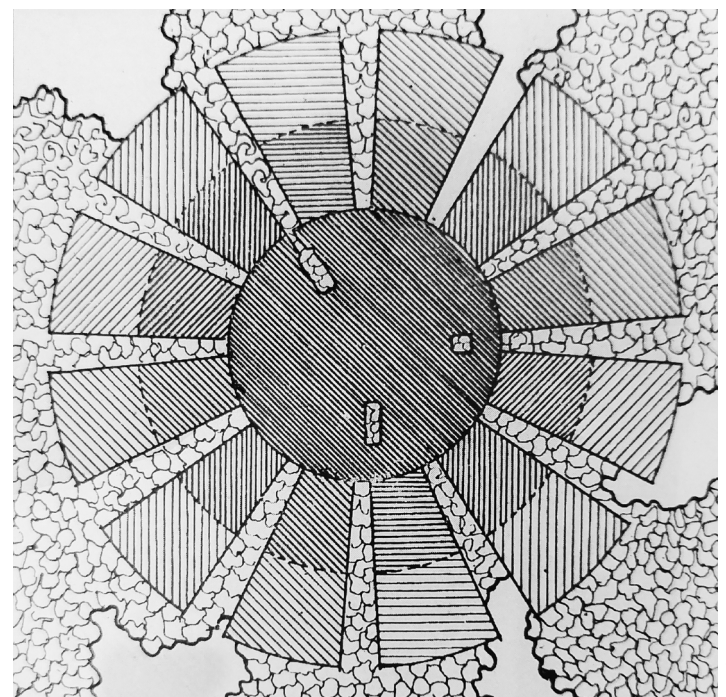
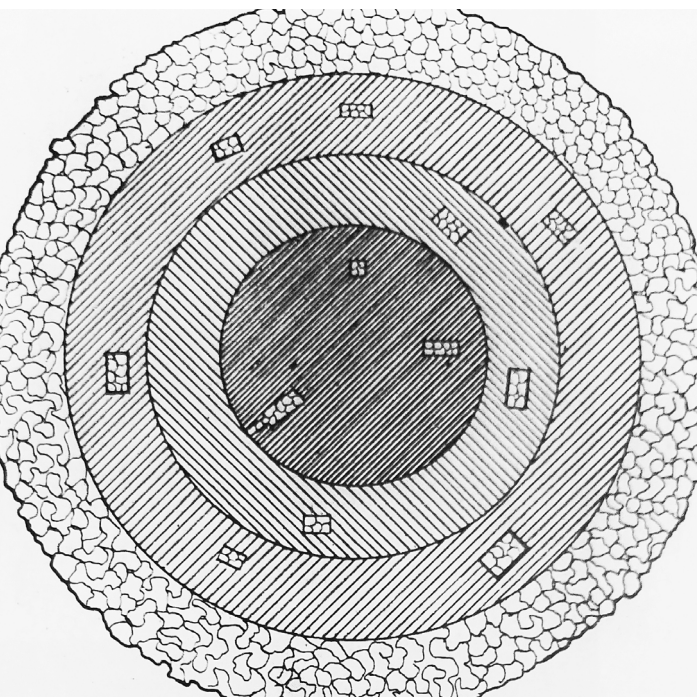
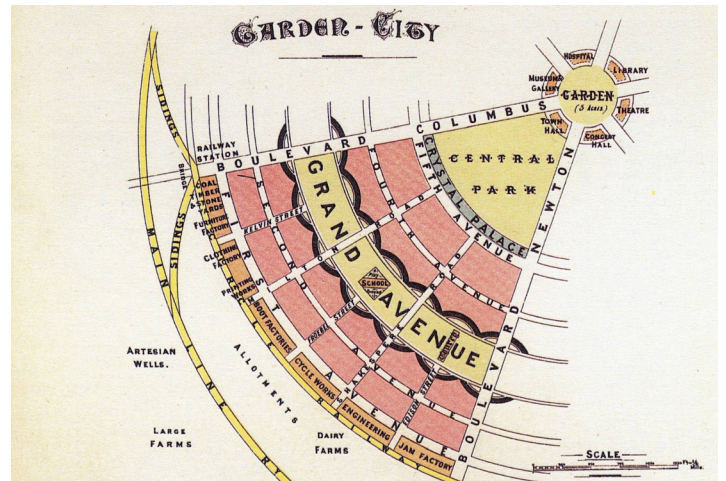
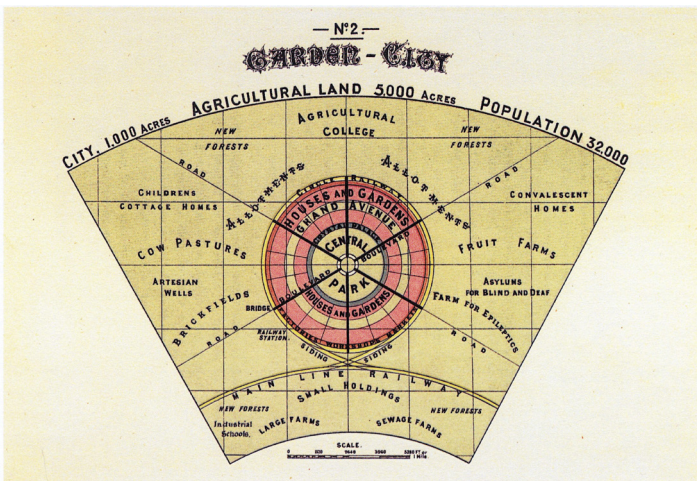
top left: Figure 5. The Garden City diagram by Ebenezer Howard, 1898.²

top right: Figure 6. A detailed spatial diagram of a section of a Garden City by Ebenezer Howard, 1898.²

bottom: Figure 7. Concentric and radial spatial systems.³

cities become full, next ring of cities can be added on the outer rim. Each of the garden cities would have a central park at their centre (Figure 5, 6), surrounded by concentric circles of houses with allotments separated by grand avenues, all enclosed within a band of factories.

One might say that Howard's idea gave birth to the practice of urban planning, as it gave a theoretical framework to the concept of a city exhibiting many different functions. Its clear logic inspired other planners across Europe involved in city planning, for instance, R. Eberstadt, B. Möhring and R. Petersen who worked on the expansion scheme for Berlin in 1910, and who managed to elaborate on The Garden City concept. They found that the concentric layout would be an efficient solution only for a series of small towns, but not for a larger city that Berlin already was at the time. The different zones would grow too large, and the old part of the city would be completely enclosed within the new parts and cut off from the rural. They devised an alternative scheme by breaking the concentric plan radially out of the centre providing it with a more direct connection to the outside and with the greenery reaching and 'wedging' far in (Figure 7).⁴ This concept proved to be a better solution for already large urbanised areas and hence it gained a lot of international attention in the age of rapid urban growth. The term 'green wedge' got coined in and is being used till this day in urban terminology:



*'The green wedge idea refers to a particular articulation between open and built-up spaces in which green wedges opening out towards the countryside are interspersed between development areas. It can be presented as a typology of green space, just as an urban park or a square. This tends to happen when they are included as a non-structural element within a green space network, usually not acquiring specific hierarchical dominance. As a typology, a green wedge may also be presented as a single element not necessarily linked to a green space strategy or network.'*¹⁵

A very important, although quite different, concept has been developed a few decades earlier and across the ocean by Frederick Law Olmsted. The American landscape architect grew famous when he proposed an alternative extension of the parks in Boston, US, now known as the Olmsted Park. Instead of a traditional garden in a Victorian style, Olmsted proposed to spread the park along the river connecting both the newly planned and the already existing parks into a system of greenery enclosing the city.⁶ The American, similarly to Ebenezer Howard, understood the longing for the soothing greenery as an escape from a crowded and polluted city. He brought the park closer to the urban not in a systematic way, but using the existing elements of nature. It was the first example of designing greenery into a system, and it was so successful that the municipality kept extending the park system into what is now known as the Emerald Necklace.

³ Marianne Lahr, *Het Idee van de Functionele Stad. The Idea of the Functional City - A lecture with slides 1928*. C. van Eesteren (Den Haag: NAI Publishers and EFL Publications, 1997), 105-106.

⁴ R. Eberstadt, B. Möhring, R. Petersen, *Gross-Berlin. Ein Programm für die Planung der neuzeitlichen Grosstadt* (Berlin: Wasmuth, 1910).

⁵ Fabiano De Oliveira, *Green Wedge Urbanism: History, Theory and Contemporary Practice* (London: Bloomsbury Publishing Plc, 2020).

⁶ James C. O'Connell, 'The Legacy of Frederick Law Olmsted's Emerald Necklace in Contemporary Boston', *Proceedings of the Fábos Conference on Landscape and Greenway Planning*, vol. 5, no. 1, 23 (2016): 165-167.

⁸ Bosma, *Het Nieuwe Bouwen. Amsterdam 1920-1960*, 55-56.

⁹ *Ibid.*, 58.

¹⁰ Tuinstadcommissie, *Rapport van de commissie* (Amsterdam: Amsterdam Stadsdrukkerij, 1929), 17.

¹¹ E.H.M. Mens, *Een architectuur-historische waardestelling van naoorlogse woonwijken in Nederland: het voorbeeld van de Westelijke Tuinsteden in Amsterdam* (Eindhoven: TU Eindhoven, 2019), 17.

¹² Groep Groot-Amsterdam&NIVS, *Amsterdam's Toekomstige Ontwikkeling* (Haarlem: Tjeenk Willink, 1926), 6.

with the intension to open up the possibilities for the city to expand. The council also suggested that the Slotermeer-polder could be turned into a lake, and recognised the need for implementing large green areas, possibly with implementation of the Garden City idea which has already reached continental Europe and was widely supported by housing associations and municipal housing services.⁸ The municipal bodies were that enthusiastic about the concept that they appointed The Garden City Commission in 1923 to evaluate the merits of the garden city idea, what would be their cost, what effect they would have on the traffic system, and were they could possibly be located.⁹ Due to the extent of their research, the commission made an important contribution to the development of urban planning. Their main conclusion was that:

*'The foundation of a new, entirely self-contained city such as can still easily be done in the prairies of America, may be considered out of the question.'*¹⁰

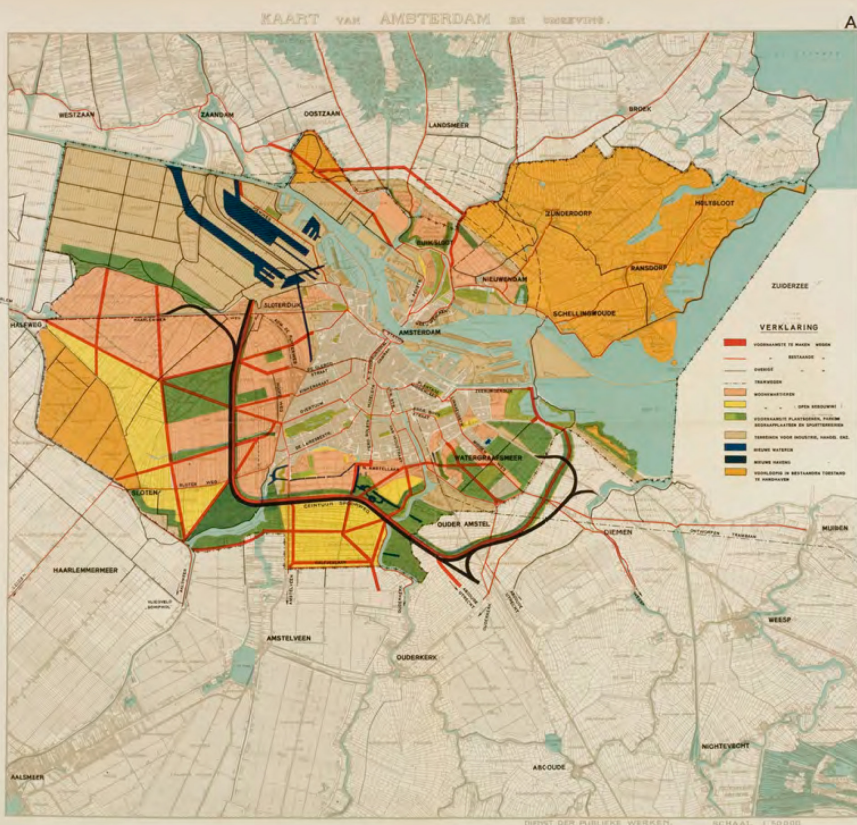
The commission also contemplated that it could be suitable to create a satellite garden city separated from Amsterdam by a very wide green belt that would ensure the garden neighbourhoods would not be absorbed by the city.

The council developed a number of different expansion plans, for instance the 'Scheme-plan for Greater Amsterdam' (Figure 9)¹¹ by A.W. Bos, director of the Public Works Department, or the scheme by W.G. Witteveen (Figure 10), head of the Rotterdam Urban Expansion and Buildings Department, that proposed a unique organisation of green areas that were spaced out in a decentralised way that van Eesteren would adapt in his future expansion plan:

*'The outdoors can thus as it were be sucked into the city. Large wedges must be driven into the urban mass to split it up into parts, and the open spaces thus obtained should be filled with green.'*¹²

left: Figure 9. Scheme-plan for Greater Amsterdam by A.W. Bos, 1921.¹¹

right: Figure 10. Uitbreiding 'Amsterdam-West' by W.G. Witteveen, 1924. SAA.



However, in the Urban Council meeting from 1926, all schemes prepared up to that point were criticised that they were based on inadequate and uncertain studies, and that they lacked a guiding concept and any designation of functions:

*'(...) town planning means more than creating charming squares, building pleasing 'traffic walls' along the streets and deciding on the most advantageous sites for important buildings. Town planning means above all taking into full account the diverse demands of life in the city in its countless expressions.'*¹³

One of the conclusions of the council was that the expansion plan will have to be based on a thorough research and a wide scope of preparatory studies carefully investigating 'how large the areas should be for different purposes, how various districts may best be located in relation to one another and in which directions the main traffic arteries should be situated'.¹⁴ It became clear that the scope of work exceeded the possibilities of a single council, and that an entirely new department for urban development should be formed.

¹³ Groep Groot-Amsterdam&NIVS, *Het Uitbreidingsplan van Groot Amsterdam* (Haarlem: Tjeenk Willink, 1926), 6.

¹⁴ Bosma, *Het Nieuwe Bouwen. Amsterdam 1920-1960*, 57.

The Urban Development Bureau and the General Expansion Plan of Amsterdam

Figure 11. General Expansion Plan of Amsterdam (AUP), 1935. SAA.

In 1928, the municipality established the Urban Development Bureau (within the Public Works Department) with L.S.P. Scheffer as the head, that combined a research



and a design team which a year later hired Cornelis van Eesteren (1897-1988) as the head. The main task of the department was to design a mainly south-western expansion plan for the municipality of Amsterdam that could meet the housing needs of the population until the year 2000. In comparison to previous expansion plans like Plan Zuid or Plan West (1922-1927), the municipality wanted the plans to be based on scientific research, industrial planning and analysis.¹⁵ After seven years, in 1935, the department came up with the *Algemeen Uitbreidingsplan van Amsterdam* (AUP) – the General Expansion Plan of Amsterdam (Figure 11). Nine main neighbourhoods were planned to be developed throughout the 20th century (listed counterclockwise): Bos en Lommer (1936 – 1952), the Western Garden Cities (Slotermeer, Geuzenveld, Overtoomse Veld, Slotervaart, Osdorp) (1936 – 1965), Buitenveldert (1958 – 1965), Frankendael (Jerusalem) (1950 – 1954), and Amsterdam North (1958 – 1975). Around 1955, it became clear that the objective of the AUP, sufficient housing for the Amsterdam population until the year 2000, would not be achieved. An unplanned social factor appeared – the amount of housing was sufficient, however, people started to seek places with bigger square footage. New construction sites were being started in Amsterdam-North, Amstelveen and the Bijlmermeerpolder in Amsterdam-Southeast.

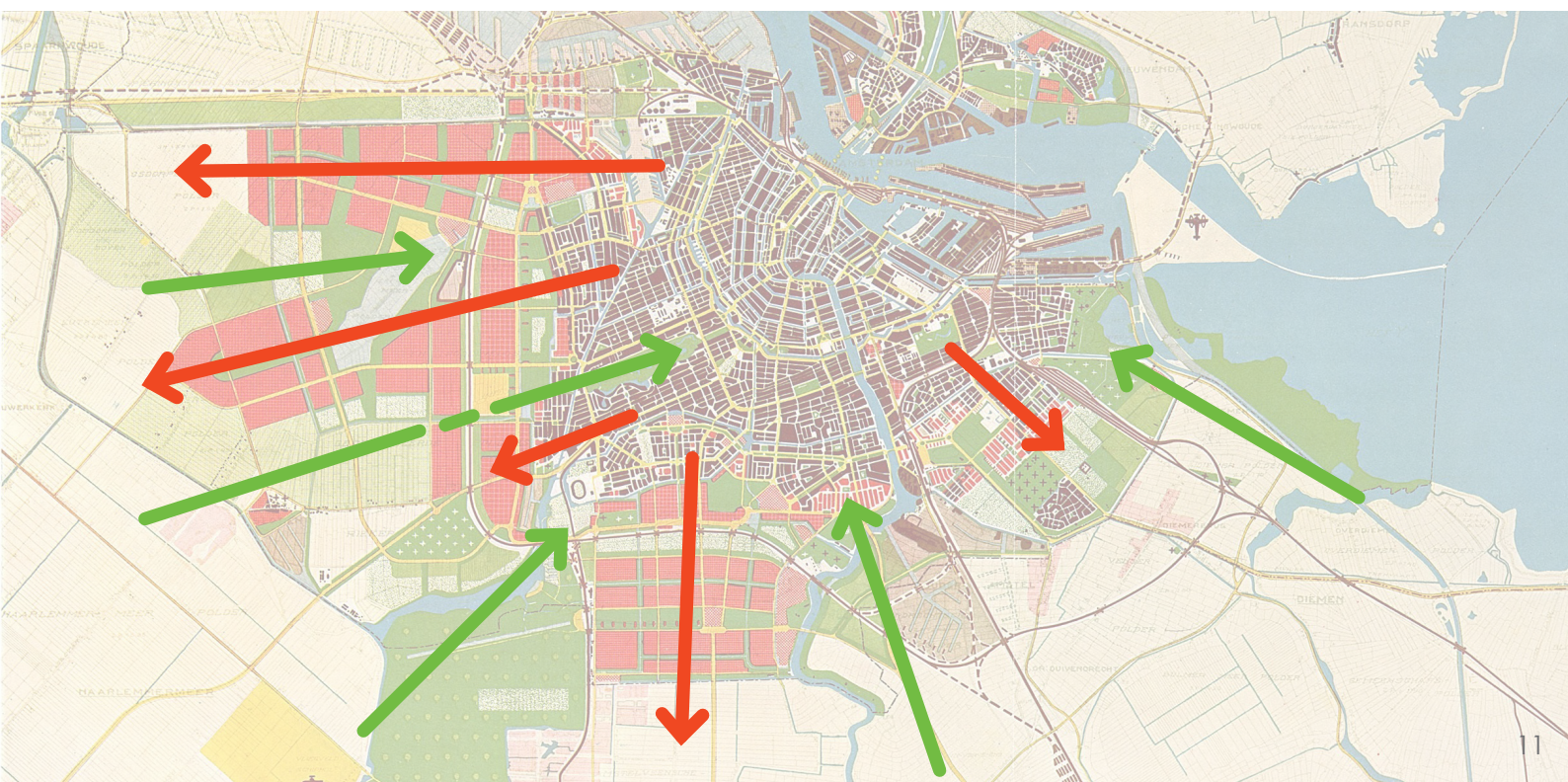
Throughout the 1920s and 1930s, the views on urban design have been changing. The Garden City concept from England and the Bauhaus from Germany forever changed the way architects and urban planners designed. It could be noticed in van Eesteren's lecture from 1928 in Berlin, where he presented the concepts of the Garden City, radial and concentric urban models and the new challenges of the modern architecture:

¹⁵ Bosma, *Het Nieuwe Bouwen. Amsterdam 1920-1960*, 58.

¹⁶ Quote by C. van Eesteren from the Berlin lecture, 1928. Cited in: Lahr, *Het Idee van de Functionele Stad. The Idea of the Functional City - A lecture with slides 1928. C. van Eesteren*, 117.

Figure 12. AUP - the urban stretching radially out of the city centre, and the green wedges reaching deep into town. Diagram made by the author.

*Modern town planning is not at all that concerned about the difference between a traditional tiled roof and a flat roof. The real problems that face it are the coherence of functions, infrastructure, technical provisions (...).*¹⁶



He criticised the unplanned radial neighbourhood expansions that naturally extend along the transportation routes but consist nearly exclusively of single-family houses causing an extreme homogenisation of urban typologies and functions that makes the neighbourhood very dependent on the city centre and other districts, leading to a strain on transportation as the residents of such areas need to commute more in order to sustain their needs. Van Eesteren wanted to avoid such situation and hence elaborated on the old concentric and radial urban concepts, designing urban areas to stretch radially out of the city centre like fingers, and at the same time to be more independent and functionally mixed by creating places for shops, schools, parks, churches, etc., in order to sustain most needs of their residents (Figure 12). W.A. de Graaf, the director of Public Works department, characterised the plan as:

*'doing justice, in a coherent fashion, to the four main functions of urban life as regards town planning: working, living, recreation and traffic.'*¹⁷

Van Eesteren also understood that a city cannot function efficiently without a well thought through plan for the traffic:

*'Urban planning revolves around the architectural organisation of volumes and the orchestration of human movement through urban space.'*¹⁸

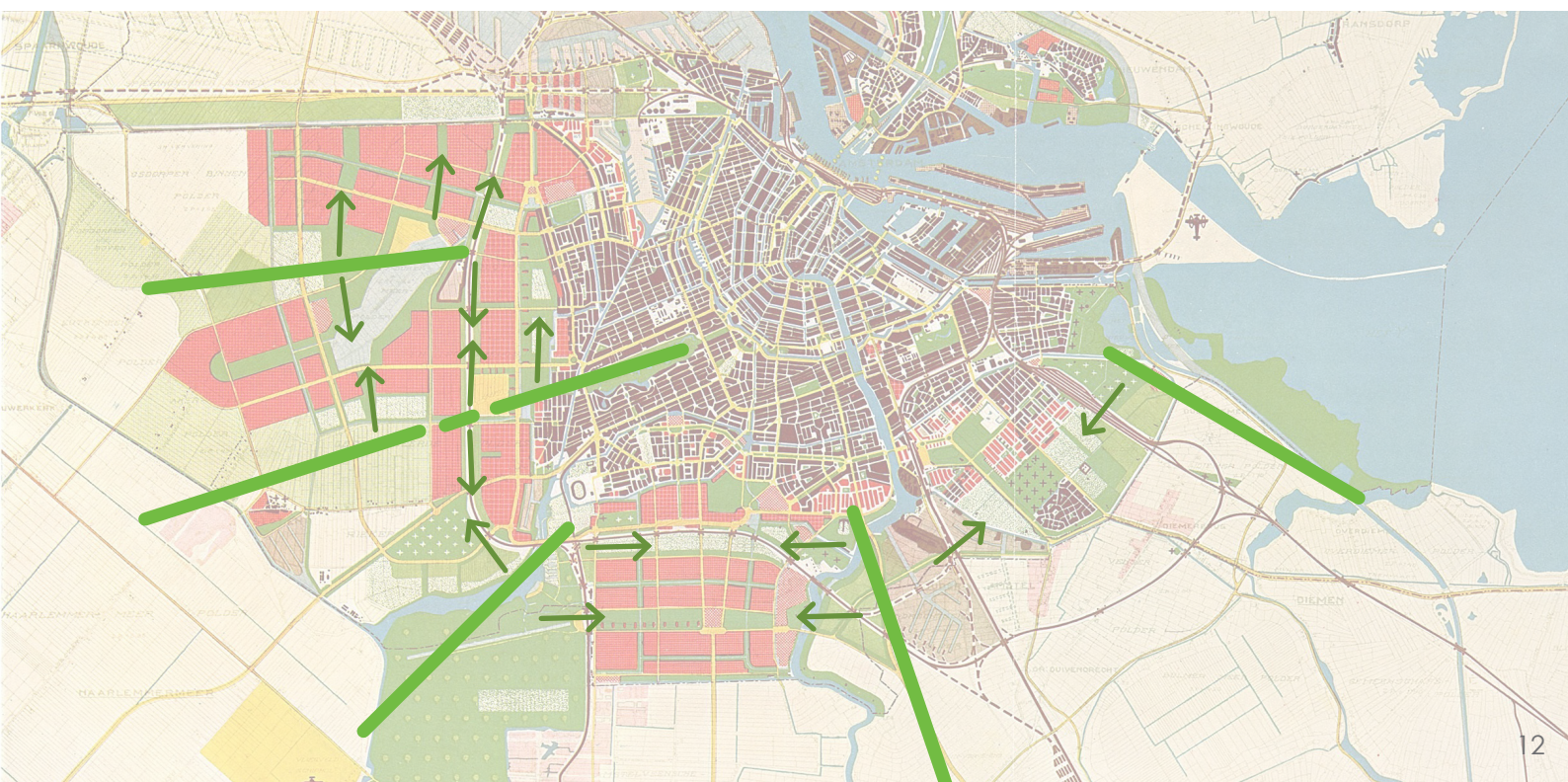
The big-scale traffic was separated from the smaller-scale neighbourhood traffic. The public functions were placed mainly along the main traffic routes to facilitate a quieter environment for the residential areas. The city scape was diverse with high-rise buildings creating 'striking points' between low-rise residential ones. The whole scheme was optimally oriented in relation to sun, and the motto of the whole AUP was: 'light, air and space'.¹⁹ The neighbourhoods also allowed the green to reach deep into city, interlocking in-between them like wedges (*scheggen*). The

¹⁷ H.M.C. Holdert (ed.), 'Hoe breidt Amsterdam zich uit? Oude plannen en het nieuwe' *De Telegraaf*, 22.10.1932.

¹⁸ C. van Eesteren, 1929. Cited in: NHA, 640 *Economisch-Technologische Dienst, Provinciale Planologische Dienst* [...], Inv. No. 401, minutes *Commissie voor Gemeentelijke Plannen 1956-1958*, minutes meeting 29.01.1957.

¹⁹ Bosma, *Het Nieuwe Bouwen. Amsterdam 1920-1960*, 61.

Figure 13. AUP - the green wedges weaving through the neighbourhoods. Diagram made by the author.



placement of the urban fingers and green wedges was a calculated result of van Eesteren's ideology and the existing conditions. The fixed points that the architect had to take into consideration were: IJmeer and the bay, the Amstel river, the Schinkel river and the Nieuwe Meer, the railway heading towards Haarlem and the North Sea Canal. Interestingly, the bay and rivers are located in a natural rhythm having similar distances between each other. It seems natural then, that van Eesteren followed the suggestions of his predecessors from the council of 1921, and planned another water body between the railway and the Nieuwe Meer to follow their natural spatial rhythm, and to create green wedges around each water body and in a systematic, regular way. Moreover, the greenery seems to not be merely placed in between the 'urban fingers', but it creates a coherent network, cutting through the neighbourhoods via wide green avenues that reach other green wedges (Figure 13). These on the other hand, seem to organise the neighbourhoods, especially the western Green Cities, that are placed around them like houses around a collective green courtyard. One of the most unique aspects of this system is that greenery is placed within 10min radius from any point of the city, which is a unique urban scheme till this day. Such precise planning results from van Eesteren's focus on basing the growing city's green infrastructure on quantifiable factors. The Explanatory Memorandum notes of AUP include calculations of the minimum square meters of green zones and sport facilities per resident, based on works of Martin Wagner *Das sanitäre Grün der Städte, ein Betrag zur Freiflächentheorie* (1915).²⁰

Plan Zuid versus AUP

In his AUP, van Eesteren had to adapt to the on-going extension Plan Zuid by Berlage, which was based on different principles. By the time H.P. Berlage was designing Plan Zuid, Howard's Garden City movement has not yet spread out of England. Berlage (1856-1934) belonged to the predeceasing era of neoclassicism that drew inspiration from the classical, strictly geometrical, grand squares and avenues that can be seen in his Plan Zuid.

By the time van Eesteren overtook the extension of Amsterdam, nearly half of Plan Zuid has been realised (Figure 14). He has adapted the rest of southern district to the new planning concept; he did not follow the classical square design in the eastern part, nor the diagonal alleys in the south western part. Instead, he organised the blocks and routes in a simpler way to facilitate more efficient transportation. He brought more green closer into the centre and the east part of the neighbourhood, organised the big eastern streets (Norder Amstellaan and Zuider Amstel Laan) cutting the neighbourhood into smaller avenues divided by green, and pushed the main route outside of this residential zone.

²⁰ Marinke Steenhuis (red.), *De Nieuwe Grachten Gordel* (Bussum: THOTH, 2017), 387.

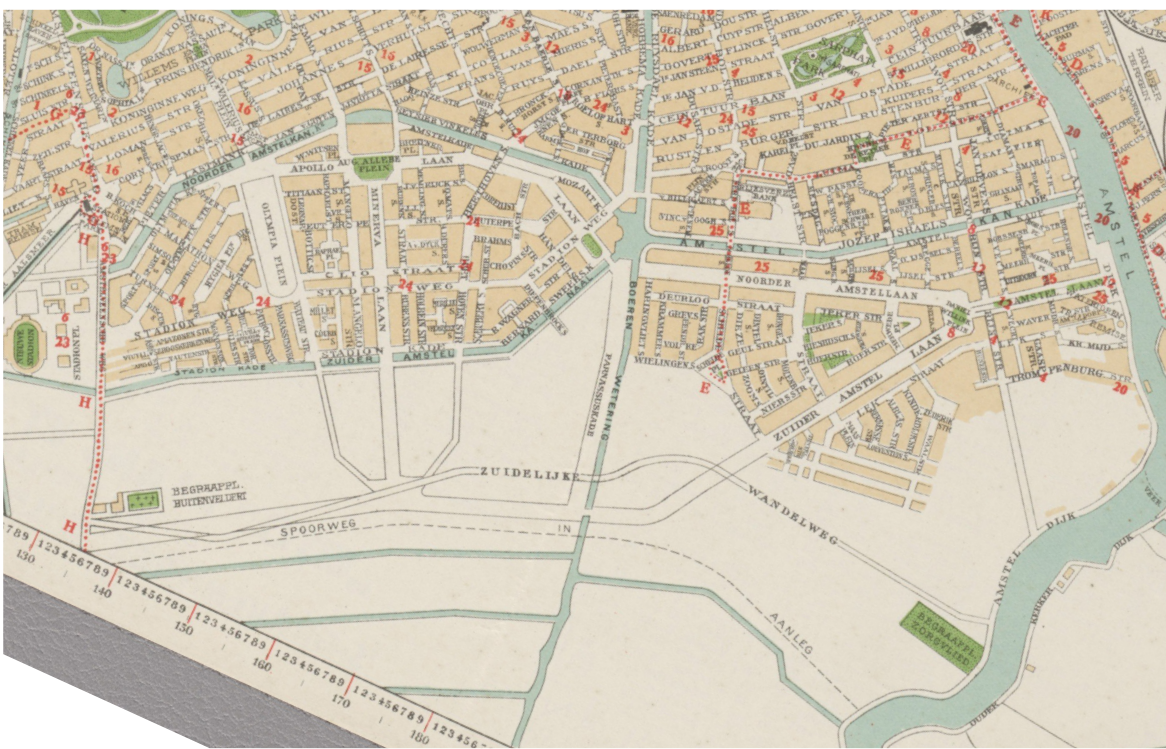


Figure 14. Comparison of: from the top: Plan Zuid by Berlage (1917), Plan of Amsterdam as of 1931, and the AUP by van Eesteren (1935). SAA.

Slotermeer

The search for an ideal neighbourhood

The first step of Amsterdam's expansion was the general plan that specified the layout of the individual districts only in a diagrammatic way – more specified plans were to be developed separately. With a clean urban canvas came the opportunity to rethink the traditional design of residential blocks that was considered outdated and inefficient by modern architects. In 1932, van Eesteren and *Architectenkern de 8* (an association of architects, devotees of functionalism) presented a project called 'The organic residential estate with open layout' - a first step to a new concept of residential block design negating the traditional closed-block scheme, and proposing, in line with the motto 'light, air and space', an open block concept with a preferable north-south orientation for a better sunlight access. The first Garden City that would implement that concept was Bos en Lommer, that had its plans passed in 1935 and featured terraced housing, however, only in part in open form.²¹ Its design was also considered too pragmatic by van Eesteren, as the urban density was as high as hundred and ten flats per hectare, the blocks were placed in straight lines with a minimum distance between the facades and the inner gardens were filled up and divided by sheds and fences. It did not portray the openness and harmony that van Eesteren had in mind. It was the Slotermeer district that he considered to be the ground for new solutions. His plans were approved in 1939, and the works started with widening the Sloterplas polder into a lake and using the excavated sand to rise the surrounding landscape to avoid possible floods, however, due to the outbreak

²¹ Steenhuis (red.), *De Nieuwe Grachten* Gordel, 387.

Figure 16. Variety of housing in Slotermeer-Northeast, 1974. HNI.



of war the same year all developments had to be held up to be continued ten years later. In the official documents, Sloterveer was described as a neighbourhood for 40 000 inhabitants consisting of series of wide urban districts on an elevated land with a lot of greenery and the 'ideal' density of seventy homes per hectare, which of a significant part was to be low-rise, and 30% of would be allocated to single-family houses.²² However, it is mainly the spatial composition of Sloterveer Garden City that makes it special. The houses were integrated into a larger whole, a landscape-like composition (Figure 16) that offered the residents orientation and something to visually hold on to. The public space has thus acquired an entirely different character. However, the most remarkable are the differences from later post-war neighbourhoods. Sloterveer is the easiest to traverse on foot or by bicycle and the roads (with the exception of Burgemeester Roëllstraat) do not form impregnable barriers; indeed, there are often no roads at all, but a system of footpaths leads through the various neighbourhoods. That is the second outstanding feature: the great variety of neighbourhoods (Figure 16), and thus, of residential atmospheres in different sectors, with a mixture of low-rise and high-rise buildings and a careful selection of optical reference points, for example, a higher flat as the visual end of an avenue (Figure 17) or a modest park providing the illusion of endlessness. Such a modern approach to urban planning was quite revolutionary at the time and has been a praised as a leading theme in the post-war period:

²² Ibid, 174.

²³ Piet Zanstra, 'Enige opmerkingen over functionele stedenbouw', *Wending. Maandblad voor Evangelie en Cultuur*, vol.10, no.4 (1955): 218.

*'In all countries, extensive experiments have been made with the new spatial possibilities of open-plan construction. Sloterveer shows what the Urban Development Bureau in Amsterdam, under the leadership of Prof. C. van Eesteren and Ms J.H. Mulder, discovered as new possibilities in this area and wanted them to be considered for implementation. It is mainly the courtyards enclosed by L-shaped blocks, and the strip construction, which, however, due to deviations from parallelism and from right angles, display a much greater degree of freedom than the first examples in Bos en Lommer.'*²³

~ Piet Zanstra, 1955

Figure 17.
Burgemeester De Vlugtlaan with a higher block near the end of the street, 1963.
HNI.



Great variety of blocks and a generous density did contribute to Sloterveer's openness and quite a luxurious spaciousness, however, it did raise a lot of questions about the financial efficiency of such solutions, and it caused many officials to question the plan for years after its first publication in 1939, up until the start of construction in 1951. Comments about the density standards also came from abroad, for instance from the English delegation of urban planners that visited Amsterdam in 1946. It was pointed out that their standards for density and green space were much lower and higher respectively. Questions were raised, whether the city of Amsterdam would be outdone by London. It was the Public Works director, W.A. de Graaf, that defended the plan tirelessly until his retirement in 1947, calling for consistency from the council and the government, which in the AUP of 1934 had decided 'to make Amsterdam a good residential city again'.²⁴ He kept quoting the comparisons with commuter towns, where the plan would be twice as dense, while 70 houses per hectare was even denser than the garden villages in Amsterdam-North. In his opinion, this was a point of principle:

*'It is not only the present, but above all the future, which we are building for and which we must always keep in mind in this work.'*²⁵

Keeping the density lower than in districts like Bos en Lommer was also defended by the secretary of the North Holland Committee for Municipal Plans, Elze van den Ban, who argued that the density of Sloterveer had to be lower than that of Bos en Lommer because Sloterveer was far from the city and therefore had to derive its appeal from a spacious residential environment. Van den Ban warned against a middle-class exodus from Amsterdam, and she pointed to future management problems in these neighbourhoods if it was decided to intensify the land division. In addition, she wrote, the price of land would rise as density increased, which would not improve operations. As a temporary solution, however, narrower, semi-paved streets and vegetable gardens could be considered instead of planting trees.²⁶ Finally, on the 3rd of October 1947, the municipal council decided to ignore the criticism of Sloterveer and to stick to the spacious subdivision. This was followed by a speech on 'the significance of the Sloterveer Plan' in 1948, signed by city engineer J.W. Clerx. The Urban Development Bureau followed with finding all possible arguments for keeping the low density of Sloterveer. Clerx then wrote to the city councillor that the single-family house typology was crucial to housing construction in Amsterdam. Any cutback in the urban design of the plan would result in irreparable damage to future housing options. The duplex house was then presented as a solution to the problem:

*'The building of, for the time being, double-occupied single-family houses [is] an effective mean, which can always relatively easily be undone later on.'*²⁷

However, it was the new Public Works Department director, engineer J.E. van Heemskerck van Beest, who, following his predecessor's strategies, finally managed to persuade the government and Minister of Reconstruction and Public Housing Joris in 't Veld. Van Heemskerck van Beest proposed a brilliant, and a quite defining for

²⁴ SAA, Letter from director De Graaf to alderman PW, 02.05.1941. Urban Development Bureau archive 5344.

²⁵ Ibid.

²⁶ SAA, Letter from the Municipal Plans Committee, 28.11.1946. Public Works Department archive 5213, file 21704.

²⁷ SAA, Letter to director PW, the city engineer Clerx to the city councillor PW, 17.08.1948. Urban Development Bureau archive 5344.

Slotermeer, strategy for improving the financial performance of the scheme:

*'The only savings that are not only permissible, but even necessary, are to be made in the technical layout (roads, paths, etc.) as much as possible. As you know, my department is already working in this direction and, as far as the accessibility of dwellings and the dimensions and construction of roads are concerned (witness the investigations of the Frankendaal Plan), solutions are being accepted which would certainly have been rejected before the war.'*²⁸

It shows something very important – that the lack of streets and the use of residential courtyards and paths on such a scale, which were interpreted as modern, were in fact not solely the plans of Van Eesteren, but also the result of cost-cutting motives. The praised new principle that had generated so much enthusiasm in Europe, and especially in Copenhagen, was used here as an argument for lower street construction costs.

Tuinstad Slotermeer Plan The Slotermeer Garden City Plan - in the making

Slotermeer Garden City underwent multiple changes overtime as its development and construction was interfered by the WWII, and thus had to be adjusted to the new realities of the post-war world and the new era. However, it did follow the main large-scale urban division of AUP and elaborated on the smaller-scale urban sectors. It can be seen in the first Slotermeer plan from the 1939 (Figure 20) – the principal roads are placed according to AUP, with two east-west oriented streets cutting through the neighbourhood (Burgemeester de Vlugtlaan in the north and Burgemeester Röellstraat in the south) and connecting them to Bos en Lommer in the east and Geuzenveld in the west. They are connected by the rail line in the east and Slotermeerlaan in the west running from north to the south across the neighbourhood. Slotermeerlaan extends towards the south into the President Allendelaan that goes through one of the green wedges, the Sloterscheg, consisting of Sloterpark with the lake Sloterpas in the middle. Sloterscheg comes in between Slotermeer in the north, and Slotervaart and Osdorp to the south. Coming from Bos en Lommer via the Jan. van Galenstraat, we reach the Burgemeester Röellstraat. One might be surprised by its size and layout, as it is designed resembling a highway, with two separate lanes and the tramway in the

²⁸ SAA, Letter from director PW Van Heemskerck van Beest to the city councilor PW, 18.06.1949. Public Works Department archive 5213, file 21704.

left: Figure 18. Burgemeester Röellstraat, looking east towards the Burgemeester Cramergracht, 1959. SAA.

right: Figure 19. Burgemeester de Vlugtlaan, looking from the Ringspoordijk to the Burgemeester Fockstraat, 1954. SAA.



³⁰ HNI, handwritten note 'Woonwijk Geuzenveld', n.d. Archive C. van Eesteren, EEST I.442.

³¹ L.S.P. Scheffer, 'The Slotermeer expansion plan', *Tijdschrift voor Volkshuisvesting en Stedebouw*, September (1939): 171-182. HNI, Inv. 1327, no. 161.

Figure 22. Slotermeer's urban functions diagram, 1939. HNI.

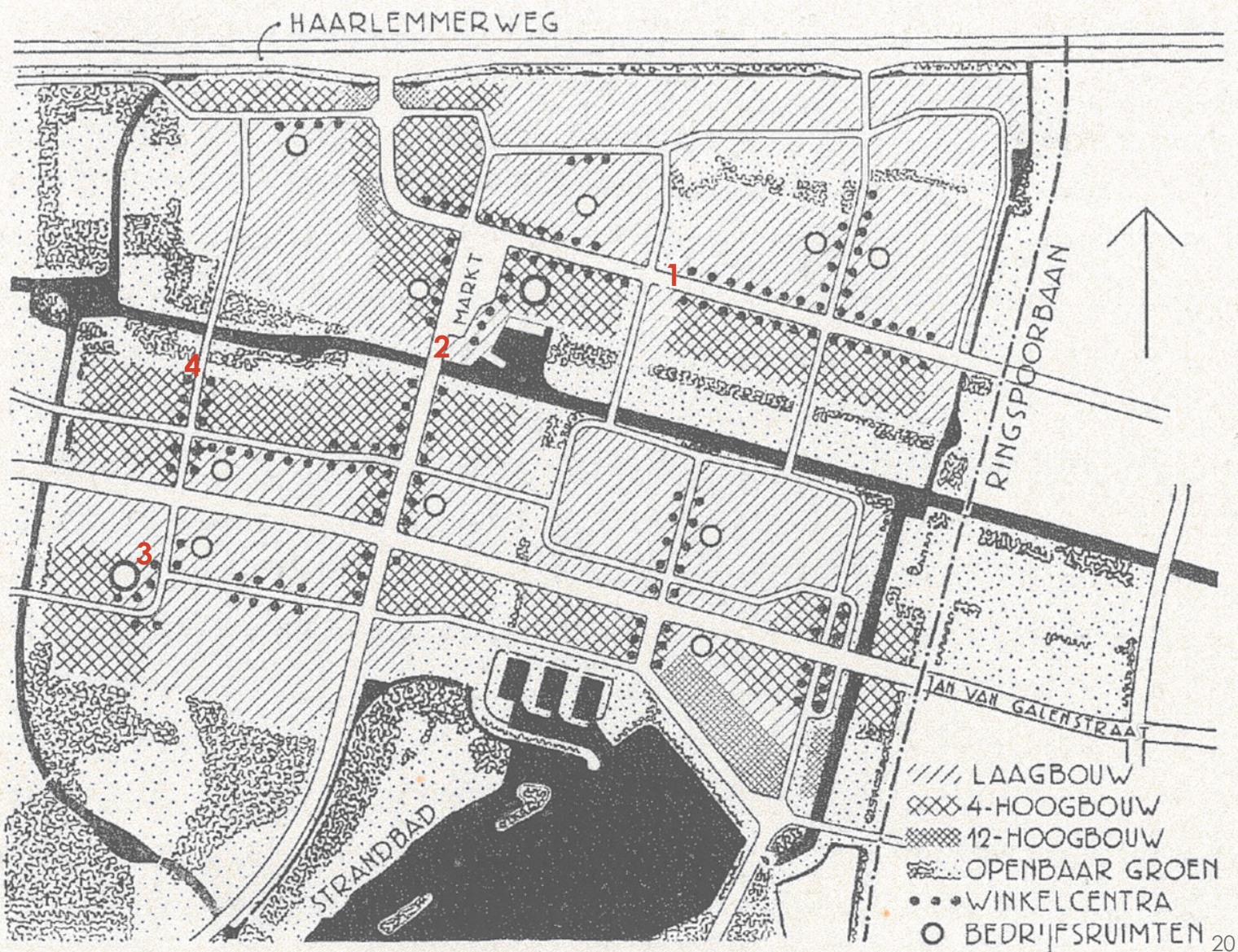
Legend, bottom-right:
 Low-rise
 4 - High-rise
 12 - High-rise
 Public green
 Shopping centres
 Business premises

1- Burgemeester De Vlugtlaan
 2- Slotermeerlaan
 3- Confuciusplein
 4 - Burgemeester Van Leeuwenlaan

century streets, where shops were housed in ground-floor apartments and urban life had to fit into 'ill-fitting ready-made suits', as Van Eesteren described it.³⁰

This hierarchical street system enclosed an equally diverse arrangement of housing types. L.S.P. Scheffer, the first head of the Urban Development Bureau until 1952, published an extensive article about the Slotermeer expansion plan in September 1939 in *The Magazine for Housing and Urban Planning (Tijdschrift voor Volkshuisvesting en Stedebouw)*, where he analysed the different kinds of housing and summarised it in a diagram (Figure 22).³¹ It shows the location of low-rise buildings, 4-floors high rises, 12-floors high rises, public green spaces, shopping centres and business premises. The layout of the district centre, Plein '40-'45 ('Markt' in Figure 22), would change over the years, only taking shape definitively in the 1960s. In 1939, a tree-lined market square and a church building were still being considered, however, in the end only the market remained. The shopping facilities were distributed fairly evenly throughout the district and, apart from the smallest local shops, were mainly located on Burgemeester De Vlugtlaan, Slotermeerlaan, Confuciusplein and Burgemeester Van Leeuwenlaan.

The day that Scheffer published his article marks also the beginning of WWII that would change the world forever. The development of Slotermeer plan had to be put on hold and it would not be resumed until a decade later.



Tuinstad Slotermeer Plan Adjusting to the post-war world

The planners and designers behind the extension plan had to face an entirely different reality after the war. The economy was collapsed, the unemployment levels were skyrocketing and the housing shortage reached levels like never before. The pressure for housing was tremendous, and the time was of an utmost importance. Furthermore, the society and its priorities have changed during the war, and the building style had to adjust to them. The first thing to change concerned the building percentage, to designers' discontent, from 45% low-rise and 55% high-rise to 30% low-rise and 70% high-rise³², in order to increase the number of dwellings to counteract the loss of houses during the war. Another aspect was the rural atmosphere that the planners kept in their focus before the war. The efficiency of the generous openness was questioned in terms of its accessibility and usability. It turned out to be not perfectly in line with the new zeitgeist, as the public sought the feeling of progress, not a total return to the provincial villages with vast open spaces and large distances in-between, as Scheffer explained in his another article commenting the first Slotermeer plans after the war:

*'The Amsterdammer is used to having everything delivered to his doorstep, and he finds a broad pavement of seven or eight metres inconvenient, because then he has to walk such a distance with his house bucket and still gets wet when he comes home by car. He's a real city person, who has completely outgrown the primitive nature of the rural environment.'*³³

³² Steenhuis (red.), *De Nieuwe Grachten Gordel*, 185.

³³ L.S.P Scheffer, 'De westelijke uitbreiding van Amsterdam en de Tuinstad-Slotermeer', *De Ingenieur*, no. 5 (1953): 14. TU Delft repository, collection Van Eesteren (EFL). <http://resolver.tudelft.nl/uuid:3f3a70d7-85a3-4098-bdfc-1dc264f3f08d> Translated by the author.

left: Figure 23.
Plan 'Tuinstad Slotermeer', 1939.
HNI.

right: Figure 24.
Plan 'Tuinstad Slotermeer', 1952.
G.A., Bureau Monumenten & Archeologie. Gemeente Amsterdam.



The Urban Development Bureau took the public opinion seriously, with Jakoba Mulder in particular experimenting with the blocks' layout and their relation to public greenery and its opportunities for play. In Tuindorp Frankendael (Jeruzalem) in the Watergraafsmeer, she had introduced the L-shaped block with low-rise roofs, which turned out to fit more houses than a strip construction. Van Eesteren was very content with such urban design invention:

*'Instead of monotony, calmness and harmony have now been created through the controlled repetition of a motif. The positively accepted equality has become a visual factor.'*³⁴

The solution was then applied on a large scale in the updated plan of Sloterveer from 1952, especially in the north and west of the neighbourhood (Figure 24). The L-shaped block was more efficient and did improve the urban design quality, however, it was criticised for being a more expensive solution. The Housing Service (*de Woningdienst*) specifically allocated for the low-rise buildings:

*'a maximum of 6 square metres per house (...) for paving by the house. The emphasis is placed on the fact that the design of the plan should be such that the relationship between the types of housing and the situation does not result in additional street work.'*³⁵

The Service also indicated that it was highly desirable to make longer blocks of houses in order to reduce the number of expensive end walls. However, Mulder was quite decided on the layout and, as a high-ranking planner, has instructed the municipal bodies to go through with her new plans.³⁶

Other blocks from the old plan were also rearranged, changing the inclination towards the streets (for instance north of the Burgemeester De Vlugtlaan) which were placed out more regularly. The higher residential buildings, often in a courtyard structure, were integrated with low-rise, so that the atmosphere of a neighbourhood could suddenly change. The multi-storey courtyard module allowed for a closed, tidy street wall, without washing and rubbish bins in the public area, while also experiencing a certain openness with a green inner courtyard – a strong improvement over the strip construction. Moreover, an entirely new housing typology in the form of homes for the elderly emerged in the 1950s – a clear aftermath of the war and an indication of the new zeitgeist.

The brochure *Tuinstad Sloterveer* from 1952 described the housing types in the district. It consisted of 12.5% two-room dwellings, 37.5% three-room dwellings and 50% with at least three bedrooms. In addition, 350 homes for the elderly were built.³⁵ Such mix of types of dwellings was made easier to implement with the post-war increase of the percentage of the high-rise buildings comprising more flats. In 1956, the design of the high-rises planned north of the Sloterveer on Noordzijde has finally started. The planners of the Urban Development Bureau have recognised the significance of that location from the very beginning, back in the 1930s. The 'very important north-east bank' was seen by the Urban Development as the centre of the recreation.³⁷ It was expected that most of the crowd from the city would reach the lake there³⁸, hence the location called for a special development:

³⁴ HNI, handwritten note 'Tuindorp Frankendael', 1952. Archive C. van Eesteren, EEST I.442. Translated by the author.

³⁵ Steenhuis (red.), *De Nieuwe Grachten Gordel*, 188. Translated by the author.

³⁶ SAA, *Summary of the discussion about Sloterveer part A at the office of the Municipal Housing Service*, 16.03.1951. Urban Development archive 5344, 339/SO 432.

³⁷ SAA, *Letter from Van Eesteren to the head of department Bridges*, 13.04.1955. Public Works archive 5213, file 21738.

³⁸ SAA, 'Explanatory description pertaining to the extension of the Sloterveer plan', *Municipal Gazette*, div. 1, 1939. Urban Development archive 5344, SO 284.

*'There is general agreement that it is undesirable for the land on the lake to be built up in the usual way, and that efforts should be made to reserve a prominent building style for residential buildings if possible.'*³⁹ (1936)

The director of Public Works, Van Walraven, also repeatedly referred to the:

*'extraordinary urbanistic importance of the high residential buildings, as the most character-defining accent of the garden cities and the recreation area around the Slotterplas in West.'*⁴⁰

All sides of the department were in an agreement about the importance of this location. Three high-rises were built in the end, in order to not block Slottermeer from the lake (Figure 25).⁴¹

A large part of dwellings in Slottermeer was placed in high-rises, however, most of the space was actually taken by lower buildings. Many argue that it was actually the low-rise around the Nico Snijdersstraat (by Blomhert, Groenewegen and Van Woerden) that set the architectural tone for Slottermeer (Figure 26).⁴² Although the style of the buildings varied considerably, as a range of architects was employed since Slottermeer was to be the first tangible result of the ambition behind the AUP, the blocks on Nico Snijdersstraat seemed most set in the tone of the neighbourhood. Some might criticise its architecture for being characterless, but the buildings also form a neutral background for the urban space. It is a fact that



³⁹ V. van Rossem
J.Schilt, J.Smit,
Jaarboek
Cuypergenootschap
2001 - IJkpunt
Slottermeer
(Rotterdam: 010, 2002),
19.

⁴⁰ SAA, Letter from
the director of PW
Van Walraven to the
alderman, 15.03.1958.
Urban Development
archive 5344, SO225.

⁴¹ Steenhuis (red.),
De Nieuwe Grachten
Gordel, 198.

⁴² Ibid, 195.

Figure 25. The three
high-rises as a
prominent north end
of Slotterplas, looking
from the eastbank.
SAA.

housing rarely is a landmark and its construction should not stand out, it should form a coherent wholeness with other elements of the urban space. The equality should become a visual factor, and hence the architecture in Tuinstad Sloterveer was to have a modest character. It was mainly about the urban and public housing ideals that would be realised there.

A crucial element of the urban ideals put forth by the Urban Development Bureau was the range of public greenery. After the war, it was given even more focus. Residents were seeking soothing, calming, safe and inviting places to live in. Particularly that is why it was unfortunate what happened to the strip of park along Burgemeester van Tienhovengracht canal, which makes it possible to cycle from Erasmus Park in Bos en Lommer through the greenery and along the water to Geuzenveld. The strip of park divides Sloterveer into a northern and a southern neighbourhood. Unfortunately, it is precisely this monumental green link in the design that was not implemented (Figure 23, 24), as it was considered not necessary enough to extend the expensive canal further. With the canal, the continuous strip of park disappeared from the design, and instead, a smaller and cheaper canal was realised, extending from Sloterveer dock to the Albardagracht canal. The interconnecting greenery and water ways that formed the basis of the strategies for urban greenery in the original AUP was partially lost here. Multiple other strategies about the urban green were realised and even developed further though.

Figure 26.
The low-rises on
Nico Snijdersstraat
by Blomhert,
Groenewegen and
Van Woerden.
SAA.



AUP Greenery organising the city

Before the first expansions plans, the urban greenery was considered solely as a luxurious addition in more affluent parts of the Netherlands. The first time planners and the Amsterdam municipality became acquainted with new ideas about the green space in a modern city was during preparations for Plan Zuid (1915) by Berlage, however, the plan was still grounded in the classical style of urban design. It is important to point out that the first actual implementation of these new ideas was carried out by W.G. Witteveen in his proposal for the western extension of Amsterdam (*Uitbreiding 'Amsterdam-West'*, 1924, Figure 10). The scheme was never realised, however, it was extremely influential as it put forward the ideas of Ebenezer Howard (the Garden City concept) with green space as one of the structure-determining aspects, and the ideas of Frederick Law Olmsted (Emerald Necklace in Boston, USA) with the linking of green areas into a coherent system. The latter he saw already applied on a smaller scale in Rotterdam Plan-Zuid extension⁴³ (by Bureau Granpré Molière, Verhagen en Kok, 1921, Figure 27), where the greenery would follow most of the canals creating a 'green web'. Witteveen was a designer belonging to the 20th century and the new era, as opposed to Berlage, and he recognised the needs of the new society. The Dutch populace was leaning more and more towards the social-democratic mindset which focused on the needs of the community as a whole. That prompted the growth of public facilities, mass recreation and sports clubs which all demanded a different type of park design than that of the 19th century, in which the focus was mainly on walking and strolling. In the Netherlands, Rotterdam and Amsterdam, cities where the SDAP (Social Democratic Worker's Party, *Sociaal-Democratische Arbeiderspartij*) had a lot of political influence, were the first cities to plan the construction of recreation areas for the masses.⁴³ In Rotterdam, the Municipal Works Department worked from the beginning of the century on plans for the Kralingse Forest (Figure 29). In Amsterdam, 'the green monster project' known as the Amsterdamse Bos was planned in 1928 (Figure 30). It was to spread over 895-hectares of green area in the polders south of the Nieuwe Meer.⁴⁴ This area was to become a real people's park, with much emphasis on active and passive recreation: walks in the nature, picnics and wandering off the pathways – a completely new concept compared to what was known in Amsterdam before.⁴⁵ Relaxation in the open air was paramount. Nature in the wild forest was an escape from the negatively valued empty polders and the stony city.

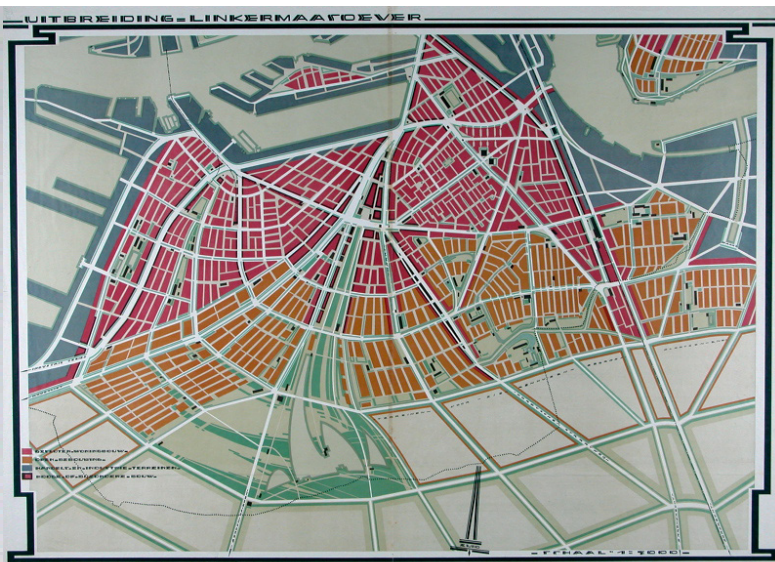
⁴³ Steenhuis (red.), *De Nieuwe Grachten Gordel*, 232.

⁴⁴ SAA, *Speech at the farewell of J.R. Koning*, 29.12.1955. Public Works Department archive 5213, file 919NW.

⁴⁵ G.M. Andela, 'Het Boschplan' in: H. Hellinga, P. de Ruijter (red.), *Algemeen Uitbreidingsplan Amsterdam 50 jaar: 1935-1985* (Amsterdam: Amsterdam Council for Urban Planning, 1985), 179-187.

left: Figure 27. Rotterdam Plan-Zuid extension 'Maas Left Banks' by Bureau Granpré Molière, Verhagen en Kok, 1921. SAR.

right: Figure 28. The Amsterdam Expansion Plan - the greenery and relaxation, 1934. Steenhuis, 231.



The municipality was greatly influenced by Witteveen's plan and wanted to continue and further develop these new ideas. The problem was that no one has ever designed urban greenery on such a scale before in the Netherlands. The Plantation Department, that this task was initially assigned to, consisted of foresters, botanists, technically trained supervisors and practical gardeners who were all used to working on much smaller projects. It was clear that a bigger organisation had to take on such a task. In 1930, at the insistence of the Committee for the New City, the relatively new Urban Development Bureau in Amsterdam took on the design aspect of greenery.⁴⁶ The Bureau was much more equipped to fulfil the task with all the numerous technical and sociological data and requirements from the other departments of Public Works. They developed the green infrastructure into a structuring and connecting motif at the highest level of scale, a green system that in its appearance was aimed at active use by all age groups. As previously mentioned, that system consisted of green wedges (*scheggen*) reaching deep into 'the heart' (the old part of the city) and placed interchangably with the new neighbourhoods that both spread radially out of the heart. The green wedges were as follows (counterclockwise): Spaarnwoudescheg [1], Sloterscheg [2], Amsterdamse Bosscheg [3], Amstelscheg [4], Diemerscheg [5], Waterlandscheg [6], Twiskescheg [7], Zaanseescheg [8] (Figure 29). Each green wedge contained a water body, either a river, a lake or a dock, and was interconnected with other wedges via green avenues or strips of green following canals (Figure 28), all creating a coherent system organising the city and allowing people to reach big green areas (parks and forests) through the greenery as well, as Jakoba Mulder once explained in her comment:

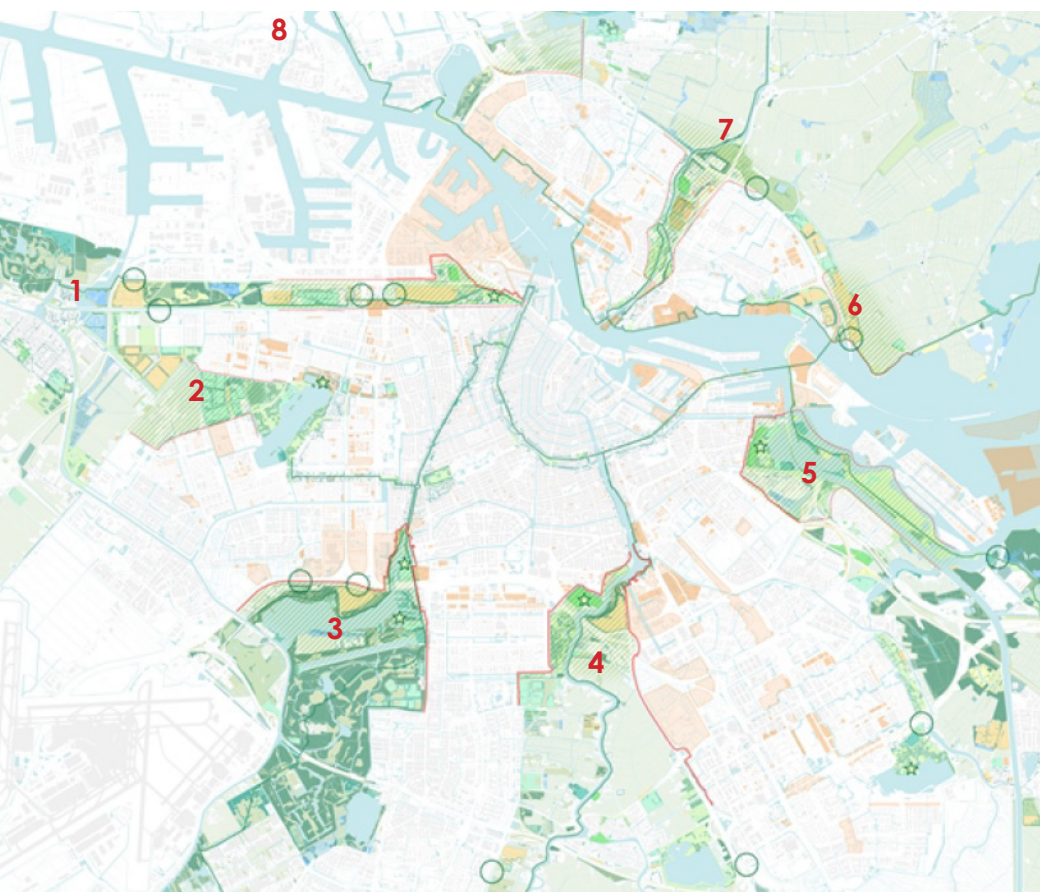
*'Greenery is beginning to take effect as a binding motif, and the many who did not understand how everything should fit together and close together are beginning to see what is meant here.'*⁴⁷

⁴⁶ SAA, H.C. King's Report, *Office for Organisation and Efficiency to the Lord Mayor*, 31.01.1944. Public Works Department archive 5213, file 3648.

⁴⁷ J.H. Mulder, 'Een tuinstad: Slotemeer - genaamd', *Polytechnisch Tijdschrift*, no. 10, 21-22 (1955): 370.

left: Figure 29. The map of green wedges of Amsterdam. M. Paulin, et al., *Amsterdam's Green Infrastructure* (2019), 20.

right: Figure 30. Plan of the Amsterdamse Bos, 1937. SAA.



It is crucial to understand that it was Mulder who was responsible for such excellent system of urban greenery in Amsterdam. When the Urban Development Bureau took over the design of greenery in the city in 1930, there was still no one in the country educated and experienced specifically for large-scale greenery design. The discipline of garden and landscape architecture appeared in higher education after the WWII.⁴⁸ The person who had best experience for the job at the time was Jakoba Mulder, who started working as a deputy engineer at the Urban Development Bureau in 1930. With her specific interest in the issue of greenery in the city, she had experience in designing urban green systems. Between 1928 and 1930, before coming to Amsterdam, she had worked in Delft on the design of the general expansion plan for the city and, at the regional level, on the urban axis towards Rotterdam and The Hague that included a regional green system.⁴⁹ In the 1930s, she would spend one eighth of her working time 'architecturally assisting [the garden architect] in making preliminary designs', as the economic advisor from the municipal Bureau for Organisation and Efficiency, H.C. King, put it.⁵⁰ In reality, her role was greater. She made the first sketches, after which the broad outlines of the greenery's composition were discussed with the Plantation Department. She then worked out the spatial layout, drawing the course of ponds and paths and sketching the location of any terrain fillings, trees and planting beds.⁵¹ She was also largely responsible for translating the AUP layout into reality by working out the links between the existing green spaces, for instance by designing the green strip along Zweerskade connecting the Beatrix Park to the Vondel Park. In summary, it is clear that Mulder was the creative mind behind the green infrastructure design in the 1930s.

In the AUP, the greenery design, similarly to the traffic links, was based on a hierarchal scheme, and it was divided into different types: the allotments (private and communal), the recreational spaces with sports and playgrounds, parks intended for everyday use, and the large, general recreational areas for the people to visit on Sundays and public holidays (big parks and forests). The guiding principle was the idea that a neighbourhood, district or borough should have sufficient recreational green space for each population group. The quantity was calculated using the method developed by urban planner Martin Wagner in 1915, in his paper *Das sanitäre Grün der Städte, ein Betrag zur Freiflächentheorie*.⁵²

A crucial issue, however, in creating an efficient greenery system was how to reconcile the linking of green areas, specifically the large city parks to the small neighbourhood green areas, with the open subdivision that the designers in Amsterdam had in mind. Private gardens would be largely absent from the open parcelling of land. On the other hand, the inhabitants would live in direct access to semi-private courtyards, which in turn would be part of a neighbourhood. The question was, what the green structure along the through roads and parks should look like and, at a lower level of scale, how the communal inner garden between the courtyards should be shaped and by whom should it be managed. The solution was the communal garden, a new type of public garden that became a recurring element in modern urban planning, and that was first seen by Dutch planners in Scandinavia.⁵³ These gardens were often laid out as small parks or gardens and fitted in with the block layout as a whole, as they were often designed by a garden architect⁵⁴, as it was called back then. The question who should be responsible for their design was still unclear though. During the memorandum of January 1951,

⁴⁸ Steenhuis (red.), *De Nieuwe Grachten Gordel*, 237.

⁴⁹ AD, *Employment contract and letters of appointment for Jakoba Mulder*, 07.-08.1928. Public Works Department archive 29, inv.no. 755.

⁵⁰ SAA, H.C. King's Report.

⁵¹ Ibid.

⁵² Steenhuis (red.), *De Nieuwe Grachten Gordel*, 387.

⁵³ HNI, 'Design of new housing estates in Copenhagen', 25.-26.05.1939. Archive Th.K. van Lohuizen, LOHU d14.

⁵⁴ D. van Hoogstraten, 'De Groene Stad' in: M. Steenhuis, F. Hooimeijer (red.), *Maakbaar landschap. Nederlandse landschaps-architectuur 1945-1970* (Rotterdam: Nai010 Uitgevers/Publishers, 2009), 240-260.

Van Eesteren suggested that different types of greenery should be looked after by different municipal bodies:

*'The light greenery [on the Slotermeer map] is public. It is conceivable, and this was discussed with Mr Van Marlen [from The Housing Service], that the darker greenery not shaded would become communal or individual gardens and that the darker greenery with shading would be given to the Housing Service for use.'*⁵⁵

Initially, the cooperation between different municipal bodies did not prove efficient, hence Van Eesteren appointed two architects to take on the responsibility and who did pioneering work to give the design and implementation of public and private green space in the Garden Cities their strength and sublimity. The first was Hans Warnau, who was hired as an assistant urban planner at Stadsontwikkeling.⁵⁶ He worked on the structuring of the green spaces in the neighbourhoods, and on the design principles for the parks, green strips and street profiles.⁵⁷ The Plantation Department then determined the types of trees and plants. The second architect was J.T.P. Bijhouwer, a key figure in pre-war and post-war landscape architecture. He was appointed as 'the greenery supervisor', first only for Slotermeer in 1952, followed in 1956 by the assignment for Geuzenveld.⁵⁸ Bijhouwer was responsible for:

*'supervising the laying out of public gardens and communal gardens, with the intention of achieving a certain degree of harmony between the laying out of the many individual gardens and the greenery as a whole, since this is inseparable from the urban design of the modern garden city.'*⁵⁹

⁵⁵ SAA, Van Eesteren's note on public greenery and courtyards of housing associations, 02.01.1951. Public Works Department archive 5213, file 21706.

⁵⁶ G.M. Andela, A. Guinée, *Tuin- en landschapsarchitect Hans Warnau* (Wageningen: Uitgeverij Blauwdruk, 2006), 17.

⁵⁷ Ibid, 33.

⁵⁸ SAA, Letter from the Mayor and Aldermen of Amsterdam to Bijhouwer, 12.04.1954. Public Works Department archive 5213, file 22549.

⁵⁹ Ibid.

⁶⁰ SAA, Wim Boer, Report on greenery supervision, 14.11.1962. Urban Development Bureau archives 5344, file 374.2/SO509 Greenery supervisors.

In short, he was to approve the green designs of both the Public Works Department and the housing associations (for the inner gardens) and private builders, and to adapt them where necessary. Thanks to him, the neighbourhoods developed in the 1950s achieved such harmony of different kinds of greeneries. Unfortunately, after his departure in 1959, this arrangement deteriorated as most of the garden designs were, quite surprisingly, handed down to horticulturalists, companies with whom housing associations often had long-working relationships. The garden architect responsible for Osdorp, Wim Boer, complained about the lack of organisation within and questionable competency of these associations:

*'As long as [they] continue to contract out both the design and the laying out of the gardens to horticultural firms, it cannot generally be expected that the urban planning objectives regarding the recreational significance of the urban open space will also be reflected in the designs for the communal gardens.'*⁶⁰

The complaints were utterly understandable; the housing associations had nothing to do with urban planning and were not as familiar with the ambitions behind AUP, however, the garden architects were still responsible for keeping the overall

greenery design in harmony, even though they were not in control of the designs shaping the allotments and had no control over the horticulturalists. It proves quite an inconsistency from the municipality and in how 'the chain of command' was organised. The problems did not end there; the garden architect Mien Ruys (responsible for the greenery in Slotervaart, Overtoomse Veld and Westlandgracht) also pointed out the unattainable ambition to cover the whole city in trees. While the public parks were raised by 40 centimetres in order to ensure a soil layer thick enough to sustain the vast greenery, the gardens of the housing associations had to work with layers of 15 to 20 centimetres:

*'This meant that the larger trees in particular developed poorly and it was precisely these that were supposed to make garden cities into "garden" cities.'*⁶¹

⁶¹ SAA, Mien Ruys, *Report on green supervision of Slotervaart, Overtoomse Veld and Westlandgracht*, 24.10.1962. Urban Development Bureau archives 5344, file 374.2/SO509 Greenery supervisors.

⁶² J.H. Mulder, 'Children at play', *Housing Centre Review*, no. 2, (1954): 13.

⁶³ *Ibid*, 11-14.

left: Figure 31. Inner garden on De Sitterstraat, 1952. SAA / Pieter Dirk van der Poel

right: Figure 32. Dutch polder landscape design in the inner garden on De Sitterstraat, 08.1952. SAA.

The communal garden as the smallest but an essential link in the green space system - the closest and most directly experienced by residents - could be considered a failure in the early 1960s. Nevertheless, in the 1950s, while Warnau and Bijhouwer were still in office, supported by Van Eesteren, Mulder, Scheffer and the Plantation Department, succeeded in designing a chain of public and semi-public green spaces (such as the inner gardens of housing complexes (Figure 31, 32)), held together by the avenue planting along the main roads. The greenery system offered space for development and free movement instead of the restrictive and idealised natural scenery that the English landscape style, dominant in urban greenery design until then, had offered. The composition and choice of species drew on the Dutch polder landscape, which was not copied but redesigned in a condensed form. Effects of that landscape, anchored in the collective memory of every Dutchman, were recalled in the western Garden Cities.

What Amsterdam could definitely be proud of though, were parts of the public green taken by playgrounds. The city was a pioneer in their large-scale design and application, and their policies were copied in many other places in the Netherlands.⁶² It was Jakoba Mulder's showpiece. Between the 1950s and the 1960s, she raised the awareness of the importance of play for the development of the child.⁶³ The playgrounds fitted seamlessly into the stepped recreation system of the AUP in which different play interests had been distinguished for seven age groups



derived with the same scientific precision as the calculations for the recreational areas.⁶⁴ The main element was almost always the sandpit for children aged three to six. For the older ones, there were tumble bars, climbing arches or jumping poles, bigger and steeper for the oldest children. In addition to the playgrounds, Mulder developed the playpond (Figure 34), because water was, besides sand, 'another particularly attractive form for the free play of children'.⁶⁵ A correct design was important for creating an intimate, private, safe, but not a closed off environment. The young architect Aldo van Eyck, who worked for the Public Works Department, tackled this task splendidly. His design for playgrounds acquired their own unique atmosphere through the meticulous coordination of paving and playground equipment, which became a national standard for the approach to playgrounds (Figure 33).

The greenery surrounding the buildings that residents had a direct contact with on the daily basis was an important element in the AUP, however, it was the parks that were the prominent points in the greenery system, and that were intended for the masses.⁶⁶ As any other element of the AUP, the parks within the neighbourhoods were also planned in a systematic way, as Mulder wrote in 1961:

*'With regard to the situation of the parks [within the neighbourhoods], a special distinction was made by dividing them into neighbourhood parks and larger parks, the smaller ones being situated in the neighbourhoods, the larger ones bordering on them. It was assumed that the smaller ones, the so-called 'neighbourhood parks', must serve the purpose of possible daily outings; they should not be more than 400 metres away from the nearest home; with regard to the larger park areas, which are visited on free afternoons or evenings, such as the Vondel Park, for example, a radius of influence of 800 metres was reckoned'*⁶⁷

In Slotermeer, for example, the neighbourhood park was located in the middle of the district along Burgemeester Vening Meineszlaan, in which playgrounds, a basketball court, a playground and some benches had been placed (Figure 35). The larger park, Gerbrandypark, was located at the southern edge of the district,

⁶⁴ Steenhuis (red.), *De Nieuwe Grachten Gordel*, 244.

⁶⁵ SAA, *Interview with eng. J.H. Mulder*, 1978. Urban Development Bureau Archives 5344, file SO487: 3.

⁶⁶ J.H. Mulder, F.G. Breman, 'Amsterdam und seine Stadterweiterungen', *Garten und Landschaft*, no. 70, vol. 9 (1960): 232-237.

⁶⁷ J.H. Mulder, 'Het groen in de tuinsteden', *Werk in Uitvoering*, no. 11, vol. 9 (1961): 102-107. Translated by the author.

left: Figure 33. Playground by Aldo van Eyck on Texelplein 3/7, with playbars in the front and a sandpit in the back, 1957. SAA.

right: Figure 34. Playpond on Gibraltarstraat in Bos en Lommer, 1952. SAA.



along the Van Tienhovengracht, and Mulder described it as having:

*'a very large playing area, with opportunities for ball games (...), playing meadows, quiet seats, flower borders, shrubbery and a small tennis complex.'*⁶⁸

The programme was typical of the time and was designed to address different age groups and their capabilities, creating, as Mulder and Breman were describing it, a 'harmonious construction with active and passive recreational areas (...) for each park'.⁶⁹ Characteristic of the larger parks were the austere green 'rooms' and the straight system of paths that structure the long-stretched strips of parkland featuring various functions. In areas for free play, such as the playing fields, the planting was also looser.

In the largest green areas within the green wedges, the wooded areas not only played a role in recreation, but were also intended as spatial boundaries. In Sloterpark for instance, they marked the edge of the lake, in contrast to the openness of the north and south banks. Through an alternation of enclosed wooded areas and open grass fields, the footpaths in the park area led to two vantage points with a view of the open water and the high-rise buildings along the lake. A low-lying terrace with benches along the east bank offered a view of the entire length of the water (Figure 36).

⁶⁸ Mulder, 'Het groen in de tuinsteden', 107. Translated by the author.

⁶⁹ Mulder, Breman, 'Amsterdam und seine Stadterweiterungen', 232-237.

left: Figure 35.
Park along the
Burgemeester
Vening Meineszlaan,
04.09.1963.
SAA.

right: Figure 36.
The viepoint as a
meeting point by
Sloterplas, 1964.
Mulder, 'Het groen in de
tuinsteden', 102-107.



Conclusion

The development time of the General Expansion Plan of Amsterdam marks a dynamically changing period in Europe. Population started rapidly growing forcing the cities to expand like never before, and the society has been moving on from the values of the 19th century, developing different needs and expectations from the cities. Moreover, the tragic upheavals shocking the whole world – the world wars – developed further people's needs, who were seeking peace, comfort, safety, openness, a sense of community and belonging. New solutions had to be invented in order to accommodate such changes, and they were being developed all around the world. They have reached the Netherlands in the 1920s and have inspired the first attempts of the Amsterdam extension plans. It can be seen in W.G. Witteveen's proposal for the western extension of Amsterdam (*Uitbreiding 'Amsterdam-West'*, 1924, Figure 10), where he put forward the ideas of Ebenezer Howard (the Garden City concept) with green space as one of the structure-determining aspects, and the ideas of Frederick Law Olmsted (Emerald Necklace in Boston, USA) with the linking of green areas into a coherent system. Although never realised, it was crucial in the development of Van Eesteren's General Expansion Plan of Amsterdam of 1935, which is still, to this day, one of the most efficient urban expansions. Such success derived from many aspects. Firstly, quite crucial turned out to be the fact that the design of the urban green was taken over by architects and urbanists instead of gardeners and botanists, with Jakoba Mulder as the leading factor, what was not a common practice at the time, but what gave the greenery such a profound expression and an excellent accessibility. Secondly, planners focused primarily on people's comfort following the motto 'light, air and space'. The accessibility of light, the quality and safety of communal spaces, a coherent circulation and access to the green seemed to be the leading themes. What seems to be a key element of the whole enterprise though, is the scientific approach applied throughout, from the largest to the smallest of scales, creating a coherent and a well-functioning system. The whole plan is an intricate web of meticulously derived hierarchical systems applied to nearly every aspect of the urban, from types of urban links, building layouts and their types and designs, to the street profiles, types of sidewalks, greenery and plants, which was quite a revolutionary approach back at the time, and which is what makes the AUP such an exquisite project – a project, to make people's lives better.

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AD – Delft Archives (*Archief Delft*), now: SAD – Delft City Archives (*Stadsarchief Delft*)

NHA – North Holland Archives (*Noord-Hollands Archief*) in Haarlem

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Figure 17.

SAA. 'Burgemeester de Vlugtlaan 200 (approx.) to 210 (low-rise building on the right, mainly) (*Burgemeester de Vlugtlaan 200 (ca.) t/m 210 (laagbouw rechts, vnl.)*)', April (1963). Image File: 10009A005244, Inv. 10009.A.

Figure 18.

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Figure 22

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LIST OF IMPORTANT PEOPLE

Ebenezer Howard (1850, London, UK – 1928, Hertfordshire, UK)
English urban planner, creator of the *Garden City* movement.¹

Frederick Law Olmsted (1822, Hartford, US – 1903, Belmont, US)
American landscape architect, journalist, social critic, public administrator, designer of the park system in Boston, US, now known as the Olmsted Park – part of the Emerald Necklace chain of parks. He was the first to design greenery into a system.²

Hendrik Petrus Berlage (1856, Amsterdam, NL – 1934, The Hague, NL)
Architect, artist, considered to be the first Dutch modernist. Designer of Plan Zuid, south extension of Amsterdam.³

Andries Wilhelm Bos (1860, Groningen, NL – 1954)
Engineer, director of Public Works Department between the years 1907-1926. Designer of the 'Scheme-plan for Greater Amsterdam' from 1921.⁴

Willem Gerrit Witteveen (1891, Deventer, NL – 1979, Vught, NL)
Urbanist, designer, head of the Rotterdam Urban Expansion and Buildings Department from 1926 onwards, founder of the Urban Development Department in Rotterdam (1931), designer of the reconstruction plan for Rotterdam after WWII, designer of the Expansion West Amsterdam (*Uitbreiding Amsterdam-West*) from 1924.⁵

Louis Suzon Pedro (L.S.P.) Scheffer (1887-1974)
Head of the Urban Development Bureau in Amsterdam in the years 1928-1952. He was a member of the executive board of the Dutch Institute for Housing and Urban Planning. He was elected President of the International Federation for Housing and Town Planning in 1952, succeeding Sir George Pepler.⁶

Cornelis van Eesteren (1897, Alblasterdam, NL – 1988, Amsterdam, NL)
Architect, urbanist, 'the father' of AUP. Head of the Urban Development Bureau in the years 1952-1958. He was involved in *De Stijl* movement and was a chairman of CIAM (*Congrès Internationaux d'Architecture Moderne*), and by virtue of that position he was the initiator of the congress 'The functional city' in 1933.⁷

Wichert Arend de Graaf (1880, Kampen, NL – 1970, Amsterdam, NL)
Public Works Director (*Publieke Werken (PW)*) in the years 1926 - 1947.⁸

Jakoba Helena Mulder (1900, Breda – 1988, Amsterdam)
Architect, head of the Urban Development Bureau in the years 1958-1965, Delft-trained structural engineer with experience in urban planning as an assistant engineer for Delft municipality. She had contributed to the Zuid-Holland West regional plan. In 1929, she joined the new team created in the Urban Development Bureau (within the Public Works Department) by Van Eesteren, with the AUP as their main task. She became the second most influential person there after Van Eesteren. Thanks to her, Amsterdam extension is full of large public, green spaces and playgrounds that she was the main advocate for.⁹

Jacob Eduard van Heemskerck van Beest (1828, Kampen, NL – 1894, The Hague, NL)
Engineer, De Graaf's successor as the Public Works Director (*Publieke Werken (PW)*), the saviour of Sloterveer's spacious layout who managed to persuade the government and the Minister of Reconstruction and Public Housing Joris in 't Veld to keep the vast spaces.¹⁰

¹ Jean-Yves Tizot, 'Ebenezer Howard's Garden City Idea and the Ideology of Industrialism', *Victorian and Edwardian Notebooks*, no. 87 (01.04.2018). DOI : <https://doi.org/10.4000/cve.3605>

² James C. O'Connell, 'The Legacy of Frederick Law Olmsted's Emerald Necklace in Contemporary Boston', *Proceedings of the Fábos Conference on Landscape and Greenway Planning*, vol. 5, no. 1, 23 (2016): 165-167.

³ Marien van der Heijden, 'Berlage, Hendrik Petrus', *BWSA*, vol. 6, (1995): 26-30.

⁴ Vincent van Rossem, 'A.W. Bos (1860-1954)', *Binnenstad*, vol. 232, January (2009).

⁵ HNI, 'Witteveen, Willem Gerrit'. <https://zoeken.hetnieuweinstituut.nl/en/persons/detail/6571574f-0791-5990-a904-554036f1b163>.

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⁸ Steenhuis (red.), *De Nieuwe Grachten Gordel*.

⁹ Steenhuis (red.), *De Nieuwe Grachten Gordel*, 386-387.

¹⁰ Bosma, *Het Nieuwe Bouwen. Amsterdam 1920-1960*, 55-59.

Hans Warnau (1922 – 1995)

Landscape architect, assistant superintendent at the Rotterdam Public Gardens Department since 1942, part of the Urban Development team since 1951, designer of Robert Kochplantsoen (1951) and the Darwinplantsoen (1952) in the Watergraafsmeer. He was an advocate of Dutch polder garden design, as opposed to the English garden style.¹¹

J.T.P. Bijhouwer (1898 – 1974)

Architect, designer, supervisor of the Sloterveer and Geuzenveld gardens.¹²

Albert van Walraven (1904 – 1986)

Engineer, Public Works Director (Dienst *Publieke Werken* (PW)) in the years 1955 - 1969. He started in 1928 and has worked at Public Works throughout his working life.¹³

¹¹ G.M. Andela, A. Guinée, *Tuin- en landschapsarchitect Hans Warnau* (Wageningen: Uitgeverij Blauwdruk, 2006), 17.

¹² HNI, 'J.T.P. Bijhouwer'. <https://zoeken.hefnieuweinstituut.nl/nl/personen/detail/2d817f2b-c2ac-5de4-b46f-b32d04d7267e>.

¹³ SAA, 'Albert van Walraven'. <https://archieff.amsterdam/inventarissen/details/30287>.