

# Cycle Traffic In Amsterdam Urban Planning

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Amsterdam had already undergone some 600 years of urban planning before the bicycle appeared at the end of the 19th century. Then it took nearly half a century before the bicycle was taken seriously as a means of urban transport when it came to town planning. This happened as part of the planning and implementation of city expansion as laid out in the General Extension Plan (1934) in the west and the south, where cycle paths were added to the most important roads. In the thirties, the bicycle was the dominant means of transport in a compact city with very little car traffic and scarcely any need for special provisions. Things changed after the Second World War, with the rise of the automobile and increasing distances. This presentation will show, using a few examples, how new urban planning has dealt with the role of the bicycle. (One example of how cycle facilities have been introduced in older parts of the city is discussed in the contribution by Addy Jonker whereas Ton Schaap's contribution emphasizes new districts in progress.)

Town planning and urban development are important determining factors for cycle use. At the same time though, planning and design has to take account of many more factors than just the bike. The result can therefore vary considerably depending on numerous variables like the topographical situation, design standards, accessibility, land use and densities, available budgets, the planning process, vision and personal opinions of planners, designers and administrators etc. etc.

The following will show how cycle facilities are part of a number of urban expansions over the last thirty years. Where possible the functioning of these facilities will be evaluated. The presentation will be followed by a cycle excursion to the Nieuw Sloten district, one of the examples to be discussed.

## The Bijlmermeer



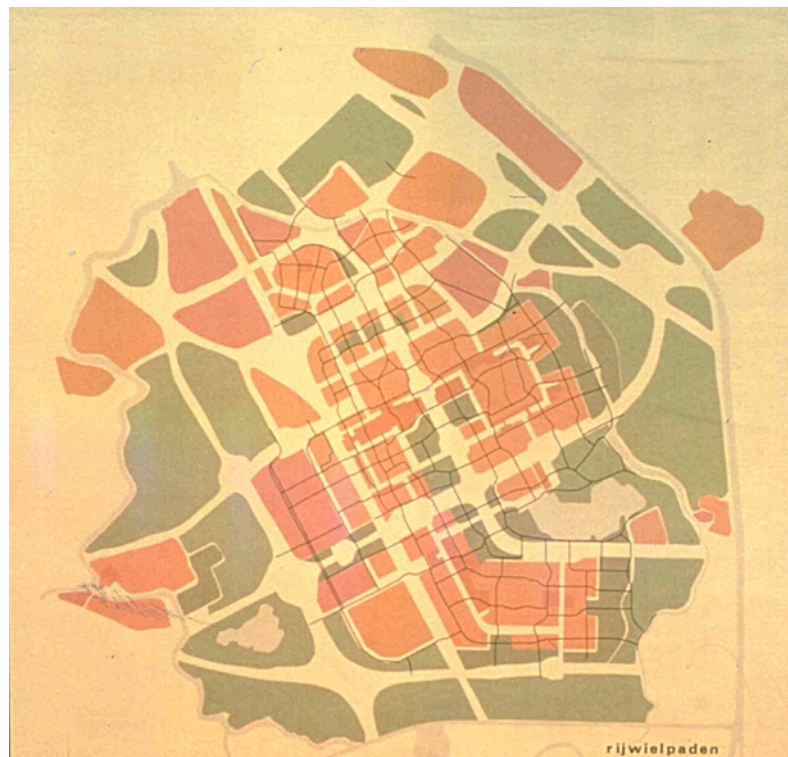
**Ill. 1 Aerial photo of Bijlmermeer**

During the implementation of the General Extension Plan (GEP) it was already clear that it would not meet the strong growth in housing demand after 1950. New opportunities for expansion were sought. These were found in the north and southeast of Amsterdam, areas dropped by the GEP. Since original objections (problems concerning accessibility and municipal boundaries) could be overcome, plans were developed to house some 100,000 residents in each area. For south-eastern Amsterdam, the Bijlmermeer was first designed and built according

to a structural plan established in 1965. The urban design was somewhat revolutionary for Amsterdam. The principles of light, air and space, that were also the basis of the GEP expansions, were unequivocally applied but here were linked to the enormous scale and the far-reaching spatial separation of functions. It was a reaction to the western suburbs with their limited quality and size of homes, their fragmented green, their parking problems and unsolved road safety. The large scale (90% high-rise in 2+9 levels) arose through the need to quickly build 17,000 (industrialised) homes with 100-125 m<sup>2</sup> in an average density of 40 homes per hectare, three quarters in the social sector.

Differentiation of function also applied to the spatial separation of different types of traffic, in this case according to levels. Ground level was entirely for pedestrians and cyclists (in a parkland design), cars and buses had an elevated system of secondary roads (about 4m+) whilst the metro and a limited number of primary roads ran even higher (about 11m+). The secondary road system in particular, determined the allocation of lots for blocks of buildings since the grid size (800x800m, combined with 800 m distances for metro stops) was based on selected walking distances to the bus stops. A honeycomb arrangement of lots was chosen within the grid, as a result of which, the large possible open green area could be achieved. Another thing that was revolutionary for Amsterdam was the fact that cars were not permitted in the area within the secondary road system. Along these roads, parking garages were built at the tips of the honeycomb of high-rises that actually replaced the neighbourhood and district streets. From the large-scale parking buildings people could reach apartments (on foot) via so-called inner streets in the blocks of flats.

Through the green space a network of foot and cycle paths – with underpasses beneath the blocks of flats – were built with grid sizes of 200m and 600m respectively, completely free of junctions in terms of traffic from cars and public transport. The cycle paths linked to the metro stations (with cycle sheds) and most bus stops; neighbourhood and district facilities were also located at these places and the density of buildings was higher. These principles were even more strongly applied in the centre of the area near the combined railway and metro station. The cycle paths run in a westerly direction under the Amsterdam-Utrecht railway line through to the busy office and commercial district in the southeast of Amsterdam. From the Bijlmermeer, the most important routes continue to the surrounding parts of the city.



### III. 2 Bijlmermeer access structure

The Bijlmermeer has never functioned in the way it was designed to. Problems with its realisation, and particularly the management of such a large area of rapidly-built blocks of flats, that through its innovative character also placed new demands on both users and the many categories of managers, led to the failure of all kinds of smaller elements of the plan, particularly in the field of amenities and collective space. The target group, residents of moderately small homes in the older districts, found the enormous scale and the area's

uniformity unattractive and opted for new areas outside Amsterdam. Partly due to immigration from Surinam, a more cosmopolitan population arose with a lifestyle different to the one previously supposed. Other factors that played a role were the tendency towards individualisation in society (less of a basis for collective facilities), the high percentage of unemployment amongst the population and the problem of crime. If we limit ourselves to the functioning of cycle facilities, then on the positive side the unusually favourable road safety score should be noted (nearly a quarter of the Amsterdam average, in terms of the number of victims per 100,000 inhabitants). A negative assessment has to be made of the social safety of the cycle paths which many people certainly do not risk after dark and where, even during the day, some degree of social control is missing in the parkland surroundings (a disadvantage here is that habitation levels do not begin until the second storey).

The approach was altered in building the second part of Southeast Amsterdam (Gaasperdam, end of the seventies, beginning of the eighties). Construction was done on a smaller scale, in smaller open blocks, with medium and low-rise buildings. Access was more in terms of conventional solutions. The most important secondary connecting roads were linked to the finely woven neighbourhood access systems. The car appeared on the streets again, albeit in specially designed places. The principles of the cycle path network in the Bijlmermeer certainly remained the same: grid size was comparable and it connected well to the Bijlmermeer network, for the most part it consisted of separate cycle paths (along residential buildings with more social control) whilst the secondary roads ran over viaducts.

Large-scale renovation and improvement projects are now being implemented in the Bijlmermeer. Here some of the high-rise buildings (about 3000 homes) will be demolished and replaced by low and medium-rise buildings (some 4000 homes). Some of the elevated secondary roads will be built at ground level. In these areas the road safety principle of separating different types of traffic will be turned into a differentiation between major traffic roads on the one hand (along which cycle paths will mostly run) and 30 km areas on the other (where there is no distinction between different types of traffic in terms of design, apart from speed bumps and other speed-inhibiting measures). The discussion about this is in full swing: critics maintain that this sort of “repair work” (local repair patches) can only set back the quality and safety of cycling in the Bijlmermeer.

### **Nieuw Sloten**

Nieuw Sloten, a new residential area with 5000 homes (where 13,000 residents are currently living) in the southwest of Amsterdam, was completed in 1997. On the north and west sides, the area connects with the existing post-war western suburbs. The old village of Sloten lies to the southwest and on the southern side there are areas for recreational purposes.



**Ill. 3 Aerial photo of Nieuw Sloten**

Plans to turn this market gardening area into a residential district date back to the end of the seventies and the beginning of the eighties. It marked the change from a policy of regional growth (absorbing the growth in the Amsterdam population into overspill centres) to a policy of compact town planning: the city council wanted to build in and around the city as much as possible because the shifting of large numbers of Amsterdammers (mostly with middle incomes) to overspill towns was affecting the basis for facilities in Amsterdam and leading to a decline. In addition, the growth in the number of commuters was creating accessibility problems.

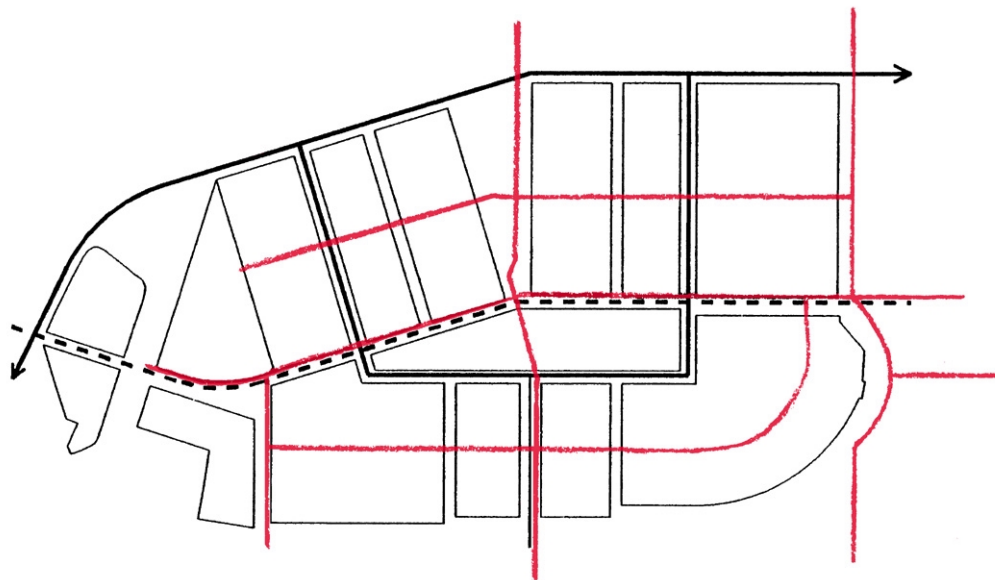
Compactness meant high-density building but still with a view to the wishes of future residents. In Nieuw Sloten, the first district as part of the compact city policy, the 5000 homes mentioned previously stand on more than 90 hectares, an average density of 53 homes per hectare. This is considerably more than the 30 to 40 homes per hectare realised in new extensions to the overspill centres. Nieuw Sloten set a trend: 100 homes per hectare are currently being built in the Eastern Docklands and 60 per hectare shortly in IJburg.

Plans for the area were accelerated in 1984 when Amsterdam put itself forward as a candidate to hold the 1992 Olympic Games. With support from the government, Nieuw Sloten was proposed as the Olympic village. As a result, new subsidies became available and there was more pressure to complete Nieuw Sloten in time. Agricultural businesses could be bought out but Amsterdam had to accept that a higher percentage of free market sector homes was inevitable. The fact that Barcelona won the right to hold the Olympics did not change things.

Two problems affected further implementation of the plans: the desirable density of homes and the structure of the roads

In terms of density, there was originally a target of 5500 homes (based on the plans for the Olympic Games), the majority of them low-rise buildings. The area's four quadrants were divided into construction belts, following the example of the long lots originally used for market gardening. Each belt had its own particular solution to the difficult problem of achieving low-rise buildings with a high density. Unity in architecture finally became unity in the design of public space connecting the construction belts. The limited size of lots was not only compensated for by carefully conceived public space but also by clever design – relatively large roof gardens for example.

For the roads connecting Nieuw Sloten with the rest of the world it was first proposed to use the planned north-south running Geerban route. Provisions for this had already been made in the General Extension Plan of 1934. The surrounding city districts objected to this for fear of large amounts of through traffic. It was finally decided to use a small (southern) part of this route that divides into a fork in an eastern and western route in Nieuw Sloten, towards the Plesmanlaan, the northern edge of the area. The attractiveness to through traffic has been limited as a result of this, but at the same time however, the integration between Nieuw Sloten and the existing city districts in the area has been compromised.



### III. 4 Map of the Nieuw Sloten road structure

Access by public transport is via the extended number 2 tramline that runs from the city centre and the 19th century districts through the centre of the area in an east-west direction. (The line has been given a terminus at the western edge of Nieuw Sloten, after a referendum decided against building on the furthest western pasture. This meant that the tram and the parallel cycle path that would have run via the pasture to the new district De Aker (since completed), now terminates in Nieuw Sloten).

There are also a few bus lines that run on the main access roads. As previously stated, there is a central east-west route for bikes formed by a cycle path parallel to the tramline.

In addition there are also separate cycle routes running through both the northern and southern parts of the area in an east-west direction providing access to the construction belts. With this

route a separate space for cyclists and pedestrians has been chosen that is not very dominant, whilst the design of each junction with roads open to vehicles has been kept to a minimum. There are also two north-south routes: on the eastern edge, part of an attractive recreational cycle route running from north to south through the western suburbs, and through the centre of Nieuw Sloten where there are local amenities and a shopping centre. This last route also has a connecting function with the surrounding areas (recreation, shopping and culture).

The intended character of the area (low-rise, high densities, long construction belts, accent on public space, position in a polder), the structure chosen for the networks (forked south-north road access, east-west public transport axis, access cycle paths crosswise to the construction belts) and the nature of cycle facilities in the surrounding areas have been the reasons why overpass junctions for cycle traffic have not been considered here. It can also be explained conversely: experiences with the principle of overpass junctions (space constraints, barrier function, lack of social safety, cost) have seriously undermined their popularity. In developing plans for Nieuw Sloten it was certainly not a natural design tool as was the case with the Bijlmermeer.

How have the conflicts with traffic from cars and public transport been solved? As previously stated, junctions between cycle paths and neighbourhood streets have not been given an “overemphasized” design; it is not a question of through connections but movement from one neighbourhood to the other. Only few traffic lights have been placed. There is one near the district centre at the junction of cycle routes with the busiest main access road. As it runs through the centre of the area, the central north-south cycle path crosses the tramline (warning lights), the central east-west cycle route and the pedestrian area (‘Together we’ll solve it’) respectively. Most crossings between cycle paths and main access roads have speed bumps for cars.

## **Conclusion**

From the examples discussed here of urban design and the bike’s place in it, there seems to be a trend towards devoting more attention to the layout of public space and at the same time, less separation of different types of users. Whether this is purely based on design philosophy (“function following form” for a change) or a powerlessness to influence behaviour by design and at the same time to create attractive public space, is difficult to determine.

Separating different types of traffic, whether vertically or horizontally, has a number of disadvantages (space constraints, fragmentation, channelling) that are particularly noticeable in urban areas, where every inch of space must be used whilst increasing demands are being placed on the design of the space. The advantages (safety and comfort in particular, but also more bike use and less car traffic) do not always seem to have been weighed up well though. The challenge is to develop a better alternative.

## **References**

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