

## MASTER

### Aging in place

adjusting post-WWII neighborhoods of midsize cities into senior friendly neighborhoods

de Groot, B.

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A photograph of two elderly women sitting on a wooden park bench. The woman on the left is wearing a plaid shirt and glasses, and is using a blue shopping cart. The woman on the right is wearing a white jacket. They are sitting on a paved sidewalk next to a road. In the background, a person is riding a bicycle. The scene is brightly lit, suggesting a sunny day.

# Aging in Place

*Adjusting post-WWII neighborhoods of Midsized cities into senior friendly neighborhoods.*



## **Colophon**

### **Author**

Bert de Groot  
s125737 | 0831788

Eindhoven, June 2016

### **Graduation Studio**

Midsized Cities in Brabant

### **Graduation Committee**

Prof. dr. ir. P.J.V. (Pieter) van  
Wesemael

Dr. S. (Sukanya) Krishnamurthy

Ir. A.W.M.M. (Ad) de Bont

University of Technology Eindhoven  
Architecture, Building and Planning  
Urban Design and Planning

# Aging in Place

*Adjusting post-WWII neighborhoods of Midsized cities into senior friendly neighborhoods.*

## **Preface**

This report is the result of my participation in the graduation studio Midsized Cities in Brabant. The graduation studio is part of the master Urban Design and Planning at the University of Technology Eindhoven. Pieter van Wesemael, Sukanya Krishnamurthy and Ad de Bont were the responsible tutors of the graduation studio. I would sincerely like to thank them for their time, knowledge and support.

Bert de Groot.





## Summary

Aging is an emerging and inevitable phenomenon that is profoundly affecting societies in the industrialized world, and thus also in the Netherlands. This imminent shift in demographics has many detrimental consequences for society in general. Because of the growing 'gray pressure', many traditional solutions for dealing with the elderly have become unaffordable and obsolete. Therefore, new alternatives have to be considered to cope with the new and imminent consequences of aging.

A new development has been the popularization of the concept 'aging in place'. Instead of retiring to a nursing home, elderly continue to grow old in their own homes. This scenario is also highly favored by the elderly themselves. With a widespread adoption of the concept of aging in place, great gains can be made in terms of efficiency in healthcare costs. To facilitate the continuation of living at home however, several adjustments have to be made to the living environment of the elderly. These adjustments are necessary to retain the autonomy and self-reliance of the elderly. The adjustments arise from specific demands and requirements of the elderly. These demands and requirements are a consequence of the limitations elderly people face.

Interesting sites to apply such a strategy are the post-WWII neighborhoods of midsize cities, dating approximately from 1945 until 1960. As they are generally considered the most neglected areas of midsize cities, while having a relative spacious structure with plentiful green and the vicinity of amenities. Moreover, these midsize cities outside of the Randstad are particularly hit hard by the aging of society.

To examine the compatibility of post-WWII neighborhoods in midsize cities, a case study has been made in Brabant. Seven midsize cities have been examined for the suitability of introducing of aging in place. The analysis has been done on the five scale levels; city, neighborhood, block, street and dwelling. The programmatic, spatial and network characteristics are cross-referenced with the demands and requirements of the elderly per scale level.

Post World War II neighborhoods in Brabant are fairly capable of converting to the requirements of aging in place. However, substantial adjustments have to be made. Foremost, these adjustments need to be made on the street level. Predominately spatial features many streets are inadequate for daily use by elderly. Furthermore, on the higher levels of city and neighborhoods, the challenge lies more in the programmatic sphere.





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# 1. Introduction

'Aging in a place that refers to making changes in the home and indentifying supports to allow seniors to live safely, independently and in a familiar environment for as long as possible. The primary concept behind aging in place is to look at the home environment and to minimize the impact of these limitations.

While older adults will require more involved care that only an assisted facility can provide, the vast majority of men and women will prefer to stay in their own home provided they can don so comfortably and with minimal danger. Minor home renovation can help seniors avoid a potentially disastrous fall, and indentifying specialized income care can delay the need to move to a nursing home.

From a government perspective, economic constraints are pushing more health-care providers and social services agencies to invest in home-care options rather than placement in costly-term residences.

Not only is staying in your own house usually much less expensive, it can also help delay or avoid the emotional stress of moving away from familiar territory.'

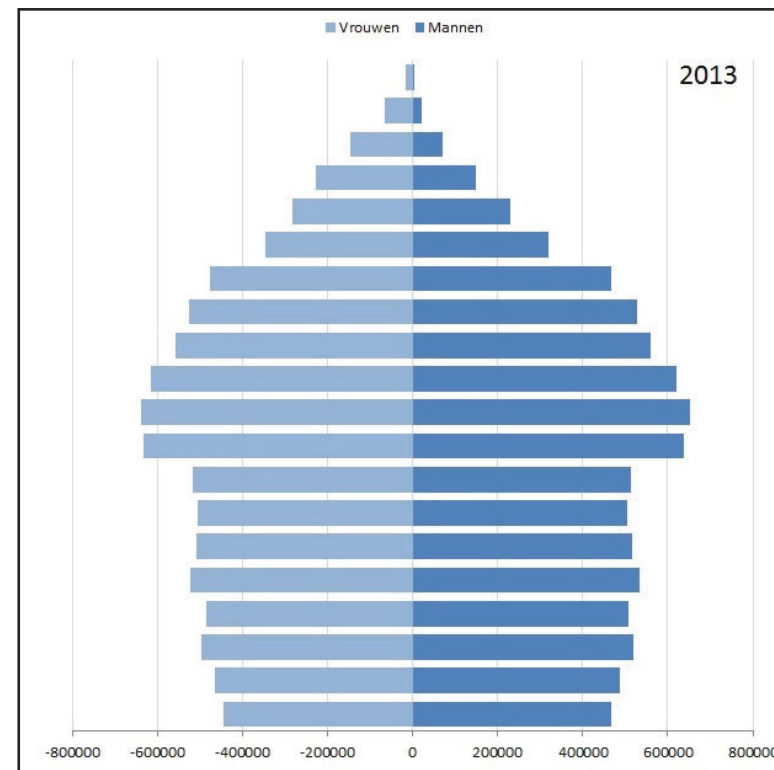


## 2. Aging

### 2.1 Aging in the Netherlands

Demographically, the Netherlands has been subjected to a gradual aging process. This development is projected to continue in the forthcoming decades. The aging fits in a larger trend within Western Europe and the Western world. This means the proportion of elderly compared to the general population is growing. This is an unprecedented situation in modern history. Traditionally, the demographic age distribution had always resembled a pyramid. With an overrepresentation in the youngest age groups and consistent declines in the subsequent age groups. In those days, dying of natural age was far more uncommon. Instead, many children never reached adulthood due to common illnesses and lack of proper healthcare. This age distribution can still be observed presently in many third world countries. However, in the ninetieth century most Western European countries rapidly industrialized. The industrial revolution brought many improvements in healthcare, nutrition and general living conditions. Therefore, fatality rates subsequently dropped. In response, the birthrates in the Netherlands started to decline since the 1880's. Continued improvements in healthcare, nutrition and general living conditions will inevitably contribute to a practically 'squared' age distribution. The size of older age groups will only be slightly smaller than those of the younger age groups.

Apart from declining early fatality rates, life expectancy rose considerably as well. This too was the result of improvements in healthcare, nutrition and general living conditions. The age group of senior citizens in the Netherlands has been set at 65 years old since World War II. However, the average life expectancy in the Netherlands has considerably risen since World War II. Therefore, the elderly are again overrepresented compared to the general population.



*Mushroom age distribution*



Another current important contributing factor is the substantial baby boom shortly after the conclusion of World War II. In the five years of dire war circumstances, many people had postponed starting a family. However, after the liberation of Western Europe the birth rate rose spectacularly. The baby boom generation includes people born between 1945 and 1955. Afterwards however, birth rates once again adjusted to normal standards. This resulted in today's overrepresentation of the older age groups compared to the subsequent age groups. The baby boom however is a temporary driver of aging, as this generation will phase out in 2030. The baby boom generation is represented in the demographic age distribution as a bulge. All these causes of aging combined have transformed the age distribution from a traditional pyramid into a mushroom.

The Netherlands will continue to age considerably in the forthcoming decades. Not only will the proportion of elderly in general grow, more specifically the number of 75+ year olds will grow. The aging occurs in all of the Netherlands, but predominately on the countryside.

The aging of the Dutch population starts to grow exponentially from 2011. This is the year that the first members of the baby boom generation became 65 years old. The aging of the baby boom generation contributes to the growing 'grey' pressure on the Dutch society. Whereas today every four people in the labor force support one 65+ year old, this will be reduced to three working people for every senior in 2020 and will even further decline to ultimately two in 2040. To put that in perspective, in 1900 every eight people in the labor force supported one 65+ year old. The grey pressure is expected to reduce after 2040.

The pace of aging is further induced by the longer staying alive of elderly. Whereas of the people turning 65 in 1990 only 60 percent reached the age of 80, of the people turning 65 in 2025 70 percent is expected to reach the age of 80. Since the introduction of the 'AOW' in 1957, the continued life expectancy after retirement has increased by 25 percent to 18 years. This is projected to extend to 20 years in 2020. The proportion of 75+ year old will increase from 7 to 14 percent in 2040.

## 2. Aging

### 2.2 Aging in Midsize Brabant

All municipalities in the Netherlands will endure aging. Including the municipalities who were traditionally exempt from it. However, there is also a geographical component to the aging process. The aging of the Netherlands is spatially not equally divided. In the Randstad and other large cities the development of aging has been relatively restricted. This can be explained by the influx of immigration and presence of students enrolled in higher education. This is in stark contrast with the more rural areas. The absence of higher education causes the departure of youth. Young adults leave these places to attend universities in larger cities. After their education, they often find suitable jobs there and continue to live there. This process is known as rejuvenation. The rejuvenation amplifies the aging process, as the proportion of elderly grows even faster. This is also the case in many midsize cities outside of the Randstad.

It is easier to organize continued autonomously and self-reliant living for the elderly in larger cities than it is in midsize cities. This is due to the higher density of elderly and the smaller distances in bigger cities. Ironically, the aging in rural midsize cities is more imminent due to the local declining labor force. Furthermore, the inevitable up scaling of many facilities, such as hospitals, leaves many midsize cities without these crucial amenities. This is especially problematic, since after many elderly end their phase of active aging, they lose their access to neighboring midsize cities. Therefore, midsize cities in the countryside face daunting challenges adjusting for aging.



*Lack of mobility*



*Lack of mobility*



*Audio or visual impaired*



*Dementia*



*Social recluse*



*Financially insecure*

## 2. Aging

### 2.3 Issues of the Elderly

This overrepresentation of elderly compared to the general population has several detrimental consequences for society, particularly in terms of social economics. Like many Western European countries, the Netherlands has adopted a social welfare state after World War II. This social security system is founded upon a proportionality between elderly compared the rest of the population. Due to the significant aging since World War II, this proportionality has come under pressure. Working people are becoming less and less able to pay for the social benefits for the growing group of elderly.

Most of the elderly prefer to grow old in their own homes and familiar surroundings. This phenomenon is better known as 'aging in place'. This implies that most of the elderly continue to live at home independently. The days that it was self evident that seniors wound up in nursing homes are gone. Due to the aging of society and the associated 'grey pressure', this has become no longer economically feasible. This is reflected by decline in available places in nursing homes in the last decades. Instead, the elderly will receive the required care through domesticated healthcare in their own homes. Only when that becomes insufficient due to the severity of illnesses or the absence of direct social support, the relocation to a nursing home becomes an option. Today, only 22 percent of 85+ year olds live in a nursing home. Therefore, in the last decade the care needs of elderly have for an important amount moved from the nursing homes to the housing market.

The concept of aging in place is not exclusively Dutch. Instead, it is popular in many industrialized countries. It is advantageously towards the elderly, as well as to the society as a whole. By continue to live in their own homes, their quality of life increases. Moreover, healthcare personal can be deployed more efficiently, while costs of healthcare are kept under control. Aging in place strongly relates to the quality of the direct surroundings of the elderly. If the quality of the surroundings is excellent, aging in place can be highly successful. However, if the direct surroundings are of a poor quality, aging in place becomes futile. Governments are presently evermore active in the encouragement of aging in place. Previously, the responsibility lay exclusively in the public domain. However, the private sector takes responsibility increasingly.

Today's elderly are easy distinguishable from previous generations. On average they are more prosperous, higher educated, more mobile and older than those of previous generations.



Although the income of the elderly diminishes after retiring from the labor force, their financial position has improved recently. This can be explained by the increase of people who have built up additional pensions during their participation in the labor force. The higher additional pensions have their origins in the increased employment of women in the labor force instead of being restricted to the household. In addition, their financial position has improved because the percentage of homeowners significantly improved. In 1981 only 30 percent of 65+ year olds was owner of a house, in 2009 this had risen to 45 percent. The trend of house ownership amongst the elderly is projected continue.

Inhabitants of the Netherlands on average continue to grow older. Old age also has its shortcomings. Although the life expectancy has risen, the number of years a 65+ year old is exempt from chronic illnesses has been reduced from 7 years in 1981 to 3 years in 2009. Not the chronic illnesses themselves, but their associated limitations restrict elderly from autonomy and participating in society. Although the increased cases of chronic illnesses increased, the accompanying limitations for the elderly declined. The years an elderly can be immune from limitations after retirement has risen from 10 to 13 years. The postponement of limitations for the elderly is expected to continue to increase.

Today's age group of 65-75 year old is particularly wealthy, mobile and active. However, there are significant differences between the elderly, both within and outside of their age groups. Major differentiating characterizations are their respective health and mobility. The income inequality amongst the elderly appears to increase. There is a schism between on the one hand prosperous elderly with supplementary pensions and paid off houses, and on the other hand poorly educated elderly with modest pension living in rented houses.

The baby boom generation enjoyed increased improved healthcare and education opportunities, technological innovations, the participation of women in the labor force, substantial increase in value of their privately owned houses, and a national rise in wealth. These new elderly are on average better educated and more active than previous generations. The members of the baby boom generation have after their retirement a surplus of time, knowledge, skills and social networks. As such, they are in an ideal situation for volunteerism, participating in local initiatives and to contribute to care giving of relatives and friends. By contributing to society in a meaningful way, the elderly can prolong their own autonomy and self-reliance.

As mentioned before, the characteristics of the elderly are changing. As a consequence of this mutation, their behavior is changing as well. After their retirement, the elderly have more leisure time. Today's elderly and those to come will be more active and mobile than the previous elderly. Therefore, their behavior and leisure activities will occur more often outdoors. Elderly spend the majority of their leisure time in the vicinity of their home. They are in general less mobile than younger people. Although people from 65 to 75 years old can be very mobile and active, after passing the age of 75 there is a steep decline in mobility and activity. After the elderly continue to get older, their average action radius diminishes. Due to their diminished action radius, the quality of their direct living surrounding grows more important. In 2020, the first members of the baby boom generation will turn 75. This will result in a major influx of people over 75 years old who will be reliant on their direct surroundings and facilities.

# General Demands and Requirements of the Elderly



























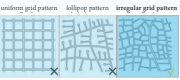








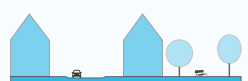












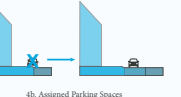
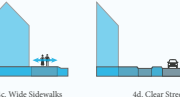
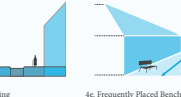

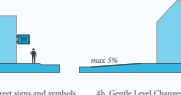
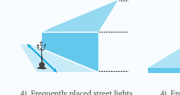

















## Literature Research

American Institute of Architects, 1985; Bjornsdottir, Arnadottir and Halldorsdottir, 2011; Cammelbeeck, 2013; Burton and Mitchell, 2006; Carstens, 1985; Gehl, 2011; Llewelyn-Davies, 2000; Mahmood et al., 2012; Michael, Green and Farquhar, 2006; Mollenkopf et al., 2004; Pearce, 1982; Pearce, 1982; Rantakokko et al., 2012; Temelova and Dvorakova, 2012

### Programmatic

### Spatial

### Actors

 <p>1] City</p>	<p>Hospital </p> <p>Dentist </p> <p>Shops </p> <p>Bars and Restaurants </p> <p>Cultural center </p> <p>Sport Facilities </p> <p>Recreational Park </p> <p>Walking and Cycling Routes </p>	<p>1a. Intersecting traffic barriers </p> <p>1b. Vicinity of the Neighborhood to the city center </p> <p>1c. Vicinity of the Neighborhood to the landscape </p>	<p>Municipality </p> <p>Ouderenbond </p>
 <p>2] Neighborhood</p>	<p><b>Primary facilities:</b></p> <p>General Practitioner </p> <p>Health center </p> <p>General food store </p> <p>Public transport stop </p> <p>ATM </p> <p>Letterbox </p> <p><b>Secondary facilities:</b></p> <p>Community facilities </p> <p>Leisure facilities </p> <p>Place of worship </p> <p>Library </p> <p>Open space </p>	<p>2a. Irregular Grid Pattern </p> <p>2b. Avoid Crossroads </p> <p>2c. Short Streets </p> <p>2d. Winding Streets </p> <p>2e. Facilities within 500-800 meters </p> <p>2f. Hierarchical Streets </p> <p>2g. Direct Routes </p> <p>2h. Mixed Use Neighborhoods </p> <p>2i. Informal Green Spaces and squares </p> <p>2j. Quiet Routes and Zones </p>	<p>Exercise Club </p> <p>Seniors Club </p>
 <p>3] Block</p>	<p>Garden </p>	<p>3a. Small Blocks </p> <p>3b. Buildings facing the street </p>	<p>Gardening Club </p>
 <p>4] Street</p>	<p>Benches </p> <p>Streetlights </p> <p>Trash bin </p>	<p>4a. Relative Narrow Streets </p> <p>4b. Assigned Parking Spaces </p> <p>4c. Wide Sidewalks </p> <p>4d. Clear Street Zoning </p> <p>4e. Frequently Placed Benches </p> <p>4f. Devoid of Clutter </p> <p>4g. Clear street signs and symbols </p> <p>4h. Gentle Level Changes </p> <p>4i. Frequently placed street lights </p> <p>4j. Frequently dropped curbs </p> <p>4k. Smooth Pavement </p>	<p>Neighborhood Association </p> <p>Oranje Fonds </p>
 <p>5] Dwelling</p>	<p>Adapted Bedroom </p> <p>Adapted Bathroom </p> <p>Stairlift </p>	<p>5a. No-step Entry </p> <p>5b. Wide Doorways and Hallways </p> <p>5c. Reachable Controls and Switches </p> <p>5d. No Height Differences </p> <p>5e. 50 - 75 square meters </p>	<p>Housing Cooperation </p> <p>Domestic Healthcare </p> <p>Food Delivery Service </p>

## 2. Aging

### 2.4 Demands and Requirements of the Elderly

The living environment needs to be made more suitable for the growing group of elderly. Due to their diminishing action radius, neighborhoods, blocks and streets need to be reevaluated. Important factors to consider are the presence of amenities, accessibility, security, the quality of green, the quality of public space and pavement. This challenge needs to be addressed in a rather urgent fashion. The responsibility of initiating a solution lies with local, provincial and the national government, housing corporations, civil organizations, the private sector and with the elderly themselves.

The most important spatial, programmatic and network consequences of aging relate to two transitions in the aging process. The first transition is after retirement from being a member of the labor force to becoming a retiree with a lot of spare time. The second transition is after a period of active aging becoming a more vulnerable and reliant senior. The active aging period is approximately between 65 and 75 years old. There are many similar requirements, but most effort is needed for the second transition. After passing the age of 75, the action radius of these people declines.

The demands and requirements of elderly can be divided in spatial needs, programmatic needs and network needs.

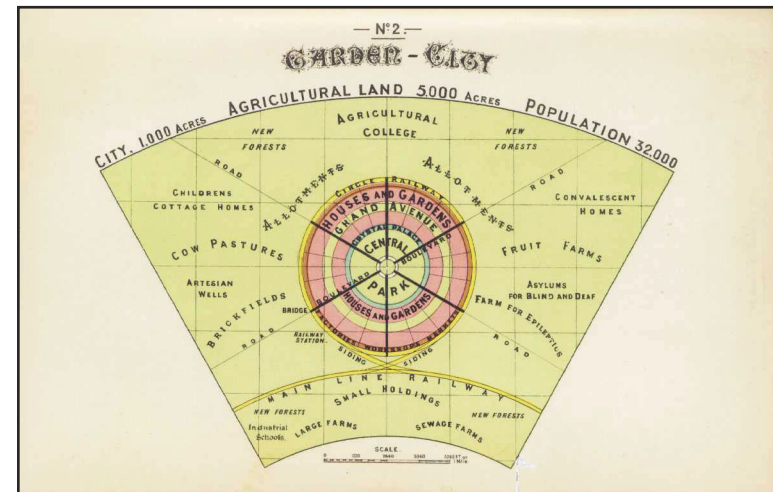
Aging in the Netherlands also has a considerable effect on the housing market. The elderly have a strong preference to continue to live in their present homes. So fewer house movements of elderly also reduces the housing market circulation in general. This will result in a constipation of the housing market. Starters on the housing market will have a hard time finding a house. However, during the 2030's when the elderly of the baby boom generation turn 85 and lose their ability to live unassisted, there will be a major influx of available houses. Those available houses will relatively be more private properties than rental dwellings. However, today's consequences are that there is a high demand for suitable senior houses. High demand with the existent limited supply of suitable houses leads to need for new appropriate housing. Due to the expensive nature of building new dwellings, it is worthwhile to look at the opportunities for converting existent houses. Converting houses is especially feasible, since most elderly have a strong preference for remaining in their present homes. Through small and bigger adjustments within homes, elderly can continue to live longer autonomously and self-reliantly in their present homes. Currently, most elderly are living in rented houses. Therefore, the largest opportunity for collective improvements with limited investments in the rental sector of the housing market. So there is a great responsibility for housing corporations to suffice in this increasing demand for elderly appropriate dwellings.

### 3. Post WWII Neighborhoods in Midsize Cities

#### 3.1 Genesis

The success of the industrial revolution had many consequences for societies in the nineteenth century. Due to the enormous amount of up scaling, many new sociological developments were triggered. The German sociologist Ferdinand Tönnies identified this shift in 1887. He described this new transformation as a junction between 'Gemeinschaft' and 'Gesellschaft'. These concepts roughly translate to community and society. Tönnies writes that modern capitalism is responsible for this schism in the traditional society. On the one hand, 'Gemeinschaft' is characterized by ones strong personal relationships with fellow human beings and a certain amount of unity and solidarity. While on the other hand, 'Gesellschaft' prioritizes economic relationships and deals with competition. Both components however represent intrinsic human needs. 'Gemeinschaft' suffices in the human necessity of relations with a group of people, while 'Gesellschaft' suffices in deliberately chosen relationships to accomplish a specific goal with a pragmatic approach.

Apart from sociological consequences, the industrial revolution also had profound repercussions for general living conditions in the nineteenth century. Many working class people were living in large newly industrialized cities with dire urbanistic living conditions. Ebenezer Howard wanted to improve these urbanistic living conditions in London with the introduction of 'Garden Cities'. Howard proposed new to be built cities of a maximum of 32.000 inhabitants. These new towns were to be situated within the landscape and around existing cities of approximately 250.000 inhabitants. This would also help in the preservation of the declining



Garden City by Ebenezer Howard



*Neighborhood Principle by Clarence Perry*

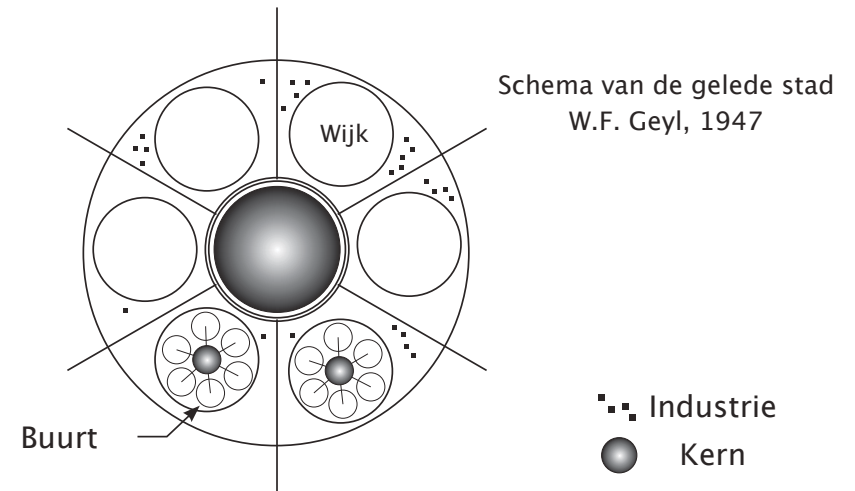
landscape. These new satellite towns would become known as Garden Cities. The new Garden Cities were connected through excellent infrastructure with the existing city centers. However, there was also a large emphasis on autonomy within the Garden Cities. The new towns were meant and designed to function as an interactive community. Residents were encouraged to participate in local government and public life. The key words were intimacy, a sense of security and a certain amount of seclusion. In this regard, it is a direct attempt at bridging the gap of Tönnies' *Gemeinschaft* and *Gesellschaft*.

The introduction of the car at the start of the twentieth century had considerable impact on the urban tissue of cities. New infrastructure to facilitate the huge number of new automobiles led to inevitable traffic barriers. These new obstacles had a negative effect on the city in terms of accessibility and living conditions. In the twenties of the twentieth century, Clarence Perry developed a new strategy to cope with, and minimize these negative effects of traffic barriers. Perry integrated these measures in the 'Neighborhood Unit'. This concept was intended to function as an urbanistic principle for dividing the city. More specifically, to divide subordinate neighborhoods. Perry decided on a unit that amounted a neighborhood with the required autonomy due to its facilities. Therefore, the need to cross the traffic barriers was significantly reduced. Eventually, the normative ratio would encompass an inclusive and comprehensive urbanistic principle to divide the city in subordinate subareas, where they could function semi-autonomously.



Shortly after the conclusion of the Second World War, the Netherlands was preoccupied by its reconstruction efforts. Many Dutch cities had suffered a tremendous amount of damage during the five years of war. The 'Wijkgedachte' was the predominate view on urban planning during these years. It was introduced with the publication 'De Stad der toekomst, de toekomst der stad' in 1946 as a result of a study group starting already during the war. The examination was instigated by A. Bos, director of the department of social housing in Rotterdam. The main pillar of the Wijkgedachte was the decentralization of cities, while being influenced by the sociologists of the Chicago School. Healthy social communities were created in the new to be built boroughs and neighborhoods. This was once again a direct response to the historic growth of cities and to address Tönnies' *Gemeinschaft* and *Gesellschaft*. Their arguing was that too large a city would be too overwhelming to comfortably live in. There was a fear of anonymity and moral decline. To combat these hazards and threats, the new borough units were limited to 20.000 inhabitants. The boroughs were subsequently further divided in subunits of neighborhoods. Every neighborhood had its own neighborhood center. The autonomous neighborhoods represented the magnitude of a village. Howard's Garden Cities and Perry's Neighborhood Unit were important and decisive influences in the creation of the Wijkgedachte.

Due to its secular nature, the Wijkgedachte was met with suspicion by the Roman Catholic establishment in the southern parts of the Netherlands. However, they acknowledged the potential benefits the Wijkgedachte could have





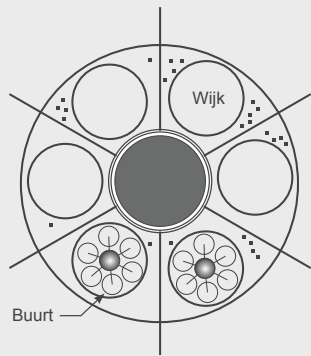
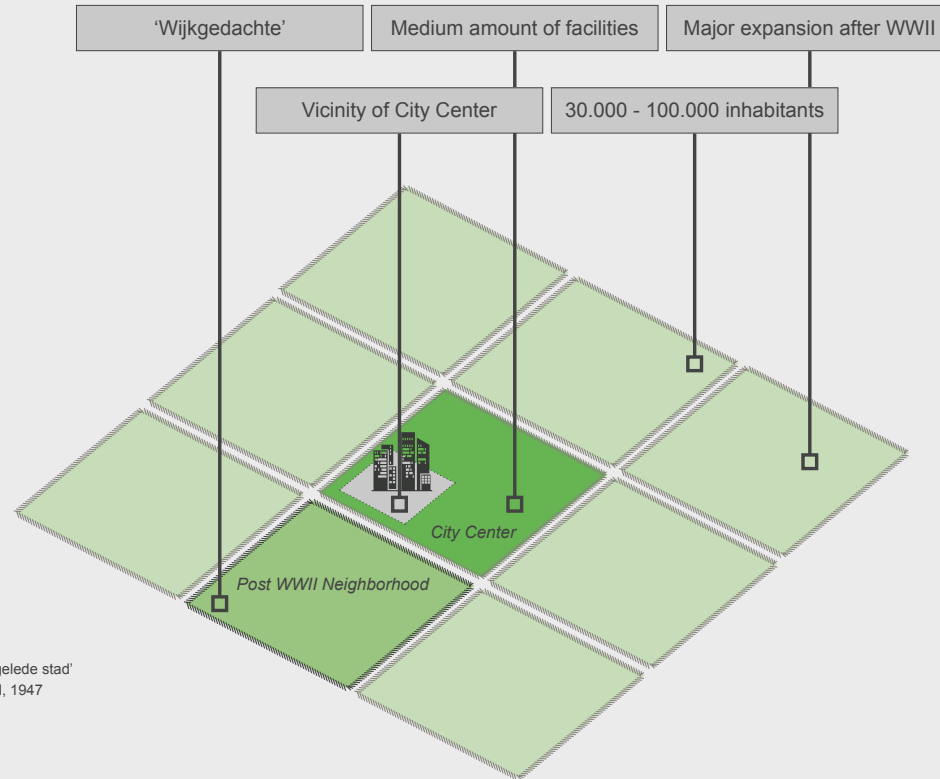
through urban planning on communities. Because they too had major concerns about the perceived demise of society. Therefore, they adopted the secular principles of the Wijkgedachte and transformed them into the 'Parochiegedachte'. Neighborhoods were to be oriented on the geographical dimensions of an autonomous Roman Catholic parish. The Catholic Church was able to afford this due to its dominant and unified positions in the southern part of the Netherlands. This dominance subsequently also led to sociological unity and cohesion. That was in stark contrast with more eclectic and fragmented protestant northern part of the Netherlands. The most important component of the Parochiegedachte was the simulation of a village within a city. Therefore, the neighborhoods were limited to approximately 1.400 dwellings. A church was situated in the middle of the neighborhood, surrounded by facilities such as a supermarket, an elementary school or pubs. The utmost importance of family in Roman Catholic doctrine also found its place in the Parochiegedachte. This was epitomized in the variety of typologies of dwellings. They were intended for different phases of a human life. This allowed inhabitants to reside within the neighborhoods for longer amounts of time, and therefore contribute to the social cohesion within the neighborhood. It also had the idealistic ambition to rehabilitate dysfunctional families in housing groups. While also allocating more luxurious dwellings to more affluent residents. As such, the Parochiegedachte was less egalitarian than the Wijkgedachte.

# Post WWII Neighborhoods in Midsize Cities

## General Characteristics



1] City



Scheme 'De gelede stad'  
W.F. Geyl, 1947

- Industrie
- Kern

'Wijkgedachte'  
A. Bos

### **3. Post WWII Neighborhoods in Midsize Cities**

#### 3.2 Cities

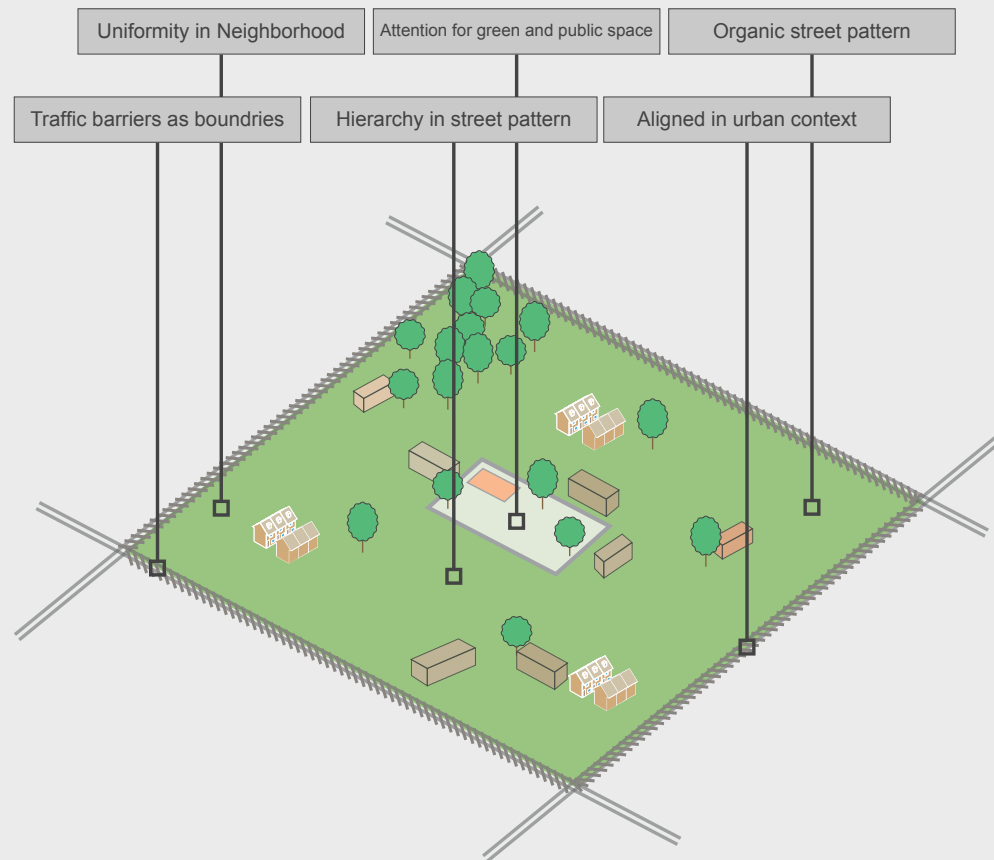
Midsize cities are categorized between 30.000 and 100.000 inhabitants. As such, midsize cities have a medium amount of facilities. Generally, only the city center and possibly a few neighborhoods were built before World War II. However, most of the neighborhoods surrounding the city center are expansions stemming from after the war. With the Post World War II neighborhoods (1945 – 1960) often directly adjacent to the city center. The neighborhoods are influenced by the Wijkgedachte or the Parochiegedachte.

# Post WWII Neighborhoods in Midsize Cities

## General Characteristics



2] Neighborhood



## **3. Post WWII Neighborhoods in Midsize Cities**

### 3.3 Neighborhoods

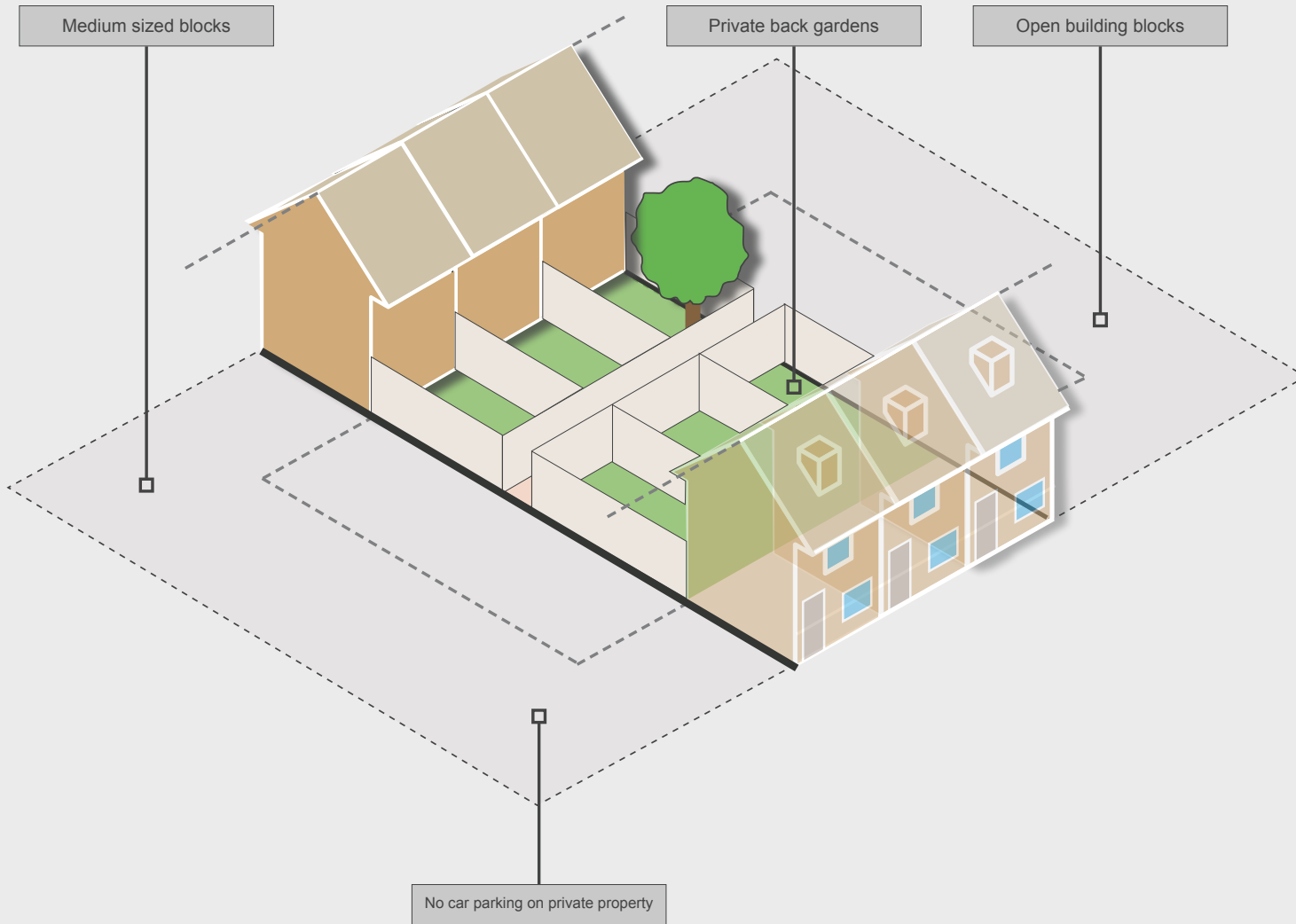
The neighborhoods have a certain amount of uniformity. Attention has been paid to the public space. The street pattern is organic. The neighborhoods are defined by the constraining traffic barriers. Within the street pattern is a recognizable hierarchy. The edges of neighborhood are aligned with its urban context.

# Post WWII Neighborhoods in Midsize Cities

## General Characteristics



3] Block



### **3. Post WWII Neighborhoods in Midsize Cities**

#### 3.4 Blocks

The blocks in the neighborhood are medium sized. An important characteristic is that building blocks are enclosed. In contrast with the more modernistic approach. The inside of the block is divided in private back gardens. However, there is no opportunity for car parking on private property.

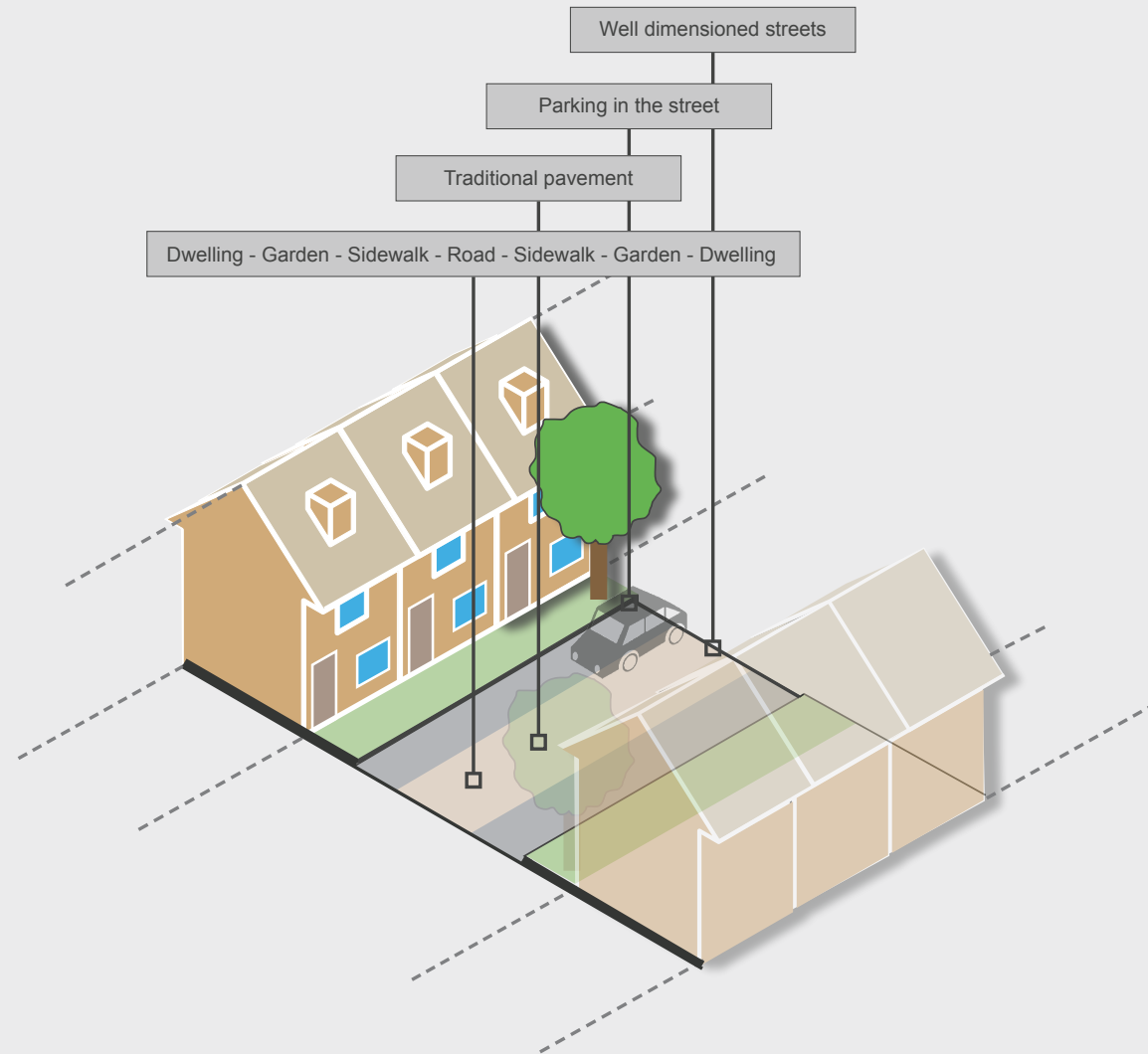


# Post WWII Neighborhoods in Midsize Cities

## General Characteristics



4] Street



### **3. Post WWII Neighborhoods in Midsize Cities**

#### 3.5 Streets

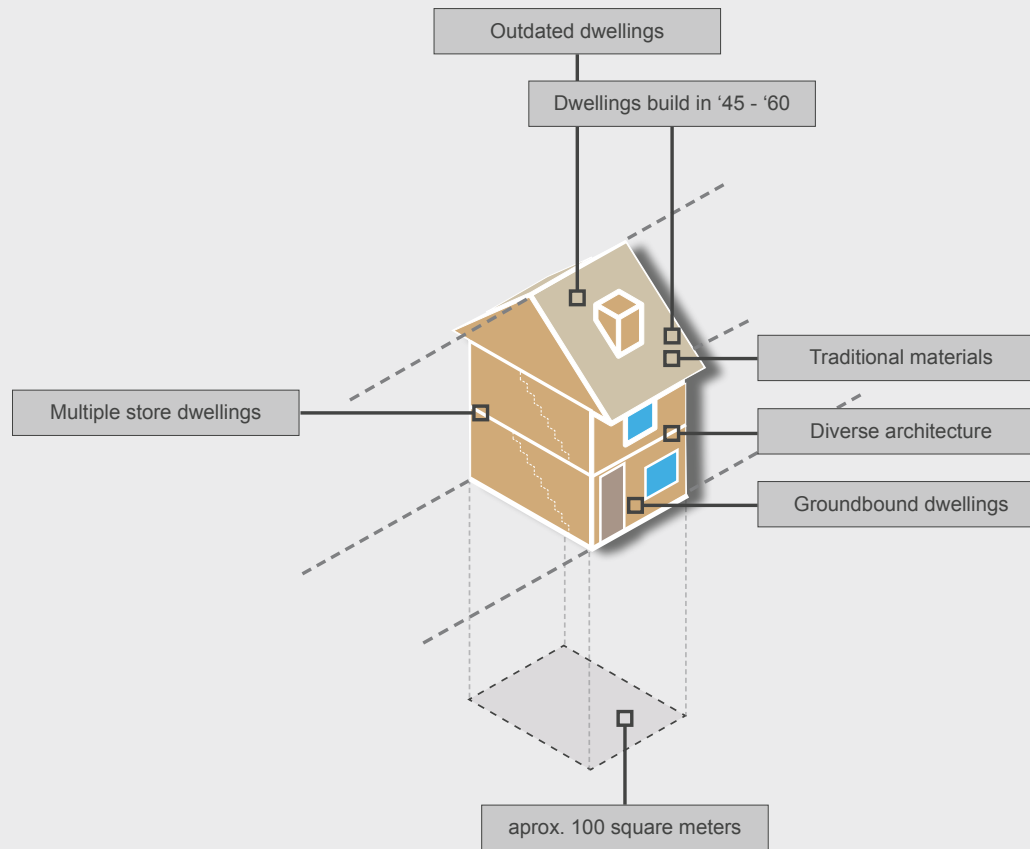
Generally, the streets are well dimensioned. Due to the absence of private parking opportunities, parking is done predominately in the street. The pavement of the street is done with traditional materials. The majority of street profiles consist of a Dwelling-Garden-Sidewalk-Garden-Dwelling order.

# Post WWII Neighborhoods in Midsize Cities

## General Characteristics



5] Dwelling

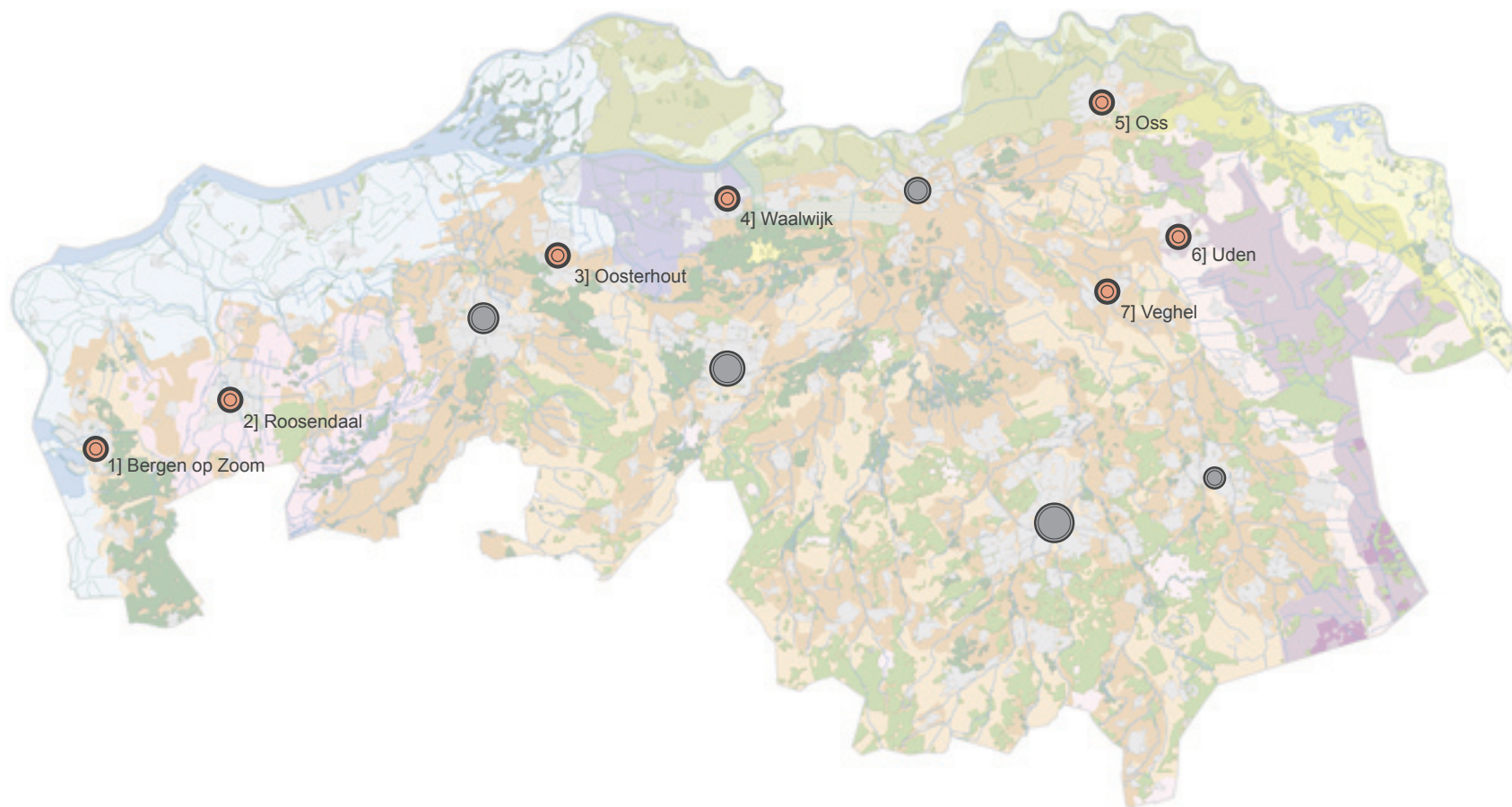


### **3. Post WWII Neighborhoods in Midsize Cities**

#### 3.6 Dwellings

Directly after World War II, there was a great urgency and to rapidly built new dwellings. Shortages of resources and materials were frequent. Therefore, the newly constructed dwellings were not of the greatest quality. Most materials used for the construction of the dwellings were traditional such as bricks, concrete and glass. In contrast with bigger cities, the majority of the dwellings are traditional ground bound dwellings with two floors and an attic. The architecture of the dwellings is rather varied.

## Midsized Cities in Brabant



### 3. Post WWII Neighborhoods in Midsize Cities

#### 3.7 Brabant

Up until the World War II, the only major cities in Brabant were Breda, Tilburg, 's-Hertogenbosch, Eindhoven and Helmond. The remaining settlements in the province of Brabant were heavily oriented towards agriculture. However, due to the intensified mechanization of the agricultural sector this economic model became obsolete. An alternative was required to accommodate the people previously employed in the agricultural sector. Therefore, a plan was commissioned shortly after the war: 'Het Welvaartsplan'. The plan encompassed a rapid industrialization of designated settlements. At these settlements, new jobs had to be created for unemployed people, formerly active in agriculture. The Queen's Commissioner of Brabant and eventual prime minister of the Netherlands, Jan de Quay, authored the plan. Seven settlements rapidly continued to grow as midsize cities: Bergen op Zoom, Roosendaal, Oosterhout, Waalwijk, Oss, Uden and Veghel.

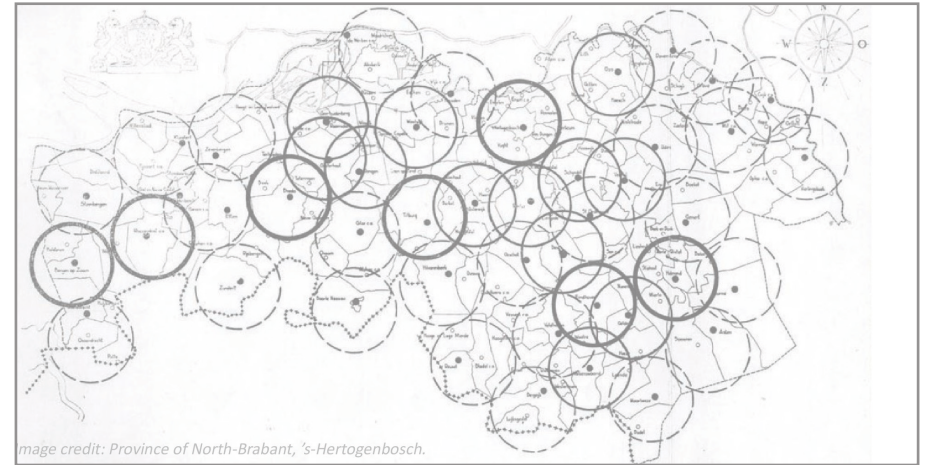


image credit: Province of North-Brabant, 's-Hertogenbosch.

*Welvaartsplan*



1] City Level



# 4. Analysis Compatibility Midsize Cities in Brabant

## 4.1 Analysis City Level

1] Bergen op Zoom 

City

-  Hospital \*\*\*\*\*
-  Dentist \*\*\*\*\*
-  Shops \*\*\*\*\*
-  Bars and Restaurants \*\*\*\*\*
-  Cultural Center \*\*\*\*\*
-  Sport Facilities \*\*\*\*\*
-  Recreational Park \*\*\*
-  Walking and Cycling Routes \*\*\*

-  Intersecting traffic barriers \*\*\*\*
-  Vicinity of the Neighborhood to the city center \*\*\*\*
-  Vicinity of the Neighborhood to the landscape \*\*

-  Municipality \*\*\*\*
-  Ouderenbond \*\*\*\*

 North  500 Meters











Bergen op Zoom	
Inhabitants	66 300
Percentage of 65+	18%
Total surface	66,51 km <sup>2</sup>
Inhabitants per square km	974
Distance to a B5 city	40,3 km





## 2] Roosendaal





City


-  Hospital .....
-  Dentist .....
-  Shops .....
-  Bars and Restaurants .....
-  Cultural Center .....
-  Sport Facilities .....
-  Recreational Park .....
-  Walking and Cycling Routes .....

-  Intersecting traffic barriers .....



-  Vicinity of the Neighborhood to the city center .....

-  Vicinity of the Neighborhood to the landscape .....

-  Municipality .....

-  Ouderenbond .....



 North  500 Meters














Roosendaal	
Inhabitants	76 900
Percentage of 65+	18%
Total surface	106,36 km <sup>2</sup>
Inhabitants per square km	723
Distance to a B5 city	24,6 km



### 3] Oosterhout



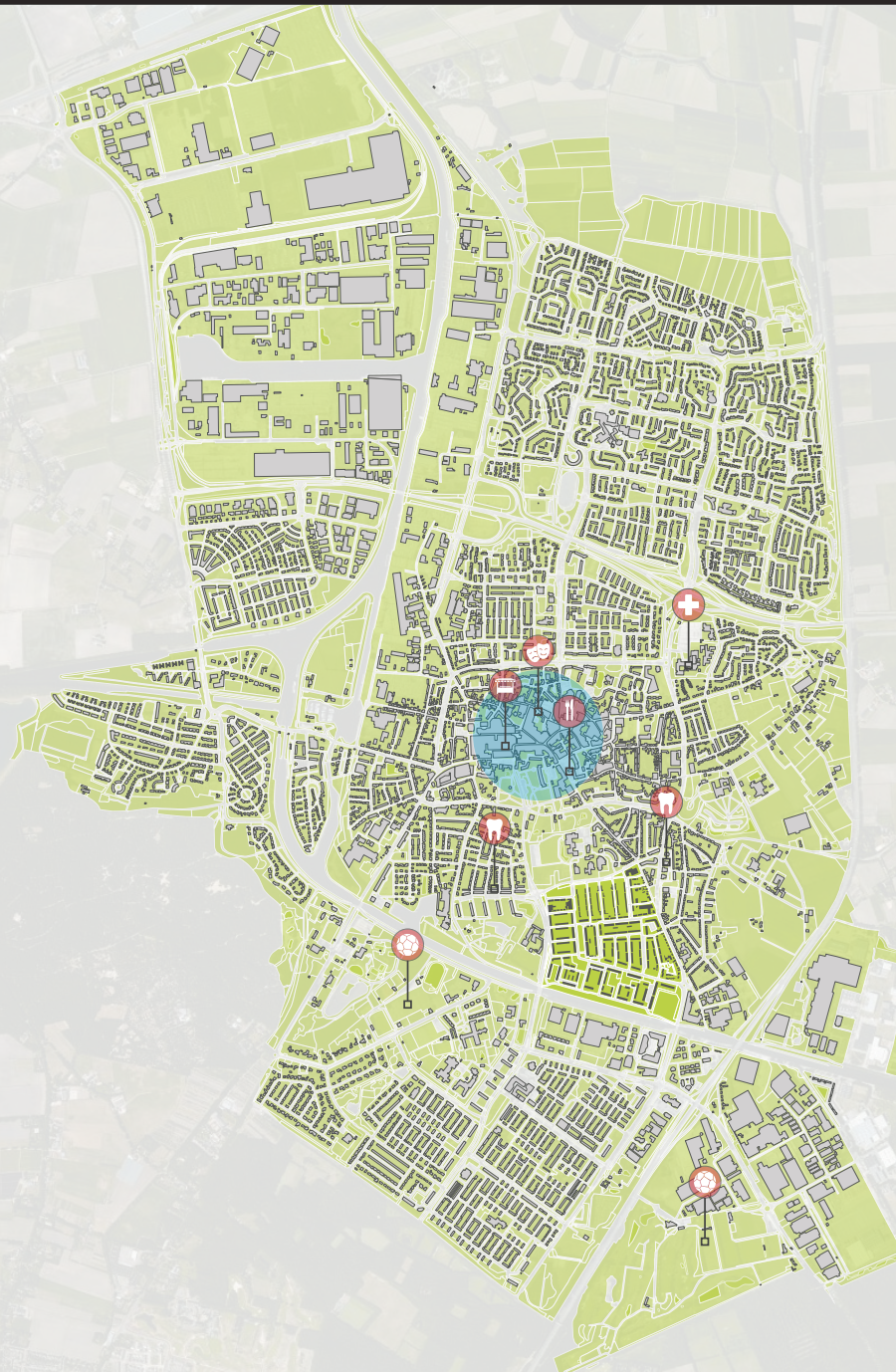
City

-  Hospital \*\*\*\*\*
-  Dentist \*\*\*\*\*
-  Shops \*\*\*\*\*
-  Bars and Restaurants \*\*\*\*\*
-  Cultural Center \*\*\*\*\*
-  Sport Facilities \*\*\*\*\*
-  Recreational Park \*\*\*\*\*
-  Walking and Cycling Routes \*\*\*
  
-  Intersecting traffic barriers \*\*\*
-  Vicinity of the Neighborhood to the city center \*\*\*
-  Vicinity of the Neighborhood to the landscape \*\*\*
  
-  Municipality \*\*\*
-  Ouderenbond \*\*\*



North

500 Meters
















Oosterhout	
Inhabitants	54 000
Percentage of 65+	18%
Total surface	71,24 km <sup>2</sup>
Inhabitants per square km	758
Distance to a B5 city	12,5 km

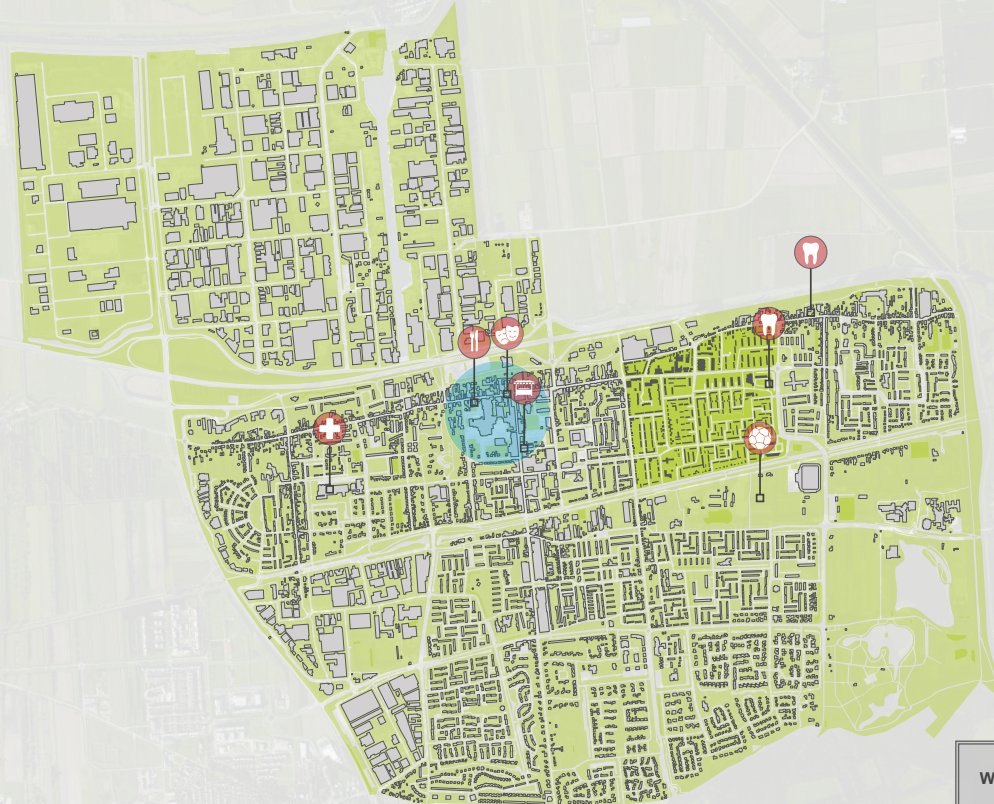




## 4] Waalwijk



City

-  Hospital .....
-  Dentist .....
-  Shops .....
-  Bars and Restaurants .....
-  Cultural Center .....
-  Sport Facilities .....
-  Recreational Park ....
-  Walking and Cycling Routes ..
  
-  Intersecting traffic barriers .....
-  Vicinity of the Neighborhood to the city center .....
-  Vicinity of the Neighborhood to the landscape .....
  
-  Municipality .....
-  Ouderenbond .....



 North  500 Meters














Waalwijk	
Inhabitants	29 200
Percentage of 65+	19%
Total surface	20,88 km <sup>2</sup>
Inhabitants per square km	1 465
Distance to a B5 city	27,3 km

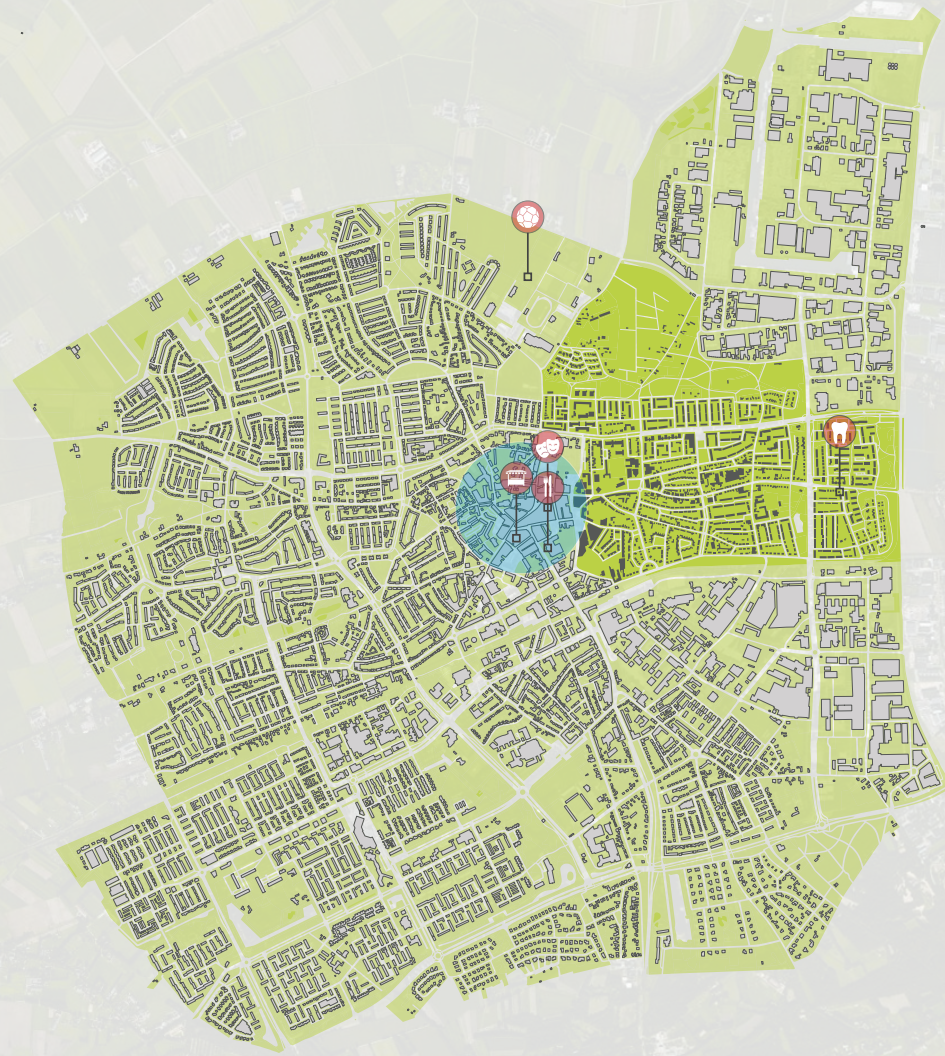



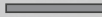
# 5] Oss



City

-  Hospital ..
-  Dentist .....
-  Shops .....
-  Bars and Restaurants .....
-  Cultural Center .....
-  Sport Facilities .....
-  Recreational Park .....
-  Walking and Cycling Routes ..
  
-  Intersecting traffic barriers ... ..
-  Vicinity of the Neighborhood to the city center ... ..
-  Vicinity of the Neighborhood to the landscape ... ..
  
-  Municipality ... ..
-  Ouderenbond ... ..



 North  500 Meters














Oss	
Inhabitants	57 600
Percentage of 65+	16%
Total surface	km <sup>2</sup>
Inhabitants per square km	
Distance to a B5 city	19,6 km



## 6] Uden





City

-  Hospital ..
-  Dentist .....
-  Shops .....
-  Bars and Restaurants ..
-  Cultural Center ...
-  Sport Facilities .....
-  Recreational Park ...
-  Walking and Cycling Routes ...
  
-  Intersecting traffic barriers ...
-  Vicinity of the Neighborhood to the city center .....
-  Vicinity of the Neighborhood to the landscape ..
  
-  Municipality .....
-  Ouderenbond .....



Uden	
Inhabitants	35 100
Percentage of 65+	16%
Total surface	36,52 km <sup>2</sup>
Inhabitants per square km	961
Distance to a B5 city	28,1 km














 North  500 Meters

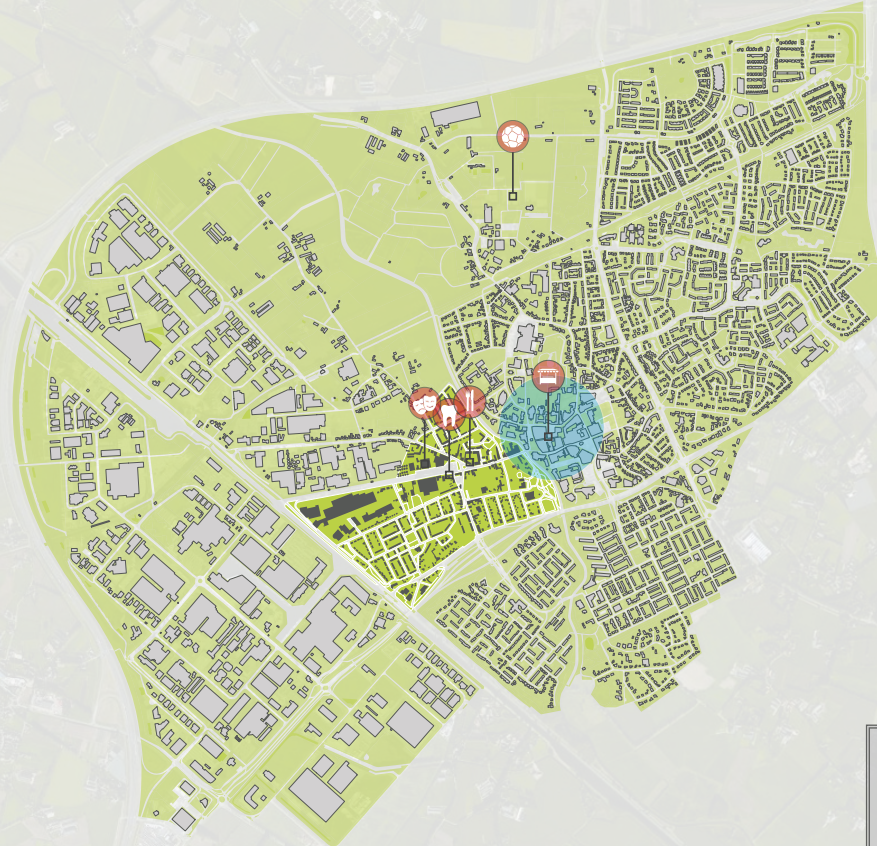


# 7] Veghel

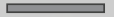


City

-  Hospital ..
-  Dentist .....
-  Shops ..
-  Bars and Restaurants .....
-  Cultural Center .....
-  Sport Facilities .....
-  Recreational Park ...
-  Walking and Cycling Routes ..
  
-  Intersecting traffic barriers .....
-  Vicinity of the Neighborhood to the city center .....
-  Vicinity of the Neighborhood to the landscape .....
  
-  Municipality .....
-  Ouderenbond .....

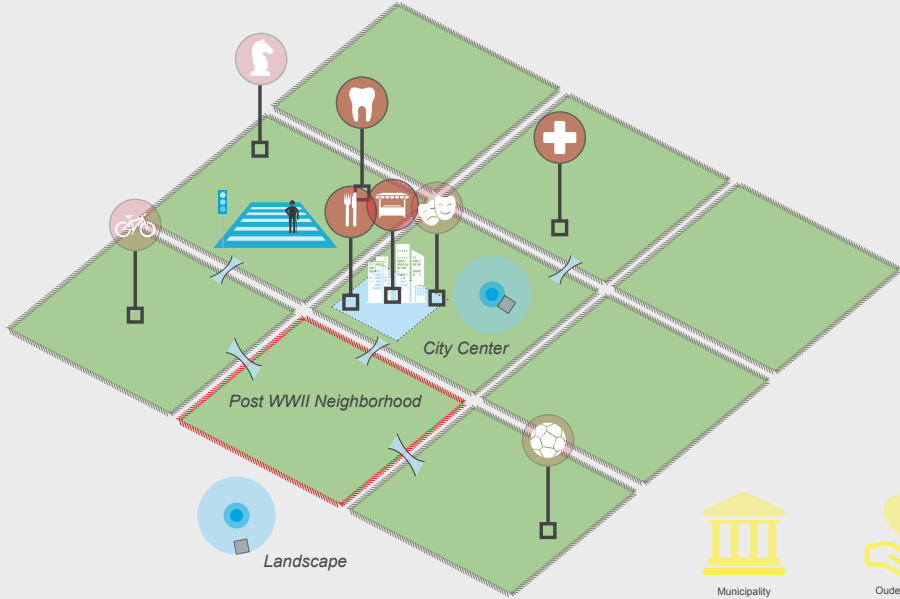


Veghel	
Inhabitants	31 400
Percentage of 65+	16%
Total surface	43,02 km <sup>2</sup>
Inhabitants per square km	737
Distance to a B5 city	20,3 km

North  500 Meters



1] City



The required amenities on the city level are a hospital, Dentist, shops, bars and restaurants, cultural center, sport facilities, recreational park and walking and cycling routes. Most of these amenities appear to be present in the M7 midsize cities in Brabant. Thus, the city level of the M7 midsize cities in Brabant as a whole appears to be rather sufficiently compatible with the programmatic demands and requirements of the elderly. In specific cities however, there need to be specific programmatic additions.

Spatially the neighborhoods are situated beneficially compared to the city center. Therefore, the most of the amenities in the city center are relatively easy accessible for the elderly residents in the neighborhood. Special attention needs to be paid on the infrastructure connecting the neighborhood with the city center. These connections are susceptible for improvement.

A lot of the responsibility for dealing with aging citizens has ended up with the municipalities. As such, the midsize municipalities require to take a proactive role in helping the elderly with their autonomy and self-reliance.






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## 2] Neighborhood Level












# 4. Analysis Compatibility Midsize Cities in Brabant











## 4.2 Analysis Neighborhood Level



1] Bergen op Zoom  
Gageldonk-West

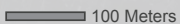


Neighborhood

-  General Practitioner .....
-  Health Center .....
-  General Food Store .....
-  Public Transport Stop .....
-  ATM .....
-  Letterbox .....
-  Community Facilities .....
-  Leisure Facilities .....
-  Place of Worship .....
-  Library .....
-  Open Space .....

-  Irregular Grid Pattern .....
-  Avoid Crossroads .....
-  Short Streets .....
-  Winding Streets .....
-  Facilities within 500-800 meters .....
-  Hierarchal Streets .....
-  Direct Routes .....
-  Mixed Use Neighborhoods .....
-  Informal Green Spaces and Squares .....
-  Quiet Routes and Zones .....

-  Exercise Club .....
-  Seniors Club .....

North  100 Meters



Gageldonk-West	
Inhabitants	5 145
Percentage of 65+	14%
Total surface	76 ha
Inhabitants per square km	6 818
Average dwelling value	€132 000,-
Percentage singular dwellings	61%
Percentage plural dwellings	39%
Percentage owned dwellings	39%
Percentage rental dwellings	61%
Distance to General Practitioner	500 meters
Distance to super market	400 meters



## 2] Roosendaal Kalsdonk



- General Practitioner .....
- Health Center .....
- General Food Store .....
- Public Transport Stop .....
- ATM .....
- Letterbox .....
- Community Facilities .....
- Leisure Facilities ..
- Place of Worship ..
- Library .....
- Open Space .....

- Irregular Grid Pattern .....
- Avoid Crossroads .....
- Short Streets .....
- Winding Streets .....
- Facilities within 500-800 meters .....
- Hierarchical Streets .....
- Direct Routes .....
- Mixed Use Neighborhoods ..
- Informal Green Spaces and Squares ..
- Quiet Routes and Zones .....

- Exercise Club ..
- Seniors Club ..

North 100 Meters



Kalsdonk	
Inhabitants	4 275
Percentage of 65+	11%
Total surface	52 ha
Inhabitants per square km	8 251
Average dwelling value	€149 000,-
Percentage singular dwellings	65%
Percentage plural dwellings	35%
Percentage owned dwellings	34%
Percentage rental dwellings	66%
Distance to General Practitioner	500 meters
Distance to super market	400 meters

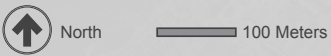


### 3] Oosterhout Slotjes-Midden



- General Practitioner .....
- Health Center ....
- General Food Store .....
- Public Transport Stop .....
- ATM .....
- Letterbox .....
- Community Facilities ....
- Leisure Facilities ..
- Place of Worship ..
- Library ..
- Open Space .....

- Irregular Grid Pattern .....
- Avoid Crossroads .....
- Short Streets .....
- Winding Streets .....
- Facilities within 500-800 meters ..
- Hierarchical Streets .....
- Direct Routes .....
- Mixed Use Neighborhoods ..
- Informal Green Spaces and Squares ..
- Quiet Routes and Zones .....
- Exercise Club ..
- Seniors Club ..



Slotjes-Midden	
Inhabitants	3 895
Percentage of 65+	15%
Total surface	74 ha
Inhabitants per square km	5 418
Average dwelling value	€164 000,-
Percentage singular dwellings	58%
Percentage plural dwellings	42%
Percentage owned dwellings	38%
Percentage rental dwellings	62%
Distance to General Practitioner	500 meters
Distance to super market	400 meters



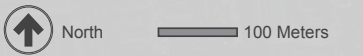
# 4] Waalwijk Laageinde



- General Practitioner .....
- Health Center ..
- General Food Store .....
- Public Transport Stop .....
- ATM ..
- Letterbox .....
- Community Facilities ..
- Leisure Facilities ..
- Place of Worship .....
- Library ..
- Open Space .....

- Irregular Grid Pattern .....
- Avoid Crossroads .....
- Short Streets .....
- Winding Streets .....
- Facilities within 500-800 meters ..
- Hierarchical Streets .....
- Direct Routes .....
- Mixed Use Neighborhoods ..
- Informal Green Spaces and Squares ..
- Quiet Routes and Zones .....

- Exercise Club ..
- Seniors Club ..



Laageinde	
Inhabitants	3 585
Percentage of 65+	18%
Total surface	48 ha
Inhabitants per square km	7 420
Average dwelling value	€159 000,-
Percentage singular dwellings	65%
Percentage plural dwellings	35%
Percentage owned dwellings	40%
Percentage rental dwellings	60%
Distance to General Practitioner	400 meters
Distance to super market	400 meters



# 5] Oss Schadewijk



- General Practitioner
- Health Center
- General Food Store
- Public Transport Stop
- ATM
- Letterbox
- Community Facilities
- Leisure Facilities
- Place of Worship
- Library
- Open Space

Irregular Grid Pattern

Avoid Crossroads

Short Streets

Winding Streets

Facilities within 500-800 meters

Hierarchal Streets

Direct Routes

Mixed Use Neighborhoods

Informal Green Spaces and Squares

Quiet Routes and Zones

Exercise Club

Seniors Club

North 100 Meters



Schadewijk	
Inhabitants	9 405
Percentage of 65+	17%
Total surface	206 ha
Inhabitants per square km	4 571
Average dwelling value	€176 000,-
Percentage singular dwellings	70%
Percentage plural dwellings	30%
Percentage owned dwellings	53%
Percentage rental dwellings	46%
Distance to General Practitioner	700 meters
Distance to super market	700 meters



# 6] Uden

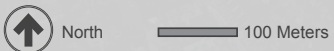
## Hoevenseveld



Neighborhood

- General Practitioner .....
- Health Center ....
- General Food Store ....
- Public Transport Stop .....
- ATM ..
- Letterbox .....
- Community Facilities ..
- Leisure Facilities ..
- Place of Worship ....
- Library ....
- Open Space .....

- Irregular Grid Pattern ....
- Avoid Crossroads ....
- Short Streets ....
- Winding Streets .....
- Facilities within 500-800 meters ..
- Hierarchical Streets .....
- Direct Routes .....
- Mixed Use Neighborhoods ..
- Informal Green Spaces and Squares ..
- Quiet Routes and Zones .....
- Exercise Club ..
- Seniors Club ..



Hoevenseveld	
Inhabitants	2 395
Percentage of 65+	21%
Total surface	55 ha
Inhabitants per square km	6 818
Average dwelling value	€188 000,-
Percentage singular dwellings	93%
Percentage plural dwellings	7%
Percentage owned dwellings	64%
Percentage rental dwellings	36%
Distance to General Practitioner	400 meters
Distance to super market	700 meters

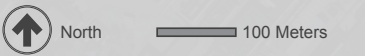


# 7] Veghel Veghel-West



- General Practitioner .....
- Health Center .....
- General Food Store ....
- Public Transport Stop ....
- ATM .....
- Letterbox .....
- Community Facilities ..
- Leisure Facilities ....
- Place of Worship .....
- Library ....
- Open Space .....

- Irregular Grid Pattern .....
- Avoid Crossroads .....
- Short Streets .....
- Winding Streets ....
- Facilities within 500-800 meters .....
- Hierarchical Streets .....
- Direct Routes .....
- Mixed Use Neighborhoods ..
- Informal Green Spaces and Squares .....
- Quiet Routes and Zones .....
- Exercise Club ..
- Seniors Club ..



Veghel-West	
Inhabitants	2 470
Percentage of 65+	16%
Total surface	87 ha
Inhabitants per square km	2 963
Average dwelling value	€174 000,-
Percentage singular dwellings	79%
Percentage plural dwellings	21%
Percentage owned dwellings	49%
Percentage rental dwellings	51%
Distance to General Practitioner	600 meters
Distance to super market	1100 meters

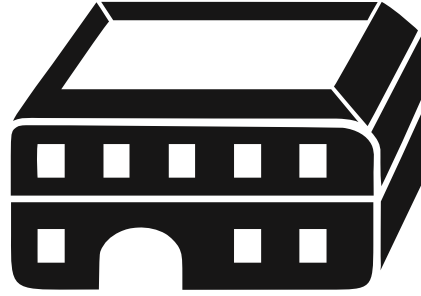




The amenities required and demanded for the neighborhood level are divided in two categories. The first contains a general practitioner, a health center, general food store, public transport stop, ATM, and a letterbox. The secondary category contains community facilities, leisure facilities, a place of worship, library and an open space. Compared to the city level, amenities on the neighborhood are more often absent. Therefore, there need to be more substantial programmatic additions to adjust the neighborhoods to the wishes of the elderly.

Spatially the neighborhoods score rather well. Most of the spatial demands and requirements are directly compatible with the neighborhoods. Areas of improvement can be the quality of informal green spaces and squares, hierarchy in the street or the distance of specific facilities.

Neighborhoods can be made further suitable for the elderly with the addition of appropriate social clubs. This can add a lot of social value to the lives of the senior inhabitants of the neighborhood.




3] Block Level





# 4. Analysis Compatibility Midsize Cities in Brabant

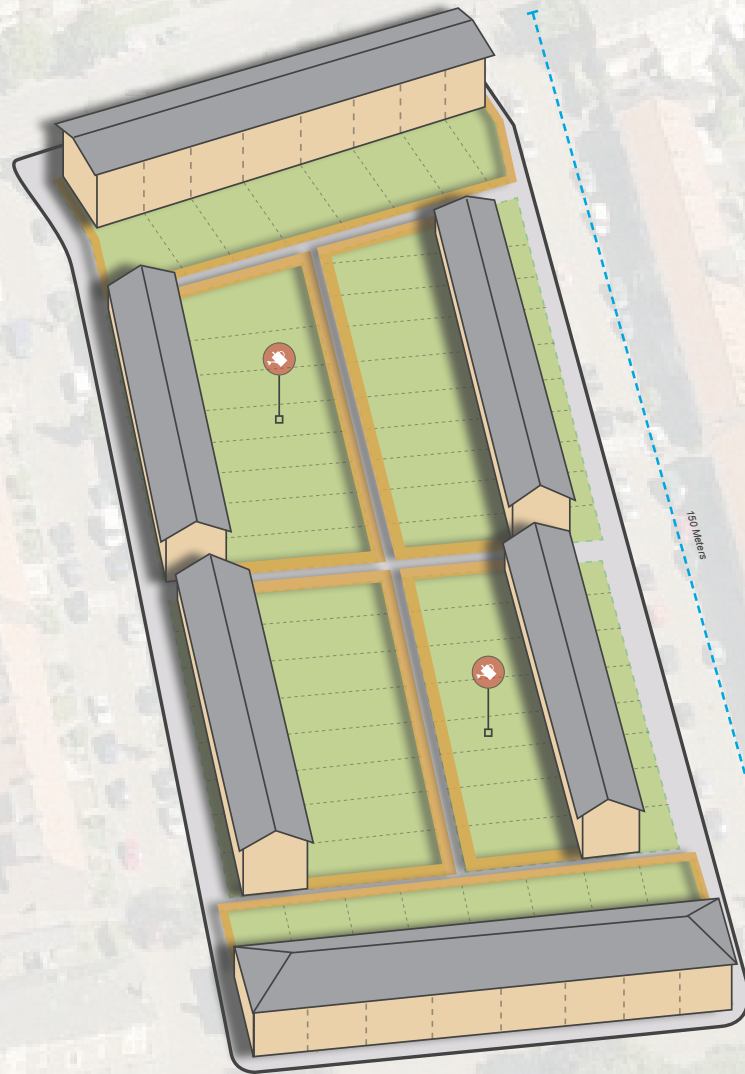
## 4.3 Analysis Block Level

1] Bergen op Zoom  
Gageldonk-West



Block




-  Garden \*\*\*
-  Small Blocks (60 - 100 m.) \*\*
-  Buildings facing the street \*\*\*\*\*
-  Gardening Club \*

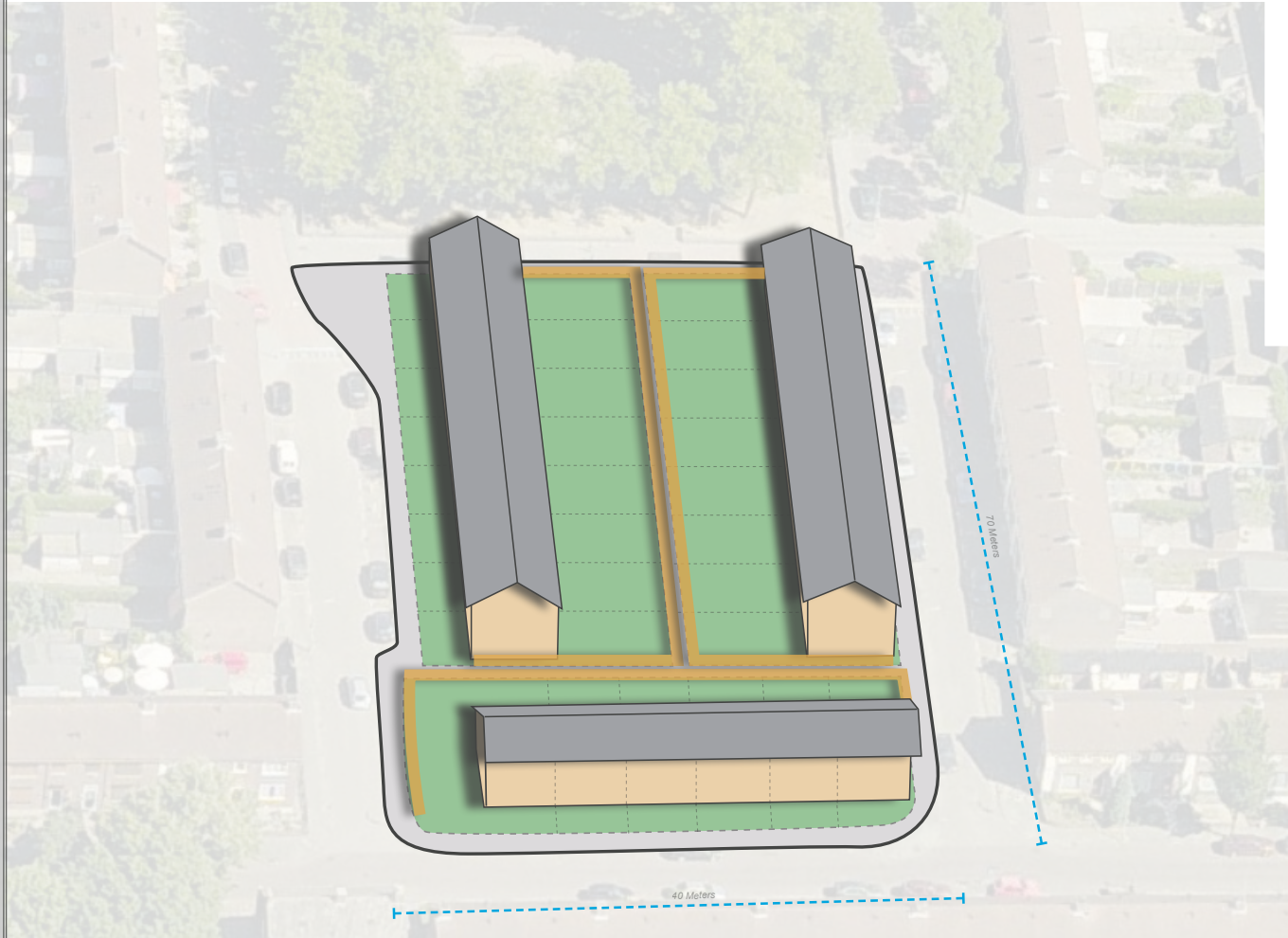


## 2] Roosendaal Slotjes-Midden



Block

-  Garden ♦♦♦♦
-  Small Blocks (60 - 100 m.) ♦♦
-  Buildings facing the street ♦♦♦♦♦
-  Gardening Club ♦



### 3] Oosterhout Slotjes-Midden



Block



Garden



Small Blocks (60 - 100 m.)



Buildings facing the street



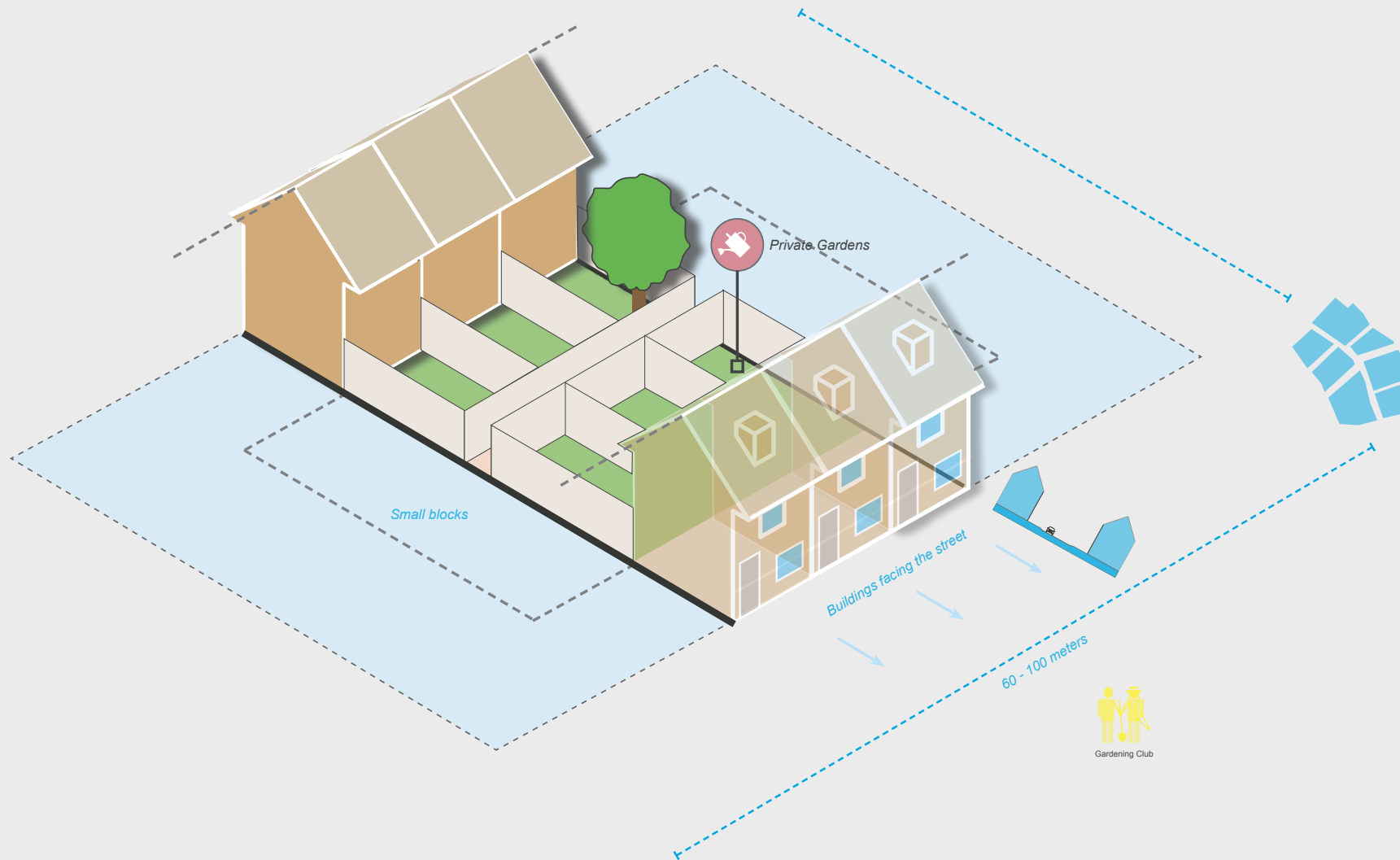
Gardening Club



# Compatibility of the Blocks



3] Block



Most inner space of the blocks is used as private garden. This is excellent as it matches the preferences of the elderly. They can enjoy this secluded outdoors are in cases such as dementia.

The spatial components suffice as well, with buildings oriented towards the street. This helps contribute to the social safety and security around the block. It furthermore helps pleasant spatial experience.

Garden clubs can further provoke a sense of community. This sense of community will contribute to the social safety and security.






4] Street Level

















# 4. Analysis Compatibility Midsize Cities in Brabant

## 4.4 Analysis Street Level

1] Bergen op Zoom  
Gageldonk-West






Street



-  Benches •
-  Streetlights ••••
-  Trash bin ••
-  Relative Narrow Streets ••••
-  Assigned Parking Spaces •••
-  Wide Sidewalks •
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter ••
-  Clear street signs and symbols ••••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs ••
-  Smooth Pavement ••
-  Neighborhood Association •••
-  Oranje Fonds •••

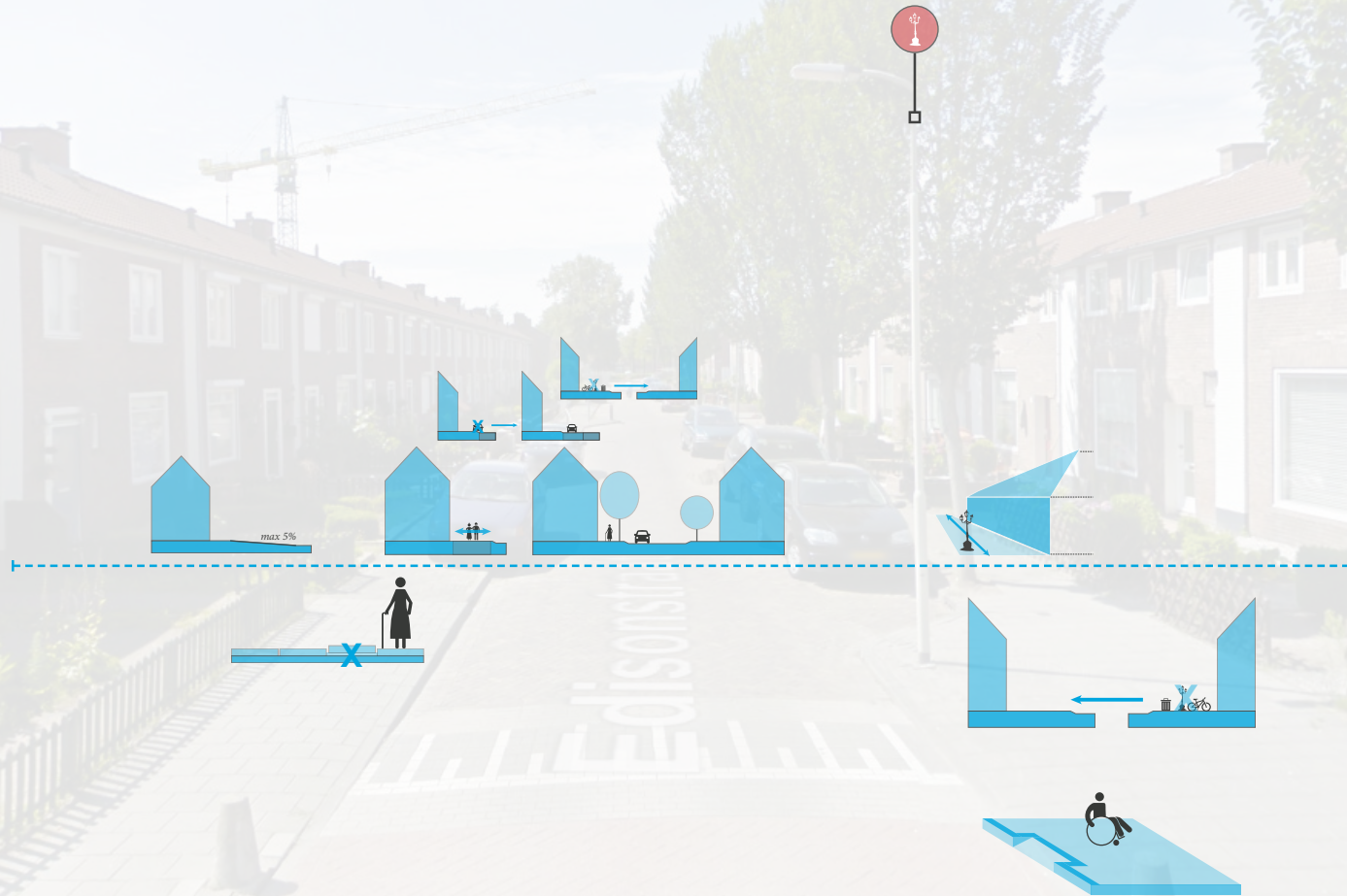


## 2] Roosendaal Kalsdonk



-  Benches •
-  Streetlights ••••
-  Trash bin •

-  Relative Narrow Streets ••••
-  Assigned Parking Spaces •
-  Wide Sidewalks •
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter •
-  Clear street signs and symbols •••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs ••
-  Smooth Pavement ••
-  Neighborhood Association •••
-  Oranje Fonds •••



### 3] Oosterhout Slotjes-Midden



Street




-  Benches •
-  Streetlights ••••
-  Trash bin •
  
-  Relative Narrow Streets ••••
-  Assigned Parking Spaces ••
-  Wide Sidewalks •
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter •
-  Clear street signs and symbols ••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs •
-  Smooth Pavement ••
  
-  Neighborhood Association •••
-  Oranje Fonds •••







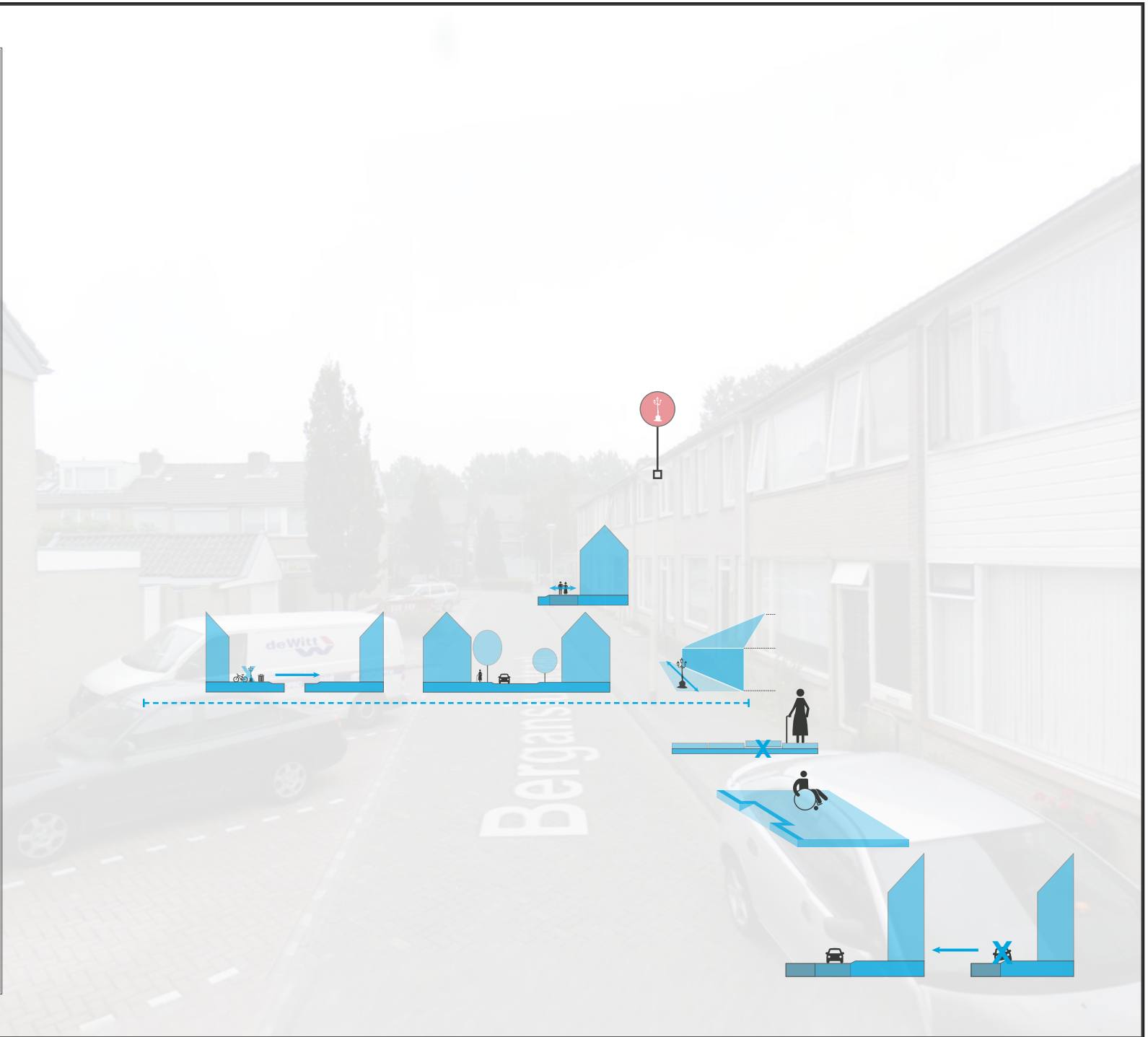


# 4] Waalwijk Laageinde



-  Benches •
-  Streetlights ••••
-  Trash bin •

















-  Relative Narrow Streets ••••
-  Assigned Parking Spaces •••
-  Wide Sidewalks •
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter •
-  Clear street signs and symbols ••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs •
-  Smooth Pavement ••
-  Neighborhood Association •••
-  Oranje Fonds •••



# 5] Oss Schadewijk



Street




-  Benches
-  Streetlights
-  Trash bin
-  Relative Narrow Streets
-  Assigned Parking Spaces
-  Wide Sidewalks
-  Clear Street Zoning
-  Frequently Placed Benches
-  Devoid of Clutter
-  Clear street signs and symbols
-  Gentle Level Changes
-  Frequently placed street lights
-  Frequently dropped curbs
-  Smooth Pavement
-  Neighborhood Association
-  Oranje Fonds











# 6] Uden

Hoenseveld



-  Benches •
-  Streetlights ••••
-  Trash bin •

-  Relative Narrow Streets ••••
-  Assigned Parking Spaces •
-  Wide Sidewalks ••
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter ••
-  Clear street signs and symbols ••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs •
-  Smooth Pavement ••

-  Neighborhood Association •••
-  Oranje Fonds •••





















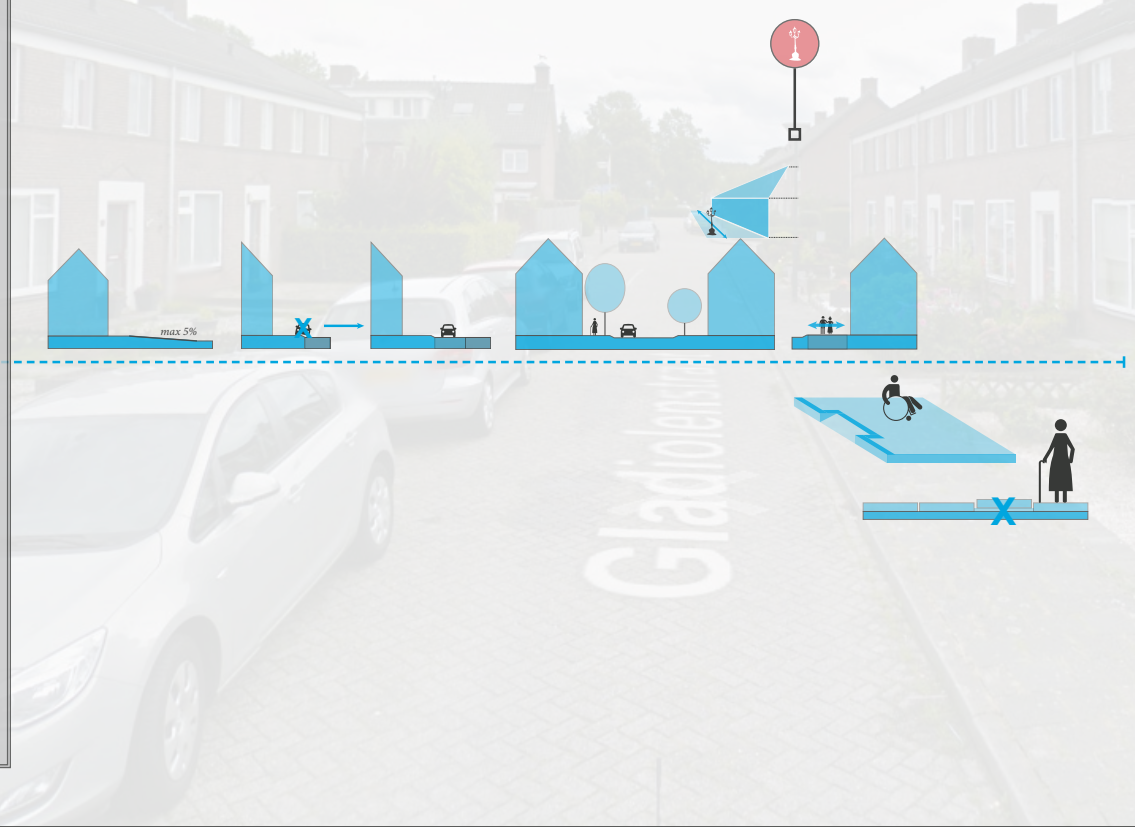
# 7] Veghel

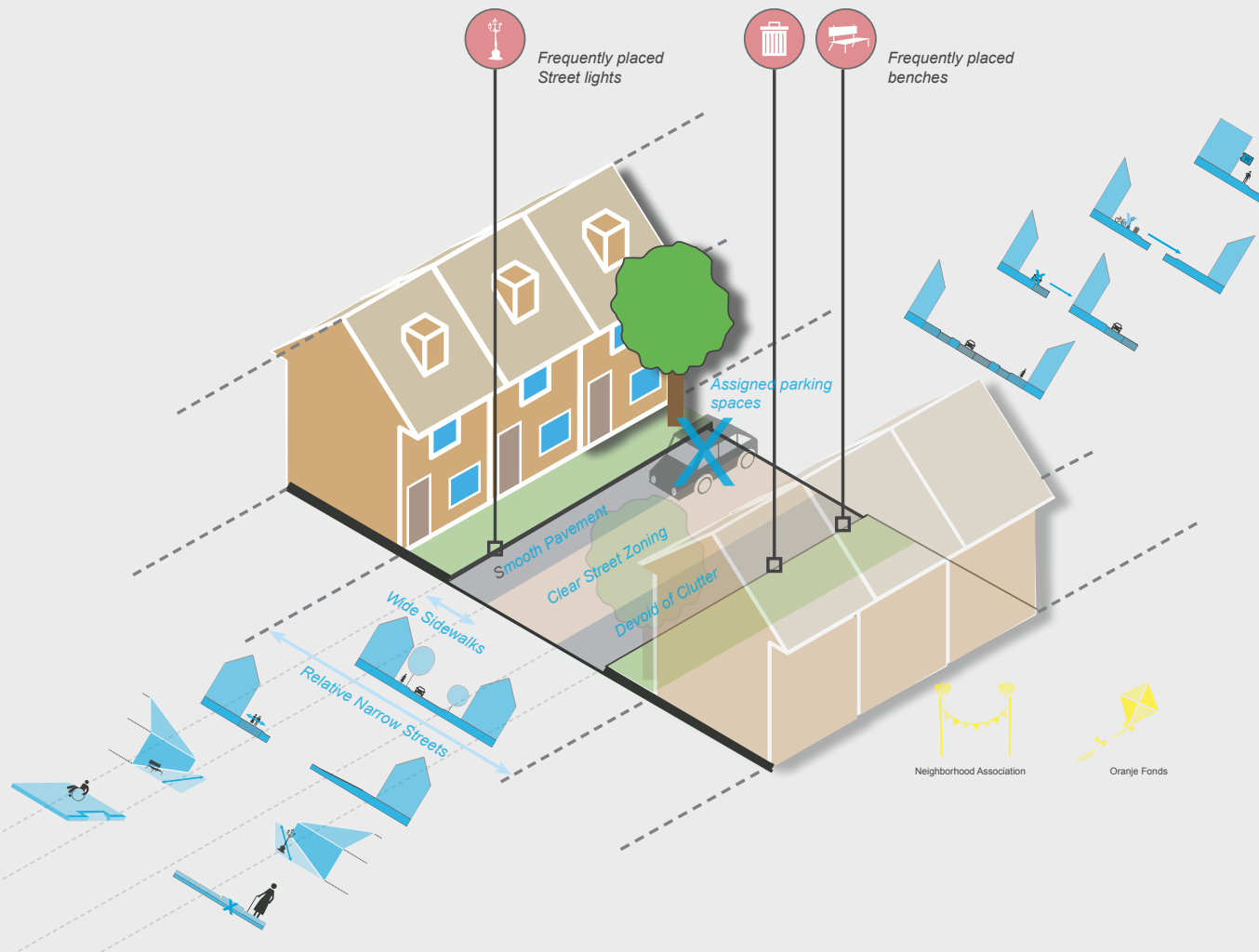
## Veghel-West



Street

-  Benches •
-  Streetlights ••••
-  Trash bin •
-  Relative Narrow Streets ••••
-  Assigned Parking Spaces ••
-  Wide Sidewalks •
-  Clear Street Zoning ••
-  Frequently Placed Benches •
-  Devoid of Clutter ••
-  Clear street signs and symbols ••
-  Gentle Level Changes •••
-  Frequently placed street lights •••
-  Frequently dropped curbs •
-  Smooth Pavement •
-  Neighborhood Association •••
-  Oranje Fonds •••





The demands and requirements of amenities is limited on the street level. Although, the amount of street lighting complies more often than not, the number of benches and trashcans is far from adequate. Especially benches are crucial for elderly. With sufficient rest after every ten minute walk, they can substantially expand their action radius.

The quality of public space on the street level in the examined cities leaves much to be desired. Although some of the fundamental preconditions are present in the streets. Most streets have an excellent profile with the appropriate relative narrow streets. The execution of the streetscape its maintenance however, falls seriously short to be suitable for the elderly. The insufficient streetscape in the midsize cities of Brabant is disastrous for the action radius of the elderly. Because elderly will not feel free to roam the streets and participate in daily life, they are restricted to the confinements of their own home. In the process losing all autonomy and self-reliance. Therefore, it is crucial for the success of aging in place to invest in quality of the streetscape. Particularly to encourage elderly to roam the streets freely.

Street life can be further improved with activities by social associations. By organizing social activities in their streets, the elderly will feel more free to desert the house.



5] Dwelling Level

## 4. Analysis Compatibility Midsize Cities in Brabant

### 4.5 Analysis Dwelling Level



*Bergen op Zoom*



*Roosendaal*



*Oosterhout*



*Waalwijk*





Oss



Uden



Veghel



Veghel





*Veghel*



*Veghel*

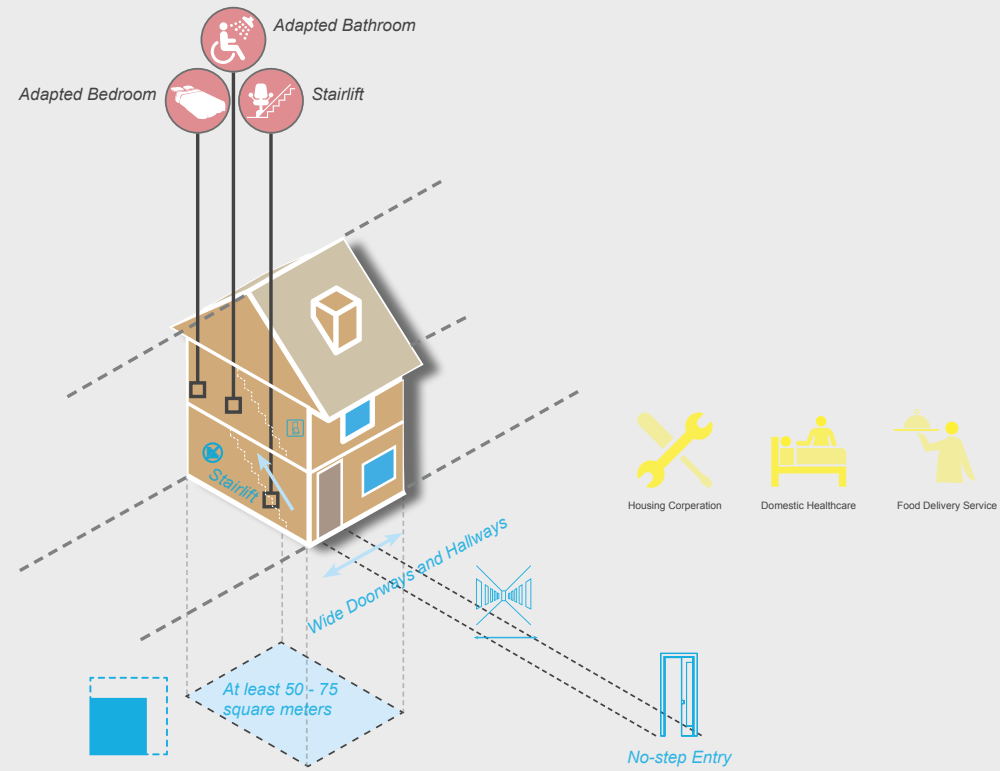


*Veghel*



*Veghel*



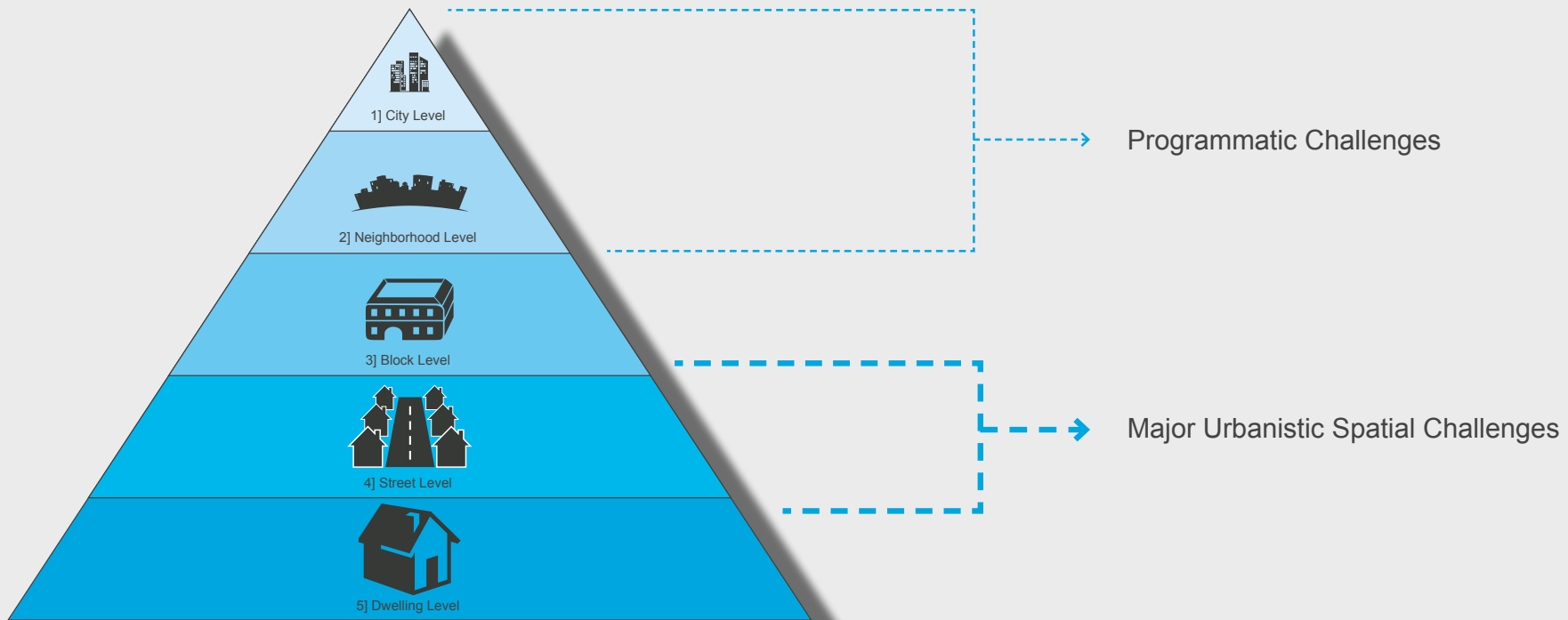


The Dwelling typologies in Bergen op Zoom, Roosendaal, Oosterhout, Waalwijk, Oss, Uden and Veghel are really similar. However, most do not have the adjusted bathroom, the adjusted bedroom or the stair lift. These features have to be implemented for the dwelling become suitable for elderly residents. There is however sufficient opportunity to implement these facilities.

Most dwellings are ground bound with two floors and an attic. →Although one-floor dwellings are preferable to the elderly, this can be overcome by the implementation of a stair lift. The number of square feet is suitable for the needs of elderly with variation between 50 and 75 square meters, and so are the dimensions of the hallway. The front door has to be adjusted quite often, as most houses do not have a no-step entry. In addition all switches and handlebars need to be rearranged so they become accessible to people dependent on wheelchairs.

Most dwellings in the examined neighborhoods belong to the housing corporations. There are therefore in a unique position to implement these adjustments on a larger scale and keep costs under control.

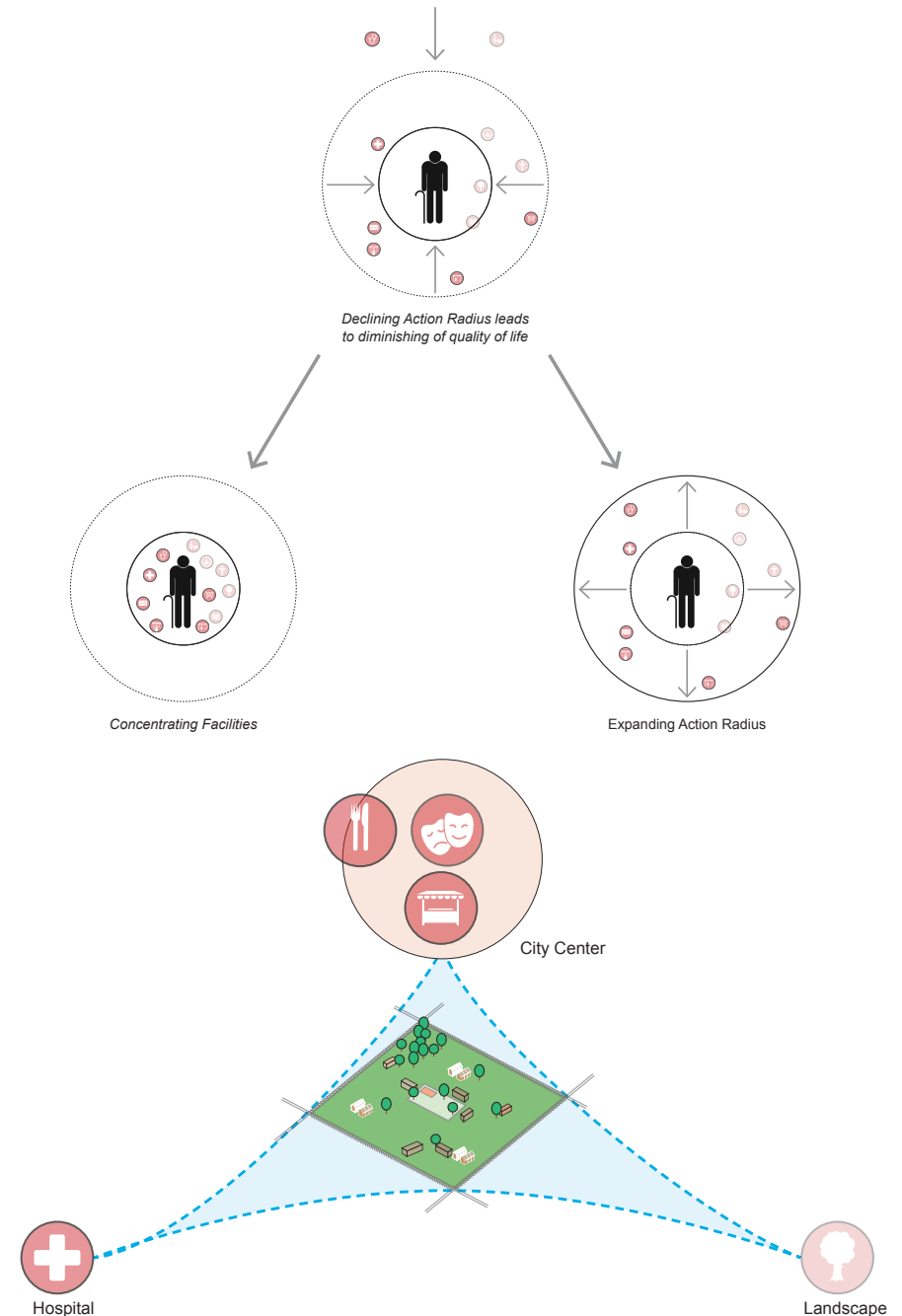
## Conclusion Compatibility Midsize Cities in Brabant



## 5. Conclusion

Post World War II neighborhoods in midsize cities are genuinely susceptible for the demands and requirements of aging in place. Although they have to take a fundamental different approach than neighborhoods in larger cities.

After people age, they succumb to the limitations brought by illnesses or general old age. These limitations have a significant effect on the action radius of the elderly. As the action radius of the elderly diminishes, several amenities fall outside of their action radius, and become unavailable for them. The unavailability of amenities is a serious threat for people's autonomy and self-reliance. There are two possibilities to address this issue. One, concentrate more amenities in a smaller designated area. In the case of local residents, all the amenities will remain within the action radius. Often this solution is applied in bigger cities with high density of people and amenities. The key difference however, between midsize cities and larger cities is that absence of critical mass in the neighbourhoods of midsize cities. That is why it is for many neighbourhoods in midsize cities more interesting to extend or try to maintain the action radius. Implementing well-designed paths to specific amenities for the elderly can do this. With this approach, you can extend to the action radius of elderly people to reach the hospital or the city centre. Therefore, without the high density of people or amenities, elderly in midsize can continue to access specific amenities that would have otherwise been restricted from them.



Furthermore, significant adjustments have to be made on the lower scale levels as well to comply with the demands and requirements of the elderly. The emphasis of the adjustments differentiates in the lower scale level. Instead of amenities, on the street level the focus is on the spatial component of the demands and requirements, and on the quality of public space. Bad public space and poor quality streets inhibit people from wandering outside. Therefore, it is once again detrimental to the action radius for people. By well-designed street, the action radius of the elderly can be easily extended.

So concluding, on the higher scale levels of the pyramid, on the city and neighborhood scale, the emphasis should be on the improvement of amenities and accessibility. While on the lower scale levels, specifically the street, the emphasis should be on cityscape and the spatial experience of public space.







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