Update the ‘bloemkoolwijk’
Spatial interventions for updating the late post-war neighbourhoods in the Netherlands

Merel Peppelenbosch | 1223747 | m.peppelenbosch@gmail.com
Msc3+4 Urbanism Graduation Studio: Urban Acupuncture | January 2011
UPDATE THE BLOEMKOOL: spatial interventions for updating the late post-war neighbourhoods in the Netherlands

Msc Thesis
January 2011

Merel Peppelenbosch
B1223747
m.peppelebosch@gmail.com

Cover:
bloemkool edited by author, map from
http://geoloket.tudelft.nl/geoloket/

Studio: Urban Acupuncture
Mentors: L. M. Calabrese and J.A. Westrik
External Examiner: O. Caso
Graduation project
Msc Urbanism
Faculty of Architecture
TU Delft
Update the ‘bloemkoolwijk’
Spatial interventions for updating the late post-war neighbourhoods in the Netherlands
This final thesis is the end product of the graduation project within the Masters of Urbanism, within the faculty of Architecture of Delft University of Technology. The subject of this thesis is the transformation of the ‘bloemkoolwijken’ in the Netherlands.

During master projects I discovered my specific interest for the regeneration of the city compared to the construction of new areas. Especially on the neighbourhood scale level where so many parties are involved and other scale levels have to be taken into account. The ‘bloemkoolwijken’ are a new topic in the literature about regeneration of the city. As until now the research was focused on the state of art of the ‘bloemkoolwijken’ and their problems, little of the researches focused on the spatial interventions needed for the transformation. This part drew my attention and therefore this project focuses on the spatial interventions needed for the transformation. Next to this I wanted to focus my research on the generic character of the ‘bloemkoolwijken’ instead of a location specific research.

During the project the role of the urbanist became another subject of attention, because of the specific role of the urbanist during the design of the ‘bloemkoolwijken’ and the complicated role he/she will have during the transformation process.

This thesis consists of four different parts which can be recognized by different theme-colours throughout the text:
Part A: Introduction
Part B: The ‘bloemkoolwijk’
Part C: Update the ‘bloemkoolwijk’
Part D: Zevenkamp

Part A elaborates upon the problem statement and incentive for this research, followed by an extended analysis and description of the ‘bloemkoolwijken’ in part B. Part C is the core part of this thesis as it summarizes the findings of the research and translates this in a new approach for the transformation of the ‘bloemkoolwijken’. This new approach is developed into a method for the transformation of the ‘bloemkoolwijken’. Part D gives an example of the adaption of this method on one of the ‘bloemkoolwijken’, which is Zevenkamp in Rotterdam. The appendix provides a more elaborate analysis of Zevenkamp.

The disciplines and the mentors involved in this project are:
Urban design: Luisa Calabrese, Dr. Ir. L.M.
Urban design – Theory and methods: John Westrik, Ir. J.A.

With this I want to address my gratitude to my mentors for their assistance and guidance during this graduation year. Next to them I want to thank my family, friends, and of course my fellow students for being loving and supportive. And in the end I want to thank Vincent, Jade, Laura and Frank for reviewing my thesis. Thank you all.
The ‘bloemkoolwijken’ account for over 20% of the Dutch housing stock market. The late post-war neighbourhoods were named after the vegetable because of the resemblance with the spatial lay-out of these neighbourhoods. The ‘bloemkoolwijken’ were built between 1970 and 1984 as a reaction on the monotonous high rise post-war neighbourhoods. The ambition of the ‘bloemkoolwijken’ design was to bring back the human scale and variation in the lay-out of the neighbourhood.

By designing the ‘woonerf’ and collective spaces the social encounter between inhabitants was stimulated. The ‘bloemkoolwijken’ have a homogenous housing stock with mostly single-family dwellings owned by housing corporations or owner-occupied. For the design of the ‘bloemkoolwijken’ the general zoning plan was introduced, in this new kind of zoning plan only vague spots and borders are defined. Therefore the role of the urbanist was minimized to defining the infrastructure, green structure and the borders of the different quarters. The actual design was made by the architect.

If one examines the urban regeneration process of the neighbourhoods in the Netherlands we can conclude that the ‘bloemkoolwijken’ are next in line. The same conclusion was drawn by a research done by SEV, which pointed out the signs of deterioration of Dutch neighbourhoods (Knol, 2006). The conclusion was that the signs of deterioration could not only be seen in the post-war neighbourhoods but also in the late post-war neighbourhoods. When visiting one of the ‘bloemkoolwijken’ these signs are also noticeable, which indicate a decrease in the liveability of the neighbourhood.

What was seen as the perfect neighbourhood in the 1970s nowadays is slowly deteriorating. For the transformation of the ‘bloemkoolwijken’ it is therefore important to meet not only the criteria of liveability of the present day but also take into account the longer term. Therefore the criteria of object liveability, defined by Machiel van Dorst (2005) are used, where the criterium sustainability is included.

During the research on the ‘bloemkoolwijken’ the focus is on the generic approach.

The aim of this project was to develop a set of spatial interventions for the transformation of the late post-war neighbourhoods (the ‘bloemkoolwijken’) in the Netherlands to meet the criteria of liveability.

After the literature study on the history, data and characteristics of the ‘bloemkoolwijken’ a case study on different ‘bloemkoolwijken’ was necessary to discover the generic elements of the ‘bloemkoolwijken’. This typology analysis showed that three generic elements in the spatial lay-out of the ‘bloemkoolwijken’ can be distinguished; the green structure, the infrastructure and the transition from private to public and collective on the street level. These generic elements can be divided into two scale levels; the neighbourhood level and the street level. Next to this a generic set of problems and opportunities could be developed.

The conclusion of the case study analysis led to a new approach for the transformation of the ‘bloemkoolwijken’; the transformation should focus on the neighbourhood scale level and the street level. This new approach is translated into a method for applying the transformation in practice. Hence, the goal of the method is to give guidelines for the transformation of the ‘bloemkoolwijken’, therefore a set of spatial interventions has been developed for the transformation of the different generic elements. With this set a map with possible intervention areas can be made, also it can provide inspiration and guidance during the design process. During this process the set can give points of attention.

The role of the urbanist has become more complex over the years. In the 1970s the urbanist role was decreased to the design of the general zoning plan, where the urbanist only made some rules and guidelines but the actual design was reserved for the
architect. For the adaptation of the method the task for the urbanist is more complex. He/she has to act as a mediator in the multiple-actor-process of the transformation, and also has to take part of the design team. In the design process the urbanist has to be able to translate the problems and opportunities into spatial assignments, being able to find the promising combinations of interventions out of the set of spatial interventions. For the update of the ‘bloemkoolwijken’ the urbanist has to combine the two scale levels and the generic elements to create an integrated design.

In the last part of this thesis, part D, the method is applied on the ‘bloemkoolwijk’ Zevenkamp. Zevenkamp is one of the largest ‘bloemkoolwijken’ in the Netherlands, situated in the north-east of Rotterdam. In Zevenkamp the first signs of deterioration can be seen, especially in the public space. Therefore it is important to invest in the transformation of the neighbourhood before deterioration is inevitable.

After an analysis on Zevenkamp maps with possible intervention areas could be drawn. Besides these, examples of interventions are given for the transformation of the infrastructure, green structure and the transitions on street level.

The design for the transformation of Zevenkamp shows in what way a generic method can be adapted to location-specific interventions for the transformation of a specific neighbourhood; by selecting the needed spatial interventions out of the set, the generic set is adapted to a location specific situation. Next to the location, the vision of the urbanist is also of influence on the translation of the set of spatial interventions to a design for the transformation of a specific ‘bloemkoolwijk’.
## Table of Content

### PART A  INTRODUCTION

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>12</td>
</tr>
<tr>
<td>1.2</td>
<td>Urban regeneration</td>
<td>13</td>
</tr>
<tr>
<td>1.3</td>
<td>Problem statement</td>
<td>16</td>
</tr>
<tr>
<td>1.4</td>
<td>Aim</td>
<td>19</td>
</tr>
<tr>
<td>1.5</td>
<td>Relevance</td>
<td>20</td>
</tr>
<tr>
<td>1.6</td>
<td>Research question</td>
<td>21</td>
</tr>
<tr>
<td>1.7</td>
<td>Sub questions</td>
<td>22</td>
</tr>
<tr>
<td>1.8</td>
<td>A design method</td>
<td>23</td>
</tr>
<tr>
<td>1.9</td>
<td>Research approach</td>
<td>24</td>
</tr>
<tr>
<td>1.10</td>
<td>Theoretical framework</td>
<td>28</td>
</tr>
<tr>
<td>1.11</td>
<td>Objective liveability</td>
<td>29</td>
</tr>
</tbody>
</table>

### PART B THE BLOEMKOOLWIJK

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>35</td>
</tr>
<tr>
<td>1.2</td>
<td>Political and social background</td>
<td>36</td>
</tr>
<tr>
<td>1.3</td>
<td>Characteristics</td>
<td>38</td>
</tr>
<tr>
<td>1.4</td>
<td>Housing stock</td>
<td>40</td>
</tr>
<tr>
<td>1.5</td>
<td>Social processes and sociological trends</td>
<td>41</td>
</tr>
<tr>
<td>1.6</td>
<td>Division bloemkoolwijken</td>
<td>44</td>
</tr>
<tr>
<td>2</td>
<td>Analysis</td>
<td>45</td>
</tr>
<tr>
<td>2.1</td>
<td>Case study neighbourhoods</td>
<td>46</td>
</tr>
<tr>
<td>2.2</td>
<td>Analyse neighbourhood</td>
<td>48</td>
</tr>
<tr>
<td>2.3</td>
<td>Analyse ensemble</td>
<td>54</td>
</tr>
<tr>
<td>2.4</td>
<td>Analyse street</td>
<td>58</td>
</tr>
<tr>
<td>2.5</td>
<td>Conclusions</td>
<td>63</td>
</tr>
</tbody>
</table>

### PART C UPDATE THE BLOEMKOOLWIJK

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>68</td>
</tr>
<tr>
<td>1.2</td>
<td>The method</td>
<td>69</td>
</tr>
<tr>
<td>1.3</td>
<td>The involved stakeholders</td>
<td>70</td>
</tr>
<tr>
<td>1.4</td>
<td>Generic elements</td>
<td>71</td>
</tr>
<tr>
<td>1.5</td>
<td>Update the ‘bloemkoolwijk’</td>
<td>75</td>
</tr>
<tr>
<td>1.6</td>
<td>The urbanist</td>
<td>78</td>
</tr>
<tr>
<td>2</td>
<td>Diagnoses</td>
<td>80</td>
</tr>
<tr>
<td>2.1</td>
<td>Problems</td>
<td>81</td>
</tr>
<tr>
<td>2.2</td>
<td>Opportunities</td>
<td>86</td>
</tr>
<tr>
<td>3</td>
<td>Spatial interventions</td>
<td>93</td>
</tr>
<tr>
<td>3.1</td>
<td>Infrastructure</td>
<td>94</td>
</tr>
<tr>
<td>3.2</td>
<td>Green structure</td>
<td>95</td>
</tr>
<tr>
<td>PART D ZEVENKAMP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>1 Introductie</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>2.1 Analysis: history</td>
<td>101</td>
<td></td>
</tr>
<tr>
<td>2.2 Analysis: characteristics</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>2.3 Analysis: trends</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>3.1 Testing: generic elements</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>3.2 Testing: problems</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>3.3 Testing: opportunities</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>4 Update: infrastructure</td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>4.1 Infrastructure Zevenkamp</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>4.2 Possible intervention areas</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>4.3 Ring road</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>4.4 Labyrinth</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>4.5 Slow traffic network</td>
<td>122</td>
<td></td>
</tr>
<tr>
<td>5 Update: green structure</td>
<td>127</td>
<td></td>
</tr>
<tr>
<td>5.1 Green structure Zevenkamp</td>
<td>128</td>
<td></td>
</tr>
<tr>
<td>5.2 Possible intervention areas</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>5.3 Neighbourhood park</td>
<td>132</td>
<td></td>
</tr>
<tr>
<td>5.4 Small parks</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>5.5 Small public spaces</td>
<td>137</td>
<td></td>
</tr>
<tr>
<td>6 Update street</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>6.1 Parking</td>
<td>142</td>
<td></td>
</tr>
<tr>
<td>6.2 Section street</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>6.3 Maintenance</td>
<td>148</td>
<td></td>
</tr>
<tr>
<td>6.4 Ownership</td>
<td>149</td>
<td></td>
</tr>
<tr>
<td>6.5 Inner courts</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>6.6 Design inner court</td>
<td>152</td>
<td></td>
</tr>
<tr>
<td>6.7 Layout inner court</td>
<td>162</td>
<td></td>
</tr>
<tr>
<td>7 Integration interventions</td>
<td>174</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion and evaluation | 176 |
Recommendations | 178 |
References | 180 |

<table>
<thead>
<tr>
<th>PART E APPENDIX</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Analysis Houten</td>
<td>187</td>
</tr>
<tr>
<td>2 Analysis Zevenkamp</td>
<td>203</td>
</tr>
</tbody>
</table>
1.1 Introduction

Part A of this thesis will set the outlines and goals of the project. First the position of the Bloemkoolwijken in the urban regeneration process will be stated. This position is one of the subjects of the problem statement of the project. More problems in the Bloemkoolwijken will be stated in the second chapter. The problem statement led to the aim of this project which is translated to the main research question. The research approach describes the way that the different sub questions and in the end the main research question will be tackled. This research approach has been the guideline throughout the whole project. After that part A is a further clarification of the project. The problem statement is the basis of the significance of the research; this is stated in the social and academic relevance of the project. And the theoretical framework is set in the end of this part.

Twenty-four percent of the current Dutch housing stock is built between 1970 and 1984 (see fig. A1). In contrast with the houses built in the post war period, most of the houses were low-rise, single-family houses (see fig. A2). Between 1970 and 1985, each year an average of 125,000 houses were built. This is more than the years before, when the average was 72,000 houses each year (van der Steeg et al., 2006). These neighbourhoods are crucially distinct from the neighbourhoods built before in the Netherlands. Because of their typical spatial structure, these late post-war neighbourhoods are also called the ‘bloemkoolwijken’, ‘easytowns’ or ‘verdwaalwijken’.

Fig. A1 ‘Current housing stock by building period’ (source: Van der Steeg et al., 2006)

Fig. A2 ‘Dwelling type in ‘bloemkoolwijken’ (source: Van der Steeg et al., 2006)
1.2 Urban regeneration

In the past, nowadays and even in the near future the Dutch national government tries, in cooperation with other partners, to tackle the physical and social problems of its cities through spatial transformation of neighbourhoods (Bijlsma et al., 2008).

In the Netherlands, urban renewal of neighbourhoods has been a political issue since the late 1960s (Stouten 1995). Until that time, the strategy was to wipe out the existing neighbourhood and replace it by a new neighbourhood. In the history of urban renewal three phases can be distinguished: creating central business districts, classic urban renewal and urban regeneration.

In the cycle of urban renewal, the next step, after the transformation of the inner-city neighbourhoods and the post-war neighbourhoods, is the transformation of the late post-war neighbourhoods, also called the ‘bloemkoolwijken’ (Van der Steeg et al., 2006). These neighbourhoods are slowly ageing and the first signs of deterioration are visible. Signs like overdue maintenance, pollution and vacancy can be noticed in these neighbourhoods (Ubink & Visser, 2009). Many researches have been done on the status of these neighbourhoods. But less has been said about the kind of transformation that will be needed. It is clear that these neighbourhoods have to deal with another kind of urban renewal than we know from the past.

This chapter will give an short overview on the history of urban renewal in the Netherlands. The focus will be on the policy goals on the national level. The effect of these goals on the policy of the municipalities lies beyond the scope of this paper.

Every paragraph will give a short introduction on why the process started, followed by an overview of the policy goals. Each paragraph will end with the disadvantages of the particular phase in the urban renewal process.

**Phase 1: Creating central business districts and urban reconstruction**

Before World War II urban renewal was seen in the light of the classic economic geographic theories. In these theories central parts of the city were seen as the core areas of the city. These parts should be stimulated economically and made accessible to all sorts of infrastructure (Vermeijden, 2001). To achieve these goals, the older inner city neighbourhoods had to be demolished for new office- and shopping-complexes build in the so called central business districts (Musterd & Ostendorf 2008). The main goal of the renewal was to accommodate the urban economy. This phase in the urban renewal focussed totally on the economical issues of the city and left the social issues out of focus. After World War II there was an enormous shortage in the housing stock in the Netherlands, due to the bombardment of city parts and the (expected) fast growth of the population. After World War II therefore the urban reconstruction started. The policies were focused on adding new houses to the housing stock instead of renewing the existing housing stock. The renewal, that took place, was meant to strengthen the economical position of the city centres, instead of improving the quality and quantity of the housing stock or the position of the residents. The renewal from that time was done by the demolition of the old central city neighbourhoods, like it was done before World War II (Musterd & Ostendorf, 2008). ‘This modernisation of the inner city was brought in the light of the ‘cityvorming’’ (Bijlsma et al., 2008, p. 43). An example of a project like this is ‘Hoogh Catherijne’ in Utrecht.

The disadvantage of the urban reconstruction was the lack of attention for the residents of the city, which were ignored in the process of urban renewal. By replacing city parts by central business districts, the housing stock of the inner city parts increased, which caused a migration out of the city by the middle and high income residents.

**Phase 2: (classic) urban renewal (‘stadsvernieuwing’)**

In the 1960s it became clear that the housing shortage could not be solved by only building in the existing capacities of the city. Therefore a process of suburbanisation started. The suburbanisation was mainly done by building new towns like Alkmaar, Houten and Spijkenisse. Through this development, the existing city was able to change its focus from the quantity to the quality of the housing stock (Musterd & Ostendorf, 2008). ‘It was in the early 1970s when the renewal of residential areas therefore became an issue in politics, particularly in the big cities’ (Stouten, 1995, p. 24). Moreover, in the time of responding to the need for new quality houses in the inner cities, it was no longer political acceptable to create more room for the central
1.2 Urban regeneration

Business districts, like in the period before (Musterd & Ostendorf, 2008). This was the start of the second phase in the urban renewal process of the Dutch residential areas: the so-called classic urban renewal. The main goal was the enhancement of the living environment for the inhabitants of the existing city. In contrast with the economically orientated period, this phase of urban renewal focused completely on the social issues. The renewal focused on housing for the urban poor. In the ‘poor’ neighbourhoods new houses were built and in later stages also improvement of existing houses took place (Musterd & Ostendorf, 2008). Due to the fact that the improvements were made for the poor residents it was not only the state of the housing stock which was looked on but also the affordability of the new houses (Stouten, 1995, p. 24). Important to mention is that the goal, of the improvement of the houses and the new houses that were build, was not only to attract new people to the neighbourhood but mainly to improve the quality of the living environment of the residents already living in that area (Musterd & Ostendorf, 2008). The disadvantage of this stage, which showed later, was the lack in housing differentiation and mixed functions. Until the end of the 1980s, the focus, in the renewal districts, was on building in only the social sector (Stouten, 1995).

Phase 3: Urban regeneration/ urban revitalization (stedelijke vernieuwing)
The change from a social policy in the classic urban renewal, to a more economical policy in the urban

Fig. A3 ‘Phases urban renewal in the Netherlands’ (by author)
regeneration, spanned a much longer period of time than the transition to the classic urban renewal (Vermeijden, 2001). In the end of the 1980s the city had lost most of its strengths due to the suburbanisation and focus on the poor residents (Musterd & Ostendorf, 2008). A new period of urban renewal started under the name of urban regeneration or urban revitalization. New policies were written, like the Vierde Nota Ruimtelijke Ordening (‘The Fourth Memorandum on Physical Planning’). These policies did not only focus on the poor but their main aim was to increase the private investments and to increase the privatized houses on the housing market (Stouten, 1995). The main reason for doing this was to stop the drift from the middle and high income class out of the city to the rural areas. Another reason was the concentration of problems and inferiorities in the inner city neighbourhoods (Bijlsma et al., 2008). The goals of this phase were very different from the stage before; not the need for new (high) quality houses, but the reinforcement of the urban economy was most important (Musterd & Ostendorf, 2008). The problems in the neighbourhoods, which were the subject for urban renewal, were solved by differentiation of the housing stock (Bijlsma et al., 2008).

**Phase 4: Present and future transformations**

Nowadays the quality of the buildings is no longer the only reason to start urban renewal. Three criteria are used to determine which neighbourhoods are in the need of urban renewal. The first reason is still the qualitative demand of the housing stock. Another reason could be the liveability of the neighbourhood; this depends on the judgement of the residents on their living environment. And the third reason could be the pressure of the city on the neighbourhood. This is not, like the other two reasons, regarding the housing stock and the appraisal of the residents, but about functions like shops, businesses and facilities which are not only directed to the daily needs of the residents of the neighbourhood but also to the city (Bijlsma et al., 2008). The spatial transformations in the (near) future will be addressed to the post-war neighbourhoods. In the years to come, the primary attention will be paid to the post-war neighbourhoods which are already the subject for urban renewal. Secondly, the late post-war neighbourhoods (‘bloemkoolwijken’) will be in line. And on the longer term, the VINEX neighbourhoods probably will need interventions too.

---

*Fig. A4 ‘Building and transformation periods Dutch neighbourhoods’ (by author)*
1.3 Problem statement

There are several reasons to assume that the ‘bloemkoolwijken’ are the next subject for urban renewal in the near future. This chapter elaborates upon the problem statement of this research. It consists of two parts, the first part describes the reason of the focus on the ‘bloemkoolwijken’ and the second part describes the reason for this research.

Cycle of urban renewal

As described in the previous chapter, it seems logical that the ‘bloemkoolwijken’ are next in line in the cycle of urban renewal, following inner city regeneration and the urban regeneration. These neighbourhoods are slowly aging, therefore an update is necessary. However, they have to deal with another kind of urban renewal than we know from the past. In this case it is not about the quality of the building technology like in the inner city regeneration; in the ‘bloemkoolwijken’ the quality of the housing stock is relatively high and the building typology (single family dwellings with front and back garden) is the most wanted in the Netherlands. The second criteria, described in 1.2 Urban regeneration, will be the main issue; the liveability of the neighbourhood. If one takes a look at the satisfaction of the inhabitants of the ‘bloemkoolwijken’ one can see a small decrease.

Kanskaart van Nederland

Due to the decrease in inhabitant satisfaction, researches have been done on the state of art of the bloemkoolwijken. Are the ‘bloemkoolwijken’ really in need of a transformation? One of the first researches was the ‘kanskaart van Nederland’.

Kanskaart van Nederland (Knol et al., 2006), a research done by SEV, mapped the indicators for social and spatial degeneration. The indicators used in the Kanskaart are; violence, theft, inconvenience, destruction and pollution. For pointing out the future problem areas in the Netherlands, some other criteria were necessary; e.g. the amount of facilities, the population composition and the spatial characteristics of the neighbourhoods.

The main conclusion of this research was

Creating central business districts and urban reconstruction
(c古典) urban renewal (‘stadsvernieuwing’)
Urban regeneration/urban revitalization (‘stedselijke vernieuwing’)
new kind of transformation (‘bloemkoolwijken’)

- demolition
- renovation
- demolishing
- new dwellings
- differentiation of the housing stock
- renovation, demolishing, new dwellings

Fig. A5 ‘Kanskaart van Nederland’ (source: van der Steeg et al., 2006)

Fig. A6 ‘Urban renewal in the Netherlands’ (source: by author)
1.3 Problem statement

that degeneration cannot only be found in the post-war high-rise neighbourhoods, but also in the ‘groei kernen’ and the neighbourhoods from the 1970s and 1980s (Knol et al., 2006). Figure A5 shows the maps the SEV has set up, indicating the different ‘future’ problem areas in the Netherlands.

First signs of deterioration

These first signs of deterioration can already been seen in many ‘bloemkoolwijken’. Examples in Den Helder, Lelystad and Groningen ten years ago, show that in a relaxed housing market not only the traditional early post-war neighbourhoods deal with problems but also the ‘bloemkoolwijken’. In these cities the people do not include the ‘bloemkoolwijken’ in their search for a new dwelling; they prefer to look for a house in a ‘VINEX-wijk’ or in a renewed early post-war neighbourhood. In this way the ‘bloemkoolwijken’ will lose its popularity on the housing market (Ubink & Visser, 2009).

Next to the difficulties on the housing market, the first signs of deterioration can be seen in the public space, example of problems are; poor maintenance, the shortage on parking places and the existence of unused undefined spaces. More and more municipalities and corporations claim they have great difficulties with the maintenance to ensure the liveability of the ‘bloemkoolwijken’ (Van der Leun et al., 2008). This top-down planning is the cause of the amount of undefined public space in the neighbourhood, which has a negative effect on the experience of the public space and is expensive in maintenance. These spaces cause problems in the use and interpretation of the public space. For example, for one inhabitant a part of the public space can be a place for his or her dog, while for the other it can be a place to let children play. This leads to tensions in the use of the public space (Ubink & Visser, 2009).

A second problem, due to the use of the general zoning plan, is the transition from public to private. This is caused by
the third layer, the quarters. The quarters are designed separately and therefore the borders between the quarters have no transition. Like Westrik said in an interview: ‘If you divide a quarter into lots the canal is seen as a border. The different allotments of the quarters cause different relations on both sides of the water’ (Hendriks, 2009).

A publication from SEV (Van der Steeg et al., 2006) shows the sociological processes which are going on in the ‘bloemkoolwijken’ (a summary of these processes can be found in part B chapter 1.5). These processes will affect the future of the neighbourhood. The composition of the inhabitants will change. The ‘bloemkoolwijken’ are mainly built for families, with the corresponding facilities and type of dwellings. In the future the amount of families will decrease and the amount of elderly will increase. The elderly will have other demands for a liveable neighbourhood than the families the neighbourhood was built for. Therefore the neighbourhood has to change to keep the inhabitants satisfied now and in the future.

From all the researches on the state of art of the ‘bloemkoolwijken’ it became clear that they become one of the new neighbourhoods in need for transformation, however the kind of transformation and the interventions needed is still uncertain. Contrary to the amount of research about the state and the future of the ‘bloemkoolwijken’ is the amount of research done on the spatial interventions which are necessary for this transformation. The general conclusion of the researches is that small interventions are necessary to prevent (further) decay of the ‘bloemkoolwijken’. But none of the researches focussed on the spatial interventions necessary to prevent this decay.

In the research of Middelkoop and SEV (Van der Leun et al., 2008) examples of interventions on different case studies are discussed. These spatial interventions are all location-specific and cannot be used in other ‘bloemkoolwijken’. In short, a general point of view on the needed spatial interventions is missing.
Looking at the problem statement, the main aim of the project is to develop a set of spatial interventions [3. Set of spatial interventions] for the transformation of the late post-war neighbourhoods (the ‘bloemkoolwijken’) [1. ‘bloemkoolwijken’] in the Netherlands to meet the criteria of liveability [2. Liveability]. This aim can be translated in the research question which can be found in chapter 1.5. This chapter will discuss the aim of the project and the different parts it entails.

1. ‘Bloemkoolwijken’
As described in the problem statement, the missing piece in the existing researches about the ‘bloemkoolwijken’ is the generic overview on the needed spatial interventions. Therefore the aim of this project is to not focus on one of the late post-war neighbourhoods but on the generic element of all of the ‘bloemkoolwijken’.

2. Liveability
The demands and the composition of the inhabitants change; in the 1970s the ‘bloemkoolwijken’ were seen as the perfect neighbourhood, nowadays the first signs of deterioration can be seen. The same goes for the liveability of a neighbourhood; the criteria for liveability change in time. Hence, it is important not only to look at the current liveability, but to focus as well on the liveability on the longer term.

Therefore the criteria for objective liveability, from the research of Van Dorst (2005) are used. The objective liveability provides liveability not only for the current inhabitants but also in the future. Objective liveability, and its criteria, is described in more detail in part A chapter 1.11. Another way to anticipate on the future (and future trends) is to look at the ongoing trends; the social and sociological changes currently occurring in the ‘bloemkoolwijken’.

The sustainable criteria of liveability and the ongoing trends are used to develop the set of spatial interventions. In this way the adaptation of the spatial elements can prevent the (further) decay of the ‘bloemkoolwijken’ and therefore prevent the necessity of extensive transformations like those needed in the post-war high-rise neighbourhoods.

3. Set of spatial interventions
The set of spatial interventions will focus on the private and public space surrounding of the houses. As explained in the problem statement the transformation of the ‘bloemkoolwijken’ will not be about the quality of the housing stock but about the liveability of the neighbourhood. Therefore the aim of the spatial interventions is to update the ‘bloemkoolwijken’ to meet the current criteria for liveability; to make the ‘bloemkoolwijken’ more attractive for its current and future inhabitants.

For this project the focus is on the spatial interventions for the transformation of an existing neighbourhood only spatial transformations will not suffice; social issues are also important. However due to the fact that this project is done within the masters of Urbanism the scope of this project will be the spatial elements which support the liveability of the neighbourhood.

The project is divided into three parts (which will be further explained in the chapter research approach): the theoretical research, the empirical investigation and the design & evaluation.

The main aim of the theoretical research is to form a basis for the design process. The goals of the theoretical research can be separated into three aspects. The first will be to place the ‘bloemkoolwijken’ in the context of urban renewal in the Netherlands. The second aspect is to gain an overview of the ‘bloemkoolwijken’ and how they are spatially built up. The third aspect of the theoretical research is to develop criteria for the liveability of residential areas, which will be used for the development of the diagnoses. The overall aim is to contribute to the existing body of knowledge.

The main goal of the empirical investigation is to compare different bloemkoolwijken throughout the whole Netherlands, thereby determining generic spatial elements. Also the opportunities and problems in the bloemkoolwijken can be found. The spatial interventions developed for the method will be based on the generic elements and the diagnoses. Together they will provide input to solve the problems occurring in the bloemkoolwijken and make optimal use of the opportunities.

In the last part, the design and evaluation, the goal is to test the new developed method on one of the case study neighbourhoods, Zevenkamp. The spatial interventions found in the previous part will be translated into a design for the renewal of this case study neighbourhood. This will demonstrate the effect and quality of the found spatial interventions.
This graduation project has a social as well an academic value:

**The academic value**

As in both the newspaper articles as in the scientific articles, the state of art of the ‘bloemkoolwijken’ is discussed. The main topic in these articles is the question whether or not these neighbourhoods are becoming the new problem areas of the Netherlands. The conclusion is that small interventions are necessary to prevent the ‘bloemkoolwijken’ from further decay and to enhance their position on the housing market. However, few design researches have been done on the interventions needed for the transformation. Some interventions are showed in the research of Middelkoop and SEV (Van de Leun et al., 2008) but these are all location-specific and can not be translated to generic ideas about the transformation of the ‘bloemkoolwijken’.

In contrast with these design researches, this graduation project will focus on the generic interventions for the ‘bloemkoolwijken’ and will therefore add something new to the body of knowledge about the ‘bloemkoolwijken’.

**The social relevance**

In the coming years the quality of the existing housing stock becomes more and more important. In the Netherlands there is no room for more expansion of the urban fabric, therefore the current housing stock becomes more important in facilitating space. The ‘bloemkoolwijken’ account for 24% of the total housing stock of the Netherlands, which implies that one out of six inhabitants of the Netherlands lives in a ‘bloemkoolwijk’ (Van der Steeg et al., 2006). The new attention for the ‘bloemkoolwijken’ mainly comes from the academics. In most of the ‘bloemkoolwijken’, the inhabitants are still satisfied with their houses and living environment, but first signs of deterioration can already be found. This, in combination with the trends and processes which are going on, will have an influence on the future opinion of the inhabitants. It is important to make interventions before it is too late; before the neighbourhood really falls into deterioration. At this moment it is possible to improve and remain the quality and liveability of the neighbourhood with small interventions. Big interventions, like those that were needed in the high-rise post-war neighbourhoods, can therefore be prevented. Small interventions have a lot of advantages for the inhabitants; they will not be faced with a lot of inconvenience and they do not have to move out or leave their house.

By improving the liveability of these neighbourhoods a big part of the housing stock market will retain its quality and will therefore be important for a good housing market in the future.

“On paper these neighbourhoods are still the dream of the average Dutchman: a own house with front and back garden, parkingplace and a small scale living environment” (Thie, 2008).

“The solidarity like there was before will not come back anymore. Nowadays this does not fit anymore; people are just to busy.” (Den Hoed, 2009, p. 1)

“Rather a VINEX then a house from the 1980s; the ‘bloemkoolwijk’ was once the ‘dream’ neighbourhood, but nowadays the deterioration is on his way” (Thie, 2008)
1.6 Research question

The main research question which will be answered in this graduation project is:

Which spatial interventions are necessary for the transformation of late post-war neighbourhoods to meet the current criteria of liveability?

<table>
<thead>
<tr>
<th>Theoretical research</th>
<th>Urban renewal</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 1 What is the history of urban renewal in the Netherlands?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bloemkoolwijken</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 2 What are the characteristics of the ‘bloemkoolwijk’?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liveability</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 3 What is (objective) liveability of residential areas according to current literature?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Empirical investigation/analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 4 Which spatial problems or situations have to be solved and which opportunities have to be taken to improve the liveability of the ‘bloemkoolwijk’?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design principals</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 5 Which spatial interventions are necessary to come to a solution for the problems and use the opportunities?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ 6 How does the design for one of the case studies look when the set of spatial interventions is applied?</td>
</tr>
</tbody>
</table>

For answering this question, a division in several sub questions is made. These sub questions can be placed in a scheme which will be followed during the research and design process.

The first three sub questions form the theoretical framework of the graduation project. They form the basis for the further research and the design process which consist of the answers on the sub questions four until seven.

Fig. A13 ‘Research set-up’ (source: by author)
1.7 **Sub Questions**

The first sub question is a theoretical research on the history of urban renewal in the Netherlands. An overview will be given on the different goals and means of the phases of urban renewal in the Netherlands. In this way the transformation of the ‘bloemkoolwijken’ can be placed in the context of urban renewal in the Netherlands.

1. What is the history of urban renewal in the Netherlands?
   - What are the different stages in the past urban renewal processes?
   - What were the policy goals of the different stages in the urban renewal processes?
   - Which neighbourhoods will be the subject for present and future urban renewal processes?

The second sub question is a research on the ‘bloemkoolwijken’. Different questions will be answered in order to get a comprehensive overview of the ‘bloemkoolwijken’.

2. What are the characteristics of the ‘bloemkoolwijk’?
   - Which developments and ideologies are the bases for these neighbourhoods?
   - Which categorization can be made on the ‘bloemkoolwijken’ based on their spatial structure and location?
   - What kind of social processes are going on in the ‘case study neighbourhoods and are they generalizable for all the other ‘bloemkoolwijken’ in the Netherlands?

The third sub question is about the liveability of residential areas. This sub question gives an overview of the criteria of liveability which can be used to test the different case studies on.

3. What is liveability of residential areas according to current literature?
   - What are the criteria for objective liveability of residential areas found in literature?
   - Which spatial elements support the criteria of (objective) liveability?

In the fourth sub question the first and second sub question are combined with an empirical analysis of the case study neighbourhoods. The list of problems and opportunities together with the criteria of objective liveability will form a list of diagnoses. These diagnoses describe the problems and the opportunities of the ‘bloemkoolwijken and how to improve the liveability of the neighbourhood.

4. Which spatial problems or situations have to be solved and which opportunities have to be taken to improve the liveability of the ‘bloemkoolwijk’?
   - On which criteria for (objective) liveability do the different case study neighbourhoods score?
   - Which criteria for (objective) liveability are inadequate in the case study neighbourhoods?
   - Which opportunities do the ‘bloemkoolwijken’ have to improve the liveability of the neighbourhood?

The fifth sub question will be design orientated. In this sub question the spatial interventions, which are necessary following the diagnoses, will be defined.

5. Which spatial interventions are necessary to come to a solution for the problems and use the opportunities?
   - On which generic characteristics do the different solutions work?

The last sub questions will be the design for the transformation of one of the case study neighbourhoods. By answering this question the new developed method with its spatial interventions will be tested on its value.

6. How does the design for one of the case studies look when the set of spatial interventions is applied?
During the research much thought has been spent on defining the final product of this graduation project, during the research. Many discussions and time are spent on the meaning and the use of the set of spatial interventions. The first idea for the final product was to develop a toolbox with spatial interventions for the transformation of the ‘bloemkoolwijken’ but during the process the toolbox proved not to be sufficient as a product of this project. Instead it is chosen to develop a method whereby the set of spatial interventions was not the end product but an integrated part of the end product.

This chapter will explain what is meant by a method for the transformation of the bloemkoolwijken.

The dictionary describes a method as a fixed and planned manner of acting to achieve a certain aim. Westrik (2002) distinguishes between three different types of methods in the field of urban planning; methods for the spatial design of the city, methods focused on the functional design and methods regarding the formal design of the city. Examples of the latter method are; the SAR method, the pattern languages and the method developed by Lynch. These methods focus on the quality and the spatial and functional coherence of the spatial elements as well as on the design process.

The method developed for the transformation of the ‘bloemkoolwijken’ is also a method from the latter category. But in contrast to the other methods, the method developed within this project will focus on one type of neighbourhood, namely the ‘bloemkoolwijken’.

Van Dorst (2005) states in his publication, a list of conditions for a design method. It has to meet the following conditions:
- be inspiring to the designer and the design team
- bring up spatial interventions without harming the uniqueness of the design
- bring up likely combinations of spatial interventions
- fit to the sub-problems of the design process and to assign the relation with other sub-problems
- be a communication tool for and with the designer

The goal of using a design method can be separated in two; the method can support the designer by solving the design problem and can structure the design process (Van Dorst, 2005).

The method can help by solving the design problem by giving a tool for developing combinations with added value and spatial solutions and by coordinating and integrating the sub-problems. However, most important is that the method inspires the designer in the design process. Not only the designer can be helped, but also the other actors; for example, when dealing with housing corporations, which are looking for guidance in dealing with the ‘bloemkoolwijken’. The developed method gives the housing corporations a framework for discussion. When fully explained the method can even help to involve the inhabitants in the design process especially on street level.

The method can provide clear insight into the development of an urban design. By using a method the plan can be transferable, transparent and verifiable and can be discussed and compared with other plans made by using the same method (Westrik, 1989, p. 17). Finally, the method can help in the design processes whereby more than one actor is involved. In this case the adaption of the design method can help to achieve consensus between different actors in the design process.

The adaptation of the design method will, in general, influence the design and the followed design process. Most of the times the design method gives a systematic approach to the design process or the design process will be structuralized by following the design method protocol.

Simply applying the design method is a risky task. De Boer states: ‘it is as risky to overestimate as to reject the design method. A good urban design is never the cause of the adaption of the method on itself. But a combination of creativity, imagination, inventiveness is necessary next to social awareness and an opinion’ (Westrik, 1989).

Some points of attention during application of the method are (Westrik, 1989, p. 19):
- the method can not be applied without any knowledge of its backgrounds.
- It can, most of the times, only be applied for a part of the design
- each problem needs a specific approach
- the adaption of the design method does not guarantee the quality of the design. The quality of the design is depended on the position, the knowledge and the skills of the designer who applies the design method.
1.9 Research Approach

I. Theoretical research
   - Theoretical framework

II. Empirical investigation
   - Diagnose a
   - Diagnose b
   - Diagnose x
   - Spatial interventions
   - Generic elements

III. Design and evaluation
   - Design

---

I. Theoretical research
   - Literature research + data analysis

II. Empirical investigation
   - Case study research:
     - Field research
     - Observation
     - Spatial analysis
     - Design (intervention)
     - Design (intervention)
     - Design (intervention)
     - Spatial analysis

III. Design and evaluation
   - Bottom-up design
   - Top-down design

---

Fig. A14 ‘Research set-up’ (source: by author)

Fig. A15 ‘Methodology research set-up’ (source: by author)
1.9 Research approach

This chapter will give an overview of the methodologies which will be used to answer the main research question. The sub questions can be divided into three separated parts. In the thesis the same parts can be found. The first part is the theoretical research. Part B of the thesis is the empirical investigation and part D the design for one of the case study neighbourhoods.

Each part has its own methodology; therefore this chapter will be divided into three parts:

Part I – Theoretical research
Before starting the analysis of the case studies or the design, a theoretical underpinning for the design process will be made in the theoretical research. The theoretical research will be based on a literature research on scientific books, researches, papers, governmental documents etc.

In part I answers will be given on the first three sub questions:
1. What is the history of urban renewal in the Netherlands?
2. What are the characteristics of the ‘bloemkoolwijk’?
3. What is liveability of residential areas according to current literature?

The first sub question will be answered in the review paper, which will be made for the course Theory of Urbanism. Books, articles and magazines will be used in order to get an overview of the political goals of urban renewal in the Netherlands. By a literature study the history on urban renewal will be made clear.

Secondly an overview of the ‘bloemkoolwijken’ will be given. A literature research will be used to give an overview of the political and social background of the design principles of the ‘bloemkoolwijken’. The social trends and sociological processes in the ‘bloemkoolwijken’ will be analysed with a data analysis.

Through a literature research on the current literature about the liveability of neighbourhoods, the definition of liveability will be made explicit. The main source for this research will be: Een duurzame leefbare woonomgeving (Van Dorst, 2005). Next to the definition of (objective) liveability, the criteria for a liveable neighbourhood will be described.

Methods: literature study; data analysis

Part II – Empirical investigation
The second part gives an answer on the fourth and fifth sub question:
4. Which spatial problems or situations have to be solved to improve the liveability of the ‘bloemkoolwijk’?
5. Which spatial interventions are necessary to come to a solution for the problems and use the opportunities?

The aim of the graduation project is to develop a set of interventions for the transformation of the ‘bloemkoolwijken’ in the Netherlands. To be able to do so it is necessary to develop an overview of the generic spatial elements of the ‘bloemkoolwijken’. The generic elements will be defined by a case study research.

A couple of criteria are used to select the different case studies who are representative for all the ‘bloemkoolwijken’ in the Netherlands. The introduction of the multilevel dwellings in the 1980s gave the bloemkoolwijken built in that period a different look. The signs of deterioration and spatial problems in the ‘bloemkoolwijken’ built in the 1980s are therefore different than the ones built in the 1970s. The toolbox will focus on the transformation of the low-rise ‘bloemkoolwijken’ because they represent the largest amount of the ‘bloemkoolwijken’.

Another criterion is the location of the ‘bloemkoolwijken’. The scheme below (fig. A18) shows the characterisation of the ‘bloemkoolwijken’. As showed in the scheme the neighbourhoods have three kind of positions in the urban fabric of the city:

- as an extension of the historic city
- as a neighbourhood of a new town (‘groeiern’)  
- as a renewal area in the existing city

This research will focus on the first two locations. With the design of the third kind, the site and the residents had a lot of influence on the design process. Therefore, these ‘bloemkoolwijken’ are hard to compare with the other ‘bloemkoolwijken’; there are too many location specific elements which

Fig. A16 ‘Generic elements’ (source: by author)
The last criterion was the size of the neighbourhood. Case study neighbourhoods with more than 10,000 inhabitants and neighbourhoods with less than 10,000 inhabitants are selected. Together with my personal motivation this gave the selection of case study neighbourhoods as can be seen in fig. A.

The spatial characteristics of the ‘bloemkoolwijken’ will be analysed by the layer approach. By analysing and a comparison of the layers of six ‘bloemkoolwijken’, the generic elements of the toolbox can be defined. The analysis will be done on three different scales: neighbourhood, ensemble and street.

For the neighbourhood scale the three layers from the general zoning plan will be used for the analysis. The layers are: green and water structure, the infrastructure and the architecture (quarters) (see fig. A17).

Next to this, a set of diagnoses will be developed. The diagnoses will describe the different generic spatial problems of the ‘bloemkoolwijken’. Next to this they will describe the opportunities of the ‘bloemkoolwijken’. The diagnoses will be made after the literature study and a case study research. Field trips to the different case study neighbourhoods will help to see if the diagnoses made after a literature research are valid.

For the different diagnoses, spatial solutions will be designed. These solutions will be designed on the different generic elements of the three scales.

Methods: case study research; literature, field research, observation, spatial analysis, design, layer approach, mapping

Part III – Design and evaluation
The third part will give an answer to the last to sub question:
1. How does the design for one of the case studies look when the set of spatial interventions is applied?

For the 6th sub question a design will be made for one of the case studies. First the case study neighbourhood will be analysed and tested on the generic elements and diagnoses. If the neighbourhood conforms to these subjects the spatial interventions can be applied on a design for the transformation of the ‘bloemkoolwijken’. This design has to show the effects of the spatial interventions on the liveability of the neighbourhood.

Methods: evaluation, reflection, design implementation, bottom-up design
### 1.9 Research Approach

#### Typology ‘Bloemkoolwijken’

<table>
<thead>
<tr>
<th>Location</th>
<th>Building period</th>
<th>Location</th>
<th>Building period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expansion area ‘groeikernen’</td>
<td>1. The seventies expansion area ‘groeikernen’ <em>(Waterland, Spijkernisse; Houten Noord, Houten)</em></td>
<td>2. The eighties expansion area ‘groeikernen’</td>
<td></td>
</tr>
<tr>
<td>Expansion area historic city</td>
<td>3. The seventies expansion area historic city <em>(Merenwijk, Leiden; Maaspoort, Den Bosch; Rivierenwijk, Heerhugowaard; Zevenkamp, Rotterdam)</em></td>
<td>4. The eighties expansion area historic city <em>(Zevenkamp, Rotterdam; Maaspoort, Den Bosch; Rivierenwijk, Heerhugowaard)</em></td>
<td></td>
</tr>
<tr>
<td>Urban renewal in inner city areas</td>
<td>5. The seventies, urban renewal in inner city areas</td>
<td>6. The eighties urban renewal in inner city areas</td>
<td></td>
</tr>
</tbody>
</table>

#### Position in the city

<table>
<thead>
<tr>
<th>Position in the city</th>
<th>Amount of residents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic city</td>
<td>New town</td>
</tr>
<tr>
<td>Merenwijk - Leiden</td>
<td>✔️</td>
</tr>
<tr>
<td>Maaspoort - Den Bosch</td>
<td>✔️</td>
</tr>
<tr>
<td>Waterland - Spijkernisse</td>
<td>✔️</td>
</tr>
<tr>
<td>Rivierenwijk - Heerhugowaard</td>
<td>✔️</td>
</tr>
<tr>
<td>Zevenkamp - Rotterdam</td>
<td>✔️</td>
</tr>
<tr>
<td>Houten</td>
<td>✔️</td>
</tr>
</tbody>
</table>

*Fig. A18 ‘Characterisation ‘bloemkoolwijken’’ (source: Giessen, 2007)*

*Fig. A19 ‘Case studies’ (source: by author)*
The first part of the graduation project is based on a literature research. This literature research forms the theoretical background or context of the graduation project.

The theoretical framework consists of three parts. The following three sub questions are answered in the theoretical framework:

• What are the characteristics of the ‘bloemkoolwijk’?
• What is the (objective) liveability of residential areas according to current literature?
• What is the history of urban renewal in the Netherlands?

Relation within the theoretical framework

The overview on the history of urban renewal in the Netherlands will give the context for the renewal of the ‘bloemkoolwijken’ in the Netherlands. It will partly state the relevance of this project.

The description of the bloemkoolwijken gives the context for the research and design. A set of spatial interventions will be made for the transformation of the ‘bloemkoolwijken’. In order to do so it is important to understand the ‘bloemkoolwijken’.

The third part of the theoretical framework gives criteria for the liveability of the ‘bloemkoolwijken’. By testing the ‘bloemkoolwijken’ on these criteria the problems and the opportunities for the ‘bloemkoolwijken’ can be described.

Urban renewal

The first part of the theoretical framework is a short summary on the history of urban renewal in the Netherlands. Three phases can be distinguished, all with different goals and different means. This history on urban renewal is one of the foundations of this graduation project and therefore placed in the beginning of the thesis (chapter 1.2 part A).

The ‘Bloemkoolwijk’

The second part is a research on the characteristics of the ‘bloemkoolwijken’, not only the spatial characteristics but also the social. Through a literature study, the ideology and thoughts of the planners is explored. Through a data analysis the trends and processes are described.

This literature research sets the context of the graduation project: this research can be found in the first chapters of the second part of the thesis.

Objective liveability

It is important to develop not only a liveable neighbourhood for the demands of the residents nowadays, but also for the residents of the future (see fig. A21). The demands of the inhabitants change: in the 1970s the ‘bloemkoolwijken’ were seen as the perfect neighbourhood for the family and nowadays the first signs of deterioration can be seen. What first was seen as the perfect design principle is nowadays outdated.

It is therefore important to include sustainability or sustainable development in the development of a liveable neighbourhood.

In paragraph 1.11 the objective liveability is described. The relation between sustainability and liveability is described and an overview of the criteria for a liveable neighbourhood is given.
The aim of this graduation project is to develop a set of spatial interventions for the transformation of the ‘bloemkoolwijken’ to meet the criteria of liveability.

Liveability can be seen as a ‘wicked concept’. In many researches it has been described on different ways. For this research there is chosen to make use of the description of Machiel van Dorst (2005). This is done because of the fact that Van Dorst includes sustainability in his description of liveability.

It is necessary to include sustainability into liveability because it is important to not only create a liveable neighbourhood for the current inhabitants but also for the inhabitants in the future.

**Sustainability and liveability**

Sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs. If this would be applied to the neighbourhood, sustainable development of the neighbourhood would be ‘the development that meets the needs of the sitting residents without compromising the needs of future generations of residents and people elsewhere’ (Van Dorst, 2005, p. 40).

For sustainable development they use three pillars; people, planet and prosperity (Van Dorst, 2005). In this case, the focus is on a sustainable development of a liveable neighbourhood. Therefore the focus will be on the first ‘P’: people. Liveability is the relationship between a subject (an organism, a person or community) and the environment. A sustainable, liveable neighbourhood is
1.11 Objective liveability

not only liveable for the current residents, but also for future generations. Such a living environment is sustainable if its qualities do not depend on intensive external management and large-scale restructuring and if it has minimal impact on environmental quality (local and global).

Objective liveability

In his research about liveability, Van Dorst (2005, p. 80) describes 3 kind of relationships between a subject (an organism, a person or a community) and the environment (see fig. A22):

- the perceived liveability (‘gepercipeerde leefbaarheid’): the individual’s appreciation of his or her environment;
- the apparent liveability (‘veronderstelde leefbaarheid’): a good match between the organism (person) and the environment, which can subsequently be evaluated in terms of the number of happy years of life;
- the presumed liveability (‘kennelijke leefbaarheid’): the degree to which the living environment meets the presumed conditions for actual liveability.

The objective liveability concerns the registered situation: it is the way that the living environment meets the criteria for objective liveability. The objective liveability is the sum of the quality of health, safety, control over one’s own life, quality of social interactions and contact with the natural environment. A sustainable, liveable environment is a healthy and safe environment which supplies in control by inhabitants, social interactions and contact with the natural environment (Van Dorst, 2005).

Criteria

This paragraph will shortly describe the criteria:

- Health and safety
Many of the health and safety aspects are in the Netherlands legislated. These are aspects like air quality, fire safety and traffic safety. Therefore the health and safety aspects are most of the time certain. But next to these aspects, the health and safety also concerns the social safety, the feeling of safety on the street. This can be influenced by crime, loitering youth (hangjongeren) and undefined public space.

- Contact with the natural environment
This criterion has a relation with the well-being of the residents. Contact with the natural environment is highly appreciated by the residents. The natural environment can also stimulate the social interactions with the other inhabitants in for example the parks and the gardens (‘volkstuinen’). Next to the liveability of the residents, it has of course a positive effect on the liveability for the plants and animals.

- Regulation of social interactions
Regulation of the social interactions is also made possible by the spatial structure of the neighbourhood. The residents want to be anonymous or have social interaction when it solves them. By privacy-zoning the residents can regulate their social interactions. In some cases this regulation is very easy, for example by closing the front door of their house. Sometimes this is more difficult, for example on the street and the transition to their front garden.

- Control by residents over their living environment
People have the need to indentify themselves with their environment. Therefore they want to personify their environment. By personification of the living environment, residents feel more involved with the public space and it gives them a feeling of control (Van Dorst, 2005).
Fig. B1 ‘Bloemkolkwijk’ by Niek de Boer (source: De Vletter, 2004)
OWNERSHIP
Door een aanpassing van de contingenten in de jaren zeventig sloeg de gewenste verscheidenheid in financieringscategorieën in deelplan drie en met name vier om naar particuliere huurwoningen en koopwoningen. Op wijkniveau werd de verdeling van de financieringscategorieën uiteindelijk 41% woningwetwoningen, 26% premiehuurwoningen, 13% goedkope premiekoopwoningen en 20% duurdere koopwoningen.

Fig. B2 ‘Bloemkoolwijk Kasbah, Hengelo’ (source: De Vletter, 2004)
This part of the thesis focuses on the ‘bloemkoolwijken’ itself. To understand the choices that are made in the spatial layout first an overview will be given on the social and political background of the building period of the ‘bloemkoolwijken’. Next to this the characteristics and some data of the ‘bloemkoolwijken’ will be described to give an idea about what kind of neighbourhoods the ‘bloemkoolwijken’ are nowadays.

The empirical analysis at the end of this part is the most important part because it provides a basis for the following parts. The empirical analysis is performed to come to the generic elements and diagnoses for the ‘bloemkoolwijken’. Therefore six ‘bloemkoolwijken’, from different categories, will be compared with each other in a case study.

Fig. B3 ‘Koepelwoning Zwolle’ (source: Stavenhuis)
This section will explain what kind of political and social thoughts and processes the bases of the thoughts behind the design principles of the ‘bloemkoolwijken’ were.

Five main themes were important in the 1970s and 1980s: human scale, variation, experiment, encounter and rediscovery of the city.

In the 1970s there was, in the light of new thoughts about democracy, environmental awareness and emancipation, an upcoming criticism against the architecture built in the period after the war until the 1970’s (Van der Leun et al., 2008). The quality of the houses was poor and the spatial structure of the neighbourhoods was monotonous and uniform.

This leaded to a new focus on the individual. The individual became the starting point of the design. This new focus on the human scale can be seen in the attention for the relation between the public and the private domain and the new layout for the street; the ‘woonerf’ (De Vletter, 2004).

In the 1970s there were countless attempts to stage the encounter of the individuals. This second theme can be seen in the design of the façade or elevation, like recesses, patios, semi-private spaces, pedestrian priority areas and galleries (De Vletter, 2004). The roof garden of the ‘Centraal Beheer’ office of Herman Herzberger is an example of stimulating the encounter. Here the shape of the benches, plants and other facilities facilitate the encounter of the employees (see fig. B5). New forms of communal living like, ‘centraal wonen’ were developed. In the interior the conversation pit (‘zitkuil’) was well represented (see fig. B6).

At the same time there was a societal change in the political thinking of the inhabitants. Societal processes like the democratisation and the emancipation influenced the thinking of the regular citizens. This leaded to a transition from the conceptual planning approach of the 1960’s into the social political thinking of the 1970’s (De Vletter, 2004). This transition affected also the neighbourhood planning; the zoning plans changed from a highly detailed zoning plan into a more general zoning plan (see fig. B7). Only the building densities, main infrastructure, green structure, functions and the character of the living environments were set out. After the general plan was designed, different architects developed different parts of the plan (De Vletter, 2004). By letting different architects design the neighbourhood, the third theme, variation, was ensured. By doing this, the government wanted to ensure a higher level of diversity in the architecture and layout of the living areas. The variation can not only be seen in the zoning plan but also on the smaller scale of the houses. More and more houses got a free floor plan instead of a fixed one.

The Ministry of Housing and Physical Planning wanted to stimulate variation in the architecture (against the monotonous architecture of the post-war) by offering subsidies for experimental housing. Therefore, Minister W.F. Schut took the initiative of setting out a number of criteria that were meant to produce a more varied living environment (De Vletter, 2004).
the cause for the fourth theme, the experiment. The outcomes were unusual housing plans and new forms of housing types.

The last theme from the 1970s is not related to the design of the ‘bloemkoolwijken’ but was really important in that time: the rediscovery of the city. As said before, the attitude of the inhabitants changed: they wanted to participate in the design process. This also showed in the existing urban fabric; inhabitants started a protest against the demolishing of whole city parts. This, together with renewed attention for the qualities of the existing city by the planners, leaded to the first forms of urban renewal. In the renewal of the historic city there was also attention for the existing buildings, like in the project of Aldo van Eyck (see fig. B8).
1.3 Characteristics

There are a few characteristics that set the neighbourhoods apart from all the other neighbourhoods built until that moment.

The Netherlands
There are many ‘bloemkoolwijken’ built in the Netherlands (see fig. B12). In 1972 the Dutch government pointed out 17 cities and non-built places as new towns (‘groeikernen’). These new towns had to stop the urban sprawl. The aim of the new town policy was to realise low rise buildings in a green environment but at the same time preserve the landscape from urban sprawl. Many of the ‘bloemkoolwijken’ were built in these new towns, like Houten en Spijkenisse. Another part of the ‘bloemkoolwijken’ was built as an expansion of the historic cities and some as renewal areas in the historic city centres. The ‘bloemkoolwijken’ built in the 1980s are mostly situated in the existing cities and as renewal areas (Giessen, 2007).

The city
In the time the bloemkoolwijken were built, the rings around the historic inner cities were already built up. The bloemkoolwijken were therefore built apart from the existing city as expansion areas of the historic cities (see fig. B13) or, as mentioned before, as a part of the new towns. Next to the position in the urban fabric the ring of green and water surrounding the neighbourhood gives the neighbourhood an even more isolated character. Even, after some time, when the neighbourhood was surrounded with other neighbourhoods, like VINEX, the introverted character of the ‘bloemkoolwijken’ was clearly visible (Van der Leun et al., 2008). Because of the introverted character, most of the ‘bloemkoolwijken’ have a poor connection to the city. The ring road leading through the neighbourhood is only at a couple of places connected to the other neighbourhoods.

The neighbourhood
The ‘bloemkoolwijken’ are, as mentioned before in the previous chapter, designed with a new type of zoning plan: de general zoning plan. The general zoning plan of the ‘bloemkoolwijk’ consists of three layers: the green and water structure in and surrounding the neighbourhood, the infrastructure for the car and slow traffic and the quarters (Van der Leun et al., 2008)(see fig B14). Two of the layers, the infrastructural network and the green structure, are fixed by the design of the urbanist. The last layer, the infill of the quarters, is left for the architect. For the infill by the architect, the urbanist only defined some restrictions for the design, like the borders and the densities, the rest was open for the architect.

Typical for the ‘bloemkoolwijken’ is the network. The infrastructural network is very hierarchal; there is one ring road with a small network going into the quarters. Slow traffic and car traffic are strictly separated on the large scale. On the lower scale there highly integrated in the new concept of the ‘woonerf’.

The street
The houses are mainly low-rise single family houses. Since the 1980s the houses have been built in 4 storeys.
Due to the new form of zoning plan and the stimulation of the government the allocation was very diverse and experimental. Another very important characteristic on this scale level is the principle of the ‘woonerf’. The principle of the ‘woonerf’ got his first shape in the United Kingdom, designed by the architect sir Colin Buchanan (1902-2001), in the report Traffic in Towns in 1963 in order of the Ministry of transport (Witsen, 2006). In September 1976 the ‘woonerf’ obtained a legal status in the Netherlands (Bach, 1986).

In the 1950s the design of the neighbourhood was really focused on the car. In the 1970s the architects and urbanists started experimenting with the dominant presence of the car in the neighbourhood. The street had of course always a traffic function but it is also a meeting place and a place where children play. The problem of the traffic accidents is not new but the car became a real problem with the mass motorisation, when the car became a part of every family. In that time 70% of all accidents involving children under six did happen in quiet streets and 80% of the mortal accidents of children took place in the immediate vicinity of their homes (Bach, 1983). Therefore the goals of the experiments were; enhancement of the traffic safety, the liveability of the street, and the quality of the public street for example playing kids (Ministerie van Verkeer en Waterstaat, 1985).

The purpose of the ‘woonerf’, in his first concepts, was to restore the environmental qualities of the street as a place to live and to diminish the danger from traffic in our residential environment (Bach, 1986). The aim of the ‘woonerf’ is to integrate traffic in the human environment to produce happy blend. One way of doing this is to restructure the urban areas. Quite simply, this involves designing them in such a way that traffic becomes subordinate to the interest of improving the environment (Bach, 1986). Therefore the basic point of the ‘woonerf’ integration of the pedestrians, cyclists and car drivers. Instead of giving each their own domain, the woonerf compels them to make a use of the same communal space (Bach, 1983).
The housing stock of the ‘bloemkoolwijken’ differs from the one of the early post-war neighbourhoods (1945-1970). The housing stock of the early post-war neighbourhoods consists of 36% single-family dwellings and 64% multi-family dwellings. In the protest against the post-war high-rise, the housing stock of the ‘bloemkoolwijken’ changed to a more single-family dwelling orientated neighbourhood; 73% single-family dwellings and 27% multi-family dwellings. These numbers do not differ that much from the average of the Netherlands; 71% single-family and 29% multi-family (see fig. B17) (Van der Steeg et al., 2006).

The building period of the ‘bloemkoolwijken’ (1970-1984) can be divided into smaller parts; in these parts there is a variation in the amount of single and multi-family dwellings that were built. From the 1980s on, there has been a sharp increase in the amount of multi-family dwellings after a sharp decrease in the period 1970-1980 (Van der Steeg et al., 2006). This change can be explained by the start of the economical recession due to the oil crisis. Therefore the production of the houses had to be cheaper whereby the single-family dwellings were changed for multi-family dwellings.

In most of the ‘bloemkoolwijken’ 78% of the dwellings are low-rise dwellings and 22% of the dwellings are multilevel buildings (see fig. B18) (Mens et al., 2008). Most of the houses have more then three rooms. This is almost the same as the average in the Netherlands.

Fig. B17 ‘Type of dwelling’ (source: Van der Steeg et al., 2006)

Fig. B18 ‘Composition low-rise / high-rise’ (source: Mens et al., 2008)
There are several social and sociological changes going on in the ‘bloemkoolwijken’. These changes, will be called the trends of the ‘bloemkoolwijken’. The trends are influencing the conditions of the neighbourhood, which will influence the kind of interventions needed for the transformation of the ‘bloemkoolwijken’. For the update of the ‘bloemkoolwijken’ it is important to anticipate on the future, therefore it is important to understand the changes which are going on in the ‘bloemkoolwijken’.

Social processes

The social processes which influence the conditions are:

- **The ignorance of individualisation**
  All over the Netherlands we can see a decrease in the amount of people living together as one household. In the past the average was like a normal family (2 parents and 2 or 3 children), nowadays it’s around 1.92 persons in each household. The question is whether this trend will continue or not. The individualisation is not only about the amount of people living in one household. It is also about the behaviour of the people. Nowadays people tend to live more inside their house than in the public space. The role of the public space changed; the question is what kind of role the public space has on people’s life.

- **The ownership of the dwellings**
  In all of the 86 selected ‘bloemkoolwijken’ a shift took place from rented- to owner-occupied dwellings. The amount of owner-occupied dwellings increased since the last five years for 6% (see fig. B21). It is clear that this is caused by the shift from rented- to owner-occupied, because of the fact that in the last five years no new dwellings were built in the ‘bloemkoolwijken’ and the amount of rented dwellings decreased with the same percentage. In the social as well as in the private sector the shift was visible (Van der Steeg et al., 2006).

- **Use of the car**
  The ‘bloemkoolwijken’ were designed with the idea that each household had an average of 1.2 car(s) (Ubink & Visser, 2009). The figure B22 shows that the household with 2 cars increased from 2000 until 2005 with more then 7%. Most of the households in the ‘bloemkoolwijken’
nowadays have 2 cars. Because of the shortage of parking space, people park their car also on the street and on the squares, therefore the liveability and quality of the public space decreases.

**Sociological trends**

The sociological trends which will influence the conditions and transformations are:

- **Change of age composition of the inhabitants**
  
The ‘bloemkoolwijken’ are built around 30 years ago. Many of the households, which bought or rented a house directly after they were delivered, are still living in the neighbourhood. But after 30 years these households changed, the children grew up, children moved out, parents got older. Together with the new kind of households that moved later into the neighbourhood, some sociological trends on the population composition can be pointed out in the ‘bloemkoolwijken’.
  
The most striking is the number of the pre-ageing population. In the ‘bloemkoolwijken’ the inhabitants with the age between 45 and 64 years increased 19% between 1998 and 2004 (see fig. 2.22). In the Netherlands this was 4% (Van der Steeg et al., 2006). Another striking fact is the age of the inhabitants. In 2004 33% of the inhabitants of the ‘bloemkoolwijken’ were younger than 25 year. In the Netherlands this percentage is 3% lower (Van der Steeg et al., 2006).
  
The other trends are (see also fig. B24):

- Decrease in children and youngsters in the neighbourhood: the children born in the neighbourhood are getting older and the birth rate stays behind. The percentage of inhabitants in the age between 0-24 year decreased between 1998 and 2004 with 2,4% (Van Der Steeg et al., 2006).
- Decrease in the middle age category (25-44 years). In the ‘bloemkoolwijken’ we can see a decrease of 4%. For comparison: in the Netherlands as a whole this number of decrease was 2% (Van Der Steeg et al., 2006).
- Small group of ageing population but sharp rise. The decrease in the number of inhabitants in the age above 65. This increase is much higher than the increase in the Netherlands. In the ‘bloemkoolwijken’ it was 1,2% in contrast with the 0,3% in the Netherlands as a whole (Van der Steeg et al., 2006).
- The amount of households
  
  In the period between 1998 and 2002 the amount of households increased with 1,4% against the 4,2% increase in the Netherlands as a whole. This trend of limited grow can also be seen in the period from 2002 until 2004 (Van der Steeg et al., 2006).

- The change in population composition

  Striking in the change in the composition of the population is the decrease in households with children. From 2000 until 2005 we can see a decrease of 15,7% (see fig. 2.23) (Van der Steeg et al., 2006). This is in contrast with the amou. In the ‘bloemkoolwijken’ there is an increase in the job participation, but at the same time the average income per household stays the same. This, in combination with a sharp increase in the amount of low educated inhabitants, shows that the composition of the neighbourhood is changing. The average income is decreasing and the amount of double-income couples is increasing (Van der Steeg et al., 2006).

Next to the decrease in the social status of the inhabitants this means also a change in the use of the space outside the houses, the public space. People have to work more time to earn the same amount of money and will therefore demand other kind of use of the public space.
1.5 Social processes and sociological trends

Fig. B22 'Increase in car use' (source: CBS, edited by author)

Fig. B23 'Average age population 'bloemkoolwijken'' (source: van der Steeg et al., 2006)

Fig. B24 'Amount of immagrants living in the 'bloemkoolwijken'' (source: van der Steeg et al., 2006)

Fig. B25 'Composition households 'bloemkoolwijken'' (source: van der Steeg et al., 2006)
### General characteristics

**Build in the 1970s**
- Varity of low rise housing neighbourhoods
- Reaction on uniformity and large-scale projects from the post-war build in smaller scale and with more differentiation
- Playfull allocation and bendy streetpatterns, designed as a ‘woonerf’
- Sometimes integration of living and working

**Build in the 1980s**
- Diversity and simplicity
  - Restrained reaction on post-war neighbourhoods
  - Program: ‘goedkoper bouwen’ from the Minesterie van Vrom
  - Restraining leads to lower rents and quality
  - More renewal areas than expansion areas: one third of the houses is in the existing city, in big cities ¾
  - Large variation in housing conditions, depending on the existing cities
  - Mostly smaller dwellings in the social housing sector, 2 to 4 floors

### Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Housing</th>
<th>Urban structure</th>
<th>Functions</th>
<th>Private - public</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Build in the 1970s</strong></td>
<td>Low-rise</td>
<td>Unclear in planning and design, unclear for the users</td>
<td>Moderate separation of functions</td>
<td>Clear separation</td>
</tr>
<tr>
<td><strong>Build in the 1980s</strong></td>
<td>Low-rise and multi-level</td>
<td>Moderate clear in planning and design, not totally clear for users</td>
<td>Integration of functions</td>
<td>Clear separation</td>
</tr>
</tbody>
</table>
The aim of this project is to develop a set of interventions for the transformation of the late post-war neighbourhoods. The aim is to develop a set of interventions not just for one ‘bloemkoolwijk’ but a set that can be used for the update of more than one ‘bloemkoolwijk’. Therefore it is important to find the generic elements which can be used to develop the spatial interventions; for this reason a typology analysis is performed to discover the similarities in the spatial layout of the different ‘bloemkoolwijken’.

Case study neighbourhoods:
For the analysis six different ‘bloemkoolwijken’ are compared with each other. The figure below shows the differences between these case study neighbourhoods.

As explained in the research approach a couple of criteria are used to select the different case study neighbourhoods. As can be seen in the scheme on the previous page the bloemkoolwijken built in the 1970s differ a lot from the ones built in the 1980s. The introduction of the multilevel dwellings in the 1980s resulted in a different look. This research focuses on the low-rise ‘bloemkoolwijken’ and therefore on those built in the 1970s. For some of the case study neighbourhoods the building process started in the 1970s but continued in the 1980s. Another criterion is the location of the ‘bloemkoolwijken’; as described in the research approach this analysis will focus on the neighbourhoods built as an extension of an historic city and on the neighbourhoods built in a new town (in Dutch: groeikern). The last criterion concerned the size of the neighbourhood; case study neighbourhoods with more than 10,000 inhabitants are selected.

The analysis:
The analysis is done on three scale levels; the neighbourhood, the ensemble or building block and the street. On the scale level of the neighbourhood the three layers of the general zoning plan are used as the basis; the infrastructure, the green structure and the quarters. For these three layers different subjects are divined. For the level of the building block different building blocks are compared with each other. On street level the section on the front and on the back side of the dwellings are brought together is a set of sections.

<table>
<thead>
<tr>
<th>TYPOLOGY ‘BLOEMKOOLWIJKEN’</th>
<th>Building period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>1970s</td>
</tr>
<tr>
<td>Expansion area ‘groeikernen’</td>
<td>1. The seventies expansion area ‘groeikernen’ <em>(Waterland, Spijkernisse; Houten Noord, Houten)</em></td>
</tr>
<tr>
<td>Expansion area historic city</td>
<td>3. The seventies expansion area historic city <em>(Merenwijk, Leiden; Maaspoort, Den Bosch; Rivierenwijk, Heerhugowaard; Zevenkamp, Rotterdam)</em></td>
</tr>
<tr>
<td>Urban renewal in inner city areas</td>
<td>5. The seventies, urban renewal in inner city areas</td>
</tr>
</tbody>
</table>
## 2.1 Case study neighbourhoods

<table>
<thead>
<tr>
<th>Neighbourhood</th>
<th>City</th>
<th>Inhabitants</th>
<th>Building period</th>
<th>Dwellings</th>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Merenwijk - Leiden</strong></td>
<td>Historic city</td>
<td>14,478</td>
<td>started in 1971</td>
<td>6,039</td>
<td>199 ha.</td>
</tr>
<tr>
<td><strong>Maaspoort - Den Bosch</strong></td>
<td>Historic city</td>
<td>17,772</td>
<td>started in 1977</td>
<td>7,001</td>
<td>566 ha.</td>
</tr>
<tr>
<td><strong>Waterland - Spijkenissenn</strong></td>
<td>New town</td>
<td>8,900</td>
<td>started in 1973</td>
<td>3,400</td>
<td>131 ha.</td>
</tr>
</tbody>
</table>

---

Fig. B26 ‘Position in the city’
Fig. B27 ‘Merenwijk’
Fig. B28 ‘Position in the city’
Fig. B29 ‘Maaspoort’
Fig. B30 ‘Position in the city’
Fig. B31 ‘Waterland’
2.1 Case study neighbourhoods

**Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard**

- **City:** Historic city
- **Inhabitants:** 11406
- **Building period:** end of the 1970s
- **Dwellings:** 6595
- **Surface:** 152 ha.

**Zevenkamp - Rotterdam**

- **City:** Historic city
- **Inhabitants:** 17,500
- **Building period:** started in 1979
- **Dwellings:** 7001
- **Surface:** 216 ha.

**Houten Noord - Houten**

- **City:** New town
- **Inhabitants:** 25,662
- **Building period:** begin of the 1970s
- **Dwellings:** 9979
- **Surface:** 131 ha.

![Fig. B32 ‘Position in the city’](image1)
![Fig. B33 ‘Rivierenwijk, Edelstenenwijk and Molenwijk’](image2)
![Fig. B34 ‘Position in the city’](image3)
![Fig. B35 ‘Zevenkamp’](image4)
![Fig. B36 ‘Position in the city’](image5)
![Fig. B37 ‘Houten Noord’](image6)
2.2 Analysis Neighbourhood

**Infrastructure**

**Merenwijk - Leiden**
- Ringroad with two connections with the surroundings
- Cycle path on historic line, connection the school and shopping centre
- Busline over the ring road

**Maaspoort - Den Bosch**
- Ringroad with two connections with the surroundings
- Few separate designed cycle paths
- Bus over the ring road and going into the quarters

**Waterland - Spijkenisse**
- Ringroad with three connections with the surroundings
- Connection the school and shopping centre with the quarters
- Bus over the ring road

Fig. B38 ‘Analysis infrastructure’ (source: by author)
2.2 Analysis Neighbourhood

INFRASTRUCTURE (CONTINUED)

Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard

- Ringroad with four connections with the surroundings
- Few separate designed cycle paths
- Bus over the ring road

Zevenkamp - Rotterdam

- Ringroad with two connections with the surroundings
- Connection the school and shopping centre with the quarters
- Metro going through the neighbourhood and bus over the ring road

Houten Noord - Houten

- Ringroad around neighbourhood with five connections with the surroundings
- Cycle path following the green line and connection the school and shopping centre
- Train connection with stop on shopping centre and bus over ring road

Fig. B39 ‘Analysis infrastructure’ (source: by author)
2.2 Analysis Neighbourhood

Green Structure

Merenwijk - Leiden

Main green: green heart

Greenheart at the centre of the neighbourhood in the middle of the ringroad

Green ring

Green ring formed by water and small strokes of green

Green in the neighbourhood

Ring of water in the neighbourhood

Maaspoort - Den Bosch

Main green: green heart

Greenheart at the border of the neighbourhood connected with the ringroad

Green ring

Green ring formed by water and a park in the north other sides small strokes of green

Green in the neighbourhood

Water between quarters, green as fingers from surroundings into the neighbourhood

Waterland - Spijkenisse

Main green: green heart

Greenheart in the middle of the neighbourhood connected with the ringroad

Green ring

Green ring formed by water and small strokes of green in south a park

Green in the neighbourhood

Green and water fragmented through neighbourhood

Fig. B40 ‘Analysis green structure’ (source: by author)
2.2 **Analysis Neighbourhood**

**Green Structure (continued)**

**Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard**

- Greenheart in the middle of the neighbourhood
- Green ring formed by water and small strokes of green
- Green fragmented through neighbourhood, water as one part

**Zevenkamp - Rotterdam**

- Greenheart in the middle of the neighbourhood
- Green ring formed (small) strokes of green, in south a park
- Water between quarters, green fragmented through neighbourhood

**Houten Noord - Houten**

- Greenheart in the middle of the neighbourhood in the green zone
- Totally surrounded with open landscapes
- Green designed as a structure through the neighbourhood

Fig. B41 ‘Analysis green structure’ (source: by author)
2.2 Analysis Neighbourhood

BUILT ENVIRONMENT

Merenwijk - Leiden
- 11 quarters from different sizes
- Shopping centre connected with ring road, 3 schools

Maaspoort - Den Bosch
- 21 quarters from different sizes
- Shopping centre connected with ring road, 6 schools

Waterland - Spijkenisse
- 18 quarters from different sizes
- Shopping centre connected with ring road, 3 schools

Fig. B42 ‘Analysis built environment’ (source: by author)
BUILT ENVIRONMENT (CONTINUED)

Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard

12 quarters from different sixes

Zevenkamp - Rotterdam

10 quarters from different sixes

Houten Noord - Houten

16 quarters from different sixes

Shopping centre at the border of the neighbourhood, many schools

Shopping centre connected with ring road, 4 schools

Old and new (at train station) shopping, many schools

Fig. B43 ‘Analysis built environment’ (source: by author)
2.3 **Analysis Ensemble**

- **Merenwijk - Leiden**
- **Maaspoort - Den Bosch**
- **Waterland - Spijkenisse**

Fig. B44 ‘Analysis ensemble’ (source: by author)
2.3 **Analysis Ensemble**

**Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard**

**Zevenkamp - Rotterdam**

**Houten Noord - Houten**

Fig. B45 ‘Analysis ensemble’ (source: by author)
2.3 Analysis ensemble

Merenwijk - Leiden  

Maaspoort - Den Bosch  

Fig. B46 ‘Analysis ensemble’ (source: by author)
2.3 Analysis ensemble

Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard

Houten Noord - Houten

Houten Noord - Houten

Fig. B47 'Analysis ensemble' (source: by author)
These are some of the most common profiles from the different case study neighbourhoods. Important in these profiles is the transition area on the front and on the rear side of the house from the private environment to the public or collective space. The numbers and characters written below the profiles refer to the generic elements described in the next part.
2.4 Analysis street

Maaspoort, Den Bosch

Waterland, Spijkenisse
2.4 Analysis street

Rivierenwijk, Edelstenenwijk, Molenwijk - Heerhugowaard
2.4 Analysis street

Zevenkamp, Rotterdam
2.4 Analysis Street

[Diagrams of street analysis showing various points labeled B1, B2, B3, B5, B6, B7, F1, F2, F3, F5, with some annotations and symbols indicating different elements like houses, trees, cars, and people.]
2.5 Conclusions

Neighbourhood

Infrastructure
• Main infrastructure
  All the case study neighbourhoods do have a ring road. In all of the neighbourhoods, except for Houten, they chose to make the ring road run through the neighbourhood. In Houten they chose for a more expensive option; a ring road surrounding the neighbourhood. By making the ring road at the border of the neighbourhood it does not form a barrier in the neighbourhood. In many of the case study neighbourhoods, where the ring road goes through the neighbourhood, it forms a barrier and cuts the green structure in small undefined pieces. Because of the road there are only a few connections to the surroundings. In the case study neighbourhoods the ring road is connected to the infrastructure network of the city on two, three or four points. From the ring road there are small roads, with the layout of the ‘woonerf’ going into the neighbourhood. These smaller roads form the labyrinth of the ‘bloemkoolwijken’.

• Slow traffic
  The ‘bloemkoolwijken’ are known for their separated slow traffic network. Bicycle paths are designed as a separated network in the neighbourhood. Most of the times the cycle path is combined with the green structure, like in the case study neighbourhood Houten. Another advantage of the separated cycle paths is the connection they make between the schools and the neighbourhood.

• Public transport
  In most of the case study neighbourhood the only form of public transport is the bus. In most of the neighbourhoods the bus drives on the ring road. Sometimes the bus is going into the neighbourhood, like in Den Bosch. In Zevenkamp, Rotterdam next to the bus there is a metro running through the neighbourhood, which has a stop at the shopping centre. In Houten they even have a train running through the neighbourhood, which has one stop at the centre of the neighbourhood.

Green structure
• Main green: green heart
  In most of the case study neighbourhoods the green heart is situated in the area within the ring road. Sometimes, like in Leiden and Houten, the green heart is combined with the shopping centre. In one case the green heart is situated at the border of the neighbourhood, this is because the green heart is combined with an already existing green element (the duck decoy). In Zevenkamp, there is no green heart. In Houten the green heart can best be described as a zone going through the whole neighbourhood. In all the case study neighbourhoods water is included in the green heart, if one was present.

• Green ring
  The green ring was meant to make a transition area from the neighbourhood to the surrounding landscape. But in time, the surrounding landscape changed in most of the cities into built up areas. What remains is a small ring of green and water. In most of the case study neighbourhoods the green ring exists of a road with a strip of green and water. Only Houten is still surrounded with a broad ring of greenery and water. In most of the case study neighbourhoods the green ring is connected to a park, like in Rotterdam and Spijkenisse.

• Green in the neighbourhood
  Next to the green ring surrounding the neighbourhood and a green heart there is also a green structure in the neighbourhood. In most of the neighbourhoods this structure concerns undefined pieces of greenery or small play gardens though.

Built environment
• Quarters
  In all the case study neighbourhoods the urban fabric is divided into different quarters. These quarters were designed by different architects and therefore look very different. In Houten one of the quarters is formed by the old city centre. The amount of quarters is between ten and twenty.

• Functions
  In most of the ‘bloemkoolwijken’ the facilities are concentrated in shopping centres. The shopping centres are in most of the neighbourhoods connected to the ring road. In the Rivierenwijk the shopping centre is connected to a road going to other neighbourhoods, which serves more people than only the residents of the nearby neighbourhood.

Ensemble/building block

As described in the beginning of this part in the characteristics, the different
quarters of the ‘bloemkoolwijken’ were designed by different architects. The analysis shows that the different architects did not use generic ensembles for the design of the quarters. There are some general characteristics to distinguish:

- The semi-public green zone (in Dutch: ‘erf’)
- The use of mostly single-family dwellings
- And the street (In Dutch: ‘woonerf’)

One issue which most of the ensembles do have in common is the attempt to create a place where the residents could live ‘together’.

**Street**

In the different profiles from the case study neighbourhoods generic elements can be distinguish. The same thoughts are used for the transition from the private to the collective or to the public space.

Striking is the placement of the sheds; in many of the neighbourhoods it is placed in the front garden. The cars are parked in between in the sheds in the front garden, in the sheds or on the street. This position of the shed causes multiple problems, explained in the diagnoses. In almost all the profiles the principle of the ‘woonerf’ is used; there is no distinction between the sidewalks and the street and all functions of the street are integrated.
The conclusions drawn from the case study analysis led to a new approach for the transformation of the ‘bloemkoolwijken’ as can be found in the Netherlands. This new approach is translated into a method which can be applied to all ‘bloemkoolwijken’ present in the Netherlands; the scheme in figure C1 shows the method.

In this part the different elements of the method will be elaborated upon which together constitute the methodology. Part D will discuss an example of how the method can be applied to one of the ‘bloemkoolwijken’ in the Netherlands.

Part C will firstly explain the three phases of the method, after which the method will be explained in more detail; a description of the most important involved stakeholders is given, followed by an in-depth discussion on the generic elements where the method is based on.

For the update of the different generic elements two different approaches will be used, which are explained in chapter 1.5. Because it is important to define the role of the urbanist when applying the method, this is described in chapter 1.6. The second half of this part will describe the generic diagnoses for the ‘bloemkoolwijken’, which are then categorized in either problems or opportunities the ‘bloemkoolwijken’. And ends with an overview of the set of spatial interventions, developed for the update of the different generic elements of the ‘bloemkoolwijken’.

Fig. C1 ‘Method update of the ‘bloemkoolwijken’ (source: by author)
1.2 The method

The developed method for updating the ‘bloemkoolwijken’ consists of three parts: the analysis of the neighbourhood, the test on the criteria of generic elements and diagnoses & the update of the neighbourhood.

Phase I The analysis
First an analysis of the neighbourhood has to be made. This analysis consists of both a data analysis as well as a spatial analysis.

The spatial analysis has to be done on the generic elements: the green structure, the infrastructure and the street level. Within these layers the different subjects for the analysis are:

For the infrastructure: the car network (streets), the bike network and the public transport. The important subjects for the green structure are: the main green and water structure and the left over greenery. And on the street level: the position of the sheds, the orientation of the front and back of the houses and the presence of collective spaces.

An example of the analysis can be found in appendix; 2. Analysis Zevenkamp.

Next to a spatial analysis an analysis on the data of the neighbourhood has to be done. The data analysis consists of an analysis on the trends and on the housing stock. With trends is meant the social and sociological changes going on in the neighbourhood. It is also important to look at the appreciation of the inhabitants on the green, facilities and other subjects in the neighbourhood to underpin the problems. For the data analysis on the housing stock it is important to look at; the ownership, the schools, facilities and type of buildings.

Phase II Testing
The conclusions of the first phase are necessary for the second phase. In the second phase the neighbourhood has to be tested on several criteria. For using the set of spatial interventions the generic elements have to be present in the neighbourhood, so the neighbourhood has to be tested on the presence of the generic elements on the layers: green structure, infrastructure and street level. Next to this the diagnosis made for the ‘bloemkoolwijken’ have to be present in the neighbourhood.

The conclusions obtained from the data analysis are necessary as a support for the design. But these conclusions are also necessary for comparing the trends going on in the ‘bloemkoolwijken’ in general and the specific neighbourhood. If the neighbourhood scores well on all the criteria (generic elements and diagnoses) the spatial interventions made for this method can be applied in the third phase.

Phase III The update
With the set of spatial interventions, developed for this method, the update of the neighbourhood can be made.

With the use of these spatial interventions a map of possible intervention areas can be made. These intervention areas point out the problem areas or the areas with opportunities.

Next to this the spatial interventions can help by making a design for the update of the neighbourhood.

These intervention areas and the design will be based on the generic elements. These generic elements together will form a design for increasing the liveability of the neighbourhood.

Generic versus specific
The aim of this project was to find a generic approach for the transformation of the ‘bloemkoolwijken’. The generic character of the method is based in the supporting aspects: the generic elements, the diagnoses and the set of spatial interventions.

Although the ‘bloemkoolwijken’ do have generic elements, they can not all be transformed at the same way with the same interventions. Therefore the strength of the method is that the outcome will be different for every specific location. By choosing a set of spatial interventions out of the complete set, the generic method can be translated into a location and problem specific design. By making a map with the possible intervention areas a selection of the generic spatial interventions is made. For every neighbourhood the amount of spatial interventions and the set of spatial interventions will be different. In the next step, the design, these spatial interventions can be used as guidelines, as points of attention, the design solutions or real interventions will therefore differ per location or kind of problem. Also differences probably can be seen in the person who made the design. Every user of the method will give its own interpretation on the spatial elements. On the other hand some of the solutions found for one neighbourhood will also be useful for the design for another ‘bloemkoolwijk’. For example the models developed for the transformation of the inner courts of Zevenkamp (Part D) can also be used by the transformation of inner courts in other neighbourhoods. The same goes for the developed solutions for the parking problems.
In the process of urban regeneration different stakeholders are involved, each with their own vision, interest, expertise, responsibility and control. The way these stakeholders cooperate will influence the success and the time span of the regeneration process. Important stakeholders are: the municipalities, housing corporations, national government, inhabitants, real estate developers, architects, provinces, shopkeepers/entrepreneurs, banks, construction firms, police, schools and many more (KEI, 2010).

This chapter will explain the four most important stakeholders in the process of urban regeneration, which are: the municipality, the housing corporations, the private parties and the inhabitants. Chapter 1.5 describes the role they play in the regeneration of the ‘bloemkoolwijk’. For the adaptation of the method the urbanist plays an important role, therefore he is described separately in chapter 1.6.

Nowadays the role of the national government is limited. The policies, like Nota stedelijke vernieuwing (1997) and the Grotestedenbeleid, are guidelines for the municipalities but are not always used because they do not fit with the local goals (Van der Schaar, 2005). Therefore the national government is not included within the array of most important stakeholders.

### The municipality

The municipality is the lowest authority in the Netherlands; it has to follow the policies of the province, the national government and the European Union. In the past the municipalities played a dominant role, but nowadays this role is more in balance with the other stakeholders. They do not build dwellings but pay and lay down the layout and the maintenance of the public space and finance the build and maintenance of social facilities.

### The housing corporations

Housing corporations are private non-profit organizations with a public interest. Because of several reasons they are important in the process of renewal; they own a large part of the housing stock in the urban renewal areas and they know what is happening in the neighbourhood, because of their long term presence and familiarity with the neighbourhood. Next to this the housing corporations own considerable funds.

### The private parties

There are different kinds of private parties: real estate developers, contracting firms and investors for example. In the last years their participation has been lower than expected because of several reasons; the financial risks, the unwillingness of the housing corporations to cooperate, lack of ownership of land in the neighbourhoods in question and the complexity and long time span of the process.

### The inhabitants

The participation of the inhabitants became more important because of the added social goals of the renewal process. They have different roles in the renewal, for example; resistance against demolition, set up of small initiatives, involvement and new ideas in projects or the renovation of houses. Participation of the inhabitants is important because of their influence, by cooperation and initiatives, on the process and result of the urban renewal in their neighbourhood.
From the spatial analysis we can conclude that there are generic elements on two scale levels, namely neighbourhood- and street level. On the scale level of the building block there is too much variation between the different case study neighbourhoods. As explained in the first section these generic elements are necessary for developing a method with a set of spatial interventions which can be applied for the transformations of all the ‘bloemkoolwijken’. Before using the set of spatial elements it is therefore necessary to analyse if these generic elements are present.

If we look at the social and political background of the ‘bloemkoolwijken’, described in part B, we can conclude that the two aforementioned scale levels were designed with a strong vision in mind. On the level of the building block this vision seemed absent, resulting in the fact that different architects could do whatever they wanted concerning the spatial lay-out.

This chapter explains the different generic elements of the ‘bloemkoolwijken’ and which spatial elements they consist of.

The neighbourhood
The scale level of the neighbourhood contains of two generic elements, which are the infrastructure- and green&water-structure layer. These are the same layers as were used for the general zoning plan.

1. The infrastructural network
The infrastructural network consists of three different elements: the ring road, the labyrinths going into the quarters and the slow traffic network. Problems on these elements are for example the accessibility of the neighbourhood and the orientation within the neighbourhood, e.g. people found it often hard to find a certain address. A quality is the enclosed feeling the inhabitants have or the safety for children. These qualities and problems will be further investigated in the chapter diagnoses.

2. The green and water structure
The green and water structure consists of three elements; the green heart, the green spaces scattered throughout the neighbourhood and the green and water ring surrounding the neighbourhood. The green heart is mostly situated in the ring road and is often combined with a shopping centre. The ring was initially designed as a transition area between the neighbourhood and the surrounding landscape but nowadays acts just a small border between two neighbourhoods most of the time. Examples of problems on this element are; bad maintenance of the public space, undefined public space and unused public space.

The street
3. Street profile
Out of the analysis of the street, different transitions from private to public or from private to collective are defined. These transitions are all used in all the sections. The transitions are divided into transitions at the back of the house or at the front. Both can be combined to make whole street profiles.

For the transition the barriers are the most important elements, they define how the transition can be used and the spaces...
1.4 Generic Elements

on both sides influence each other.
Two kinds of barriers can be found in the ‘bloemkoolwijken.
The sheds: as well as in the front as in the back the sheds form a division between the private and the public or collective space. Most of the time the sheds have a closed wall on the side of the public or collective space. Thereby they form a strong barrier.
The fence: most of the times the fence was not planned in the design. But the composition of the residents and their demands changed; for creating more privacy many of the residents placed fences surrounding their gardens. Especially between the garden and the collective space the fences cause problems.

There are different kinds of elements used in the sections of the ‘bloemkoolwijken’:
The dwelling: the dwelling is the most private part of the section. In most of the dwellings the kitchen is situated in the front of the house and the living room at the back of the house.
The garden/the private space: most of the houses have a front and a back garden. If the shed is placed in the back garden the front garden is most of the times open to the street. If the shed is placed in the front garden, the sight from the house to the street is blocked by the shed. The back garden is nearly all the time surrounded by fences as to create privacy.
The inner court (in Dutch: erf)/the collective space: was designed in the light of the ideas of the 1970s about society. They were meant to stimulate the interaction between the inhabitants, while nowadays they are most of the times neglected and not in use anymore.
The public space: the public space is the green structure or the paved public space. The private space is most of the time separated from the public space by a shed or a fence.
The street: most of the streets are designed with the lay-out of the ‘woonerf’. This is a street where all the functions are integrated and paved on the same way.
The parking place: The parking is done on the front of the house in the street, in the public space, in the sheds or between the sheds in the front garden. Sometimes the parking places are situated at the borders of the neighbourhood to create a car-free neighbourhood.

The opportunities and the problems can be found in the barriers between the different zones. Most of the problems are caused by the inadequately placement of the house in its environment. The placement of the shed also plays an important role in this, next to the placement and the appearance of the fence which can make a great difference in the use of the public and private space.
1.4 GENERIC ELEMENTS

Transition back side

...backgarden

Fig. C4 ‘Transition back side’ (source: by author)
1.4 Generic Elements

Transition front side
...front garden - street - front garden

... street

... front garden - street - collective space

... front garden - public space

... front garden - street - public space

Fig. C5 ‘Transition front side’ (source: by author)
This chapter investigates the third phase of the method, the update of the ‘bloemkoolwijken’. The strategy as well as the role of the involved stakeholder will be explained. The position of the urbanist, who is involved when applying the method, is investigated in the next chapter.

The update of the ‘bloemkoolwijk’ will focus on the update of the generic elements, as explained in the previous chapter. The generic elements can be separated over two scale levels; the neighbourhood and the street. These scale levels each need a specific approach, as showed in figure C6. For the update of the ‘bloemkoolwijken’ a combination of top-down and bottom-up approach is necessary. First a short explanation of the two strategies;

**Top-down**
Top-down design is an approach where one starts on the highest scale with the general ideas and works down to the lower scale level, the technical details. An example is the use of the general zoning plan. To start with, the layers on the neighbourhood level are designed whereupon the layers are further investigated on the lower scale levels. In the past the top-down planning was the only way of designing, but nowadays this approach is often combined with a bottom-up approach.

**Bottom-up**
Bottom-up is the opposite approach of top-down planning, but this does not mean that they do not go together. Bottom-up design is a design process from the lowest scale level to the highest (Wikipedia). When dealing with urban planning, a bottom-up approach often entails starting with the participation and ideas of the inhabitants. This starting point is translated towards an overall plan on neighbourhood scale level. The approach gained more and more popularity within the urban renewal processes because of the added social goals for transformation.

A good design process involves both a bottom-up and a top-down approach; they should be imbalance though. Too much focus on the bottom-up planning will cause a lack of concern on the integrated design and planning. Too much focus on the top-down planning will cause an ignorance of the demands of the inhabitants and therefore less support.

Thus, the bottom-up approach is important to ensure a broad support from the inhabitants for the planned interventions while top-down planning maintains integration of all the problems and solutions.

In the case of the transformation of the ‘bloemkoolwijken’ it is important to use the bottom-up approach as a counterbalance against the top-down planning of the general zoning plan used by the design in the 1970s. Adding a bottom-up approach is important for the inhabitants. Hereby they can control their own environment (Van Dorst, 2005), which is even more important if the case concerns a residential area which is not at the end of the process of neighbourhood decline, but earlier in this process, and urban interventions are aimed at preventing possible decline.

The transformation of the ‘bloemkoolwijken’ is not as simple as showed in the diagram; for example the main approach on neighbourhood scale will be the top-down planning, but of course also a bottom-up approach is necessary to ensure the balance. And only the most important stakeholders are included in this diagram. Next, the diagram will be explained for each scale level.

**Neighbourhood**
For the neighbourhood scale level an integrated vision is needed to ensure that not the same mistakes are made as during the design of the general zoning plan. The integrated vision has to be defined by the urbanist in cooperation with the municipality, the housing corporations and the other partners from the design team. The municipality is most likely the owner of most of the public spaces and it can be expected that they have to pay for the costs of the transformation of the public space and infrastructure, which renders their cooperation compulsory. It is important to involve the housing corporations in the design process, especially when they are selling their dwellings to private parties?. Money can be spent on the public space and the maintenance and ownership of the collective spaces can easily be rearranged.

The design team consists of designers involved in the discipline of urban design but with their own specialities like the traffic engineering, landscape design and urban planning.

It is important to carefully monitor the interests of the different stakeholders. An
1.5 Update the ‘Bloemkoolwijk’

Integrated vision is therefore needed to guarantee the quality of the outcome of the interventions. The main involved stakeholder are: municipality, housing corporations and the design team.

**Street**  
On the lower scale level two strategies are necessary. The integrated vision is needed to point out the areas which need to be updated, and is needed to point out the weaknesses in the spatial lay-out on the street level of the neighbourhood. The other strategy is a bottom-up approach for the design of the inner courts by acupuncture. It is necessary to involve the inhabitants into the design process to increase the commitment, especially when the inner courts are updated. Full support of the inhabitants is in this case necessary for optimal use and maintenance of the inner court.

In chapter 6 of part D an example of the cooperation of the two approaches can be found. The chapter starts with a vision on which of the inner courts have to be updated in the spatial layout and which only need an update in the layout of the inner court (the integral vision). For the update of only the inner courts three models are developed which can be used in the cooperation with the inhabitants (the acupuncture). The main involved stakeholders are: municipality, housing corporations and inhabitants.

**Integration of the different elements**  
Initially this method is developed for each of the generic elements. Firstly the different generic elements can be investigated separately, but for the design of the transformation of the neighbourhood it is important to combine and integrate the interventions of the different generic elements. The urban design operates at and across a variety of spatial scale levels. Considering urban design at particular scale levels, in this case the neighbourhood and the street level, might often be a convenient manner, but detracts from the notion of places as vertically integrated ‘wholes’. Therefore needs the urbanist be constantly aware of scale levels above and below the scale level at which they are involved (KEi kenniscentrum stedelijke vernieuwing, 2010, p. 6).

Not only should the two generic elements on the neighbourhood scale be integrated but also the street and the neighbourhood level. The hierarchy in the street pattern designed on the neighbourhood scale for example influences the design of the transitions on street level highly. The same goes for the green structure and the use of the inner courts. In this way the different scale levels can enforce each other.
Update the ‘bloemkoolwijk’

**SCALE LEVEL**

**APPROACH**

Fig. C6 ‘Strategy for updating the generic elements’ (source: by author)
The position and the role of the urbanist changed over time. Where the focus was first on building the city and new neighbourhoods, the focus is nowadays shifted to the regeneration of the city and its neighbourhoods. Especially in the Netherlands, where most of the open landscapes have to be preserved, the quality of the existing housing stock became of importance. The role of the urbanist in this regeneration process is different then in the process of building a new neighbourhood. Therefore this chapter tries to give an idea of what the role of the urbanist will be when the method of the transformation of the ‘bloemkoolwijken’ will be applied. First a short overview is given on the history of the role of the urbanist, followed by a more extended explanation of the role of the urbanist during the different phases of the method.

Urbanism has a long history in the Netherlands. Already in the late Middle Ages, the Netherlands have a history of planning and regulation of the land. In the beginning of the 20th century, an important change in the function of the urbanist took place. Next to the regulation and the preparation of the land, the urbanist had to take care of the architecture and the distribution of the program over the side. The first examples can be seen in the design of Berlage for Amsterdam-Zuid (1917) and designs from Van Eesteren. In the 1960s this relation between the functional planning and the urban design was even legislated in a law: Wet op ruimtelijke ordening (1966) (Heeling, 2002). At the end of the 20th century, the doubt about the role of the urbanist grew. The ideas about the combination of architecture and urbanism, and the functional function of the urbanist, did not match anymore with the changed society. This leaded to a new position and role of the urbanist in the 1970s, the time the ‘bloemkoolwijken’ were designed. In this period, the use of the general zoning plan was introduced. The use of the general zoning plan meant a decrease in the role of the urbanist, in contrast with the role of the architect. The role of the urbanist was reduced to defining the spots of the general zoning plan. In the general zoning plan the urbanist defined the general lay-out of the infrastructure, the green structure and the position and borders of the different quarters. The task of the architect was to design the quarters, whereby every quarter was given to another architect.

In the transformation of existing neighbourhoods, urban design became a shared, rather then a particular responsibility, not in the least because the problems that are posed and the challenges that are presented may often be too complex to be handled by a single individual or profession. Therefore one of the main roles in the design process nowadays is the one of mediator.

This method is not developed for every one. The application of a method asks certain skills of the person who uses it; creativity, imagination and inventiveness are indispensible, even as social awareness and an opinion (Westrik, 1989). The same applies for this method. Like Christopher Jones said in 1976: “The value of the method is as much as the person who applies it” (Westrik, 1989, p. 34).

For this method, the urbanist has to play many roles, like in other regeneration processes. During different phases different tasks will be asked from the urbanist, to bring the transformation into a success. This chapter will explain four of the main tasks the urbanist has to fulfil during the application of the method.

First, a general task which will apply throughout all the phases:

• Mediator: A design process can be seen as a multi-actor complex. Especially by the transformation of existing neighbourhoods, many different actors will be involved, like: the housing corporations, the municipality and the inhabitants. Hilde Blank, director of BVR, views her role as urban designer for a large part as a mediator in complex multi-actor processes. In her point of view, design images are necessarily a subject of discussion, but less so as an intended design end goal (Bruin, 2010). The urbanist not only has to work together with other actors with different interests, but also with other partners from the planning
environment, like the traffic engineering, the landscape architect and the urban planner. Together they form the design team. In the complex processes, like the transformation of the ‘bloemkoolwijken’, the urbanist can not solve the problems on its own; he needs the expertise of other partners from the urban planning discipline. For the transformation of the inner courts, it will become really important to work in collaboration with the inhabitants. Participatory planning is not an easy task; there will be many different interests. But the participation will guarantee use and success of the transformation of the inner court. An important task as mediator is to translate the different ideas and interests in spatial suggestions. For many of the stakeholders, it is hard to imagine their thoughts into spatial consequences. This translation is the task of the urbanist.

Next to this general task, there are three important tasks focussing on the vision, spatial and designing skills of the urbanist:

- **Combination of scale levels:** In contrast with what is done during the design of the ‘bloemkoolwijken’, it is important to combine and integrate the two scale levels. Only in this way the neighbourhood can be made sustainable liveable. During the design of the ‘bloemkoolwijken’, only a general plan was made on the neighbourhood scale. The exact design was composed out of design decisions on the lowest scale level. Therefore problems occurred in the adjustment of the different elements. For the transformation of the ‘bloemkoolwijk’, the neighbourhood and street scale level should be integrated, only in this way the problems on the scale level of the building block and quarter can be solved.

- **Recognizing the problems and assigning the possible intervention areas:** After the analysis of the spatial and social elements of the neighbourhood, multiple problems can be recognized. It is the task of the urbanist to assign which areas should be transformed, in which order and on which extent. Like Hilde Blank said: “An urban designer not only has a function in providing a physical translation of an intended program for an area, but also in setting the agenda for development of a place” (Bruin, 2010). For example, the transformation of the inner courts: not all the inner courts can be improved by only redesigning the inner court, sometimes bigger interventions on the spatial lay-out of the building block are necessary. It is the task of the urbanist to assign these problems and the extend of intervention needed.

- **Selection of promising combinations:** For the design of the interventions that are needed for the transformation of the ‘bloemkoolwijk’, it is important to not only select the good spatial interventions, but to search for the promising combinations. It is not only about the choice between the interventions, but the way they are put together to form promising interventions. The combinations are influenced by the specifics of the location, but also by the view of the urbanist.

In contrast with the role of the urbanist in the 1970s during the design of the ‘bloemkoolwijken’, the task of the urbanist during the transformation of the ‘bloemkoolwijken’ is more complex. The urbanist has not only to fulfil the task of making and coordinating the design, but also has to function as a mediator between the different stakeholders involved in the regeneration process.
Next to the spatial layout the ‘bloemkoolwijken’ are also analysed with focus on the problems and opportunities they hold. These problems and opportunities together form the generic diagnosis of the ‘bloemkoolwijken’.

By taking advantage of the opportunities and solving the problems, described in this chapter, the liveability of the neighbourhood will improve. It is therefore logical that the criteria of objective liveability, described in part I - 1.11 Objective liveability, are used to set apart the list of different diagnosis. The diagnoses are formed after a literature study and visits to the neighbourhoods.

The diagnoses are related to each other; by solving one of the problems other problems can be solved as well. The same goes for the opportunities and between the opportunities and problems. By taking advantage of one of the opportunities at the same time a problem can be partly solved. But the solutions to the diagnosed problems can also influence each other negatively. Therefore it is important that the problems are not solved one by one, but dealt with in an integrated design.

The diagnoses together with the generic elements form the criteria for using the method. After a neighbourhood is analysed, it can be placed next to the list of diagnoses. By testing the neighbourhood on the different diagnoses a selection can be made out of the set of spatial interventions that need to be carried out to enhance liveability.
This chapter describes the different problems of the ‘bloemkoolwijken’ and the effect they have on the criteria of objective liveability.
2.1 Problems

The accessibility and orientation of the ‘bloemkoolwijken’ has to be improved in order to create a liveable neighbourhood.

The ‘bloemkoolwijken’ are known for their infrastructure. As a reaction on the grid structure of the post-war neighbourhoods the bloemkoolwijken do not have any straight roads. The infrastructure network consists of the slow traffic network and the network for the cars; the problems exist in the network for the car. The slow traffic is well connected with the facilities in the neighbourhood and the surrounding neighbourhoods. The infrastructure network of the car consists of two parts; the ring road and the labyrinth in the quarters.

The ring road functions properly in most of the neighbourhoods but the labyrinth is too complicated for the visitors of the neighbourhood. The labyrinth consists most of the time streets ending in cul-de-sacs. It is hard to orientate because there are no orientation points or differences in the identity and buildings.

Clear identities or orientation points could help the visitor to find his way in the neighbourhood. Also a clear structure in the network would help. It is important for the driver to know if he is on the ring road or on a ‘woonerf’. Therefore this difference should be made clear in the pavement and layout of the section of the road. This can improve the safety on the road, and thereby the liveability of the neighbourhood.

By solving the parking problems the liveability of the public space in the ‘bloemkoolwijken’ can be enhanced.

In the 1970s when the ‘bloemkoolwijken’ were designed each household had an average of 1,2 up to 1,25 cars. The ‘bloemkoolwijk’ is therefore designed with this number in mind. Nowadays the average car possession has increased, causing a problem with the quantity of parking places in some of the ‘bloemkoolwijken’. Therefore people tend to park their car anywhere on the ‘woonerf’ and not only on the designated parking places. Next to the quantity problem there is a quality problem in some neighbourhoods; the parking places are situated on the wrong locations. They are positioned to far from the houses on the border of the neighbourhood; people want to park their car at short distance from their homes. The result is that in this kind of situations they ignore the parking places and park their car in the surroundings of their home on the street.

The cars parked on the street cause problems on the street. The street should be open for the children to play but the parked cars block the view for the drivers. And also from the house towards the street the view is hindered, causing a problem for parents trying to overlook their children playing outside. By solving the parking problem the use of the street could increase and therefore the liveability of the street. Not only would the safety be improved but also the use and therefore contact with the environment.
2.1 Problems

For a liveable neighbourhood the facilities have to fit to all kinds of residents of the neighbourhood.

The composition of the inhabitants of the ‘bloemkoolwijken’ is changing. The neighbourhood was built in the 1970s as a neighbourhood for families. But the composition changed and nowadays not only families are living in these neighbourhoods. The Netherlands is ageing and this trend is even more visible in the ‘bloemkoolwijken’.

The facilities are planned on the kind of inhabitants that were living in the ‘bloemkoolwijken’ in the 1970s. To keep the neighbourhood liveable the facilities have to change. Facilities fitting to the elderly have to be built. This does not only concern facilities like shops and care taking facilities but also facilities like elevators.

There is a large group of 15-20 years old residents living in the neighbourhood. In contrast with the facilities for young children there are too less facilities to keep the youngsters busy.

The facilities provide not only in the daily car but are also necessary for the regulation of the social contacts. The facilities give people a reason to go out of there house and meet other people.

The existence of undefined public space is undesirable for optimal use of the public space in the ‘bloemkoolwijken’.

The design of the ‘bloemkoolwijk’ is made with the idea of the general zoning plan. Three layers, the infrastructure, the green structure and the quarters, were designed separately and in the end placed on top of each other. This caused problems in the public space concerning the amounts of left over greenery which exist next to the designed green structure and were a result of the top-down planning.

The left over greenery does not have a function and is therefore undefined public space. The problem of undefined public space is the fact that they are expensive in maintenance and do not have a clear function. Therefore they have a negative effect on the liveability of the neighbourhood.

Another problem is the fact that through the different front and backside situations from the dwellings the undefined space does not have a singular purpose. For one inhabitant it can be a place for their dog, for the other one a place to let their children play. This evidently leads to tensions in the use of the undefined space (Ubink & Visser 2009).

The improvement of undefined space has a positive effect on the liveability of the neighbourhood. This causes a higher score on the criterion of ‘contact with the natural environment’ and also on the criterion ‘possibility for social interaction’. Because there will be more room for coincidentally meetings between the inhabitants.
2.1 Problems

The liveability of the public space can be improved by changing the architecture, function or placement of the shed.

The sheds are placed in front of the dwelling in the front garden. The sheds are the division between the public space and the private dwelling. By placing the sheds in front of the dwelling there was a free site from the living room into the back garden and the public green behind it. The rear of the dwelling is therefore transparent in contrast with the façade which is really closed due to the floor plan and the placement of the shed (Van der Leun et al., 2009).

The shed, if positioned in the front garden, blocks the view from inside the house towards the public space. For example for parents cooking in the kitchen who are unable to watch their children playing on the street. Another problem is the fact that the closed façade implies that you are at the backside of the house instead of the front (Lofvers et al., 2009). Front doors are hard to find because of the placements of the shed.

By changing the position, the function or the architecture of the shed the liveability of the neighbourhood can be improved. Firstly the liveability of the public space can be improved, by enhancing the social control, by enhancing the relationship between the dwelling and the public space. Also the activity quality of the public space can be improved by giving the shed for example a clear and open function in relation with the public space. By increasing the safety and the activity quality of the public space the neighbourhood will rate better on the criterion of ‘possibility for social interaction’.

A neighbourhood with a clear identity has a positive effect on the feeling of control of the residents on their own living environment.

Analysis of the ‘bloemkoolwijken’ shows that the ‘bloemkoolwijken’ do not have a clear identity. This identity is necessary for a strong position on the housing market. But not only for the position on the housing market; the residents of the neighbourhood feel more at home when their environment fits with their taste and thoughts about the neighbourhood.

Different citizens have different thoughts about the layout of their environment. It is therefore important to create different and strong identities within the neighbourhood.

By improving the identity of the neighbourhood the residents will feel more at home. They have the feeling that they have control over their living environment by the choice they made between the different identities.
High quality public spaces give more opportunities for use and improve the liveability of the neighbourhood.

In many of the ‘bloemkoolwijken’ the poor maintenance of the public space has a negative impact on the liveability of the neighbourhood. The main green structure is most of the time well maintained while the other public spaces are poor maintained. When we speak of the public space it includes both the paved and unpaved areas. Especially the left over greenery and the inner yards are often poorly maintained (Ubink & Visser, 2009). Nowadays the municipality is in charge of the maintenance but the required activities are costly. Therefore they are not capable of maintaining all the public space in the ‘bloemkoolwijken’ on a sufficient level?

The quality of the public space could be improved by better maintenance. But this problem can also be solved by other solutions like dividing parts of the public space over to the inhabitants or by giving the public space a clear function.

By improving the maintenance of the public space the neighbourhood will score better on the criterion ‘contact with the natural environment’. But not only the maintenance but also improvement of the accessibility of the green areas can have a positive effect. With a better state of the public space also the activity quality of the public space can improve, by that the liveability will improve on the criteria ‘possibility for social interaction’.

The privacy zoning (the zoning in the street section) does not fit anymore with the ideas about the regulation of social interactions between the inhabitants. A better transition between private-public and collective provides will result in a better regulation of social interactions.

In the 1970s and 1980s the street had to be connected to the houses as much as possible. The collective space had to encourage the encounter of the residents again. The individualisation nowadays causes a differentiation in lifestyles. These different lifestyles are harder to bring together in one thought about the collectives values and standards for the use of the collective space. Therefore there is tension in the individual interest and the collective interest in the ‘bloemkoolwijken’. The placement of the fences is a commonsense reaction for creating more privacy, but causes a negative effect on the public space on the other side of the fence.

The privacy zoning is one of the basal conditions for a liveable neighbourhood (Van Dorst, 2005). It provides in the possibility to make or ignore social interactions with other inhabitants. By improving the section of the street the liveability can be improved. The regulation of social interactions can be fit to the demands of the residents nowadays. And the contact with the natural environment can be improved.
2.2 Opportunities

This chapter describes the different problems of the ‘bloemkoolwijken’ and the effect they have on the criteria of objective liveability.

Fig. C10 “Opportunities of the ‘bloemkoolwijken per generic element’ (source: by author)
The appraisal of the inhabitants will increase on three of the liveability criteria if the inner courts will be redesigned in cooperation with the people living around the inner court.

Many of the inner courts are not any longer that green as was desired. The hedges are replaced by fences and the sheds are placed on the boundaries. This creates a strong barrier between private gardens and the collective inner court. Although privacy of the inhabitants is increased this is at the expense of the social control the inner courts provide and the commitment of the inhabitants with the inner court.

For the transformation of the inner courts it is important to participate with the people living around them; only in this way the inhabitants can feel committed with the inner court again. The design for the transition from the private to the collective space needs a lot of attention.

By transforming the ‘poor’ inner courts towards a high qualitative inner court the liveability of the neighbourhood can increase on three criteria. Use of the inner court by the people living there can support the possibilities for spontaneous encounters and thus the opportunity for social interaction. Secondly the inner courts can provide the inhabitants (contact with) a green space in the vicinity of their home. Finally, the space can give inhabitants the feeling of control of the area surrounding their home.

Improving the function and the role of the ‘woonerf’ nowadays can improve the liveability of the neighbourhood.

The ‘woonerf’ is designed as a street where living, traffic, recreating and play are integrated. The design of the floor plan of the dwelling therefore is to create contact between the dwelling and the street (Van der Leun et al., 2008).

In time society changed, which influenced the use of the ‘woonerf’, concerning car possession and placing of parked cars for example. Not only the car use changed over time, also the use of the public space did. In the 1970s and 1980s most of the residents were families with children. Nowadays the populating aged and the amount of families decreased resulting in less children playing on the street.

For the transformation of the ‘bloemkoolwijken’ it is important to investigate in the use of the public space nowadays. Who are the users? What are their activities? And what is the role of the ‘woonerf’ as a public space? It is also important to keep in mind the historic value of the ‘woonerf’.

By improving the proper use of the ‘woonerf’ not only the safety but also the quality of the street can increase.
2.2 Opportunities

Enhancing the child friendly character of the neighbourhood can improve the liveability and the attractiveness of the neighbourhood.

From research from the University of Utrecht (by Hooijmeijer and others, can be concluded that the inhabitants of the ‘bloemkoolwijken’ highly value the child friendly character of the neighbourhood, next to price-quality ratio and the presence of a range of different facilities (Mens, et. al., 2008)

This child friendly character is not only created by the type of dwellings and the possibility to play in the own garden, but also by the lay-out of the infrastructure and the building blocks. Especially the lay-out of some of the streets, as a woonerf, makes the neighbourhoods really attractive for children. The separated bicycle network gives the children an opportunity to move freely and safely through the neighbourhood, for example to the schools and sport facilities.

Next to this the lay-out of the building blocks gives opportunities to create safe places for children to play, like in the inner courts.

In the process of transforming the ‘bloemkoolwijken’ this child friendly character can be improved by the hierarchy of the streets and the creation of new parking places. By making a stronger hierarchy, some of the streets can become car free and therefore safe for children to play. By enhancing the child friendly character of the neighbourhood the ‘bloemkoolwijken’ will rate better on the criteria of health and safety.

For the transformation of the bicycle network it is important to enhance the connection with the green spaces. This will not only create extra quality for the bicycle lanes, also the quality and the use of the green spaces can improve. It is important to keep in mind the social safety of the bicycle lanes; there should be enough control for a safe feeling, also in the evenings.

A bicycle network with these characteristics will give the neighbourhood a better rating on the criteria of health and safety.
2.2 Opportunities

The position of the ‘bloemkoolwijken’ in the city can be used as an extra quality for the inhabitants.

The ‘bloemkoolwijken’ are built after the post-war neighbourhoods. They were most of the times built at the borders of the city surrounded with a green ring as a transition to the green surroundings. Nowadays most of the neighbourhoods are enclosed by other neighbourhoods, like the VINEX neighbourhoods; therefore the green ring is not a transition to the green surroundings anymore. The ‘bloemkoolwijken’ still have their suburban character but when one drives on the ring road or on one of the bigger roads out of the neighbourhood it is easy to get to the highway or provincial roads.

The position of the ‘bloemkoolwijken’ in the city can be used as an extra quality for the inhabitants. This opportunity can be used by enhancing the connection to other parts of the city. Hereby the improvement of the public transport network is the most important intervention. Nowadays the public transport in most of the ‘bloemkoolwijken’ is poorly designed and organized.

For the transformation of the neighbourhoods it is important to keep in mind that every green space should be present in their living environment. Next to the green spaces in the vicinity of their houses a green space next to the school would preferably be present.

The green character of the neighbourhood can not only be used as a promotion of the neighbourhood but also improves the liveability for the current inhabitants.

The main green structure is most of the times unexpectedly good, but there are differences in the quality of the maintenance of the green spaces. In the structure and the planting the ambitions of the design period are still noticeable (Van de Leun, 2008). Research however shows that the ‘bloemkoolwijken’ have a lot of spatial potentials in the green structure which are not used at this moment, like the neighbourhood parks or the presence of water.

For children it is important to spend time outdoors, therefore enough green spaces should be present in their living environment. Next to the green spaces in the vicinity of their houses a green space next to the school would preferably be present.

For the transformation of the neighbourhoods it is important to keep in mind that every green space should have a function. Next to that there should be social safety, which can be created by the orientation of the dwellings towards the green spaces. A green character of the neighbourhood will increase the liveability on the criteria of contact with the natural environment and health, safety and wellbeing of the inhabitants.
The introvert character of the neighbourhoods is well appreciated by the inhabitants; therefore this quality should be remained by the transformation of the ‘bloemkoolwijken’.

One can consider the introvert character of the ‘woonerven’ as cultural-historical value instead of a mistake in the urban planning history. In contrast with the high-rise neighbourhoods, the ‘bloemkoolwijken’ are designed as a place and a world on its own. It is a sheltered, protective and stable neighbourhood in the rapid changing society of the 1970s. These neighbourhoods witness of the wish to protect the living environment from the upcoming massiveness of the car, the economy and even the public housing. This works, because of the fact that the neighbourhoods are in a way separated from big infrastructures or the other neighbourhoods. The need for a sheltered and protective living environment even today is present as can be seen in the contemporary imitation castles, new villages and collective inner courts (Witsen, 2006). The quarters of the neighbourhood are directed inwards on the collective inner court. Nowadays this is still notable; it takes the inhabitants a while before a stranger is noticed (Van der Leun, 2008).

The introvert character of the neighbourhood gives the inhabitants a safe feeling; this also promotes the social interactions between the inhabitants.

By taking advantages of the many green space, the liveability of the neighbourhood can be improved, next to the fact that the maintenance costs can decrease.

As described in the previous part the ‘bloemkoolwijken’ are designed with the general zoning plan. This meant that the three layers were designed separately and afterwards placed on each other; this resulted in many small undefined spaces. Most of the times these spaces are planted with grass or other bushes but have no clear purpose or use. This result in the fact that none of the spaces is used but still have high maintenance costs.

These spaces should be therefore transformed into different spaces with their own qualities. Examples of functions could be; green parking places, play field, allotments, pocket parks, intensification or private gardens. Next to this these places should form a network; it has been proven in other neighbourhoods that the green is better evaluated when it forms a network throughout the neighbourhood.

By improving these spaces the neighbourhood can rate better on the criteria of contact with the natural environment, regulation of social interactions and the control of the inhabitants over their own living environment.
2.2 Opportunities

More recreation possibilities will improve the liveability of the public spaces. Because of the spacious lay-out of the ‘bloemkoolwijken’ there are many spaces for recreation. In many of the ‘bloemkoolwijken’ a neighbourhood park is present, which connects with the shopping centre. Centrally located in the neighbourhood many of the ‘bloemkoolwijken’ have a shopping centre, and in most of the ‘bloemkoolwijken’ all the shops are located in this shopping centre. By adding more functions to the green spaces these can be improved. Especially the neighbourhood park can, in most of the neighbourhoods, be enhanced; this will increase the possibilities for recreation.

The recreation options will increase to possibilities to meet inhabitants of the neighbourhood but also to get more in contact with the green environment. And spending more time outside can be beneficial for the health and wellbeing of people.

By providing the possibility to change the dwelling and garden to the residents’ needs & demands the liveability of the neighbourhood can be improved.

One of the basic conditions for a liveable neighbourhood is the possibility for the residents to adapt their living environment to their personal needs and taste (Van Dorst, 2005). In the ‘bloemkoolwijken’ every residence has got its own garden. These gardens are easy to adapt by the inhabitants to their own demands. The problem is created by the placement of the fences to create privacy, which frustrate the proper use of the public space. It is therefore important to find a compromise between the appearance of the public space and the possibility for the residents to alter their environment. Another aspect is the adaptability of the dwelling. The houses are built in times of housing shortage, therefore many houses had to be built at the same time. For this reason they tend to look the same, which makes it important to give the inhabitants the possibility to adapt their dwelling, while keeping the bigger picture in mind.

Adaptability
2.2 Opportunities

The presence of a private garden adds value to the dwelling and therefore the attractiveness of the neighbourhood.

The most popular type of dwelling in the Netherlands is still the single-family dwelling with a front and back garden. In the ‘bloemkoolwijken’ this type of dwelling accounts for 74% of the housing stock and in most of the cases the quality of the dwellings is still good.

A common problem is the maintenance of the garden, especially the front garden. Poor maintenance of the front garden renders the street with a deprived look, which then can lead to a decrease in the value of the other dwellings in the street.

A problem in the backyard is the transition from the private back garden to the collective inner court, as discussed in the paragraph about the inner courts.

The gardens do not need a transformation on itself but should be kept in mind when the street or the inner courts are redesigned.
This chapter gives an overview of the spatial interventions developed for the update of the ‘bloemkoolwijken’. The spatial interventions are aspects which need to be considered when updating the ‘bloemkoolwijken’. The goal of the spatial interventions is to give subjects for the update of the ‘bloemkoolwijken’ to meet the criteria for liveability. With the spatial interventions a map of the possible interventions areas can be made, next to this the spatial interventions can help and guide by the following design process. The spatial interventions are not meant to be strict regulations, therefore the problems and the opportunities are to location specific, as told in the beginning of this part in the paragraph. With a set of spatial interventions different designs can be made, depending on the gravity of the problem, the location and the person making the design. By saying the spatial interventions can not be used as a strict regulation thought is given to the fact that the transformation of many of the ‘bloemkoolwijken’ asks for a specific design. Therefore the spatial interventions are intended to be a list of subjects for attention; they need to inspire the designer during the design process, they are not ready for use design solutions. Next to this the set of spatial interventions can be used as a tool for communication for example when determining the problems with other stakeholders.

So the set of spatial interventions is:
- a set of subjects for the update of the ‘bloemkoolwijken’
- points of attentions
- no strict regulations
- a guide by defining the possible intervention areas
- a tool for communication
- source of inspiration for the designer

The spatial interventions are an outcome of a combination of the trends, the generic elements and the diagnoses made for the ‘bloemkoolwijken’. As explained before; the diagnoses are developed as a result of the test of the ‘bloemkoolwijken’ on the criteria for liveability. The spatial interventions make use of the opportunities and solve the problems of the ‘bloemkoolwijken’. Therefore they increase the liveability of the neighbourhood.

Next to the diagnoses and the generic elements there is also a relation between the spatial interventions and the trends. The trends, described in the beginning of part B, influence the future of the ‘bloemkoolwijken’ therefore it is important to use them for the development of the spatial interventions. In this way the interventions will anticipate on the future of the ‘bloemkoolwijken’.

The next four pages give an overview of the spatial interventions. The interventions are categorized on the four generic elements of the ‘bloemkoolwijken’. Because they are based on the diagnoses the link is made between the diagnoses and the interventions.
3.1 Infrastructure

Diagnoses

Problems
1. Accessibility
2. Parking

Opportunities
3. Bike network
4. Position in the city

Fig. C13 ‘Spatial interventions for infrastructure’ [source: by author]
3.2 Green Structure

**Diagnoses**

**Problems**
1. Undefined space
2. Maintenance

**Opportunities**
3. Many green spaces
4. Recreation possibilities
5. Green character

Fig. C14 ‘Spatial interventions for green structure’ (source: by author)
Diagnoses

Problems
1. Section zoning
2. Sheds
3. Parking problems
4. Maintenance

Opportunities
5. Adaptability
6. Woonerf
7. Child friendly
8. Enclosed
9. Gardens

Fig. C15 “Spatial interventions for the street” (source: by author)
3.4 Inner Court

Diagnoses

Problems
1. Section zoning
2. Sheds
3. Maintenance

Opportunities
4. Gardens
5. Adaptability
6. Inner courts

Fig. C16 ‘Spatial interventions for the inner court’ (source: by author)
Part C will give an example of what the method can mean for the transformation of the ‘bloemkoolwijken’. The goal of this part is to show how the method can work and what the results of the adaption on one of the ‘bloemkoolwijken’ can look like. The case study neighbourhood ‘Zevenkamp’ is used for the adaption of the method.

The chapters of this part will be divided in the same parts as the method. Therefore, the first chapter will give a short introduction on the neighbourhood. A more extended analysis of Zevenkamp can be found in the appendix of this report. The second chapter is the second phase of the method; the testing. First a description is given of the generic elements, followed by the problems and opportunities of Zevenkamp. These two aspects can also be seen as the conclusions of the analysis.

Of course the following chapters give the update of Zevenkamp. The update of Zevenkamp is divided over the different generic elements. For each of these elements, first a map of the intervention areas is given, followed by some examples of possible interventions on the different parts of the generic element.

This example clearly shows that this method consists of generic elements and generic spatial interventions, but that the outcomes, the design interventions, are location specific.

By making a map of the possible intervention areas, a selection is made of the generic spatial interventions. In the design phase, these interventions were used as guidelines, as points of attention, but not as strict regulations and therefore the outcome, the design interventions, can differ per location or situation.

On the other hand some of the design solutions found for Zevenkamp could also be useful for other neighbourhoods, like the variants of the inner court or the solutions for parking problems.

**Zevenkamp?**

In general, Zevenkamp does not function too badly, but the first signs of deterioration can already be found; decrease in liveability, feelings of unsafety and a discomfort about the quality of the living environment. These aspects could lead to a weak position on the housing market in the future.

On the ‘Kanskaart van Nederland’, introduced in the problem statement, Zevenkamp scores badly on the criteria of degree of degradation and unfavourable spatial elements. This indicates that Zevenkamp is one of the neighbourhoods which is in line for transformation in the future.

Like stated in the problem statement, it is important to intervene in these neighbourhoods before it is too late, before these neighbourhoods really fall into deterioration. At this moment, Zevenkamp can possibly be updated with small interventions, which are less noticeable for the inhabitants and have lower costs.

With applying this new method, an indication can be made of the interventions which will be necessary for the transformation of Zevenkamp.
Short history on Zevenkamp

For Zevenkamp the designers were given the assignment to develop an attractive living environment, which could serve as an alternative to inhabitants of Rotterdam who were contemplating relocating to one of the neighbouring low-density municipalities. Thereby it was proposed to develop a relatively large number of single family houses, and multi-storey housing with gardens. The housing shortage of that period in the area made it necessary to start immediately with the building process. Zevenkamp had not only to give an attractive living environment, the main purpose was to provide in the housing shortage. The municipality of Rotterdam was at that time busy with the urban renewal areas in the inner city of Rotterdam and therefore asked an office from Amsterdam, Abma, Hazewinkel en Dirks, for the development of the general zoning plan. Zevenkamp is built between 1979 and 1986. The shortage in the housing stock leaded to a swift development of Zevenkamp; in 1979 the first 500 dwellings were built. In the coming period till 1984, the next thousand dwellings had to be built. The first years the development went as planned; in 1984 Zevenkamp was even connected to the metro network of Rotterdam, but due to the economical crisis there had to economize which meant that the further development of the neighbourhood had to be postponed for two years. The economical recession and changed public housing policy had negatively influenced the materialisation and variation in typology in the remaining parts.
This paragraph gives a short summary on some of the characteristics of Zevenkamp. An extended analysis on the spatial characteristics can be found in the appendix.

**General zoning plan of Zevenkamp**

The general zoning plan only showed the rough main intention for the neighbourhood, with the main infrastructure, green and water structure and the borders of the quarters. The general zoning plan of Zevenkamp is made in the end 1970s. On neighbourhood scale the general zoning plan distinguished 4 different parts, which are bordered by the structural elements like water, greenery and infrastructure. For each of the parts the intended amounts of dwellings were given. The four parts are afterwards designed in phases in different quarters. The changing thoughts in urban design over time can be seen in the design of the different parts; like in the street patterns and the lay-out of the building blocks.

The first part has a varied living environment, designed in the end of the 1970s and constructed with different small and complicated sub parts. In the second part we can see a start in the change in the thoughts in urban design, the design of this part is already more simple. After discussions about the costs of the varied layout of the first part of the neighbourhood the first simple straight blocks were built in part two. The complicated and small scale variations, designed by the architects and politicians in the 1970s, were in the society of the 1980s, marked by the crisis, not feasible anymore. Part three and four are therefore designed with only straight roads and a simple allotment layout.

**Surroundings Zevenkamp**

Zevenkamp has, like many other ‘bloemkoolwijken’, a relatively inward-facing character. In the north of Zevenkamp there is an open landscape and the recreation area Zevenhuizer Plas, which are important amenities. The borders of the neighbourhood are formed by a large park in the north, the Wollefoppenpark, the A20 high way in the south and canals and roads on the eastern and western edge between Zevenkamp and the neighbourhoods Ommoord and Nesselande. And in the north-western corner the edge is formed by communal gardens.

**Zevenkamp**

Zevenkamp is built as one of the neighbourhoods of the borough Prins Alexander in the north-east of Rotterdam. Zevenkamp is one of the largest neighbourhoods built in the 1970s-1980s in the Netherlands, only Kersenboogerd in Hoorn is larger. Because Zevenkamp was planed in the Prins Alexanderpolder, which existed of compressed low lying clay and peat layers, therefore it was necessary to cover the underground with a package two meters of sand. This meant that for the general zoning plan their were no original elements to take in account.

Surface: 216 ha.
Amount of inhabitants: 17,500
Amount of dwellings: 7001
Housing stock: 46 % high rise, 54 % low rise
For the use of the set of spatial interventions it is important to see if the social and sociological trends described in part B can be seen in Zevenkamp as well.

**Social processes**
Ignorance of individualisation: decrease in the amount of people living together as one household
Zevenkamp: decrease in the amount of people living together as one household. (1999: an average of 3,1 persons, 2009: 2,3 persons each household.

**Sociological trends**
Change of age composition: decrease in children and youngsters, decrease in the middle age category (25-44 years), increase in inhabitants between 45 and 64 years (19% between 1998 and 2004), small group of ageing population but sharp rise
Zevenkamp: decrease of children and youngsters, decrease of 4% in the middle age category, strong increase (7 %) in the pre-aging population and a small but stable group ageing people.

Change in population composition: two main trends: decrease of households with children (15,7% from 2000 until 2005) and an increase in the amount of immigrants (2,4 % from 1998 until 2004) Zevenkamp: decrease of households with children (30% from 1999 until 2009) increase in the amount of immigrants (from 11% till 33% from 1999 until 2009)
3.1 Testing: Generic Elements

Infrastructure
Ring road: A ring road is present in Zevenkamp but is interrupted in the northern part; in the north the profile is small, and at one point even forbidden for cars. This makes a smooth traffic flow over the ring road impossible. The ring road is connected to other roads of the city infrastructure on three points, mainly in the south.

Labyrinth: from the ring road different quarters can be entered via a labyrinth of smaller roads. In origin this labyrinth was designed with quarter roads and living streets, so their supposed to be a hierarchy between the different roads but nowadays in most of the quarters this difference in roads is missing. But the possibilities to make a distinguish between living streets and quarter streets is still there.

Slow traffic network: the slow traffic network of Zevenkamp consists of a ‘bicycle highway’ and smaller bicycle lanes leading into the quarters. The ‘bicycle highway’ is not only used by the inhabitants of Zevenkamp also the inhabitants of the adjacent neighbourhood Nesselande use this bicycle path for crossing Zevenkamp. Most of the dwellings are turned away from this bicycle lane, for the social safety it is therefore important to face some facilities and dwellings to this bicycle lane. The smaller bicycle lanes are connected with the different schools and guided by water and trees; this gives them a high quality look.

Green structure
Green heart: during the design a green heart is designed but nowadays the green heart is not used like the neighbourhood park. The two parts; the one north of the shopping centre and the one in the south are poorly connected and are therefore seen as two separated parks. Next to this the green heart has no facilities or functions and is therefore poorly used. But because of its location, near to the shopping centre and in the middle of the neighbourhood, and its size the green heart has the potential to become a real neighbourhood park.

Green ring: The green ring is not completely, like in other ‘bloemkoolwijken’, surrounding the neighbourhood. In the east and the west the green is replace by built-up areas; the two neighbourhoods Nesselande and Ommoord. In the south the edge is formed by a highway. Only in the north green spaces can be found. This green should be connected better with the neighbourhood for optimal use by the inhabitants of Zevenkamp.

Green in the neighbourhood: Next to a large amount of small public spaces there are also bigger green spaces next to the green heart. The use of these spaces is really low because of the fact that these spaces do not have a clear function. There is no hierarchy between these spaces and the smaller left over greenery and they are poorly connected to each other as a green network through the neighbourhood.

Street
As we can see in these figures, part 1 of Zevenkamp looks the most like a typical ‘bloemkoolwijk’ with its collective inner courts and bendy street pattern. In this part most of the collective inner courts can be found.

Most of the front sides are orientated on quarter roads. By creating more hierarchy in the infrastructure these streets can be downgraded to living streets and therefore create a more child friendly and liveable environment. The transitions as been summarized in part C can all be found in Zevenkamp. Only the placement of the sheds is different; in Zevenkamp the sheds are mostly placed in the back garden.
3.1 Testing: Generic Elements

Fig. D9 ‘Ring road’ (source: by author)
Fig. D10 ‘Labyrinth’ (source: by author)
Fig. D11 ‘Slow traffic network’ (source: by author)

Fig. D12 ‘Main green: green heart’ (source: by author)
Fig. D13 ‘Green ring’ (source: by author)
Fig. D14 ‘Green in the neighbourhood’ (source: by author)

Fig. D15 ‘Transitions front’ (source: by author)
Fig. D16 ‘Transitions back’ (source: by author)
3.2 Testing: Problems

**Accessibility**
The interruption in the ring road and the lack of landmarks makes it hard to find a orientation point in the neighbourhood. Most of the times the orientation in the ‘bloemkoolwijken’ can become easier by the clarification and hierarchy in the pavement and layout of the streets, in Zevenkamp both the hierarchy and the cleaness in pavement are missing.

**Parking problems**
Like in other ‘bloemkoolwijken’ the use of the car and the ownership of the car increased. This means that there is a shortage on parking places. This and the fact that people prefer to park in the direct vicinity of their dwelling causes problems like wrong parking in the public space or on play fields.

**Undefined space**
In Zevenkamp many undefined spaces can be found, from these spaces it is not clear what the function is. This makes it harder to point out the one who is responsible for the maintenance and the costs this brings. Therefore these spaces become desolate and poorly maintained. This can be solved by giving the spaces a clear function and owner.

**Maintenance**
Many of the public, and especially the collective, spaces suffer from poor maintenance. Because of the amount of public and collective spaces it is too expensive for the municipality to maintain all the spaces. Therefore some of the spaces, and especially the collective inner courts, should be maintained by other parties like private parties or the inhabitants.

**Facilities**
For some age groups there are enough facilities, but for the two growing groups, the elderly and the youngsters there is a lack of facilities. It is important to create specific facilities for these two groups to keep them satisfied.

**Identity**
In Zevenkamp there is a matter of neighbourhood identity. People from Rotterdam say that they can recognize the inhabitants from Zevenkamp. But within Zevenkamp there is no clear difference in identity between the different quarters, the identity on the smaller scale is missing, but researches shows that this identity is as most as important as the neighbourhood identity.

**Section zoning**
Because of the spatial lay-out of some of the buildings blocks there are conflicting situations in the section zoning. Most of the problems occur where the front and back side of the house are meeting each other.

**Sheds**
In contrast with other ‘bloemkoolwijken’ in Zevenkamp the sheds are placed in the back garden, on the edge of the private to the collective space. Therefore the sheds form a smaller problem then in some of the other ‘bloemkoolwijken’. In Zevenkamp most of the dwellings have a real façade and the amount of anonymous streets is lower.
3.2 Testing: Problems

Fig. D21 ‘Undefined space’ [source: by author]

Fig. D22 ‘Maintenance’ [source: by author]

Fig. D23 ‘Left over green’ [source: by author]

Fig. D24 ‘Parking problems’ [source: by author]

Fig. D25 ‘Undefined space’ [source: by author]

Fig. D26 ‘Maintenance’ [source: by author]

Fig. D27 ‘Greenery without function’ [source: by author]

Fig. D28 ‘Adaptebility’ [source: by author]

Fig. D29 ‘Section zoning’ [source: by author]

Fig. D30 ‘Section zoning’ [source: by author]

Fig. D31 ‘Loitering youth’ [source: google]

Fig. D32 ‘Sheds’ [source: by author]
Inner courts
Especially in part one of Zevenkamp the presence of the inner courts can give extra quality to the living environment. The inner courts can enhance the green character or can become play fields for children.

Woonerf
In origin the lay-out of the infrastructure of Zevenkamp the ‘Woonerf’ was present. But nowadays these streets are dominated by the car. It is important to ban the car out of some streets and create ‘living streets’ again.

Child friendly
The existence of the ‘woonerf’ and the inner courts can improve the child friendly character of the neighbourhood. In Zevenkamp especially the living streets can be improved by excluding the car from the streets. There is a large amount of play fields, they can be improved by giving them a unique character. A good point of Zevenkamp is the connection between the bicycle lanes and schools.

Bike network
The bicycle network consists of a bicycle highway and smaller bicycle lanes. A point of improvement could be the enhancement of the social safety of especially the ‘bicycle highway’ and the connection with the green heart, which is at this moment bad.

Position in the city
Zevenkamp is situated closely to the shopping centre and train station of Rotterdam Alexander and at the same time closely to a large nature area. The centre of Rotterdam is on the other hand quite far but there is a good metro and train connection.

Green character
Zevenkamp has the potential to become a neighbourhood with a green character because of the green axes and the green heart but also because of the potential to connect to a great nature area in the north of the neighbourhood to the green heart.

Enclosed
The spatial lay-out of the building blocks gives the neighbourhood an enclosed identity.

Many green spaces
The green axes have high qualities but the quality of the green heart can be improved, but there are opportunities. Next to this main green structure there is potential in all the small public spaces, nowadays they lack of function and maintenance but with small interventions this can be improved.

Recreation possibilities
At this moment there is a lot of space for recreation options which are not fully used, for example in the green heart. Also the quality of the shopping centre can be improved, all the facilities are present but appearance can be improved and also the connection to the green heart.

Adaptebility
Because of the housing shortage there was a swift building process, this and the economical crisis leaded into a uniform look of the dwellings, these dwellings are more difficult to adapt by the inhabitants.

Gardens
The goal of the municipality was to create a neighbourhood which could compete with villages in the surroundings. Therefore almost all the houses were built with a front and back garden. Important is to monitor the maintenance of the gardens in order to keep a positive image of the street.
3.3 Testing: Opportunities

Fig. D37 ‘Water structure’ [source: by author]

Fig. D43 ‘Bike network’ [source: by author]

Fig. D38 ‘Innecourt’ [source: by author]

Fig. D44 ‘Many green spaces’ [source: by author]

Fig. D39 ‘Child friendly’ [source: by author]

Fig. D41 ‘Many play gardens’ [source: by author]

Fig. D45 ‘Schools connected by bike’ [source: by author]

Fig. D40 ‘Shopping centre’ [source: by author]

Fig. D42 ‘Connection schools and green’ [source: by author]

Fig. D46 ‘Green recreation area in North’ [source: by author]
The generic element the infrastructure consists of three parts, explained in the description of the generic elements: the ring road, the labyrinth and the slow traffic network.

The ring road is characteristic for the ‘bloemkoolwijken’. In most of the ‘bloemkoolwijken’ it is not necessarily needed to have a ring road for the size of the traffic flow, but the ring road can give orientation to the inhabitants and visitors, especially when landmarks are placed along the ring road.

For the update of the ‘bloemkoolwijken’, the clarity and difference between the ring road, the labyrinth and the slow traffic network should be enhanced, whereby the hierarchy within the labyrinth is of most importance. Within the labyrinth, difference has to be made between the quarter roads and the living streets. The function of the quarter road is to connect the ring road with the different quarters, and also the different quarters with each other. The living streets should be designed like the idea of the ‘woonerf’ and connect the houses to the quarter streets. The living street should be kept car free as much as possible.

The parking places of the quarter roads and the ring road have to be increased, in order to keep the living streets car free as much as possible. Also the small green spaces can be used to facilitate more parking places. The sections of the quarter road and the living streets are also explained in the update of the street, in chapter 6.

By making more clarity in the section of the different streets, the position of the car is clearer and the orientation in the different quarters is better. The positive effect of the labyrinth, the closed character of the neighbourhood, can be maintained by keeping the structure of the labyrinth and its bendy roads. But the negative effect of the recognisability can be put right by distinguishing the quarter and living streets.

In most of the ‘bloemkoolwijken’, a separated slow traffic network is present. In these cases, sometimes only small interventions are necessary, for example to create more social safety.

This chapter lays down the infrastructure of Zevenkamp and gives some examples of interventions which can be done for the update of the infrastructure of Zevenkamp. First, the possible intervention areas are given, pointed out with the help of the set of spatial interventions, followed by some examples of interventions on the ring road, the labyrinth and the slow traffic network.
4.1 Infrastructure Zevenkamp

Fig. D48 ‘Ring road’ (source: by author)

Fig. D49 ‘Labyrinth’ (source: by author)

Fig. D50 ‘Labyrinth’ (source: by author)

Fig. D51 ‘Labyrinth’ (source: by author)

Fig. D52 ‘Bicycle lane’ (source: by author)
Zevenkamp has a ring road, a labyrinth in the different quarters and a separated slow traffic network.

The problem of the ring road is the consistency: along the ring road it has different sections, where not only the size but also its appearance differs. Especially the north and south part are very different. In the north, car drivers can not recognize that they are on a part of the ring road. Therefore the section of the ring road should be made consistent to create more clarity.

For the accessibility of the neighbourhood, it is important to create hierarchy in the infrastructure. The hierarchy in the labyrinth is missing. Therefore, a clear distinction has to be made between living streets and quarter roads. This hierarchy can be made visible in the different sections of the different roads. At this moment, there are no living streets in the labyrinth, whereas the structure of a ring road and smaller road is made for it.

The separated slow traffic network has many qualities, and therefore only some small interventions are needed. The social safety could be improved by orientating dwellings on the bicycle lane and also there is a missing link between the neighbourhood park and the slow traffic network.

The metro line, running through the neighbourhood, is unique for this ‘bloemkoolwijk’. The metro line has three stops and makes a good connection with Rotterdam Alexander and the rest of Rotterdam. Only the metro stops can be enhanced, many of the inhabitants see these places as social unsafe places.
4.2 Possible intervention areas

Fig. D54 ‘Spatial interventions infrastructure’ (source: by author)
**Spatial interventions:**
This map shows the possible intervention areas for the infrastructural network of Zevenkamp. The intervention areas are the areas where problems have to be solved or opportunities can be taken. The map is made with the help of set of spatial interventions. This chapter will explain the different interventions. In the next pages examples of these interventions are given.

1. **Hierarchy infrastructure:** for the accessibility of the neighbourhood, it is important to create hierarchy in the infrastructure, between the ring road, the labyrinth and the separated slow traffic network.

2. **Clarity pavement:** the hierarchy between the different roads has to become visible, not only in the profiles of the road but also in the pavement.

3. **Landmarks for entering the living environment:** by placing landmarks along the ring road, the inhabitants and visitors can recognize where they are. This will help enhancing the accessibility of the neighbourhood. At this moment, there is only one landmark at the shopping centre.

4. **Clear profiles:** as told at point three, the consistence of the profiles of the road are important to tell the people what the use and the function of the road is.

5. **Clear ring road:** at this moment the ring road is not consistent, in the north the profile differs from the profile in the south. For a good circulation of the traffic, a consistent ring road is important. Also the clarity and the accessibility will improve. The ring road is not necessarily needed for the amount of cars and the size of the neighbourhood, but it will help for the recognisability. By removing the frontage roads, more parking places can be realized on the ring road, which can partly solve the shortage of parking places.

6. **Clear profiles:** as told at point three, the consistence of the profiles of the road are important to tell the people what the use and the function of the road is.

7. **Concentrate parking:** by concentrating the parking on neighbourhood scale, the parking problem can partly be solved. On most of the places the ring road has a broad section; therefore the ring road can be used to facilitate more parking places.

8. **Connection bike network with the green structure:** for an optimal use of the green network, the bike network has to have a connection with the green structure. The green axes and the bike network are placed in the same section. In the main green spaces, the green heart, this connection is now missing. The new bicycle path in the green heart can also make a good connection with the green area in the north.

9. **Social safety:** for a good use of the bike network, the bicycle lanes have to feel safe, also in the evening. Therefore it is important to orientate the dwellings on the bicycle lanes to create more social safety.

10. **Enhance environment public transport nodes:** most of the inhabitants experience the metro stops as unsafe places.

11. **Connection public transport nodes and bike network:** by improving this connection, taking the public transport will be stimulated.
4.3 **Ring road: current**

Fig. D55 ‘Pictures current ring road’ (source: by author)
4.3 Ring Road: Landmarks

Fig. D56 ‘Landmarks along ring road’ (source: by author)
Section 1: current situation

Section 1: new situation

Fig. D57 ‘Sections ring road’ (source: by author)
Chapter 4.2 shows the interventions needed for the transformation of the ring road. Firstly an impression is given of the current ring road. As can be seen in the pictures, the part in the north has a total different section as the part in the south. The new profiles, as showed on these pages, have more similarities with each other. The same standard section is used to create consistency. The sections on the previous page show how the frontage roads can be used to create more parking places. The actual road is made smaller, which makes it possible to create three parking rows.

The landmarks, in the beginning of this chapter, are used as orientation points in the neighbourhood. They mark the points where the ring road is connected to the infrastructural network of the city, and to the Neighbourhood Park and shopping centre.
4.4 **Labyrinth: Current Situation**

![Map diagram](source: by author)

Fig. D59 ‘Current layout labyrinth’ (source: by author)
4.4 Labyrinth: New Situation

Fig. D60 ‘New layout labyrinth’ (source: by author)
4.5 SLOW TRAFFIC NETWORK

Fig. D61 ‘Network of bicycle lanes’ (source: by author)
4.5 **Slow traffic network**

Fig. D62 ‘Current situation bicycle ‘highway’’ (source: by author)
4.5 **Slow Traffic Network**

Fig. D63 ‘New situation bicycle highway, improved social safety’ (source: by author)
The generic element of the green structure consists of two parts that are specific for the ‘bloemkoolwijken’; the green ring surrounding the neighbourhood and the green heart. Next to this, the green structure consists of smaller public spaces scattered through the neighbourhood. The green heart is meant to be the neighbourhood park and forms in many ‘bloemkoolwijken’ the heart of the neighbourhood. The green heart is often combined with the shopping centre. In some of the ‘bloemkoolwijken’, the green axes form a connection between the living environment and the green heart. The green ring was meant to make a soft transition from the neighbourhood to the surrounding landscapes. Because of the ongoing growth of the city, the ‘bloemkoolwijken’ are nowadays (frequently) surrounded by other neighbourhoods, and the function of the green ring changed into a barrier between the different neighbourhoods. The ‘bloemkoolwijken’ have many smaller public spaces scattered through the neighbourhood, due to the use of the general zoning plan during the designing process of the neighbourhood. Nowadays, these small places are often undefined and have high maintenance costs, but with the transformation of the neighbourhoods these spaces have high potential because they can be used for different functions.

The two main problems in the ‘bloemkoolwijken’ concerning the green structure are: poor maintenance and the many undefined spaces. These two problems could partly be solved by assigning functions to all the green spaces. Assigning a function to the green spaces gives clarity to the green structure, which avoids undefined spaces and makes the maintenance easier.

Examples of other neighbourhoods, like Houten, taught us that the green structure is better valued and used by the inhabitants if it really makes a structure through the neighbourhood. For creating a good working green structure, it is important to bring hierarchy in the different green spaces. This hierarchy consists, for the ‘bloemkoolwijken’, of three layers:

1. the green axes, the green ring and the green heart.
2. the smaller parks.
3. the small public spaces scattered through the living environment.

This chapter lays down the green structure of Zevenkamp and gives some examples of interventions, which can be done for the update of the green structure of Zevenkamp. First, the possible intervention areas are given, pointed out with the help of the set of spatial interventions, followed by the interventions on the different layers.
5.1 Green structure Zevenkamp

Fig. D65 ‘Green axis’ (source: by author)

Fig. D70 ‘Green axis’ (source: by author)

Fig. D66 ‘Neighbourhood park’ (source: by author)

Fig. D71 ‘Neighbourhood park’ (source: by author)

Fig. D67 ‘Small park’ (source: by author)

Fig. D72 ‘Small park’ (source: by author)

Fig. D68 ‘Small park’ (source: by author)

Fig. D73 ‘Green spaces scattered through the neighbourhood’ (source: by author)
In a survey on the liveability of Zevenkamp, the inhabitants were unsatisfied with the public green spaces (rate 4.9). Also the recreation areas had a low score, a 4.3 out of 10. On the other hand, the inhabitants are satisfied about the outdoor sport facilities. (The complete rate of the inhabitants is described in the appendix.)

But Zevenkamp has much potential for a good working green structure. The existing green axes have good qualities, like the water. The green heart has potential because of its location and size, but at this moment these are not fully used. And there are many small public spaces which can improve the liveability of the living environment.

For the transformation of Zevenkamp, the green axis have to be used to create a green structure through the neighbourhood. The green heart should be updated to a real neighbourhood park, whereby several interventions are necessary, like creating a bicycle lane, adding more functions and adding new dwellings. And a hierarchy should be created in the smaller public spaces. Some of these spaces should be upgraded to small parks in connection with green axes, the schools or other facilities. And for the other small spaces there are a couple of opportunities, like creating a play garden, pocket park or new parking places.
5.2 Possible intervention areas

Fig. D75 ‘Spatial interventions green structure’ (source: by author)
5.2 Possible intervention areas

**Spatial interventions:**

This map shows the possible intervention areas for the green structure of Zevenkamp. The intervention areas are the areas where problems have to be solved or opportunities can be taken. The map is made with the help of the set of spatial interventions. This chapter will explain the different interventions; in the next pages examples of these interventions are given.

1. **Assign functions to green:** especially in the neighbourhood park and the small public spaces, scattered through the neighbourhood. The presence of undefined green spaces has a negative effect on the liveability of the living environment.

2. **Link green spaces:** the small parks and the neighbourhood park have to be connected with the green axes. The neighbourhood park also has to connect the neighbourhood with the green area in the north.

3. **Decrease left over greenery:** give some of the small public spaces another function, like a new building or a parking garage. This intervention can decrease the maintenance (costs).

4. **Hierarchy green structure:** as explained in the previous chapter, a hierarchy has to be introduced in the green structure for a better valuation and use.

5. **Zoning in use and lay-out:** a sustainable park has to facilitate functions for more then one target group, therefore the functions should be zoned in the green spaces, especially in the neighbourhood park.

6. **Connection neighbourhood green and surrounding:** the green area in the north can offer many recreation possibilities, which can be used when this area is connected to the green structure in the neighbourhood.

8. **Combination green structure and dwellings:** the social safety of the green structure can be enhanced by the orientation of the dwellings on the green structure. This can be done by changing the orientation of the existing dwellings or building new dwellings orientated on the green structure. This is also significant for the small public spaces, where social control is most important.

9. **Lifecycle proof functions public space:** by implementing functions for all the target groups the park becomes more sustainable and flexible.

10. **Combination green structure and schools:** many of the schools in Zevenkamp are situated next to a small park, but at the moment the schools are making no use of these spaces. There should be a stronger correlation between those two; the green space could, for example, be used as a school garden or schoolyard.

11. **Combination bike network and green structure:** in Zevenkamp the green axes are combined with the slow traffic network. Only in the neighbourhood park this link is missing.

12. **Combination green structure and facilities:** because of their location, the shopping centre and the neighbourhood park are easy to combine. By combining these two the quality of both can improve.
Fig. D76 'Current situation neighbourhood park' (source: by author)
5.3 Neighbourhood Park: Current

Fig. D77 '1. Southern part: pedestrian path' (source: by author)

Fig. D78 '4. Connection north and south' (source: by author)

Fig. D79 '2. Southern part: play field' (source: by author)

Fig. D80 '5. Northern part: open field' (source: by author)

Fig. D81 '3. Southern part: play field' (source: by author)

Fig. D82 '6. Northern part: dwellings for elderly' (source: by author)

Fig. D83 '7. Northern part' (source: by author)
5.3 Neighbourhood park: New

- Children’s farm (1)
- Recreation area (2)
- Restaurant (3)
- Park
- Intensification: home for elderly
- Centrum (4)
- Dike with bike path
- Intensification
- Extra parking places
- Intensification: home for elderly
- (Landscape) park
- Outdoor pool
- Youth facilities (7)

Fig. D84 ‘New situation neighbourhood park’ (source: by author)
5.3 Neighbourhood Park: New

1. Children’s farm

2. Recreation area: playground

3. Park with restaurant

4. Centre

7. Youth facilities

Fig. D85 ‘New functions neighbourhood park’ [source: by author]
5.4 **Small Parks**

Fig. D86 ‘Network of small parks’ (source: by author)
The small public spaces are scattered through the neighbourhood and can improve the liveability of the direct living environment. The problem at this moment, is that these spaces are often undefined and poor maintained, therefore they rather decrease than increase the liveability of the living environment.

During the transformation, these spaces should get a clear function in order to improve the use. By giving these spaces a clear function, the maintenance can improve as well.

In a good neighbourhood there is a green space on a 15 minute walk distance. This can be the neighbourhood park or a small park, but also a small public space with a green character.

The small public spaces have much potential because they can be transformed into spaces with different functions. This chapter will give some examples of what these small public spaces could become.

1. **Pocket parks**: Pocket parks are open green spaces at very small scale, often created on vacant building lots or on irregular pieces of land. Pocket parks provide drops of urban green spaces for urban residents. Local communities who have pocket parks within walking distance are less likely to drive to meet their green needs, thereby reducing pollution and traffic. Furthermore, pocket parks can potentially relieve pressure on the larger parks, thus allowing flexibility to devote larger areas of the parks to habitat and ecological functions. Functions include: spaces for relaxation, meeting friends, taking lunch breaks, reading a book, play areas for children, etc.

2. **Parking places**: In order to relieve the living streets from parked cars, small public spaces can be used to create more parking places in the vicinity of the dwellings. Normal parking places or small parking boxes can be created. In both cases, it is important to give them a green character.

3. **Play ground**: Many of the small public spaces nowadays are used as playgrounds. The small public spaces are perfect for the children who can play without any parental control. Younger kids can use the inner courts because there is more social control. The spaces can be used as play gardens but they also can have small sport facilities, like a soccer or basketball field. It is important, to design each of the spaces carefully. The spaces will be used more when some extra care is taken into the design and not only the standard equipments are placed.

4. **Intensification or inner court**: Sometimes it is possible to integrate a small public space in the redesign of a building block. In this case the public space can be owned and maintained...
5.5 Small public spaces

by the inhabitants of the inner court. This is a good example of reducing the amount of undefined public space. An example is given in chapter 6.7 of this part.

5. Vegetable garden: Rotterdam has a long history in allotment gardens. In corporation with the inhabitants the small public spaces can be turned into allotment gardens. A condition is that the maintenance is done by the inhabitants.

Fig. D90 ‘Small public space with no use quality, Zevenkamp’ (source: by author)

Fig. D91 ‘Pocket park’ (source: www.rotterdam.nl)

Fig. D92 ‘Play ground Beetsplein, Dordrecht’ (source: www.designbelt.tumblr.com)

Fig. D93 ‘Small public space with no use quality, Zevenkamp’ (source: by author)

Fig. D94 ‘Play ground, Zevenkamp’ (source: by author)
5.5 SMALL PUBLIC SPACES

Fig. D95 ‘Amount of small public spaces Part I Zevenkamp’ (source: by author)
Update: street

With the generic element street is meant the transition from the private house to the collective inner court or the public street. The generic character of the street is the way the transition is made from private to collective and to public. As showed in part C there are only a couple transitions. The update of the street focuses on two parts; the front (the street) and the back (the inner courts).

**Front**

As explained in chapter 4 The infrastructure, the infrastructure of Zevenkamp needs a better hierarchy in order to enhance the liveability of the neighbourhood. In Zevenkamp the amount of living streets can be increased, the layout allows this but at the moment the car is dominating most of the streets. Another important problem to solve was the amount of parking places. These two aspects should be integrated, whereby the ring road and the quarter roads can facilitate in more parking places and the living streets should be kept car free. With the transformation of the lay out of the streets it is also important to look at the left over green spaces which are scattered through the neighbourhood, these could for example be used to solve (a part) of the parking place shortage.

**Back**

Zevenkamp has especially in part I many inner courts. Some of these inner courts are used often en maintained well but many of these inner courts should be enhanced in order to increase the use and liveability. For the inner courts a division should be made between the inner courts which could be enhanced by only redesigning the inner court and the once which need a transformation in the spatial layout of the building block. With the transformation of the inner courts it is important to also include the surroundings of the building block. In some cases the left over green spaces can have a new function in combination with the inner court or with a transformation of the building block the surroundings could be enhanced as well, for example when left over greenery can be included in the transformation.
The Netherlands counted 7.6 million cars in 2010. These cars are standing still for 23 hours a day average, not only in traffic jams but mainly on parking places. Next to a parking place related to the house, the car needs a parking place at the office and at the recreation spots. This means that every car needs more than one parking place. However, the most important places are the ones related to the dwelling; 85% of the parking places are related to the dwelling (Coevering et al., 2008). In the Netherlands there is no absolute shortage on parking places; only the unequal dispersal of demand and offer of the parking places causes problems.

In the neighbourhoods the parking problems influence the liveability and the quality of the public space. The shortage of parking places is one of the greatest irritations of the inhabitants and the wrongly parked cars causes inconvenience for the public space (Andel, 2010).

Predicted is that the amount of cars will increase in the coming years; in the coming 20 years an increase of 0.6 to 3.5 million cars can be expected (Coevering et al., 2008). This will bring even more pressure on the existing amount of parking places in the existing neighbourhoods.

It is therefore necessary that the amount of parking places in the existing neighbourhoods will increase. There are different ways to increase the capacity. This chapter will shortly summaries some ideas for increasing the parking places. Next to this, this chapter will give an overview on the different possibilities and the opportunities for the

‘bloemkoolwijken’.

For the new parking places it is important that the quality of the public space has to be guaranteed. Next to this it is important to keep in mind the existing urban fabric, it is desirable that the urban fabric stays intact as much as possible. This means that only small interventions can be done to increase the amount of parking places.

The possibilities are categorized into two groups:

1. Parking on own property
2. Parking in the public space

Next to these two options it is important to think about two other factors; parking underground or above the ground and the intensity of the parking places.

The two groups have different possibilities which have their own advantages and disadvantages.

1. Parking on own property; on the inner courts, in front garden the garden, in carport, in back garden, under the house
2. Parking on the public space; change the section of the streets (narrow, one-way traffic, diagonal parking), on left over greenery, demolish a part of the building block for extra places, place multi-storey parking garage

With all these options it is important to keep in mind the quality of the public space. Therefore it is important to keep in mind the other spatial interventions, like; presence green, visibility from dwelling, and the section and zoning of the street. Next to the amount of parking places there should be thought of the distance from the house to the parking place and the quality of the parking place.
The bloemkoolwijken
At this moment the parking is done on several ways in the ‘bloemkoolwijken’. Some are specific for the ‘bloemkoolwijken’ others are more general. The ‘bloemkoolwijken’ were designed in a period where the car was already part of the daily routine. Therefore the car got his own place in the design. On some of the ‘woonerven’ there is the possibility for collective parking. Next to this most of the houses have a parking place on their own property, sometimes in a carport sometimes just in the front garden. There are also some experimental solutions like; the drive-in houses, as a new solution for parking in the Netherlands, the ‘parkeerkoffers’ (parking places along the road) and the ‘woondecks’ whereby the parking places are under the dwelling and the dwelling is lifted.

Parking problems
There are two causes for the parking problems in the ‘bloemkoolwijken’ nowadays:
Shortage on parking places; through the increase of car possession from 1,2 cars each household to almost 2 per household.
Wrong use of the parking places; Firstly most of the parking places on own properties are used for other purposes. The garages, for example, are used as a storage. The other problem is that people want to park their car in front of their own house. This means that they won’t use the collective parking places at the borders of the neighbourhood but park their car in the public space in front of their home instead.

Looking at the bloemkoolwijken some possibilities are:
Parking on own property
• .. on the inner courts; this is a good solution when building a new inner court, in this case the parking places can be placed under ground level or the collective space can be lifted. In the case of the ‘bloemkoolwijk’ is the placement of the parking places on the inner courts not a good solution. Because these parking places will devalue the quality of the inner courts, which is one of the qualities of the ‘bloemkoolwijk’. An example can be seen in the pictures of Deventer.
• .. in front garden the garden; done on the right way this can be a solution for the ‘bloemkoolwijken’. But in this case it is important to keep in mind several aspects; the view from the dwelling on the street, the distance between the dwelling and the street and the quality and safety of the sidewalk
• .. in carport; it is hard to force the inhabitants to park their car in the carports. But the inhabitants could be ‘forced’ by charging money for parking in the public space.
• .. in back garden; in the bloemkoolwijken most of the back gardens are situated next to the green structure or a collective inner court. Parking in the back garden would
it is important to retain the qualities of the inner courts.

**Zevenkamp**

For Zevenkamp there is chosen to solve the parking problems mostly in combination with the enhancement of the hierarchy of the streets. In this case the section of the street had to be adapted, which gave the opportunity for creating more parking places. By changing the section of the ring road more parking places could be created, in the new profile the frontage roads are left out which gives more space for parking places. In the labyrinth a stronger difference between the living streets and the quarter roads is made. The quarter roads can have a denser look, which means that more parking places can be created in these streets. In contrast with the living streets where the presence of the car should be prevented. Therefore these streets have no parking places in their profile and parking on the street is prohibited. To create more parking places small left over green spaces could be used to created green parking places or parking boxes.

Parking in the front garden is also a solution, especially in the quarter roads. For Zevenkamp it is important to improve the quality of the inner courts, it is therefore not allowed to turn the inner courts into parking places.
These sections show how the sections of the street can be changed in order to create hierarchy between the living streets and the quarter roads. By changing the sections of these streets a difference is made in the use of the two streets.

In the quarter road more parking places are created and the two traffic flows are separated. Also a sidewalk on both sides is created.

In the living street more space for play and other facilities is created. In the current situation this is a real broad street therefore there is a lot of space for trees and facilities, like benches, play field, soccer field and jolle de boule.

For the transformation of the other streets in the neighbourhood it is important to give the street a uniform look, therefore the same section should be used, especially for the quarter roads. They should all have parking places in the middle and two separated traffic flows for the rapid flow.

In the living street the car should be avoided as much as possible. In this example the car must be allowed to create a smooth traffic flow through the neighbourhood. But parking is prohibited to avoid the car from domination the look of the street.

The next pages show the situation of these two streets in the map of Zevenkamp. Here the problems are showed and the interventions done to solve these problems.
6.2 Section Streets

Fig. D111 ‘Building block: current situation and problems’ (source: by author)
Spatial interventions:

The important interventions are done in order to make a stronger hierarchy and distinction between the quarter roads and living streets. This is done by rearranging the parking places, remove out of the living streets and more in the quarter roads and the planting of more green, especially in the living streets. For the liveability of the streets broad sidewalks should be present on both sides and there should be enough trees. Therefore in some of the streets the sidewalk is created or made broader to a minimum of 2 meters.

2. Visibility from dwelling: the parking places and sheds should not block the view from the dwelling.

3. Distance street-dwelling: for a social safe street this distance should not be too long.

4. Representative front facade: front doors should be visible from all sides, in some cases the front door should be made more visible.

5. Zoning: a front garden should be present in order to give people the possibility to control their own environment, in some streets front gardens have to be created.

7. Presence broad sidewalk: in some of the streets a broad sidewalk should be created or the existing sidewalk should be made broader. The sidewalk should be at least 2 meters.

8. Clear profiles: to show the use and the place in the hierarchy the streets should have a consistent and uniform section.

9. Amount of parking places: in the current situation 75. This building block consists of 72 houses which means there is a small shortage (average car ownership in Zevenkamp is 0.8 car each household). In the new situation there are over a hundred parking places.

10. Distance parking–home: distance between house and parking place stimulates exercise and gives the possibility for meetings on street on the other hand should the distance not be too long to avoid wrong parking.

11. Pretty parking: parking places can have a green image, especially when made on the left over green spaces.

12. Presence greenery: for a liveable street green should be more present in the streets.
The deterioration of the ‘bloemkoolwijken’ is most visible in the public space. Due to poor maintenance, many of the public spaces look desolate and untended. Reasons for this poor maintenance could be the amount of public spaces, the size and structure and the unclearness in use and ownership.

Therefore, one of the important aspects for the transformation is the organization of a good maintenance plan. Hereby the most important aspect is the clarity of ownership. For every piece of the public space it has to be clear what the function is and who is responsible for the maintenance. For this reason, it is important to create a structure and hierarchy within the green structure. The green structure consists of: green axes, the neighbourhood park (green heart), small parks, small public spaces in the living environment and the collective inner courts. The green axes, the green heart and the small parks will be maintained by the municipality. For the other spaces it is really important to point out a responsible actor, which can be the municipality but also the housing corporation or the inhabitants.

The ‘bloemkoolwijken’ are known for their amount of public spaces. Many of these spaces can be called ‘undefined’ since they have no clear function or use. For a better maintenance it is important that these spaces are included in the green structure and get a function. Next to this, the municipalities do not have the capacity nor the money to maintain all these public spaces. It is therefore important to hand over some of the spaces to other stakeholders, for example the inner courts can be handed over to the inhabitants.

The last couple of years in many of the ‘bloemkoolwijken’ the housing corporations sold a part of their housing stock, as also explained in the next chapter. For the municipality and the housing corporations this is the moment to hand over the responsibility of the public or collective space and the corresponding maintenance. The conveyance of maintenance is the easiest if all dwellings have the same owner, if there is no overdue maintenance and if the inhabitants have interest in maintaining the space. The inhabitants have to have a personal interest in the ground for taking over the ownership of the ground or to participate in the ownership. It is therefore the most logical to hand over the collective inner courts.

Next to the fact that the maintenance costs of the housing corporations or the municipality can be decreased when handing over the maintenance, the conveyance can also mobilize, bind and organize the inhabitants.
6.4 Ownership

The composition of ownership, influences the transformation of the ‘bloemkoolwijken’. In particular by the transformation of the inner courts, the composition of ownership is important. Figure D111 shows the ownership of the dwellings in part I. In this part roughly half of the dwellings is owned by the housing corporation Woonstad. The other half is owner-occupied. If we take a look at the average of Zevenkamp, figure D113, we can see that this is above average; 33% of the dwellings is owner occupied. The composition of Zevenkamp is compared with the normal average of all the ‘bloemkoolwijken’: 54% owner occupied, 7% private rent and 39% social rent. The map of the ownership composition of the whole of Zevenkamp can be found in the appendix.

The high percentage of owner occupied dwellings is a quality, as Priemus says (SCP, 1998); owner-occupants are the most able to prevent the decline of a neighbourhood, since they are involved because of the value of their dwelling. Private renters have the least interest in enhancing the dwellings and living environment, in particular when they have no financial interest. The housing corporations have responsibility for the living environment, but because of their target group a large percentage of housing corporation dwellings can mean an easy decline of the neighbourhood, by Priemus (SCP, 1998). The neighbourhoods, in which the housing corporations are the biggest owners, are less vulnerable to decline, according to Priemus. According to Priemus, it would therefore be favourable that the ‘bloemkoolwijken’ have a small percentage private rent-owners and a larger part of housing corporations and (sometimes) a larger part owner-occupied.

As told in the trends of the ‘bloemkoolwijken’, a part of the ownership is shifting due to the fact that the housing corporations are selling their dwellings. In Zevenkamp the corporation ‘Woonbron’ wants to sell 30% of its procession; currently this is 10%. Woonbron does not offer a maintenance service, but participation in an owners’ association (V.V.E.) is obliged. Woonstad is also selling a part of its dwellings, but in this case they stay responsible for the maintenance. Vestia does not sell any dwellings.

The sale of dwellings can be seen as an opportunity to invest in the public and collective space. As told in the previous chapter, these moments are the best moments to rearrange the responsibilities.

In the development of the inner court, it is important to make clear statements about the ownership and maintenance of the collective space. The housing corporation can be in charge, but it’s more preferable to have a situation with an owners’ association, whereby the inhabitants share the responsibility for the quality and maintenance of the collective space. This can increase the involvement and use of the inner court. During the design process it is important to get all the involved actors on one line. This can mean that in some of the cases it is better if the housing corporation sell the dwellings owned in that building block, for a homogeneous ownership.
After a spatial analysis and visits of the inner courts the state of art of the different inner courts is made up. For the update of the inner courts first the state of art of the different inner courts has to be analysed. This analysis has to be made by the urbanist; he has to decide whether the inner court needs an update or a total transformation.

The analysis has to be made on different subjects; spatial layout (which has influence on the social control), the use (important are the adaptability and the spatial qualities) and the maintenance. The spatial interventions described in paragraph 5.4 of part C are used as the criteria for the three subjects:

1. Spatial layout:
   - distance dwelling – inner court
   - visibility from dwelling on inner court
   - presence transition elements
   - zoning in the dwelling
   - safe rear access

2. Use:
   - clear entrance
   - zoning: presence of hybrid zone
   - presence facilities
   - presence green
   - routing
   - zoning in use
   - lifecycle inner court

3. Maintenance

With this analysis the expert has to divide the inner courts into three different groups.

**Group 1**
The first group consists of inner courts with high appreciation on the different subjects.

**Group 2**
The second group consists of the inner courts which need a total transformation, this means that it is not sufficient to only reorganize the inner court but transformation of the whole building block is necessary.

**Group 3**
The third group is the one with the inner courts which do not score that well on the different subjects but can be improved by only redesigning the inner court. For this group a division is made into two phases. These phases indicate which inner court should be improved first and which can wait till the next phase.

Phase 1: Phase one consists of the inner courts which need improvement right away. These inner courts do badly on many of the different subjects. In most of the cases the maintenance is poor, there are no functions, the space is too narrow or there is no greenery. These inner courts need to be reconsidered in space, function and spatial elements. Things which can be thought of are: the transition elements, sight from the dwellings on the inner court, zoning in use, presence of green, presence of facilities, safe rear entrance etc.

Phase 2: on the surface these inner courts look good. But if we take another look the use of the inner courts is very low. This can be caused by several aspects, like the functions and the transition elements of the inner court. For the inner courts in this group it is important to rethink the use and the layout of the space.

For the redesign of the inner courts the spatial interventions, described in paragraph 5.4 of part C, has to be used as points of attention.

For the optimal use of the inner court it is important to create support from the inhabitants. Therefore it is important to include them in the planning and design phase of the inner court, this goes for the inner court from group 3.

For these inner courts 3 models are developed which can be used in the discussions with the inhabitants.

For one part (part 1) of Zevenkamp this division of the inner courts is made. The full analysis of the inner courts of part I of Zevenkamp can be found in the appendix of this thesis.

This project gives an example of a redesign of an inner court from group 1 and one from group 2.

The design of the inner court has, as told in the method, to be made in cooperation with the inhabitants of the building block. For the start of this cooperation there are three models which can be used as an inspiration for the possibilities and as a starting point for discussion between the experts and the inhabitants. These models can not be seen as a new total design. The final design can of course also be a combination of these models.

For the second model variations are made for a new lay-out of the building block. The models developed for inner court 1 can also be used for the design of the inner courts of building block two. These two building blocks are chosen because they are both mainly in procession of the housing corporation Woonstad.
6.5 Inner Courts - Problems

Legend
- U: Judgement on use
- S: Judgement on spatial layout
- M: Judgment on maintenance

Group 1
Group 2
Group 3: phase 1
Group 3: phase 2

Fig. D115 'Judgement inner courts part I Zevenkamp' (source: by author)
**Facts**
- Dwelling type: row houses, appartments without elevator, HAT dwellings
- Amount of dwelling types: 3
- Amount of dwellings: 72
- Ownership: Woonstad
- Surface: 8090 m²
- Surface innergarden: 1480 m²
- Sheds: in back garden
- Transition elements: sheds, fences

**Spatial qualities**
This inner court has a surface of 1480 m², this is large enough to facilitate different functions. The quality of this place lies in the shape, the orientation and the size of the inner court. Because of the rectangular shape it is easy to make a design which fits the needs of different inhabitants and a zoning in functions can be made. For the design it is important to join the two parts of the current situation to one inner court.

**Spatial defaults**
As can be seen in the pictures the use of the inner court is moderate. This can for example be seen in the fact that there are no clear wearing parts surrounding the outdoor equipment and the fact that during the visits none of the times people were seen in the inner court. At this moment the inner court is designed as two parts with no facilities. The spatial interventions show the weaknesses of the existing situation, for example the lack of functions or the quality of the greenery.

For the design of this inner court a close look have to be taken on the transition from the private garden to the collective inner court. The transition elements and the hybrid zone are important elements in this case.

The next pages give models for the participation process with the inhabitants. These models can give inspiration and guide the conversations with the inhabitants.
6.6 Design inner court - Problems

Fig. D116 “Problems inner court” (source: by author)
Design inner court - current
6.6 **Design inner court - current**

Fig. D117 ‘Picture inner court’ (source: by author)

Fig. D118 ‘Picture inner court’ (source: by author)
**Model 1: Privatization**

In line with the individualization, one of the trends in the ‘bloemkoolwijken’, a model for the inner court could be the privatization of the inner court. For doing so the inner court should be divided into private parts. This could be done by dividing the space over the different inhabitants (variant 1), in this case every house gets a bigger garden, or by creating space for a facility in the inner court (variant 2), for example day care for children. In the case of the day care, the inner court can be used for enlarging the building and for the outdoor space for the children.

**Spatial qualities**

The main advantages are the size of the back garden and the costs for maintenance. By giving up the collective space the space for the private gardens, the back gardens, will multiply. In most of the times the maintenance of the inner courts is done by the municipalities. Because the inner courts are not used by everybody and not open for everybody the interest of the municipality for the quality of the collective spaces is not high. By privatization the municipality only has to maintenance the rear access path which gives them extra time and money for the maintenance of the public space in the neighbourhood.

**Spatial defaults**

In model 1 one of the qualities of the spatial lay-out of the ‘bloemkoolwijken’ is neglected. By the privatization of the collective space the building block will lose its extra quality. The collective space is made to encourage the encounter between the inhabitants, by replacing the inner court by only a rear access the possibilities for the inhabitants to meet will decrease.
Fig. D122 ‘Model 1: Privatization of the inner court’
Model 2 Private and collective space
This model is a compromise between model one and three. There is a collective garden but there is also space for private gardens. For this model it is important to give extra attention to the design of the transition from private to collective. For an optimal use and quality of the collective space this transition should be as transparent as possible. In between the different private gardens a more solid transition is permitted, but the green character should be kept in mind. The sheds can be used to create more privacy in the gardens. In this case the collective garden is deepened, in this way an open transition from the collective to private is possible without harming the privacy in the gardens. For the maintenance of the collective space agreements should be made, for example in the form of an owners' association.

Spatial qualities
The quality of this model is the combination between a private space and a collective space which matches with the demands of a liveable neighbourhood nowadays. People can use their private garden for their need for intimacy and at the same time they can meet other inhabitants in the collective garden. Also the fact that everyone can make a difference in the openness of their garden can be seen as a quality.

Spatial defaults
Not everyone has the same needs as it comes to the use of the collective space, this can cause friction between the inhabitants. Some will use the collective space more then their private gardens, some the other way around. This difference in commitment can cause problems for the maintenance.
Fig. D127 ‘Green inner court seperated from private gardens by difference in height’
Model 3: the Danish model
The third model is developed inspired on the Danish examples. In Denmark many inner courts are developed as total collective spaces. In this case the inhabitants can chose for a small private terrace but there are limits to the size. There are also restrictions for the fence surrounding the private gardens. Those can not be more then 1 meter and should have a green character. The private space should be as minimized as possible.
In this model a collective shed is necessary to replace the private sheds, in this collective shed the inhabitants can park their bicycle.

Spatial qualities
Because of the minimization of the public space, the collective space has become a space of a real size. Because of its size there are more possibilities for the design. A zoning can be made between different functions and different target groups.
Because of the lack of real private spaces all the inhabitants are involved with the collective space, therefore good restrictions can be made about the maintenance of the space.

Spatial defaults
For this model it is really difficult to reach consensus. This model is often applied when a new inner court is build because in that case people chose to live there. But in the case of transformation it is really hard to convince all the inhabitants to change to this model. The commitment of all the inhabitants is necessary because they have to give up their private garden (or a part of it).
Fig. D132 ‘Private terrace and large collective space with collective facilities’
Facts:
- Dwelling type: apartments without elevator, row houses
- Amount of dwelling types: 2
- Amount of dwellings: 146
- Ownership: Woonstad and owner occupied
- Surface: 13721 m²
- Surface inner garden: 570 + 500 + 150 x 4 = 1670 m²
- Sheds: in front and back garden
- Transition elements: sheds, fences

As showed in the figure on the next page, the inner court has in its current state a lot of problems. Many of these problems are caused by the poor design of the transition from private to collective and the poor design of the inner courts itself. The problems of the inner court can not be solved by only redesigning the inner court but need a transformation of the layout of the building block. Therefore different models of different lay-outs are developed. The first model doesn’t solve the problems and can therefore be ignored. The second model could be a solution if a careful look is taken at the design and the connection of the two parts of the inner courts. The third model is the best possibility if we look for an option with small interventions. If there is a possibility for a larger transformation the fourth model is the best option. In this model also the problems from the surroundings are solved.

For the design of the inner courts the models developed in 6.6 can be used in corporation with the ideas of the inhabitants.
6.7 Layout Inner Court - Problems

Fig. D133 ‘Problems in current situation’
6.7 **Layout inner court - current**
6.7 Layout inner court - current

Fig. D134 ‘Picture inner court’ (source: by author)

Fig. D135 ‘Picture inner court’ (source: by author)
6.7 Layout Inner Court - Model 1

Facts:
- Amount of demolished dwellings: 10
- Amount of new dwelling: 15
- Conclusion: 5 dwellings more in new situation
- Two separated collective spaces
- New parking places in new street

Qualities
- Five more dwellings
- Clear layout collective spaces
- New parking places

Negative
- Small collective spaces
- Many corner houses
- Many gardens with poor orientation on sun (north-east)
- Difficulties with shape and sizes of gardens (especially in the second block)

Interventions
In the first model the building block is split into three different closed building blocks. Two of these blocks have good opportunities to develop a collective garden.

By dividing the building block into three smaller blocks, the ownership of the collective spaces becomes clearer. A disadvantage is that the collective spaces are really small and have therefore only a few possibilities for use. In the third block only private gardens are created, here it is important to design a safe rear access.

In this model, two new streets are created which gives the possibility to create new parking places for the inhabitants of the building blocks. Therefore the public space can stay a playfield and the other streets can become living streets again.

Fig. D136 ‘Model 1: 3 building blocks’ (source: by author)
6.7 Layout Inner Court - Model 1

Fig. D137 ‘Model 1: 3 building blocks’ (source: by author)
Facts:
• Amount of demolished dwellings: 10
• Amount of new dwelling: 8
• Conclusion: lost of 2 dwellings in new situation
• Possibility for one integrated collective space or two separated

Qualities
• Possibility for integrating the collective spaces
• No new corner houses
• Large gardens for everyone

Negative
• Lost of 2 houses
• Still separated small collective spaces
• Many gardens with poor orientation (and some new gardens)
• No new parking places

Interventions
In this model the building block is transformed into one closed building block. By closing the building block the transitions from private to collective and from private to public becomes clearer. Also the lay-out of the collective spaces is better, they are less scattered over the building block.

Now there is the possibility to create one large inner court in stead of three smaller spaces. This can increase the use, the quality and the flexibility of the inner court. Another advantage of this model is that there are no new corner houses, in contrast with the first model. These corner houses bring most of the time difficulties with the spatial lay-out of the floor plan.

A difficulty is the amount of gardens with a poor orientation on the sun. This amount is even increased in comparison with the current situation. Because no new streets are created the public space should be used to create more parking places and enhance the liveability of the street.
6.7 **Layout inner court - model 2**

Fig. D139 ‘Model 2: one building block’ (source: by author)
6.7 Layout Inner Court - Model 3

Facts:
- Amount of demolished dwellings: 23
- Amount of new dwelling: 11
- Conclusion: lost of 12 dwellings in new situation
- One large inner court

Qualities
- Large gardens for everyone
- One large collective space
- New parking places on new street
- Clear lay-out

Negative
- Lost of 12 houses
- Many gardens with poor orientation (and some new gardens)
- One new corner house: apartments

Interventions
In this model the building block is transformed into two building blocks. By doing so the lay-out of the building block and the inner courts gets clearer; there are less difficult orientations from private to public or collective.
One of the new building blocks will be privatized by gardens and in the other building block there is space for one collective garden. This collective garden should be designed in corporation with the inhabitants, whereby the models developed for inner court I, described in chapter 6.5, could be used.
Because of the new street, placed between the two building blocks, there is the possibility for creating new parking places in the public space. In this way the other streets can be turned into car free streets and the inner court can be saved from parked cars.
Another advantage of this model is the fact that the parts of collective space in the current situation can be linked into one larger collective space. But on the other hand can be decided in corporation with the inhabitants to enlarge the gardens with poor orientation. But this will mean that the collective space will decrease in size or maybe even totally disappear.
6.7 Layout inner court - model 3

Fig. D141 ‘Model 3: building blocks’ (source: by author)
Facts:
- Amount of demolished dwellings: 20
- Amount of new dwelling: 25
- Conclusion: gain of 5 new dwellings in new situation
- Two inner courts

Qualities
- Five more dwellings
- No undefined left over green
- Large inner court
- Clear layout collective spaces
- Extra parking places
- Less gardens with poor orientation

Negative
- Large intervention
- One new corner house: apartments

Interventions
The interventions for this model are more complex than the other three models. In this model not only the existing building block will be under transformation but also the building block situated next to this building block and the surrounding public space. The reason for this is the unused part of public space between the two building blocks which has more potential for use if it was transformed into collective space. Because of the strange orientation of the second building block and the streets surrounding the public space there is no connection between the buildings and the public space. Also the design and the facilities make the public space unattractive for use. In this model this public space is transformed into a collective space for the inhabitants. By doing so the use and the supervision is delegated to the inhabitants of the building block. The idea is to design the inner court in corporation with the inhabitants to create more commitment.

Another advantaged of this new layout is the orientation of the gardens. In this model most of the gardens with a poor orientation on the sun are replaced by new dwellings with a better orientation. The top building block is almost privatised with gardens, only in the west there is a small collective garden. Also this garden can be designed in corporation with the inhabitants.

Because of the transformation of the public space the existing play facilities should be moved to the collective spaces.

In the new streets new parking places can be generated.

Fig. D142 ‘Model 4: ‘Transformation public space into collective space’ (source: by author)
6.7 Layout inner court - model 4

Fig. D143 ‘Model 4: ‘Transformation public space into collective space’ (source: by author)
INTEGRATION INTERVENTIONS

Redesign inner court
Redesign building block
Section quarter road
Section living street

Fig. D144 ‘Model 4: ‘Integration interventions’ (source: by author)
This map shows the integration of the interventions of the two scale levels for part 1 of Zevenkamp.

As it is one of the important tasks of the urbanist to combine and integrate the different scale levels, this maps shows how the two different scale levels can work together. For example the amount of parking places on the ring road will influence the amount of parking places needed on the quarter roads and the small public spaces.

Also the transformation of a building block can influence the surrounding green space as is showed in the previous chapter.
CONCLUSION AND EVALUATION

This chapter gives a summary of the project by answering the research question and the different sub-questions as stated in the beginning of the graduation project. Next to this, this chapter will provide an evaluation of the research approach and process followed during this graduation year.

The main research question of the project is: Which spatial interventions are necessary for the transformation of the late post-war neighbourhoods (the ‘bloemkoolwijken’) to meet the criteria of liveability?

This research question is answered by answering the sub-questions.

1. **What is the history of urban renewal in the Netherlands?**

   This question is addressed in the first chapter of part A. The history of urban renewal knows three phases which all have own specific means and tools. After the transformation of the post-war neighbourhoods the ‘bloemkoolwijken’ will become the fourth phase in the process of urban renewal. Only the tools for this transformation are still unclear, this graduation project therefore focused on the spatial interventions needed for this transformation.

2. **What are the characteristics of the ‘bloemkoolwijken’?**

   The characteristics of the ‘bloemkoolwijken’ are addressed in part B. A case study research is done to discover the generic spatial elements of the ‘bloemkoolwijken’. The generic elements can be found on two scale levels; the neighbourhood- and the street scale level. On the neighbourhood scale level the infrastructure and the green structure are the generic elements, for the infrastructure this is the ring road, the labyrinth and the separated slow traffic network. The green structure consists of a green ring surrounding the neighbourhood, a green heart and many small public spaces scattered throughout the neighbourhood.

   On the street scale level the generic element consists of the transition areas from private- to public space (mostly at the front of the dwelling), and the transition from private- to collective space (mostly situated on the rear side of the dwelling). These generic elements are used as the basis for a new approach for the transformation of the ‘bloemkoolwijken’ which is then translated into a method.

3. **What is liveability of residential areas according to current literature?**

   Liveability is a ‘wicked’ concept and many researches have been done on this subject. For this project it is chosen to use the criteria of objective liveability defined by Van Dorst (2005), because they include sustainability; not only liveability of the current inhabitants is taken into account but also that of the future inhabitants. The criteria of objective liveability are:

   1. Health and safety
   2. Contact with the natural environment
   3. Regulation of social interactions
   4. Control by inhabitants over their living environment

4. **Which spatial problems or situations have to be solved and which opportunities have to be taken to improve the liveability of the ‘bloemkoolwijken’?**

   The problems and opportunities of the ‘bloemkoolwijken’ together form the diagnoses of the ‘bloemkoolwijken’ and can be found in chapter 2.1 and 2.2 of part C. The diagnoses are defined through a case study and literature research with the help of the criteria of liveability.

5. **Which spatial interventions are necessary to come to a solution for the problems and use the opportunities?**

   The spatial interventions necessary for the transformation together form a set. This set is divided over the generic elements; the infrastructure, the green structure, the inner courts (transition private-collective) and the street (transition private-public). These sets can be found in chapter three of part C. The spatial interventions are based on the diagnoses and solve therefore the problems and make use of the opportunities of the ‘bloemkoolwijken’.

6. **What does the design for
one of the case studies look like when the set of spatial interventions is applied? For the application of the method the neighbourhood Zevenkamp in Rotterdam is used. With the help of the developed set of interventions a map with possible interventions areas is made. Next to this examples are given for the different intervention areas, which together can be found in part D of this thesis.

To reflect back on the main research question, "which spatial interventions are necessary for the transformation of the late post-war neighbourhoods (the ‘bloemkoolwijken’) to meet the criteria of liveability?", it can be concluded that for the transformation of a specific ‘bloemkoolwijk’ a selection of interventions can be made out of the set of spatial interventions as can be found in chapter three of part C.

Next to the answer on the research question some other aspects are important to notion in the conclusions:

**The role of the urbanist:**
In the 1970s the role and vision of the urbanist changed from a strong position to a small position where he/she only took part in designing the general zoning plan. Urbanism was degraded from a design discipline to a minor discipline of defining the rules of the general zoning plan. For the transformation of the ‘bloemkoolwijken’ this role will be multidisciplinary again; the urbanist will not only control the design process but also have a role of mediator in the multi-actor process of the transformation.

**Generic / specific:**
The method developed for the ‘bloemkoolwijken’ is not applicable on other types of neighbourhoods, this is because of the specific character of the generic elements of the ‘bloemkoolwijken’ where the set of spatial elements is based on. But the way this method is developed can be used to develop other sets of interventions for the transformation of other type of neighbourhoods. In that case first an investigation has to be done to discover the generic spatial elements, the problems and the opportunities of the neighbourhoods. Afterwards these generic elements can be used to develop a generic set of interventions.

The existing research on the ‘bloemkoolwijken’ was based on one specific location. This project tries to find a generic approach to the transformation of the ‘bloemkoolwijken’. But the method is developed in such a way that it can be applied to a location-specific design. By making a selection out of the set of spatial interventions, the generic set of spatial interventions can be translated to a location-specific set, thereby dealing with the fact that all ‘bloemkoolwijken’ incorporate different problems.

**Evaluation research approach:**
The research approach consisted out of three parts: a theoretical research, empirical investigation and design & evaluation. Of course the planning needed updating during the project, as decisions were made which changed the following steps in the process. E.g. the decision for making a transformation method instead of a toolbox, which changed the role and the meaning of the set of spatial interventions.

During the process there was a strong connection between the development of the method and the design of one of the case studies. The importance of the combination of the bottom-up and top-down approach was discovered during the design of one of the inner courts. In this way there was a constant interaction between the design and the method.
Recommendations

This is the end product of the graduation project on the transformation of the ‘bloemkoolwijken’ but this is just the start of the research on the transformation of the ‘bloemkoolwijken’. In the near future thorough investigations have to be done on the transformation of these neighbourhoods to maintain or increase their liveability, as they are of great importance to the quality of the Dutch housing stock. This project only makes a start on the generic research. Next to a further investigation on the generic method of the transformation much attention should be paid on the interventions needed for the transformation of a specific ‘bloemkoolwijk’.

This chapter gives some recommendations for further research, which can be divided into recommendations for further research and those for the use of the method.

Recommendations for further research:

Literature study:
In this graduation project the focus in the literature study is on the investigation of the ‘bloemkoolwijken’ and the urban regeneration process, while less time is spent on the subject liveability of residential areas and its criteria. For this project it was chosen to use the criteria of Van Dorst (2005) concerning objective liveability, for defining the problems and opportunities of the ‘bloemkoolwijken’. In the case of a more extensive research other visions of the ‘wicked’ concept liveability could be used for an extension of the list of criteria and therefore the problems and opportunities.

The transformation of the ‘bloemkoolwijken’ is a multi-actor design process. A further research on the stakeholders and their vision on the future of the ‘bloemkoolwijken’ would be useful for the design process, especially on the housing corporations because of their ownership and the money they have. Another important actor is the municipality and its policies.

Case study research:
For this graduation project the case study analysis is executed for six of the many ‘bloemkoolwijken’ situated in the Netherlands. A more extensive case study (including more cases) could lead to a better explanation of the diagnoses of the ‘bloemkoolwijken’. Thereby it is possible that more problems and opportunities are revealed and the already found problems and opportunities could be better defined.

Recommendations for use of the method:

Clarification of the set of spatial interventions:
Further research can lead to more diagnoses, in that case the set of interventions needs to be extended. The idea of the set of spatial interventions is that they are not only used by the urbanist but could also be used as a communicative mean in conversations between the urbanist and other actors. Obviously, in that case, the spatial interventions need more clarification; an example is showed on the next page.

Also in case of use by other urbanists the set of spatial interventions could use a further clarification.

Implementation of the method:
One of the tasks of the urbanist is to bring together the different scale levels. For the implementation of the method it could be helpful to look for more examples of this kind of projects.

Another important aspect of the adaption of the method is the participation with the inhabitants. Participatory planning is relatively new in the urban design processes, therefore a good preparation is needed to bring this process to a success. Other regeneration projects, for example of post-war neighbourhoods, can be studied and can help with the preparation.
5. Clear ring road

The ring road has to be recognizable in the lay-out of the streets. Therefore the ring road has to have a specific section which can be recognized along the ring road and is therefore different then the other sections.

The ring road can create a fluid flow of the traffic through the neighbourhood. The inhabitants and visitors only have to leave the ring road when entering the quarter they need to be in. In this way the quarters can be relieved from traffic.

The ring road has to become an orientation point in the neighbourhood, the use of a consistant profile and the placement of landmarks can help with this.

- **Relation with other spatial interventions**: hierarchy infrastructure, clarit in pavement, landmarks for entering the living environment, clear profiles, concentrate parking, good connection with the city
- **Relation with diagnoses**: problem accessibility
- **Criteria of liveability**: health and safety

10. Combination greenstructure and schools

The green spaces situated next to the schools can become the small parks of the neighbourhood.

By connecting the small parks with the schools the function and use of the small park will increase. Especially for children it is important to be in contact with the natural environment and the schools can have an important role in this.

The small parks have to be in contact with the green axes and form a network through the neighbourhood.

By combining the two, a functions is assigned to the green spaces which decreases the amount of undefined public spaces.

- **Relation with other spatial interventions**: assign functions to green, hierarchy green structure, zoning in use and lay-out, combination green structure and dwellings, combination green structure and facilities
- **Relation with diagnoses**: opportunity green character, problem undefined spaces, maintenance, many green spaces
- **Criteria of liveability**: contact with natural environment and health and safety

Fig. D145 ‘Examples of explanation of spatial interventions’ (source: by author)
ANDEL, F., BRINK, L., HOVERNIER, J.,
Zakboek parkeren voor de
woonomgeving. Rotterdam:
Uitgeverij 010

Het stedelijk woonerf, Tilburg:
IVA.

Woonwijken: Nederlandse
stedebouw 1945-1985,
Rotterdam: Uitgeverij010.

zeventig, Rotterdam: NAi Publishers.

DEN HOED, R., 2009. ‘Elke buurt
die ouder wordt gaat
achteruit’:De verloedering
ligt op de loer in de
‘bloemkoolwijken’ Oosterflank
en Zevenkamp. Algemeen
Dagblad. Available at:
http://www.ad.nl/ad/
nl/1038/Rotterdam/article/
detail/414506/2009/06/11/
lsquo-Elke-buurt-die-ouder-
gaat-achteruit-rsquo.
dhtml [Accessed March 20,
2010].

GEHL, J., 2010. Life between buildings:
using public space, Skive: Arco
Grafisk A/S.

GIESSEN, S., 2007. Woonerfwijken,
typische probleemwijken?,
Delft: TU Delft.

HEELING, J., MEYER, H., WESTRIK, J.,
2002. Het ontwerp van de
stadsplattegrond, Amsterdam:

HENDRIKS, M., 2009. Alarmfase voor de
bloemkoolwijk. Blauwe Kamer,
1, p. 24-37.

KEI KENNISCENTRUM STEDELIJKE
VERNIEUWING, 2010. Dossier
Stoomcursus stedelijke
vernieuwing. Available at:
http://www.kei-centrum.nl/
view.cfm?page_id=6239 [ 
Accessed 3 januari, 2011]

KNOL, F., MARLET, G. & SINGELENBERG,
J., 2006. Kanskaart van
Nederland. Available at:
http://www.sev.nl/uploads/
File/oud/Kanskaart.pdf
[Accessed March 31, 2010].

MENS, N., SPARENBERG, S.,
SINGELENBERG, J. &
De toekomst van de
bloemkoolwijken. Available
at: http://www.sev.nl/
publicaties/publicatitem.
asp?id_publicatie_
open=915&zoek=true&zoek_
string=toekomst%20van%20
de%20bloemkool [Accessed
March 15, 2010].

MINISTERIE VAN BINNENLANDSE ZAKEN
EN KONINKRIJKSRELATIES,
2009. Samenwerken aan de
Krachtige stad: Uitwerking van
het stelsel Grotestedenbeleid
Available at: http://www.
grotestedenbeleid.nl/huidig_
beleid/gsb_iii/ [Accessed June
References


Fig. E1 ‘Green heart Houten’ (source: by author)
This chapter gives a short overview on the analysis of Houten. Houten is a ‘bloemkoolwijk’ which is positively appreciated by the inhabitants for its green and safe environment. This is caused by the overall designed green structure and infrastructure and the combination of the two of them. Therefore this analysis will show the different parts of these two structures and the relation between these two.

The set of spatial interventions is defined with the help of a literature study, other ‘bloemkoolwijken’ and case study analysis. Houten is one of the ‘other bloemkoolwijken’. The conclusions of this analysis are used to define some of the spatial interventions. Especially for the spatial interventions on the neighbourhood scale; the green structure and the infrastructure.
Famous for Houten is the combination of the green structure with the infrastructural network. Because of the special infrastructural network of Houten there is more space for functional greenery. In comparison with other neighbourhoods the green in Houten can be used as high quality green with a function not, like in many other neighbourhoods, as a buffer between infrastructures.

An important design rule for the public space of Houten was ‘ Every domain is a part of every other domain’ ('ieders domein maakt ook deel uit van dat van een ander') (Steenhuis stedeboouw/landschap, 2009). This means that every space should be used by different groups (children, adults, elderly). This principle is especially used for the design of the neighbourhood parks and green centre. The planting, playgrounds and parking places are integrated in one space.

In the green centre there is more space for special groups and private places. There are special facilities for the different groups. The different functions like sport fields, playgrounds and fish spots are more separated.

Guideline:
72 m²

187 m²
133 m² sport and parks

Fig. E2 ‘Green structure Houten’ (source: by author)

Fig. E3 ‘Public green per household’
Green structure

The green centre gives Houten its green quality. The green centre is a strip of 3.5 kilometres which is at right angles to the train line. Breadthways the centre has different sizes and design. Different facilities of the neighbourhood are connected or implemented in the green centre, like the shopping centre, the train station, the different quarters, and the bicycle lanes. The design of the green centre is based on the use of it, and the assumption that the distance to the houses influences the use of the public space.

Neighbourhood parks

Different neighbourhood parks spread throughout the neighbourhood are connected to the green centre. The neighbourhood parks are connected by green axis and bicycle lanes to the green centre. Every quarter has one big neighbourhood park, which facilitates space for all ages. The basis for the design of the neighbourhood parks is an open grass field, where people can sit on benches, play football or put up their new tent. This open character gives the opportunity for a variety in use. Every neighbourhood park has the same playground, goalposts and benches. Next to this the neighbourhood park is connected to the schools and can therefore be used as a playground during school time. At the borders there are some plants planted to provide some privacy and safety; the neighbourhood park is the green room of the quarter.
**Remaining green**

Next to the green centre and the neighbourhood parks there are many green spots in the neighbourhood. The trees are for example used to guide the traffic. The different kinds of roads are recognizable by the use of different trees. Next to that the trees soften the transition from the street to the houses. Secondly the green is used to create different spaces. For example to mark the parking places; trees are used to create a kind of roof, or to create a green wall between different functions. The last important function is to mark the transitions between different uses. For example from private to public places (most of the times this is done by green walls or open grass fields), between different quarters or between different traffic flows.
1.1 Green structure

Bike network

Famous of Houten is the connection between the green structure and the bike network. This combination creates a green and safe bike network. The main bicycle lane is situated in the green centre of Houten and gives therefore the opportunity for the inhabitants to move through the neighbourhood in a green environment. Next to that are the lanes situated in the green axis and makes a safe connection from the green centre to the different neighbourhood parks.

Facilities

Every neighbourhood park is connected with a primary school. The school can use the neighbourhood park as a place for children to play during the school breaks. It gives the neighbourhood park a function. On the other hand the children can stay after school time in the neighbourhood park for playing with the other kids from their school. The schools use the park as a place for playing or as a room to teach. The neighbourhood centre with all the shops is situated in the middle of the green centre. Also the train station is situated over here.
1.1 Green structure
1.1 GREEN STRUCTURE

Fig. E21 ‘Combination school and neighbourhood park’ (source: by author)

Fig. E22 ‘Combination school and neighbourhood park’ (source: by author)
What can we learn from Houten?

<table>
<thead>
<tr>
<th>Functions green centre</th>
<th>Schools and neighbourhood parks</th>
<th>Combination green and bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>The green centre of the neighbourhood shelter many facilities. The functions are in relation with the surrounding houses or the structure of the green centre. The central bicycle lane connects all these facilities.</td>
<td>By combining the neighbourhood parks and the schools the neighbourhood parks have an extra function. By combining the two, the neighbourhood parks are used during school time by the kids of the schools and after school time by the inhabitants of the quarter.</td>
<td>Because of the placement of the bicycle paths in the green structure, the green structure got an extra function. Next to this the bicycle paths have more quality because they have a green character.</td>
</tr>
</tbody>
</table>
In 2008, Houten was the winner of the bike-city award. In Houten almost all the bicycle paths are situated in a green environment. The car traffic and the bicycle paths are separated as much as possible, therefore the bike can move safely through the neighbourhood. This gives the opportunity for children to move without any parental control through the neighbourhood, for example from home to the school, the library or sport facilities. In an era where the age of children being independent in mobility is getting higher and higher, this is an advantage. Houten proofed that the concept of segregation can work; most of the inhabitants prefer to take their bike. The amount of accidents is in Houten half of the national average. In Houten the car use for going shopping is more than 30% lower than in other similar cities. There have to be said that the infrastructure is working good but has also negative sides. Houten itself is child friendly and the data shows that the children can move around without any parental control, but when this children go to another city they have more accidents because they are not familiar with presence of the car in the street.
Car
The 8.5 kilometres long ring road encloses Houten North and is the domain of the car; bikes and pedestrians are prohibited. The ring road makes a hard transition between the neighbourhood and the surrounding landscapes. This transition is enhanced by placing the ring road on a higher dike which blocks the view from the dwellings on the ring road and surrounding landscapes. From the ring road the quarters are connected with 16 different neighbourhood roads, these roads are still the domain of the car which is visible in the layout and pavement of the street. Bends in the roads command the cars to slow down. Each neighbourhood road leads to a square with trees, the ‘hallway’ of the neighbourhood, which is still prohibited for bikes and pedestrians. The neighbourhood street continues in a district road. These roads are no longer the domain of the car but are the domain of the pedestrian and bike. These roads go halfway the different quarters. If you want to go deeper into the neighbourhood you have to continue on a living street.

Public transport
The public transport of Houten consists of a train line and busses. The train station is situated in the shopping centre. The busses run over the ring road and go at one point into the neighbourhood to connect Houten with the surroundings villages and houses.
**1.3 Infrastructure**

**Bike**

In Houten there is a bicycle network separated from the car network (ring road, neighbourhood roads, district road and living streets). A couple of these bicycle paths are to such an extent in the spatial layout of the neighbourhood that they are called the ‘dragers’ (carriers) of the neighbourhood. The carriers are the main route for the pedestrians and bikes and the chain between the neighbourhood quarters and the centre. If you are on one of these carriers it will always lead you to the centre of the neighbourhood. The network of carriers is designed in a herringbone structure. The main carrier is situated in the green centre, with small carriers going into the different quarters.

The bicycle paths connect the green centre with the neighbourhood parks in the different quarters. All the bicycle paths do have the same profile: 3,5 meters of asphalt, 3,5 meters grass verge (with the same trees), 1,5 meters sidewalk and 1 meter of grass. The bicycle network is designed to connect the different important facilities of the neighbourhood: schools, neighbourhood parks, shops etc. Next to the carriers there are the bicycle paths which are the chain between the living streets and the other bicycle lanes.
1.3 Infrastructure

**Landmarks**
From the ring road different roads go into the neighbourhood, these roads are marked with several landmarks. These landmarks are buildings which are bigger than the usual houses or which have a special façade. One of them is one of the secondary schools.

**Schools**
As said in the introduction in comparison with other similar cities the amount of children going to school without any parental control is high. This is possible because of the safe bike network in the neighbourhood which is combined with the locations of the schools. The north of Houten (the studied part of Houten) has eighteen primary schools, two secondary education schools and one for special education. As said are the schools connected with the bike network and therefore better accessible by bike then by car. The two schools for secondary education are situated in a more urban environment in de city centre or in the vicinity of the ring road.
1.3 Infrastructure

Fig. E44 ‘Main bike road in centre green structure’ (source: by author)

Fig. E45 ‘Bicycle lane’ (source: by author)
What can we learn from Houten?

Hierarchy infrastructure

The infrastructure of Houten has a strong hierarchy. The bicycle network and the car network are on the higher scale as much as possible segregated. On the lower scale their highly integrated and is the street the domain of the pedestrian and bike.

The car network is also hierarchical. Different roads have different functions which are expressed in the pavement and the profiles.

Clarity pavement infrastructure

This hierarchy is also translated in the pavement of the roads. The different kind of roads can be distinguished by different kind of pavement and profiles. This gives the infrastructure of Houten a convenient arrangement. The profiles differ in sizes, kind of pavements and kind of planting. The choices for the kind of trees are especially taken care of.

Combination green and bike

The bicycle lanes and the green structure are combined. Therefore all the bicycle lanes have a green character. This combination enhanced the quality of the bicycle lanes and gives the green structure an extra function.
In most of the ‘bloemkoolwijken’ the orientation is really hard due to the design of the infrastructural network. Due to the clearness of the pavement and profiles of the different streets the orientation in Houten is better. The landmarks along the ring road make it also easier to orientate on the ring road and in the neighbourhood.

As showed in the analysis the bicycle network makes a connection between the different important facilities in the neighbourhood. Because of the connection of the schools and the bicycle network the children can move around in the neighbourhood without any parental control. Due to this the amount of accidents in Houten is lower then the average in comparable cities in the Netherlands.
This chapter gives the extended analysis of Zevenkamp. Zevenkamp is one of the largest ‘bloemkoolwijken’ in the Netherlands.

This chapter only gives a spatial analysis of the neighbourhood. A short history of the neighbourhood can be found in part D. Next to the data analysis.

The analysis is used for the design of the transformation of Zevenkamp as can be found in part D. Chapter three of part D can be seen as a conclusion of the analysis. In chapter three the generic spatial elements are described and the problems and opportunities are given.
Main green structure
For the building of Zevenkamp it was necessary to cover the underground with a package of sand of 1,5 to 2 meters. Therefore the original landscape disappeared. The only original element is the main green-water axe from the west to east, the Ommoordse Tocht. Although this axe was first covered with sand too they excavated the canal and made it as a structural element in the neighbourhood. Next to the Ommoordse Tocht, canals were made to revive the quarters and to enhance the structure of the neighbourhood.

In the north of Zevenkamp there is a green buffer zone between the neighbourhood and the Zevenhuizerplas, the Wollefoppenpark. This zone of 34 hectares was not covered with sand and has therefore its original landscape characteristics.

Next to the green axes there is a green zone, going from the north, from the Wollefoppenpark, to the south, ending at the highway A20. In this green zone there is an embankment of 2,6 meters, this embankment has no damming function but is made to enhance the green structure of Zevenkamp. Together with the main green axe this zone divides the neighbourhood in 4 separated parts. The functions of the green are mostly visual and the use of the spaces is rare; the banks of the water are for example steep and therefore not useable.
Left over greenery

Next to the main green structure there is more green in the neighbourhood, in this analyses assembled in the left over greenery. This left over greenery consists of green as a buffer and other left over green spaces. The green as a buffer can be found next to the main roads and the metro line.

Especially part I has many left over green spaces. In this part the spaces are small and most of the times linked with the parking places. The structure of the green in this part causes inefficient maintenance. In these parts, where the quality is low and the maintenance poor, the green areas do not give extra quality to the living environment. In other parts, the left over green spaces are wider and can therefore facilitate functions like a play area or soccer field. Important is the ownership and the responsibility of the left over green spaces. The question is whether the municipality or the housing corporations are responsible for the maintenance.
2.2 Infrastructure

**Car**
An important structural element is the main road: the Zevenkampse Ring. This ring road, which goes along the shopping centre, connects Zevenkamp on three different points with the external infrastructural network. The road in the west is leading to the highway and the shopping centre Prins Alexander. In the east the road leading to the VINEX neighbourhood Nesselande and one road in the south-east leading to the Hoofdweg, and to the industrial area. In the north the ring is interrupted which causes problems with the traffic flows.

---

![Fig. E55 'Car Zevenkamp' (source: by author)](image)

---

![Fig. E56 'Ring road: wide profile' [source: by author]](image)

![Fig. E57 'Ring road: small profile' [source: by author]](image)
Secondary roads
From the ring road smaller roads are going into the living quarters. These roads can be separated into quarter road, leading into the living areas, and streets with the lay-out of the ‘woonerf’. The different parts of Zevenkamp used different street patterns, developed over time. In the first part the car was decelerated by the use of bendy roads. In this part the different quarters are not connected by these roads, the ring road has to be used to come to another quarter. In the last two parts there are more straight roads and the different quarters are better connected.
**Public transport**

Exceptional for this ‘bloemkoolwijk’ is the presence of the metro line. The good connection with the public transport is from great value for the inhabitants of Zevenkamp. De metro has three stops in the neighbourhood: Nieuw Verlaat, Ambachtsplein en De Tochten. The first two stops are in the vicinity of shopping centres.

To stimulate the use of the public transport the area around the metro stops is built in higher densities. Therefore 85% of the dwellings is build within a circle of 500 meter diagonal.

Next to the positive point of the accessibility of the neighbourhood the metro line does not bring any spatial qualities to the neighbourhood, only negative ones: it is a barrier in the neighbourhood, there are not enough crossings and it brings noise pollution. Also the three metro stops are valued negatively by the inhabitants.

The bus is going over the south part of the ring road, coming from Prins Alexander going to the end station for buses.

---

Fig. E62 ‘Public transport Zevenkamp’ (source: by author)
2.2 Infrastructure

**Bike**

Just like most of the other ‘bloemkoolwijken’ Zevenkamp has a separated slow traffic network. In the quarters there is an intricate structure of cycle and pedestrian paths next to the car free streets. But the main element is the cycle ‘highway’ going from east to west. This bicycle lane along the water is connected to smaller lanes going into the neighbourhood. These lanes are connected with the centre of Zevenkamp and with other facilities like the schools.
**Schools**

In Zevenkamp there are only normal primary schools, there are no schools for special education. Next to this there is one secondary school at the border of the neighbourhood.

Most of the schools are connected with the green structure; most of them are situated next to a piece of left over green, which is not in use. The schools can profit from this situation by using the green spaces as their schoolyard. Next to this it is important to connect the schools with the bicycle network to create a safe environment for the children.
Facilities

The shops are clustered at two places in the neighbourhood, at the metro stops Ambachtslaan and Nieuw Verlaat. Because of loitering youth these metro stops are vulnerable points in Zevenkamp. Also the entrances of the shopping centres, a tunnel under de metro, are unattractive.

The shopping centre Ambachtplein is situated next to the ring road but is badly connected because it is turned with its back to the ring road.

In the neighbourhood are four health centres combined with a pharmacy and three dentists.

For the inhabitants there are three important social facilities/meeting points in Zevenkamp; the youth centre 7's, podium The Little Cave and the community centre LCC Zevenkamp. The inhabitants are satisfied about the sports facilities; they even attract inhabitants of other neighbourhoods.

The best know facilities and most used, by the inhabitants of Zevenkamp, are the children’s farm, the play garden recreation area, the swimming pool and the play ground in the vicinity of the house.

Facilities:
- health care centre
- dentists
- pharmacy
- shopping centre
- youth centre 7’s
- Stage; the Little Cave
- Neighbourhood centre: LCC Zevenkamp
- Swimmingpool
- 3 gyms
- Sports hall
- Gym-, hockey-, soccer- and martial art- and water sport clubs
2.3 Built environment

Satisfaction inhabitants
These two charts show information of the appreciation of the inhabitants about the facilities of the neighbourhood. In the first figure shows what percentage of the inhabitants knows of the existence of the facilities and the second column shows what percentage also uses the facility. The second figure shows the appreciation of all kinds of facilities, compared with the general appreciation of the inhabitants of Prins Alexander and Rotterdam. From the second figure can be concluded which facilities are missing and which have to be improved.

<table>
<thead>
<tr>
<th>Existing facilities</th>
<th>Known</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s farm</td>
<td>67%</td>
<td>39%</td>
</tr>
<tr>
<td>Activities in community centre</td>
<td>40%</td>
<td>15%</td>
</tr>
<tr>
<td>Residents’ association</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>Playgroup</td>
<td>30%</td>
<td>6%</td>
</tr>
<tr>
<td>After-school child care (older than 4 years)</td>
<td>20%</td>
<td>5%</td>
</tr>
<tr>
<td>Doc shop</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Creche (0-4 years)</td>
<td>19%</td>
<td>7%</td>
</tr>
<tr>
<td>Work for elderly</td>
<td>12%</td>
<td>4%</td>
</tr>
<tr>
<td>Youth centre</td>
<td>12%</td>
<td>2%</td>
</tr>
<tr>
<td>Swimming pool</td>
<td>82%</td>
<td>52%</td>
</tr>
<tr>
<td>Playground in vicinity house</td>
<td>53%</td>
<td>28%</td>
</tr>
<tr>
<td>Play ground / recreation area</td>
<td>65%</td>
<td>31%</td>
</tr>
<tr>
<td>Allotment gardens</td>
<td>31%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Fig. E76 ‘Knowledge and use of existing facilities’ (source: Veldt, e.d.)

<table>
<thead>
<tr>
<th>Satisfaction about the physical facilities:</th>
<th>Zevenkamp</th>
<th>Rotterdam Alexander</th>
<th>Rotterdam</th>
</tr>
</thead>
<tbody>
<tr>
<td>about the shops</td>
<td>6</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>about the play grounds</td>
<td>6</td>
<td>5.9</td>
<td>4,9</td>
</tr>
<tr>
<td>about the playgroups and the day care centre</td>
<td>8.4</td>
<td>8.2</td>
<td>7.8</td>
</tr>
<tr>
<td>about the public green areas</td>
<td>4,9</td>
<td>6.1</td>
<td>4.8</td>
</tr>
<tr>
<td>about the recreation areas</td>
<td>4,3</td>
<td>4.9</td>
<td>4.3</td>
</tr>
<tr>
<td>about the primary schools</td>
<td>8,6</td>
<td>8.5</td>
<td>8.2</td>
</tr>
<tr>
<td>about the facilities for youth</td>
<td>3,4</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>about the facilities for elderly</td>
<td>5,5</td>
<td>6.8</td>
<td>5.1</td>
</tr>
<tr>
<td>about the locations for public activities: community centres and squares</td>
<td>5,8</td>
<td>6.3</td>
<td>5.1</td>
</tr>
<tr>
<td>about the bars</td>
<td>4.3</td>
<td>4.3</td>
<td>4.9</td>
</tr>
<tr>
<td>about the facilities for indoor sports</td>
<td>7.6</td>
<td>6.4</td>
<td>5</td>
</tr>
<tr>
<td>about the sport fields</td>
<td>6.5</td>
<td>6</td>
<td>4.9</td>
</tr>
<tr>
<td>about the religious facilities</td>
<td>6</td>
<td>7.3</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Fig. E77 ‘Satisfaction about the physical facilities’ (source: Veldt, e.d.)
Ownership
During the building period the government made restrictions which can be seen in a switch in ownership. The differences between part 4 en 1 are the most striking. In part 4 most of the dwellings are owner-occupied or rented houses by private individuals.
In total the division in the neighbourhood was: 41% ‘woningwetwoningen’, 26% subsidised rented houses, 13% subsidised owner-occupied dwelling and 20% more expensive owner-occupied dwellings.
This map shows the dominant presence of the social rented houses (Vestia and Woonstad) in the west part of Zevenkamp. Until this moment Vestia is still the owner of all these dwellings, the company does not sell any dwellings. Woonstad on the other hand has an disintegrated ownership spread over multiple blocks. Woonbron owns only dwellings in the east part of the neighbourhood. On the map can be seen that in the past Woonbron sold (disintegrated) parts of its housing stock. Also some of the private individuals who rented houses sold of their housing stock.
**Type of dwellings**

In Zevenkamp the first dwellings were delivered in 1979. In the beginnings of the 1980s the economical recession started. This caused an increase in the demand on owner-occupied dwellings. Important for the housing stock of Zevenkamp was the fact that the government wanted to change the amount and the composition of the housing stock. In Rotterdam the amount of ‘woningwetwoningen’ had to decrease. This had consequences for the east part of Zevenkamp (part 3 and 4); parts of the design were replaced with new ones with more low rise houses. In the design for Zevenkamp they chose to use a mixed composition of dwelling types. With not only single family dwelling but als HAT-dwellings and apartments. This mixed composition had to lead to a new kind of collectivity. In part 1 of Zevenkamp (in the west) this mixed composition is the most noticeable. Nowadays the mixed composition leads to confrontations of inhabitants with different ideas on life and public space. Especially in the building blocks were the HAT-dwellings and the single family dwellings are combined.
If we look at the figure with the orientation of the front gardens we can conclude that in almost every situation the dwellings are orientated at a main or quarter street. In a few cases the front garden of the dwellings is connected with the main green structure, but in most of the cases these two are separated by a road. The front garden from a couple of houses is connected with the public or collective space. The houses situated at the ring road give the neighbourhood a uniform look, especially for the visitors. But on the other hand prevents this orientation of the front side of the dwelling on the ring road the ring road from being anonymous. In most of the cases the car is parked in front of the house or in the vicinity of the dwelling. Some of the streets are car free, in that case the cars have to be parked in special areas. By doing so the streets become child friendly and a part of the public space. The front gardens, designed to give the neighbourhood a suburban look, can contribute to the green character of the neighbourhood. But on the other hand are the gardens a vulnerable point because of their maintenance. Some of the gardens slowly transform to parking places and hedgerows into fences, this will denigrate the spatial qualities of the neighbourhood.
**Back**

The houses in the bloemkoolwijken, designed in the 1970’s, were built with a front and a back garden. The backyards are situated next to roads, bicycle lanes, public spaces or collective spaces. The idea was to open the gardens to the public spaces. But nowadays people have different thoughts about their privacy and configuration of their back garden. Therefore most of the times the back gardens are paved because of the time they want to spend on maintenance. The gardens are surrounded with fences to create more privacy. Maybe this creates more value for the back gardens for the inhabitants but it decreases the value of the collective and public space situated behind the fences. The public spaces who supposed to be for everyone become no-one-spaces. Especially in part 1 of Zevenkamp, where most of the back gardens are situated at collective spaces, the collective spaces become desolate.

The dwellings situated with their garden next to the water have most of the times a high potential with special qualities. Quays enhance the green-water quality these neighbourhoods do have; these kinds of qualities can be found at the borders of the neighbourhoods.

If we combine the maps of the front and back gardens we can conclude that the idea of the designers was to create a lively front side, connected with the roads, and a safely rear side connected with the green spaces.
2.4 Street level

Sheds

The position of the shed is, next to the orientation of the dwellings, important for the quality and the experience of the public space. In the design of the bloemkoolwijken it was common to place the shed in the front of the house. But in Zevenkamp most of the sheds are placed in the back garden. The sheds have to make a soft transition in the transition zone from private to public. Occasionally the sheds are placed in front of the dwelling. In these cases the shed blocks the view from the street to the dwelling and creates therefore a kind of distance. The most important problem caused by placing the shed in the front garden is the lack of a representative facade. The shed creates in this case two back sides of the dwelling therefore the connection with the streets disappears. The streets become anonymous if the sheds are placed on both sides of the streets. In Zevenkamp these streets are rare. If the shed is placed in the front garden it is integrated with the dwelling and creates therefore a more representative facade.

Fig. E90 'Sheds' (source: data obtained from bureau Middelkoop)

Fig. E91 'Shed on front side dwelling' (source: by author)

Fig. E92 'Shed on front side dwelling' (source: by author)

Fig. E93 'Shed on back side dwelling' (source: by author)
**Private and collective gardens**

After the anonymous streets from the 1960s, in the 1970s the goal was to make a neighbourhood for the inhabitants. Whereby the street had to be a collective space for game and the encounter of the inhabitants. Especially the ‘woonerven’ and the inner courts in the south-east of Zevenkamp (part I) are designed with these principles. These collective spaces had to bring the inhabitants back to each other. But the conflicting is the fact that during the building process the private garden got more and more value. Therefore most of the collective spaces became enclosed areas. Nowadays the inner courts have poor maintenance and facilitate few functions, therefore they are not attractive to stay or meet your neighbours. The question is how to update these collective spaces.

**Amount of inner courts: 36**

---

**Fig. E94 ‘Private and collective gardens’ (source: data obtained from bureau Middelkoop)**

**Fig. E95 ‘Closed inner garden’ (by author)**

**Fig. E96 ‘Collective space’ (source: by author)**
2.4 Street Level

Rear sides of dwellings, playground, row houses, rent (woonstad)

Rear sides of houses, playground, apartments and row houses, rent (woonstad)

Front of houses, playground, row houses, owner-occupied and rent (woonbron)
### 2.4 Street level

Table: Appreciation of the inner courts

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Spatial layout</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Distance dwelling - innercourt</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Visibility from dwelling to inner court</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Orientation gardens</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Presence transition elements</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zoning in the dwelling</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Safe rear acces</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td><strong>Use</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Clear entrance</td>
<td>-</td>
<td>+/-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zoning: presence hybrid zone</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Presence facilities</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Presence green</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Routing</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Zoning in use</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Lifecycle inner court</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td>Maintenance</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
<td>+/-</td>
</tr>
</tbody>
</table>

**Additional information:**
- **Spatial layout**
  - +/-: Present
- **Distance dwelling - innercourt**
  - +/-: Present
- **Visibility from dwelling to inner court**
  - +/-: Present
- **Orientation gardens**
  - +/-: Present
- **Presence transition elements**
  - +/-: Present
- **Zoning in the dwelling**
  - x: Present
- **Safe rear acces**
  - n.a.: Not applicable
- **Use**
  - +/-: Present
- **Clear entrance**
  - +/-: Present
- **Zoning: presence hybrid zone**
  - +/-: Present
- **Presence facilities**
  - +/-: Present
- **Presence green**
  - +/-: Present
- **Routing**
  - +/-: Present
- **Zoning in use**
  - +/-: Present
- **Lifecycle inner court**
  - +/-: Present
- **Maintenance**
  - +/-: Present
Legend

1. Judgement on use
2. Judgement on spatial layout
3. Judgment on maintenance

Group 1
Group 2
Group 3: phase 1
Group 3: phase 2

Fig. E100 ‘Inner courts Part 1 divided over the groups’ (source: by author)
Rear sides of dwellings, playground and seatings, row houses and apartments, rent (woonstad)

Rear and front sides of dwellings, apartments and row houses, owner-occupied