

Improving living standards during the interbellum

Three case studies
of
Dutch garden villages

Introduction

Throughout history, housing has had many forms and requirements. Nowadays a house has to be big enough to give every inhabitant their own bedroom, and indispensable are a kitchen and living room spacious enough to accommodate large numbers of visitors. Of course a contemporary home also needs to fit a person's individual styles and needs. A house nowadays reflects on what kind of a person lives there, and especially how she or he lives. Another important aspect is the increasing demand for health and sustainability of a house. Because of the wealth of western civilisation certain people developed these requirements and could permit themselves to select and build houses according to these requirements. Throughout history the requirements for housing have changed a lot. Looking at the earliest form of housing, being the caves, the purpose was to give shelter and to protect from the elements and animals. This requirement as a second skin has stayed the same throughout history, but a lot of new requirements were added. These new requirements led to changes in urban lay-outs, housing architecture and housing typology.

One of these changes is launched by the garden city movement which started in England by pioneering work of Ebenezer Howard. His revolutionary book *Garden Cities of Tomorrow* (1898) introduces in detail the concept of a city more connected to the country side and freed from the industrialization and urbanisation of many big cities at that time. These ideas of de-urbanization became popular and were adopted in many countries, including Japan. In the Netherlands this concept was modified, and also practised on a smaller scale. The concept became known as *Tuindorpen*, which translates to garden villages.

These garden villages are the main focus point of this history thesis. In this thesis the connection between the social and economic aspects of the beginning of the 20th century and the typology of the garden villages will be researched. The defined research question is; 'Are garden villages an answer to the social and economic problems of the beginning of the 20th century and, if so, how is that reflected in the design?'. To come to an answer literature studies and case studies have been done. In the first chapter the social and economic problems of the beginning of the 20th century will be described briefly. Topics like the living conditions, the new Dutch housing Law and the economic crisis will be discussed and anchored as context. This paves the way for the case studies. Three *Tuindorpen* have been selected, *Vreewijk* and

Heyplaat in Rotterdam and *Marlot* in The Hague. Each case study will be discussed in a separate chapter with specific parameters. This methodology provides balanced comparisons because each selected garden village has different architectural features, qualities and focus points. The cases will be researched by analysing the plans, images and the social histories of these garden villages. The second purpose is that by doing this the connection between the development in time and in typologies will become clear and therefore an answer can be formulated to the research question.

Chapter 1

Social and economic context of the beginning of the 20th century

With the dawn of the twentieth century, the world would soon face the threat of a war on a scale like never before. First the First World War broke out in 1914 and then the Second World War followed in 1939. With this first global conflict, the beginning of the twentieth century was marked by much destruction, fear and devastation. These wars affected society mostly in a negative way, it led to an economic crisis in the thirties, housing shortages and destructions all across Europe. However, behind the curtain of wars lurked many other problems of the time, problems which were tried to be solved with for example new housing regulations and the improvement of living standards. In this chapter the problems and the effects of the First World War but also the housing regulations will be illustrated to give a good overview of the time to give context to understand the following case studies better and in the perspective of that time, the start of the interbellum.

To understand the context in the Netherlands of the 20th century one must first address some important changes of the late 19th century. The 19th century was defined by the industrial revolution in several phases. Because of this revolution people lost handcraft work in the agricultural areas and were lured into the cities. People hoped to find better jobs there. This explosive urbanisation created housing shortage and very poor living conditions because there was no social housing and private investors built the worst thinkable houses, merely to make money. (Nationaal Historisch Museum, 2020). The government ignored the horrible living standards. People were living in basements or in one room dwellings, sometimes with more than ten children. These dwellings were usually very moist, not hygienic, poorly lit and not ventilated or insulated. Most dwellings also did not have running water, proper sewers or a draining system. Entire neighborhoods were tormented by all kind of diseases. These conditions caused a lot of bad health and dissatisfaction among the poorer class of society. The poor people were exploited so that the private companies without any empathy could make money out of these dwellings. Architects were not involved! With money as biggest motivator these dwellings were usually also poorly constructed which caused

leakages, too small living spaces and unsafe homes (Schut, 1939). However more and more people expressed their discontent with their living conditions which led to the rise of different kind of social unions and charity initiatives to assure that people had safe and healthy living conditions. Also employers noticed that it is better for business when employees are happier and healthier, which made them join the movement. Socialism saw daylight and became powerful. In 1899 also the government felt threatened and finally noticed the need of housing regulations and it submitted the first Dutch Housing Law to the House of Representatives. This law was passed in 1901 marking a new era for social housing and living conditions. The municipalities, supported with financial funds and loans without interest, from now on had the responsibility to make sure that dwellings were of good quality and that the living conditions would improve. In reality the housing law did not solve all the problems. The housing law did improve some living conditions but made the shortage of good quality houses bigger (Van Mil, 2017).

Apart from the interference of the national government and municipalities in the housing conditions, architects, urban planners or other important people also came up with their own plans to improve the conditions. In England one of these persons was Ebenezer Howard. As mentioned before, in 1902 Howard wrote the book *Garden Cities of Tomorrow*. He proposes a new way of constructing and designing self-supporting green cities. Garden cities are focussed on living closer to nature, placing working and living closer together and to create a self-sustainable living community. To achieve this goal Howard designed a concept of circular cities with a lot of boulevards combined with living and then on the outskirts he placed all the facilitating functions such as a farm and factories (See figure 1).

This ideology was also adapted in The Netherlands where it became known as 'tuindorpen' which

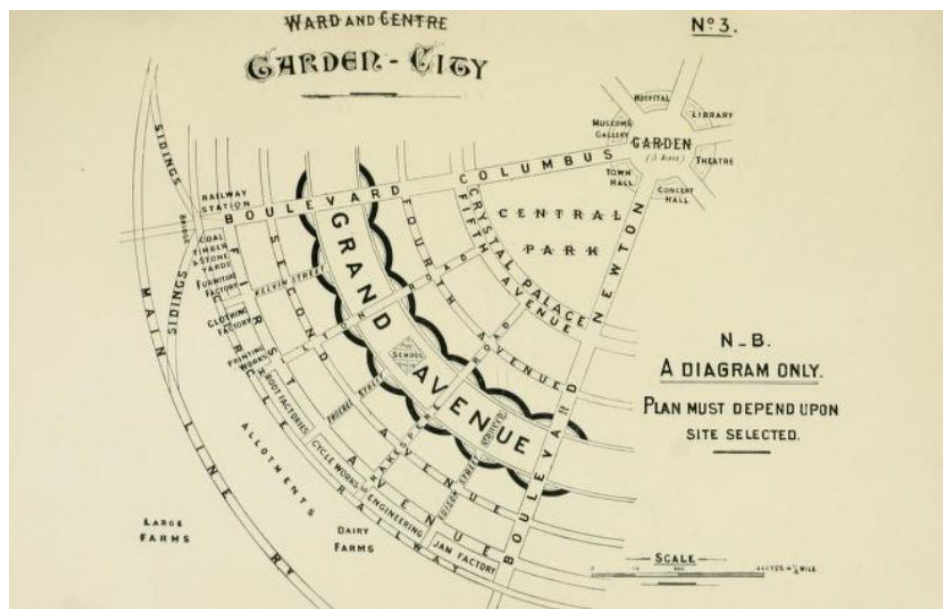


Figure 1, Garden Cities (Howard, 1902)

translates to garden villages. These garden villages could usually be recognised by lower one family housing with a front garden and a lot of greenery in the neighbourhood. They were also usually designed to give a village feeling, with the focus on family and community. The villages were also meant for people to learn to live like a 'role-model citizen' and to stimulate people to contribute to society (GAN, 2022). The garden villages emerged as an initiative of different parties. Sometimes the government took initiative and sometimes a rich investor or entrepreneur. This results into different kinds of garden villages in The Netherlands, with focus points on different areas. These differences will be made clear in the following chapters.

Chapter 2,

Case study Vreewijk in Rotterdam

One of the first garden villages of the Netherlands is Vreewijk in Rotterdam. The origins of Vreewijk can be lead back to the creation of a public limited company named 'N.V. Eerste Rotterdamse Tuindorp' (Korthals Altes, 2004). In 1913 the banker K.P. van Mandele and some other upperclass people wanted to contribute to the improvement of housing conditions of workers. At the end of the 19th century and the beginning of the 20th century there was a lot of urbanisation which influenced the living conditions in Rotterdam in a negative way. Between 1870 and 1910 the population of Rotterdam increased with 250 percent. This resulted into the fact that on average 4,6 people lived in a one room dwelling. These were usually dwellings with very poor living conditions (Jongeneel, 2001). The creation of the 'N.V. Eerste Rotterdamse Tuindorp' was supposed to solve and better these living conditions. They focussed on the southern river bank, with plenty of room for expansion areas. This company could be seen as a housing association with the exception that the inhabitants did not have any influence or say in the neighbourhood. The company bought some land south of the neighbourhood of Feijenoord (Oudenaarden, 2012) to create a garden village, later known as Vreewijk. For this project H.P. Berlage made a street plan but due to another running project, De Roos & Overeijnder, Granpré-Molière and Verhagen took over the urban planning. They incorporated the design of Berlage but also changed some street patterns. They also designed a lot of the first buildings. The goal was to design smaller, village-like houses that were simple but designed and built in a proper and decent way.

The urban design for Vreewijk was finished in 1913. However it took several years for the project to be build. This had two main reasons (Jongeneel, 2001). The first one was the financing of the project. Because of the high wages, high prices and high interest during the First World War it was impossible for the board members of the public limited company to finance the project completely by themselves. To finance the project they used the financial facilities that the new Housing Law provided. This meant that in 1915 the budget for the project was obtained. The other reason for the delay in realising the project was the First World War. The war created a shortage in building materials. And even though the Netherlands did not participate in the war, the effects of it did reach the Netherlands and with that also the realization of Vreewijk. Despite the delays the project was realized a couple years later and the first people moved into their houses in 1918 (Oudenaarden, 2012). Vreewijk was developed in different stages. In the first stage

of the development 550 houses were realized. Later Vreewijk kept on expanding and growing and after the Second World War there were more than 5000 houses. For this research the case study will focus on the first and oldest part of Vreewijk. This part was built between 1917 and 1922 (Figure 2).

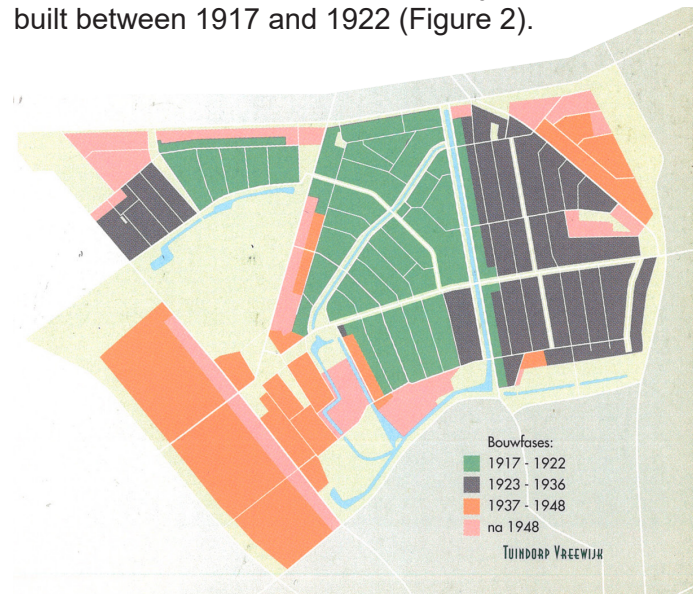


Figure 2, Building phases Vreewijk (Oudenaarden, 2012)

Vreewijk was build and designed mostly for the working class of the harbour area (Groeneweg, 2021). Employers and more influential people noticed that when the working class was happy, well looked after and had better lives, they perform better at work and therefore increase the earnings of a company. With this motivation in mind Vreewijk was designed to help people better their lives. This was done by providing better living conditions, better amenities and also a committee that taught people how to live properly. When living in Vreewijk people had to keep their house tidy and do house chores on specific days or they risked being evicted from their houses. One of the examples of these chores is that people were only allowed to hang their laundry outside on Tuesdays (NPO, 2019). One other example is that at any given moment a person of a special committee could come and check the house to see if it was properly cleaned. They would even check if the clothes were folded and put away, if the cabinets were dusted and if the dishes were cleaned, so in short if the household was upkept. These things were considered essential for people to live a civilized and proper life, which was in the end better for society and the economy. Other part of the lives of people were also controlled. In 1918 the public house in Vreewijk was opened named the Zuiderhuis (Groeneweg, 2021). In this house people would come together for different exhibitions, classes and social gatherings. This was a way to control what people learned, what their political view was and also what they drank. In the area there was no bar to be found so that people could not become alcoholics and this was another way to ensure that workers performed better.

Apart from the improved and controlled lifestyle, Vreewijk also provided better housing. They may look tiny from the current point of view, the houses in Vreewijk were much more spacious than people were used to. The houses had multiple rooms, so that children and parents could sleep in their own room, so they had privacy for the first time in their lives (Figuur 3). Apart from more space for the bedrooms there was also space made for a tiny bathroom in the house. There was no running water yet, so the inhabitants needed to fill the bad tube with hot water. Another mayor improvement was that the bedrooms had their own windows so that the air and light could access (Korthals Altes, 2004). By letting in daylight into the house and allowing for ventilation the purpose was that people would also live in a more healthy environment.

The main design concept of Vreewijk was to create the feeling of a village in the city of Rotterdam. To achieve this there was a lot of greenery and ditches. Most houses provided with a front and back garden.

There was a lot of greenery and green spaces for children to play or for people to meet or just enjoy the outside. This was also considered an improvement compared to the cramp and dark stony alleyways of the city (Korthals Altes, 2004). Also most streets had a lot of dents and turns so that the streets did not feel so long. By creating a feeling of a small town the aim was that people would look after one another and live more like an community. To enhance the feeling of community the urban plan had elements that stimulated smaller meeting groups. For example the back gardens of the housing blocks were only accessible for its inhabitants. In that way that space would feel more intimate and made meeting your neighbours in that safe and green space easier.

Considering all the improvements one could say that Vreewijk was built to improve the lives of many working class people. To provide more space, greenery, better light and ventilation and a lot of amenities people could improve their health and better their lives in Vreewijk and provide a better future for their children. Even though this seems like a noble goal from K. P. van der Mandele, the creation of Vreewijk was not a charity act on its own. By bettering the lives of the workers, the harbour businesses could earn more because people provided more and better work. So the creation of Vreewijk had not only social motives but also major economical purposes.

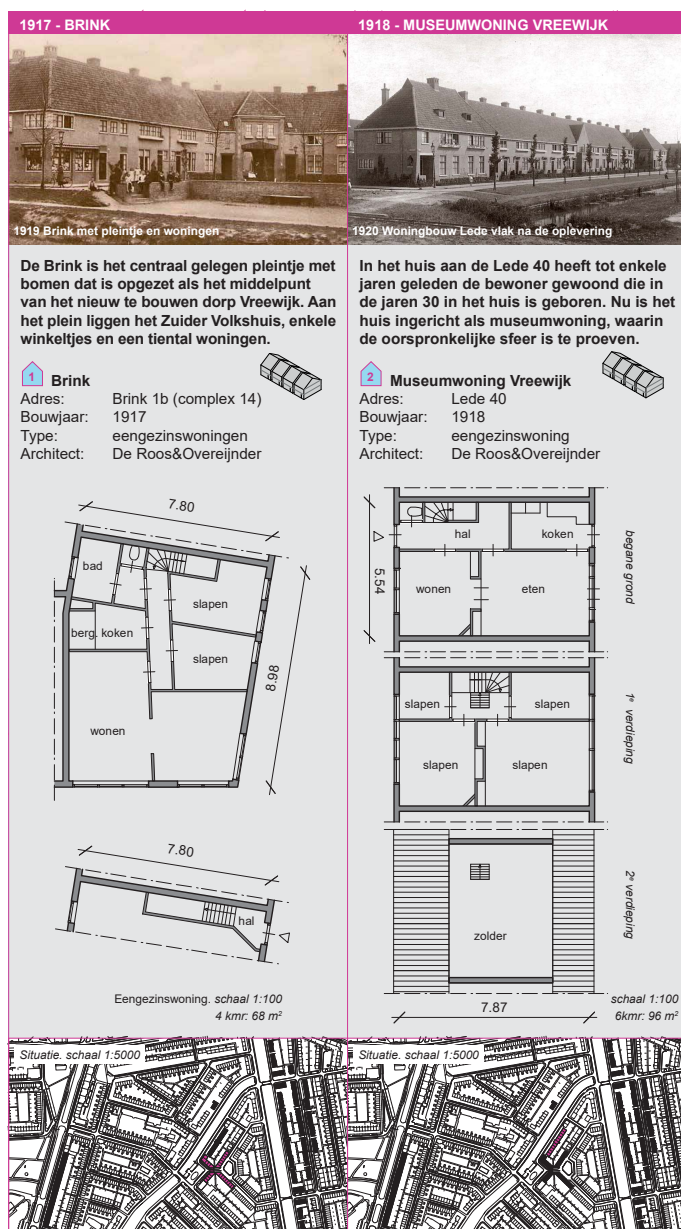


Figure 3, Housing in Vreewijk (Rotterdam woont, 2012)

Chapter 3, Case study Heijplaat in Rotterdam

At the start of the 20th century Rotterdam was very much evolving and expanding. Until 1860 Rotterdam only occupied the northern banks of the river the Nieuwe Maas. This started to change when the Rotterdam port started to expand, after an initiative of Lodewijk Pincoffs who built the area, later known as Kop van Zuid. In his footsteps companies started to move to the southern banks of the river after 1890. One of this companies was the Rotterdamse Droogdok Maatschappij (RDM). This company originated from 1902 and specializes in the building and repairs of ships and trying to get these ships on the land (Korthals Altes, 2004). RDM had around 1000 people working for them of which 300 people were still living on the northern banks of the Nieuwe Maas. They were forced to commute daily with the boat to their work. This created problems for the company with being able to deploy people day and night. They had to come up with a solution. This solution was to place housing on the southern banks as nearby to the company as possible. In 1906 they came up with this plan and in 1914 they build a housing area known as Heijplaat. By building housing for their employers RDM could also control them better. They had a better overview of what people did in their spare time. Besides controlling their employees, Heijplaat was also meant to attract a lot of new employees (de Gelder, 1916). In order for Heijplaat to work as a magnet for new employees, the housing and the neighbourhood had to be as attractive as possible. Even though the ambition was to design attractive housing, RDM had to make a trade-off between profit and comfortable homes with lots of outdoor space (Korthals Altes, 2004). This resulted with a high density that was remarkable for a garden village, consisting of 44 houses per hectare (Figure 4).

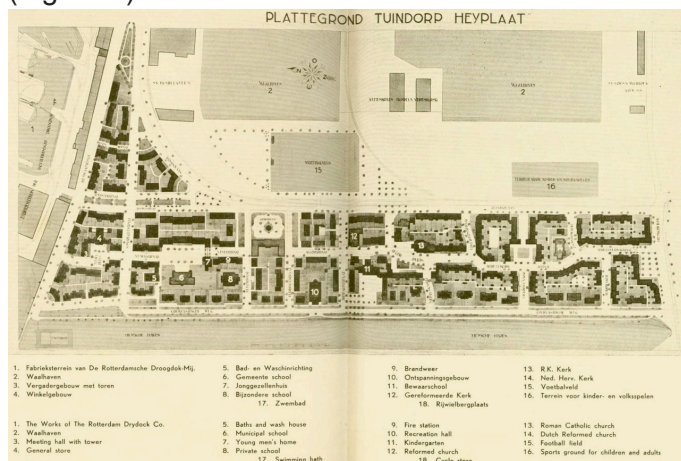


Figure 4, Urban plan Heijplaat. (Burgers, 2017)

For the design of the houses and the urban plan RDM hired the architect H.A.J. Baanders from Amsterdam. Based on a total concept, Baanders designed each

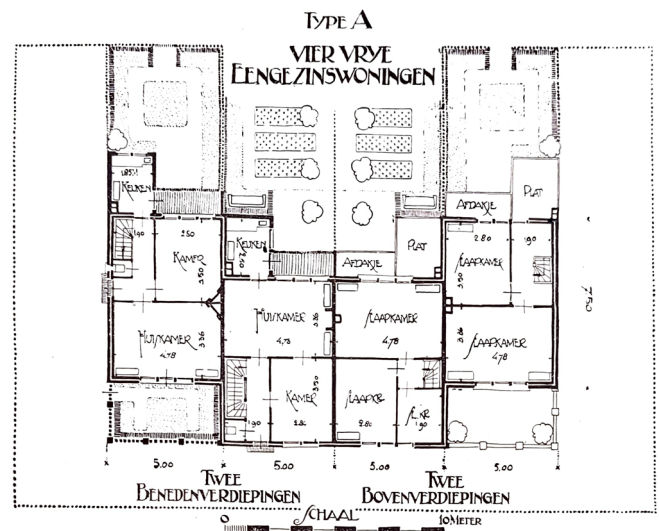


Figure 5, Housing typology A (Burgers, 2017)

house and did all the detailing for the houses himself. This resulted into a harmonious design. Even though almost all the houses have the same scale and size the architect tried to bring in some variation by experimenting with the facades and the rooflines of the houses (de Gelder, 1917). So even though almost all the houses have the same floorplan there is a lot of variation in appearance (For example of a house see figure 5). This gave the inhabitants a better sense of a personal home. The feeling of home and spending time at home was stimulated by the RDM. When workers wanted to spend time home after work this would mean that the workers didn't go to bars and therefore had a lower chance of becoming an alcoholic. Designing bigger houses helped with this ambition. Once houses became bigger with more rooms, the workers had space to relax after work (de Gelder, 1916). As a result of more rooms, but also better quality of outside space the children had more room to play, so they didn't need to play in the same room where father was getting some rest. Furthermore the houses had more light and fresh air. This was a big contrast with the one bedroom apartments which most people lived in before. There the darkness, uncomfortable spaces and poor air supply made sure that people wanted to escape their houses. The new houses made sure that people felt comfortable in their homes.

Once people moved into their new homes and Heijplaat became inhabited, the need for amenities was very high. This was because Heijplaat was situated completely isolated from other neighbourhoods and amenities. On top of that, in order to qualify as a garden city or garden village had to put in amenities. This would mean that the area functioned as a self-sustainable area. And again RDM wanted to attract new employees so Heijplaat needed to do as much as they could to make Heijplaat very attractive, so putting in amenities was one tool they used (de Gelder, 1916). So together with the building of the houses amenities facilities were set up, such as a school, a shop, a laundry and bathing building and a recreation building. As a means of social control gate houses were build. In this gate houses people were living who would check who was walking on the streets to make sure that no one suspicious was walking the streets but also to make sure that people living in Heijplaat were not out on the streets on weird times of the day or night. The recreation building was meant for social gatherings (Figure 6). There was also a stage so that theatre performances could be held there. And for the children a playground has been placed on the grounds of the recreation building. This building was also meant for men to come and relax after work, in short, another way to keep them out of the bars and away from becoming alcoholics. It was a replacement for a bar.

function of the bath and laundry house was, as the name of the building reveals, doing the laundry. Until now the laundry was done by hand and hung either inside or outside to dry. In this building for a small fee women could go and let their laundry be washed in a machine. Additionally if they wanted they could dry their clothes by a machine so that it did not need to dry inside for a whole day. This way the women saved time which they could spend on their children, on themselves or other tasks in their households. So Heijplaat had not only aspects that attracted merely the workers but was designed to please their families by making it an attractive place to live for women and children.

So to conclude RDM was a growing company that wanted to attract new workers and improve their way of living so that the workers in turn could improve the way they performed at work. So RDM had a very direct motive for providing good housing to the workers. This is a difference with Vreewijk where the people that started the initiative for Vreewijk would not directly profit from designing good housing. Nevertheless the garden villages are similar in headlines. They both were designed to teach the inhabitants some important life lessons. Where Vreewijk focusses mostly on how to do the household, Heijplaat focusses mostly on hygiene. So they both try to improve the life's of the people living there.

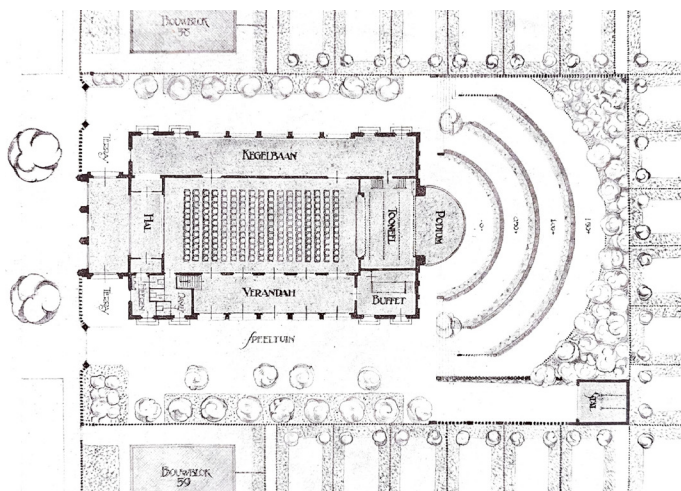


Figure 6, Recreation building (de Gelder, 1916)

One of the other amenities that was special was the collective bathing and laundry building. This building had a purpose to teach people about hygiene. In the end of the 19th century, hygiene was not something people knew or worried about. In the bathhouse people could for a small fee use the bath and showers (Korthals Altes, 2004). On top of that the inhabitants could request to put in an bathtub in the kitchen, however this was not free and very little people wanted to do this. This could be because of the yearly fee for the tube, but one other motivator could be the lack of understanding of how important personal hygiene was (de Gelder, 1916). The other

Chapter 4, Case study Marlot in the Hague

The living conditions in the Hague were very similar to the living conditions as in Rotterdam. However, the middle class of society was faced with a different problem, the housing supply for the middle class was very small. This is one of the reasons why shortly after the First World War the middle-class housing increased the most (Schut, 1939). The garden village of Marlot was one of the projects that increased the housing in the upperclass of this category. For this project the municipality of the Hague bought the grounds of the Marlot estate in the year 1917. These ground were estimated to be around 91 hectare. In 1923, around 33 hectare of these grounds were made available as ground lease for a housing project and the rest of the grounds were reserved to develop and keep as a park near the Marlot estate, close to Huis ten Bosch. The city administration of The Hague wanted the new neighbourhood to be one coherent design of the utmost architectonic quality. To this purpose the munical Department of Town Planning invited only three architects to design the houses for the new neighbourhood. These architects were all member of the Hague art circle where the building style of the New Hague School was launched, so this bond stimulated that their style in architecture was similar (Teunissen & Freijser, 2008). This is how Marlot became to be the showpiece of the mentioned architecture movement known as the New Hague School. In this movement the architecture is characterized by detailing, horizontal windows and brick facades with concrete bands in the masonry (Teunissen & van Vulpen, 2018).

The design process of the houses in Marlot was done in a unique way. The homeowners could have input on how their houses were going to look like in

details and spatial organisation. However, the rough outlines were fixed by sketches and not negotiable. The owner could go to one of the three architects and together with the architect make some design choices. These choices would be compared to the plans made at the beginning of the project. This was to make sure that Marlot would stay a coherent and harmonious neighbourhood (Teunissen & Freijser, 2008). One could say that the sketches the three architects made were a precursor to the image quality plan we have no a days to ensure that the cities and streets are coherent and the designs fit the surround buildings. For Marlot this was a good way for the homeowners to be able to adjust a home to their wishes and not put the design of the city in jeopardy.

To make Marlot an attractive place to live apart from a lot of thought and effort put in the houses there was also a lot of thought put into the urban plan. For the design of the urban plan the urban designer H.E. Suyver was involved, being the co-director of the municipal Department of Town Planning. There was no room for private initiative. So, the local government directed the development of this garden village right from the start. Suyver was inspired by Berlage and aspired to create a design with enough room for open green spaces, symmetrical lay-outs and long axes with views. These open spaces were designed as meeting places or greenspaces for people to be able to come to rest. De design included water features, parks, green squares and front gardens for each house. Also to enhance the green and park feeling of Marlot a lot of pergola's, planters and stairs were added to minimize the transitions between dwelling and outside space. The enhancement of park feeling continued into the designs of the dwellings. The pitched roofs, monumental chimneys and awnings on the corners of the street create the feeling of a cottage-style architecture (Figure 8 & 9).



Figure 7, Floorplan of a house in Marlot (Teunissen & Freijser, 2008)



Figure 8, Architecture of houses in Marlot (Teunissen & Freijser, 2008)

The garden village of Marlot was a very desirable place to live. People viewed the houses in Marlot as 'pocket-sized palaces' (Wesseling, 1924). There are different sizes in housing so that older and younger



Figure 9, Air picture of Marlot (Teunissen 2018)

people were attracted to the area. But it was mostly not the housing that attracted people according to the community newspaper from 1924 (Wesseling) but the atmosphere that Marlot provided. It felt like a place where people could find rest after a long day of work or a place where children could be raised peacefully and where they could play outside. The area was praised for the amount of flowers and the amount of sunshine let into the area. Looking at the first photos from Marlot it is not hard to imagine why the area was so beloved (Figure 8). There is a lot of open space and beautiful trees and plants. One can also see a lot of free standing building blocks and houses, however there is one exception in typology which is the Residential hotel of Marlot. This is a unique project by Co Brandes. Because of his popularity he was asked to design the second part of Marlot. The area of the part that was developed second was divided into bigger plots that were intended for eight large villa's. However there was not much interest for that and a building initiative for a large block of luxury apartments was brought in. The Welfare Committee could not accept the massive scale, so Co Brandes was asked to make a new design. He designed four lower building strips, linked to each in the basement. The rectangular block encloses an intimate courtyard and keeps distance to the other houses with surrounding spacious front gardens (Teunissen & Freijser, 2008).

Comparing Marlot to the previously mentioned garden villages there are a lot of differences to be found. Vreewijk and Heijplaat are garden villages designed to accommodate the needs of the working class better and to teach them how to live better. Marlot however is designed more as a villa-park in one specific building style. It does not provide the same amount of amenities and it does not have the same type of social control over the inhabitants as Vreewijk and Heijplaat do. Marlot is liberal and built to be more spacious and accommodate the needs of a higher class than Vreewijk and Heijplaat. This difference is made apparent in the typology name of Marlot, instead of garden village Marlot would also be

named a villa-park which suggest a more luxurious typology.

So to conclude Marlot is an area where the emphasis in design was put on the use of greenery and the use of open spaces. It was designed to feel peaceful and as a comfortable living environment. In contrast to garden cities or garden villages Marlot does not provide any social amenities but focuses mostly on the urban coherence and abundant housing designs. The cause for this is probably that the higher middleclass is living in Marlot and their need for social amenities or control willingly escaped the government control, quite the opposite to the lower classes. Even though Marlot does not provide a lot of amenities it can be concluded that it is an successful project since people enjoy living in Marlot.

Conclusion

The start of the 20th century was for some people a difficult time. The living conditions were poor, because of that people had a lot of health issues, there was an economic crisis and the effects of the First World War hit the Netherlands even though the Netherlands did not participate in the war. With all these downsides of that time period it is no wonder that people and organizations started initiatives to better lives. Changes in law, mentality or way of designing housing and urban plans helped to better the lives of people. In this conclusion we will walk through the changes and how they are visible in the case studies.

Change in law

At the start of the 20th century the first Housing Law of the Netherlands was introduced. Before the Housing Law investors put in as little money as possible into houses they developed. This resulted in unsafe homes, leaking houses and very tiny living spaces. The Housing Law was introduced to combat these problems and to force and help investors develop houses that are up to a better standard. It also provided better means to develop better housing. This is something that can be seen in the development of Vreewijk. The Housing Law helped secure the financing of Vreewijk. Without the Housing Law K. P. van de Mandele might never have been able to finance the project. Apart from the financing the Housing Law also changed some characteristics of a dwelling. The ventilation and light inside the house were improved. Each room now had direct access to a window. This can be seen in all three case studies.

Change in mentality

Improvements in peoples living conditions were usually done with the greater good in mind. People began to realize that living had an huge impact on the health and happiness of people. So when people had good living conditions they became healthier and happier which then had an positive impact on society. In the case studies the wish to improve the health and happiness of the working class had different motivations and implementations. In Vreewijk the motivation was mostly to better society. The implementation of that wish was mostly to help the working class to teach them how to live in a better way. This was done by controlling the way the household was done and monitoring what people did in Vreewijk. In Heijplaat the improvements of the living conditions of the working class was not done out of the goodness of people's hearts. Employers began to realize that when the workers are healthier and happier than their work improves. Because of

this employers did their best to better the hygiene of people which then in turn made them healthier. By making the houses lighter and more spacious workers could get some rest at home so they did not have to escape to a bar. And last but not least by creating an workers neighbourhood the employers had better control over the workers to make sure that they didn't do anything that put their working abilities at risk. Also by placing all the workers nearby it was easier for the employers to call on them whenever needed. In the case of Marlot there was no need to control and teach the inhabitants on how they were supposed to live. The middle and higher class people lived in Marlot and they mostly had their live in order and had no need for the extra control. However you still can see in Marlot that the design was made to improve the lives of the people even though their lives were not bad before.

Change in urban and housing design

In order to provide better housing and living conditions the way of designing had to change. A new design typology was introduced by Ebenezer Howard. He came up with the principle of garden cities. This is what inspired many architects and urban designers in the Netherlands. In the three case studies described in this thesis the references to the garden city movement are visible. In all the cases the use of green plays an important role. Most houses get their own garden and in the neighbourhood a lot more green open places can be found. The use of greenery was a way to escape the overcrowded cities and to make people feel as if they were living in a village. This feeling was meant to help create a community. Apart from the urban plan the housing plans also have changed. The houses provided a lot more space so that the children and the parents could sleep in separate rooms. Also a bathroom was introduced in many houses in order to provide better hygiene.

So to give an answer to the research question; 'Are garden villages an answer to the social and economic problems of the beginning of the 20th century and, if so, how is that reflected in the design?' the answer would be positive and it is mostly reflected in the green spacious designs which also provide a lot of amenities. One of the biggest problems of the start of the 20th century was that people lived in very poor conditions. So providing better housing, amenities and a peaceful environment the living conditions have been improved. Garden villages made people see that living in a better environment could improve people's health, happiness and that in turn helped society.

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