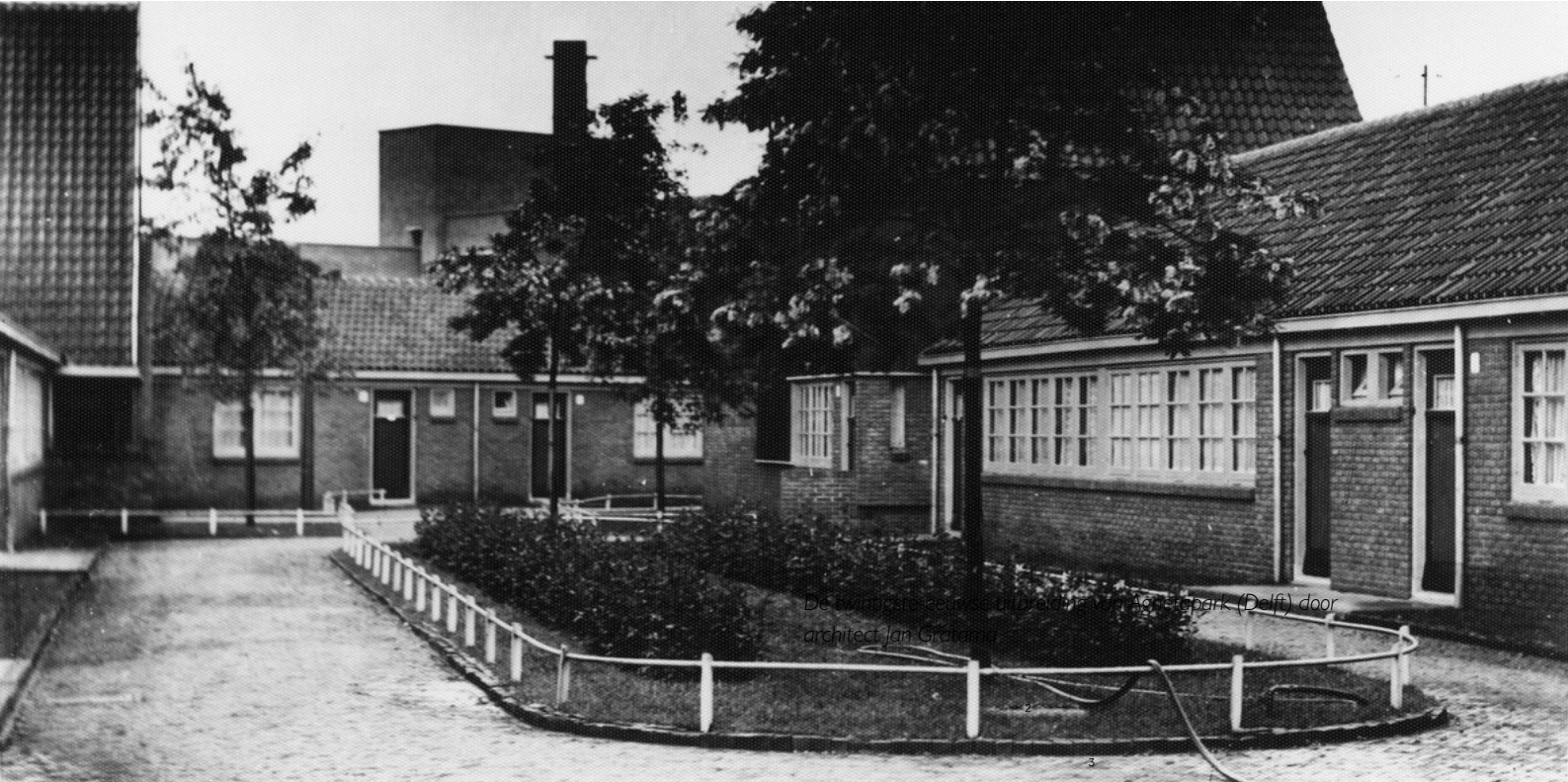


SUSTAINABLE DUDOK?

THE TRANSFORMATION OF THREE MONUMENTAL SOCIAL HOUSING COMPLEXES IN HILVERSUM

By Isabel Timmermans, October 5, 2022



De binnenplaats van de woningbouwcomplex Agrietpark (Delft) door architect Jan Gribanov

Courtyard in Hilversum Zuid (source: archief Gooi- en Vechtstreek)

Monuments need to become considerably more sustainable in the coming years. In social housing that also has monumental status, the challenge can be very great. In Hilversum, three monumental garden districts were made sustainable, most of them social housing. This article looks at the heritage values of monumental social housing in Hilversum, the preservation of those homes and how those transformations have taken place.

Monument owners face a major challenge in the coming years. The Paris climate agreement agreed in 2015 to reduce CO₂ emissions from the built environment by 95% by 2050.¹ Public and private monuments will have to become more sustainable in the coming years to meet these targets. Preferably without damaging the heritage values of the monuments, according to the Dutch Cultural Heritage Agency.² The central government's aim is to focus mainly on insulating buildings and generating energy sustainably. They aim to address those goals at the district level.³

ROLE OF HOUSING ASSOCIATIONS

Of the 7 million homes in the Netherlands, 2 million are owned by housing associations. They are of great influence in reducing CO₂ emissions.⁴ Aedes, the umbrella organisation of housing associations in the Netherlands, came up with a target in 2012 that by 2020, housing association homes in the Netherlands would own label B on average. This was included in the climate agreement by the minister of housing and housing supply in 2013.⁵ This proved to be a more difficult task after all; in 2020, the target was not yet 100% achieved.⁶

MONUMENTAL, SOCIAL HOUSING

An example of a city where the task of preserving monuments and social housing come together is Hilversum. This city consists largely of social housing. Dudok designed many of these houses. Because of the urban planning concept of the garden city idea applied to the monumental social housing in Hilversum, a large part falls under national protected cityscape.⁷ This makes heritage protection an important issue within sustainability. Housing corporations face two important tasks during renovation, making the houses more sustainable and preserving the heritage qualities of the houses.

¹ Lange Termijn Renovatiestrategie, Website RVO.

² Duurzaamheid van historische gebouwen, Website RCE.

³ Lange Termijn Renovatiestrategie, Website RVO.

⁴ Hassink, Woningcorporaties scoren slecht op verduurzaming, website Milieudefensie.

⁵ Energieakkoord voor duurzame groei, website Rijksoverheid.

⁶ Hassink, Woningcorporaties scoren slecht op verduurzaming, website Milieudefensie.

⁷ Beschermd stads- en dorpsgezichten, website RCE.

The monumentality of the housing complexes can be explained by several developments. At the end of the nineteenth century, a housing shortage arose in Hilversum. With the construction of the Oosterspoor railway in 1874, several factories settled in Hilversum, causing a huge population growth.⁸ Throughout the Netherlands, there was a scarcity of housing. In response, the Housing Act in 1901 and many additional houses were built in the early twentieth century. The garden city idea also had a strong influence on the design of social housing. These developments together, the Housing Act and the influence of the garden city idea, had a major impact on the development of neighbourhoods in Hilversum.

HOUSING ACT

In 1901, the Housing Act was passed in the Netherlands. The Housing Act came up with minimum requirements for rooms in newly built houses, making it possible to declare bad houses uninhabitable and to encourage the construction of good houses. Thus, public housing was encouraged and it became mandatory for large municipalities to draw up an expansion plan to be revised every 10 years.⁹

In Hilversum, both developments became well visible in the streetscape. This started as early as the beginning of the 20th century with the construction of a few housing estates, but from 1915 onwards housing complexes were built in large numbers under Dudok's supervision. As Director of Public Works and later municipal architect, he was responsible for revising the urban development plan drawn up by his predecessor in 1905. In 1918, Dudok came up with an urban expansion plan.¹⁰ In that plan, many housing complexes were set up according to the garden city idea. The future residents, the workers, were central.

THE GARDEN CITY CONCEPT

Since the early 20th century, the "Garden city movement" spread, aka the garden city idea according to Ebenezer Howard (1850-1928). He published his utopian vision in "Garden Cities of To-morrow" as a counter-movement to London's uncontrolled urban sprawl. He described the garden city as a self-sufficient, green social housing community where the busy city was relieved and a good environment for workers was created. Through international conferences and publications on the garden city idea, this movement also spread among Dutch architects and urban planners. The urban planning congress in Amsterdam in 1924 contributed greatly to this.¹¹

Although Howard saw the "Garden City" as a stand-alone city, it was interpreted differently in the Netherlands. In the Netherlands, there was less room to develop new cities alongside the existing ones. To prevent the Netherlands from becoming one big city, the relationships between city and the green space around it were seen as an important starting point for urban plans.¹² As a result, the concept in the Netherlands resulted more in garden villages and garden suburbs.

DUDOK'S INSPIRATIONS

Dudok drew inspiration from work by his colleague in the field, alderman for public works in Utrecht J.P. Fockema Andreae (1879-1949). Fockema Andreae saw the city as an organic whole, and argued that hygiene was an important issue in housing construction. But above all, the beauty of architecture should come first. This leaned towards the ideas according to fellow architect H. Kampffmeyer (1876-1932). He translated the ideas of the garden city movement into relationships between houses and streets. Indeed, narrower streets would promote social cohesion among lower dwellings.¹³ For him, the garden city idea meant designing a complete neighbourhood that included facilities such as parks, playing fields, schools, shops and essential public buildings.¹⁴ This is a translation that Dudok was comfortable with. Its application is also clearly visible in Hilversum neighbourhoods.¹⁵

URBAN EXPANSION PLAN

One of the key points within Dudok's designs, was the transition from the city to nature. This became even more apparent with the arrival of the expansion plan in 1933; this became the termination plan. In it, he announced the boundary of Hilversum.¹⁶ In retrospect, he stated the following: "I have striven all my life in urban planning not only to serve the interests of the expanding cities, but equally those of the rural area remaining between them, the gifted preservation of which is of eminent importance." For Dudok, the city was finite, and it was important that there was a good balance between housing and nature.¹⁷



Plan Oost, W.M. Dudok, 1927-1931 (source: Aanwijzing beschermd stadsgezicht Oost)

⁸ Koenders, Hilversum: Architectuur en Stedenbouw 1850-1940, 12.

⁹ Wet houdende wettelijke bepalingen betreffende de volkshuisvesting, Delpher.

¹⁰ Koenders, Hilversum: Architectuur en Stedenbouw 1850-1940, 27.

¹¹ Schram, Doevendans, Plannen over grenzen heen, 105.

¹² Schram, Doevendans, Plannen over grenzen heen, 110.

¹³ Dudok, Brief aan B&W Hilversum, 2.

¹⁴ Beschermd stadsgezicht Hilversum Oost, website RCE.

¹⁵ Beschermd stadsgezicht Hilversum Zuid, website RCE.

¹⁶ Koenders, Hilversum: Architectuur en Stedenbouw 1850-1940, 31.

¹⁷ Koenders, Dudok, 53.



"Boekensteun" ("Bookend") Dudok, Hilversum Oost (Archief Gooi en Vechtstreek)

BEAUTY

The balance between building and nature was evident in architecture and urban planning. Dudok's main concern was that the architecture should be of high value. In one of his first correspondences with the board of B&W of the municipality of Hilversum, he clearly addressed his vision of future social housing: "For we live in a time, when not only are clear ideas about hygiene and social rights and needs more and more pervasive and laid down in beneficial legislation, but another need has gradually arisen: a need for beauty."¹⁸

That beauty would contribute to the worker's happiness in life, according to Dudok. From 1915, several housing corporations were busy creating designs that matched the vision of Dudok's urban plan. The houses fit together as a whole through the interplay of horizontal window frames with vertical interruptions. Dudok's 'bookend' is an example of a corner solution where horizontal lines and vertical interruptions interact.

BLOEMENBUURT, ELECTROBUURT AND LIEBERGEN

Three neighbourhoods consisting largely of social housing complexes in Hilversum have undergone transformations over the past 15 years. The Bloemenbuurt, Electrobuurt and Liebergen are the three neighbourhoods that have been transformed.

The Bloemenbuurt is located in Hilversum South and is part of the cityscape, designated by Rijksdienst voor het Cultureel Erfgoed. The Electrobuurt is in Hilversum East, and falls just outside the protected cityscape. Liebergen is also in Hilversum East, but does fall within the protected cityscape.¹⁹ The transformation involves renovating homes, but also rebuilding it. The transformation also included steps towards sustainability.

RENOVATION BLOEMENBUURT

In the Bloemenbuurt neighbourhood, nothing had been done to the houses for 30 to 40 years. Therefore, major maintenance was already on the planning and the choice was made to restore to the original state of the houses. Between 2011 and 2018, a total of 571 houses were renovated. This renovation mainly involved restoring the facades of the houses to their original appearance with corresponding style features. The focus was mainly on the window frames with rod division and front doors, which had disappeared due to previous renovations. Window frames and doors were renewed and painted in the old colour, based on the original drawings. The single glass was also replaced for monumental glass, also known as HR++ glass. Besides renovating the facade, the inside was also renovated after about 40 years.



Houses in Bloemenbuurt before the renovation. (Aalbrechts bouw)

¹⁸ Dudok, Brief aan B&W Hilversum, 2.

¹⁹ Beschermd stadsgezicht, website RCE.

²⁰ Dudok Wonen viert renovatie Bloemenbuurt Zuid, Website Dudok Wonen.



Banner from residents in the Electrobuurt: 'Mayor do not grant demolition permit' (photo website Woning-corporatie Gooi en Omstreken)

OPTIONAL IMPROVEMENTS

The residents were given several additional options to choose from by the housing association. They could choose to replace the bathroom and kitchen, with no rent increase. There was also an option to insulate the entire house better, which did come with a rent increase. Wouter Weijer, project manager at Dudok Wonen of the Bloemenbuurt, said the following about this: "Of the 571 homes, only 35 chose the option to have the house insulated at the time. Now the thinking about insulating is different though, these days we get calls from tenants asking: when can my house be insulated?"²¹ The thinking during this restoration a few years back, versus today's awareness of energy transformation, seems to have changed a lot already.

RENOVATION ELECTROBUURT

At the Electro neighbourhood, at the turn of the century, plans were made to demolish the neighbourhood and put up new buildings. As these plans were made, the housing corporation set aside a lot of money. In 2008-2009, only emergency maintenance was carried out. Once an occupant left, no new occupant was sought in view of the fact that the houses would have to be demolished after a few years.

In 2009, residents rebelled strongly against the demolition, with success. The demolition permit was revoked and the neighbourhood was designated a municipal monument. Because the houses had not only been saved from demolition but had also received municipal monument status, there was a lot of focus on the heritage values of the houses during the renovation.

The aesthetics committee wanted to return the houses to the original designs of Dudok and others, while residents wanted to preserve the existing state of the houses. The housing corporation Het Gooi en Omstreken stood in between. Project manager Martin Groot Kormelinck therefore saw himself as a "mediator between the wishes of the residents and those of the municipality."²²

²¹ Interview Wouter Weijer, Dudok Wonen.

²² Interview Martin Groot Kormelinck, Woningcorporatie Gooi en Omstreken.

COMPROMISE

An example of such a compromise was the replacement of the window frames. From the municipality's point of view, the aim was to have a rod arrangement as it was originally. The residents had already had large, open windows since the 1980s. The large windows would not be put back. "In the end, the golden mean was sought with the residents, representative of the municipality and the restoration architect. Two options were presented, one with a rod division and one with a six-pane division.

There, Archivolt discovered that the building materials of the houses were in deplorable condition, so choosing to renovate would mean replacing almost everything. The choice was then made to demolish and rebuild all the houses. The heritage department of Hilversum municipality then encouraged building it back in Dudok's style. Hilversum municipality then encouraged building it back in Dudok's style. For Hans Ruijsenaars, that was also the only logical option. He tried to make Dudok's qualities his own, from urban planning vision to detailing.



Electrobuurt na de renovatie (website World Garden Cities)

It then became the latter," says project manager Martin.

In addition, the houses have been made more sustainable. A thin layer of insulation applied on the inside was chosen, combined with an air-conditioning system that provides ventilation and heating. The climate system mainly ensures that the houses were labelled with label B. Apart from that, the sustainability was actually minimal.

"DUDOK REVISITED" IN LIEBERGEN

About the Liebergen neighbourhood, supervisor Hans Ruijsenaars stated the following: "Liebergen was in bad shape. During night frosts, grit fell off the bricks. Due to chipping, the 80-year-old brick became thinner and thinner. Also, the house partition walls were thin and not plastered properly, you could talk through them. Then you had better turn on the same television programme, otherwise you couldn't follow it."²³

Architectural firm Archivolt also argued that the houses were of poor quality. They started by refurbishing a housing complex on Spreeuwstraat, as the beginning of a series of housing developments complexes that would be renovated.

As a result, he began to understand how Dudok made certain choices.²⁴ The reconstruction of the neighbourhood was called "Dudok Revisited".

The area became too big for one architectural firm to work on. Therefore, Ruijsenaars chose a total of three firms to design new housing complexes in Dudok's style. Because Dudok was employed by the Hilversum municipality, the construction drawings have always been well preserved. The designs for new buildings are based on the original drawings. "With every block we realised, we looked closely at how Dudok was drawing at the time. Because that is also Dudok's strength, he developed within his own work over the years," states Frans Huijting, restoration architect at Archivolt Architects.²⁵

²³ Interview Hans Ruijsenaars.

²⁴ Interview met Hans Ruijsenaars.

²⁵ Interview met Frans Huijting, Archivolt Architecten.



Liebergen after renovation (website architectenbureau Braaksma en Roos)

NEW HOMES. OLD DESIGN

The houses look broadly the same on the outside, but on the inside, the houses have become larger in both length and width. This is easy to see from the cross-sections. If you start counting the number of front doors, you will see that in the old situation there were 24 dwellings, and in the new construction there are still 22.

One of the reasons for choosing larger houses was the building code; the houses from the 1920s were simply too small in size. With a larger house a small part of the garden, which used to be for growing vegetables, also disappeared. The houses were insulated above the norm at the time; Dudok living deliberately chose this. Dudok Revisited was a radical, large project. Considerable investment was made to reinstate the homes in Dudok's style, so they aimed to ensure that the new homes would last a long time.

REFLECTION ON THE TRANSFORMATIONS

It can be argued that they have all taken a step forward, achieving energy label B. Achieving energy label B is not yet progressive enough to meet the climate targets set by the Paris Climate Agreement in 2015. There was a focus on sustainability during the transformations, but the ambition was more on restoring cultural-historical values, making sustainability an afterthought.

OBSTACLES

That those ambitions were not higher can be explained by a number of factors. The houses are over 100 years old and therefore smaller than houses being built today.

As a result, it is difficult to attach much insulation on the inside, as this comes at the expense of living space.

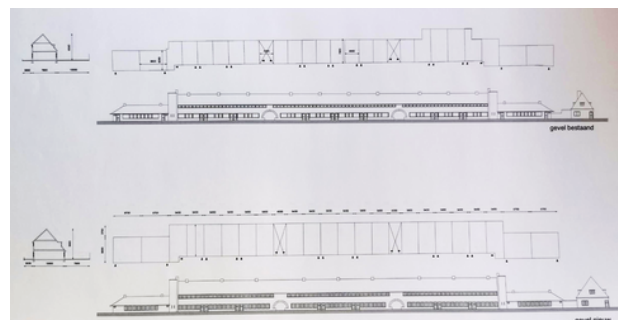
Also, climate systems - besides taking up a lot of space - are currently too pricey to purchase for every home. However, tests are being conducted for this. For instance, in the Bloemen neighbourhood, Dudok Wonen conducted an experiment with a shared heat pump, which was interconnected through the houses were connected. "That was a one-off action for us though, it was very expensive to realise," states Wouter Weijer of Dudok Wonen. For social housing complexes, however, we are looking into whether collective solar panels could be a solution. These could then generate energy for an entire neighbourhood, but thereby not affect the red roof landscape.

Various discoveries have been made per neighbourhood, which are not directly related to making homes more sustainable and CO2-neutral. However, they are insights that in the can improve the transformation of social housing.

After a long time with no renovations carried out, the houses in the Bloemenbuurt neighbourhood were looked behind the front door. Here, the housing association sometimes came across distressing situations encountered, for which they called in social assistance. Since then, the housing corporation has been aware of its social responsibility, so more attention has been paid to good contact with residents.²⁶

At the Electrobuurt, a golden mean was sought during renovation in which both residents and municipality would be satisfied. The interaction between monumental heritage values and residents' wishes seems unique. Social cohesion had a big place in renovating the neighbourhood.

The transformation of Liebergen shows that preserving the urban grid and, broadly speaking, the structure of the houses, ensures that the neighbourhood gets a new impetus. Almost 70 per cent of residents wanted to move into a new-build house on the same site after demolishing their own house. The similar design of the neighbourhood meant that after the transformation the close bond among residents could be continued.



Cross sections old and new situation (Archive Hans Ruijsseenaars)

²⁶ Interview Wouter Weijer, Dudok Wonen.

SOCIAL SUSTAINABILITY

The concept of sustainability can be understood in a context of making housing climate-neutral, but can also be interpreted in other ways. The preservation of the urban planning structure, set up according to the garden city concept, creates a sustainable living environment on several levels. The communal greenery, the social nooks and crannies and the beauty of the homes make them special for residents, making them feel one as a neighbourhood. For example, Hans Ruijsenaars talks about the consideration of demolition as follows:

"In Liebergen we demolished houses, but then I made sure that the new houses could last a long time and that the love in the neighbourhood returned. That was worth more than the cost consideration. If you built other houses, you wouldn't have the love anymore. With that, the sustainability of the neighbourhood would lose its meaning."

The three cases in Hilversum show that making social housing sustainable goes hand in hand with preserving the concept the garden city idea, transforming neighbourhoods into sustainable, loving places.

SUSTAINABLE?

In all three cases, housing complexes have become more sustainable, but quite limited. The urgency to make them more sustainable is increasing and needs to be more rigorous. It is important that more attention is paid to making these social housing developments more sustainable, both in laying ambition and dealing with heritage values.

In the coming years, striving for climate-neutral housing will have to be high on the list. It can be concluded that the term preservation is often used but will always have to be critically examined. In the case of previous case studies, sustainability has indeed been achieved, but the steps will still need to be greater to meet climate targets.

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