

# The Pelgromhof

Zevenaar, the Netherlands, 1998-2001



## Introduction

This project is located in the town center of Zevenaar (32000). It incorporates 169 support-infill apartments for elderly, a parking garage for 86 cars and a nucleus of 46 nursing rooms, designed for assisted and intramural care giving, a restaurant, a kitchen, a chapel, a theater, a shop and a library.

The Pelgromhof has been developed in the rental sector by the local housing association 'Baston Wonen', previously ASWZ, and the care foundation 'Pelgrom', today 'Pleyade'. It was selected as 'National Model of Sustainable and Energy-efficient Construction', nominated for the 'Dutch Building Award', became finalist of the 'World Habitat Awards 2004', and received the 'Experimental Status' of the Dutch government.

As a follow up to our earlier support-infill experiences in Papendrecht, Utrecht, Rotterdam and Enschede, this project focuses in particular on:

- Open building in organic architecture, a freedom of form.
- Sustainable construction: Natural paints, pressed lime-sand walls, heat-pump boilers, advanced floor heating and new digital energy and information management.
- Life-time guaranteed housing, accessibility for senior citizens, adaptability in the future and tailored care.
- Dwellings of many different forms to be filled in, in dialogue with the users.
- Adaptable floor-heating and zones of drains in screed floor.



- A safe, tranquil, yet vital green environment for elderly in the town center. A site featuring abundant plantings in ponds, beds and on external walls and roofs in addition to air purification, flowing water and a diversity of flora and fauna.

## The site plan

The project is realized in the town center near the remaining foundations of an historic castle, close to a market square, post office, town hall and railway station. It contains 169 apartments, a care center of 46 nursing rooms and services and a parking garage in the basement. It forms the courtyard 'Pelgromhof' and also a corner of the square 'Masiusplein'.



Courtyard 'Pelgromhof' and square 'Masiusplein' in the town center of Zevenaar.

The general purpose of the project is to offer elderly people an affordable, independent living opportunity in a quiet and safe, but lively environment. Here they may enjoy the facility of a care center with nursing rooms, restaurant, large kitchen, chapel, a hall-theater, community rooms, a hairdresser and other services.

That is why the care center and the apartments are built in the middle of the town, around a courtyard, the Pelgromhof, and along a square, Masiusplein, not far from shops, marketplace, post office, town hall and a castle, surrounded by a green wall. The quiet common courtyard is open during the day and landscaped as a public garden, with trees, a bridge, a birdcage, and a beautiful garden with flowing water.





An oasis vitalized by water, trees, plants, birds, insects etc.



The restaurant of the care center and independent apartments around the green courtyard.





Water flows from the third via the second floor through flow-forms into the pond of the yard.



Second floor with a water basin on the roof of the restaurant.



Entrance to the apartments



A gallery





Galleries along the courtyard have masoned balconies on outdoor columns that are overgrown with creepers.

The organic architecture follows the shapes of existing streets, validates the existing squares and rounds full-grown trees.



From the apartments and the rooms of the care center the residents are connected to comings and goings of daily life in the streets and squares around the project, the corner parts with the best views have more floors.





Here apartments are connected to the planted castle wall, on the left, with special windows and balconies to catch sunshine and enjoy the view of the greenery.



This passage between the courtyard and the square 'Masiusplein' is closed by night.





The 'Masiusplein' apartments on one corner of the square. Creepers along the outdoor columns of the galleries create a green curtain, without damaging the facades of the dwellings.

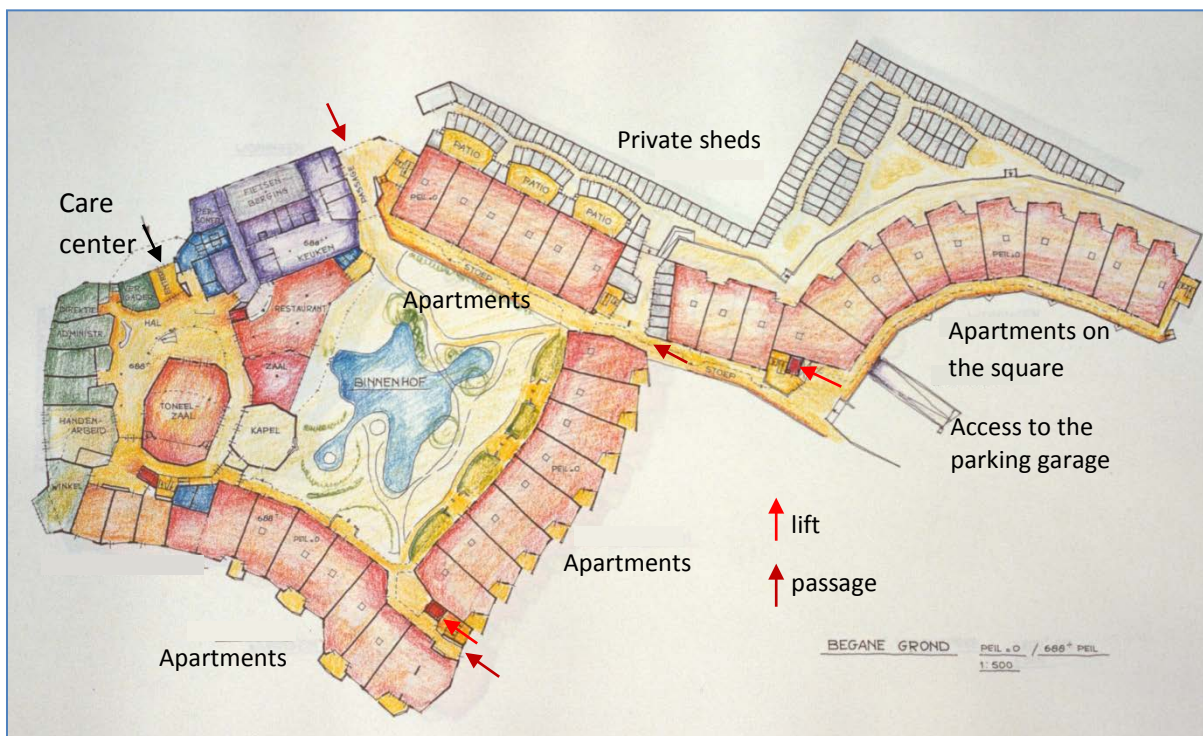
## Support Structure



Artist view of the Pelgromhof project.

On the north-east of the project we find the entrance of the care center with a hall, a theatre, a chapel, a hairdresser, activity rooms, a large kitchen and a restaurant, that opens to a terrace in the courtyard.

Three narrow passages allow free entrance for pedestrians during the day; on two corners residents find their entry to an elevator and stairwell. From Masiusplein a ramp leads to the basement with a parking garage for 80 cars.



Plan of the ground floor.

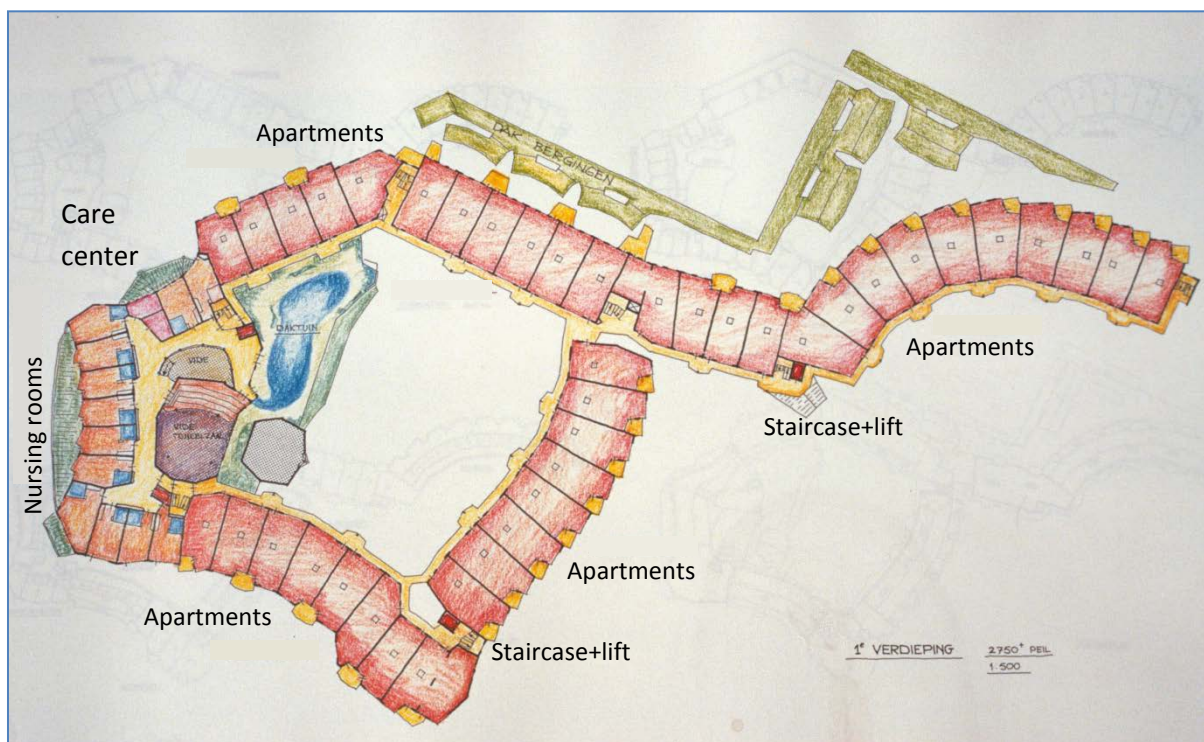


The 169 *apartments* have been built as a sustainable *support/infill* project. The main walls of the support structure stand perpendicular to the facades. They are made of pressed lime-sand blocks and have two 'fontanels', not-bearing parts that might be opened in the future to allow a re-parcellation of the structure in larger units.

The floors are made of precast concrete slabs, while the galleries, balconies and columns are prefabricated in concrete. The wooden roofs are covered by sedum plants.

The facades are composed by inner and outer walls with glass-wool in between: the inner walls are made of pressed lime-sand blocks and the outer walls are masoned in bricks.

The organic architecture led to a multitude of construction forms. They only were feasible and affordable through an adjustment by the computer in the process of designing, prefabrication, setting and execution. The dimensional coordination, including the modular 30cm grid, was of great use in the fine tuning of design and application, to say nothing about the infill practice.



2nd floor plan

### Long Galleries

The apartments are accessed by long galleries:

1. They facilitate the re-parcellation of units in the future.
2. They strengthen the contact of neighbors because the apartment entrances are visible.
3. Long galleries are cheap because they give access to a large number of units which limits the number of stairwells, that are costly and require space.

On each floor the galleries are linked to the corridors of the care center. This allows the residents an easy access to the restaurant, the chapel and other services of the center.

Caregivers go just like that to the apartments to bring mail, offer help etc..



## Public Balconies

Facing the front doors of two adjacent homes the gallery is enlarged to common 'balconies'. Neighbors and visitors can sit there for a talk and a drink.

Those enlargements of the galleries are very useful for the passing of rollators, wheelchairs and scooters, and facilitate on occasion the handling of ambulance stretchers and difficult pieces of furniture.



The balustrades of the balconies are made of brickwork to secure the feeling of safety.

## The shaft, heat pump boiler, floor heating, light and drains.

The shaft and a heat-pump boiler are the central support facilities of each apartment. The shaft contains the vertical drain, ventilation and the collective pipes and wires for water and electricity. The positioning had to be chosen carefully in order to allow an interesting range of dwelling lay-outs. A closet with a heat pump boiler is placed against the shaft. The boiler gets

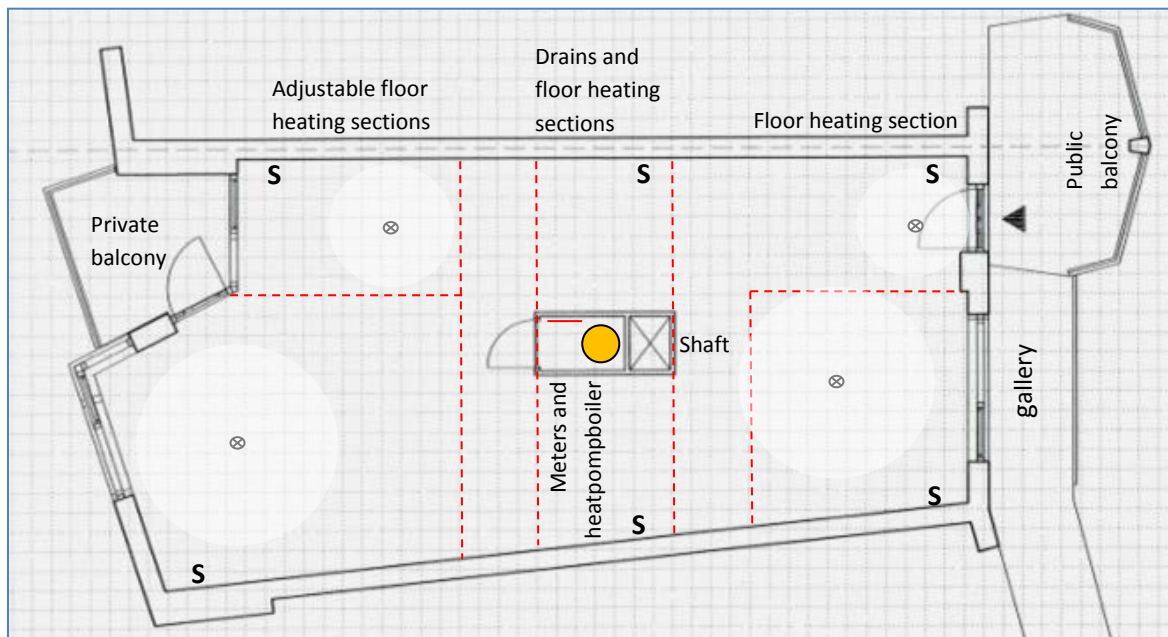


Open shaft and an open section in the screed floor for drains and the closet with the heatpump boiler.



its temperature from indoor air and electric energy, and is used for floor heating and hot water supply. The distributor of floor heating and the meters of water and electricity are placed in the same closet.

An apartment get its heat independent of its lay-out, simply by *adjustable* underfloor heating in sections of the screed floor near the facades. Those sections are strategically placed near the windows and doors through which most of the cold enters.



An empty apartment with light spots, electric wall sockets (S) and sections of screed floor heating and drains. Note the 30cm grid in the drawing.

The Pelgromhof is a project for the elderly. Thus no shower trays or raised bathroom floors are acceptable to solve the problem of the shower drain. The apartment floor should be flat and wheelchair secured, but existing systems of raised apartment floors were too expensive within the budget of this social housing project.

This is why in the middle of the dwellings special sections of the screed floors near the shaft, were kept open until a user had decided on the layout of his dwelling. Only then the shower drains were installed, whereupon that particular section could be finished with the screed layer. If a user wants to change the place of a shower on a later point in time, the drain can be replaced by opening part of the screed floor and repair it without touching the basic construction.

This idea is the result of the simple fact that in affordable apartments bath rooms are localized in the central area of a dwelling to save costs. For façades are costly and so are spaces near them.

Electricity junctions for lights have been fixed in the ceilings near facades, doors and windows, in areas that need artificial light. Other lighting is fed from the shaft by cables in the infill partitions. Electricity sockets (S) have been fixed in the middle of the support walls and near the facades.

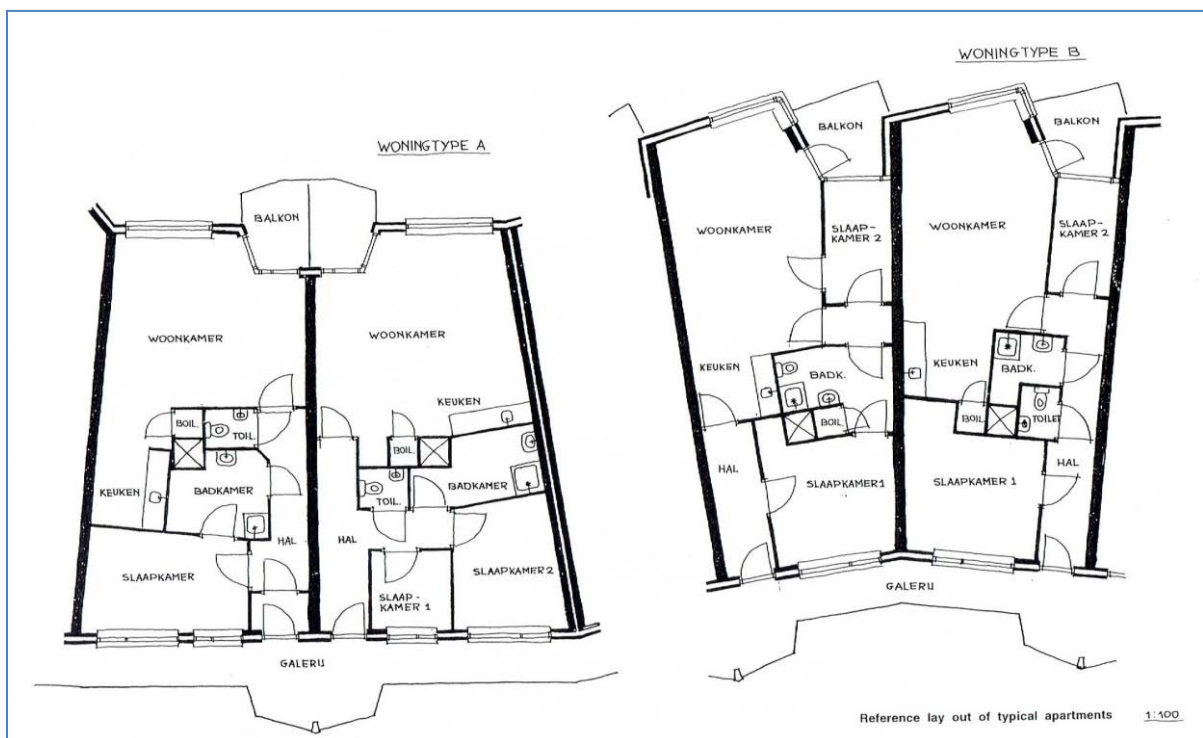


# Infill

## Reference floor plans.

Although the project received the 'Experimental Status' of the Dutch government, the capacity of the different units had to be known to get the official approval. For that purpose the so called reference lay-outs of the fundamentally different apartments were made. Those plans reflected the regulations for public housing. Those reference lay-outs also served as a base for the cost calculation.

Moreover they provided an indication to the housing association and city officials about infill possibilities, important during the allocation of dwellings to the aspirant occupants. In some cases they have been implemented, but most users decided about a specific lay-out according to their wishes, different from the reference plans.



Reference layouts of typical apartments. Left about 67,5m<sup>2</sup>, right about 74m<sup>2</sup>.

## Infill sessions

Just before building, the housing association hesitated to be engaged in the user participation process. But some staff members did an infill exercise during the weekend on a fictive apartment, and when they compared their results of their homework they discovered how different the outcomes were. That experience convinced to continue and a few weeks later the infill process was started for real.

Like in our earlier projects users were individually invited to 2 consultation meetings at the office of the housing association. Personal wishes were most important. What were people going to use their private allocated space for? Sitting, cooking, playing? Should the toilet be located apart from the bathroom? Private hobbies such as cooking, painting or handicraft created a need for extra space and services for water or electricity.



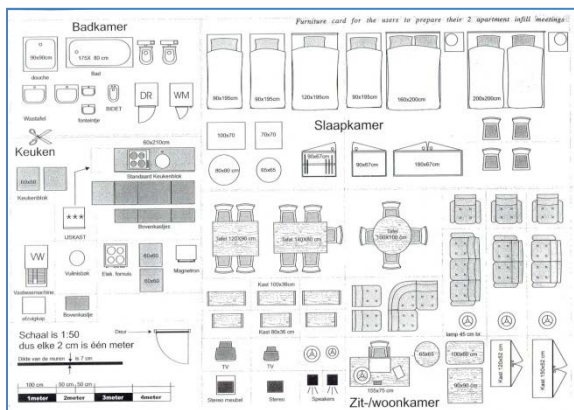


Consultation at the office of housing association.

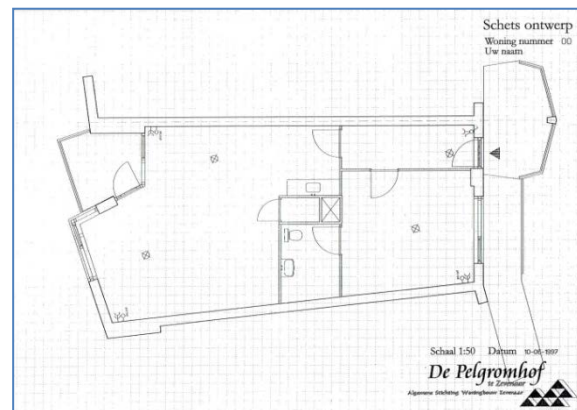


The true size model with walls, doors and furniture.

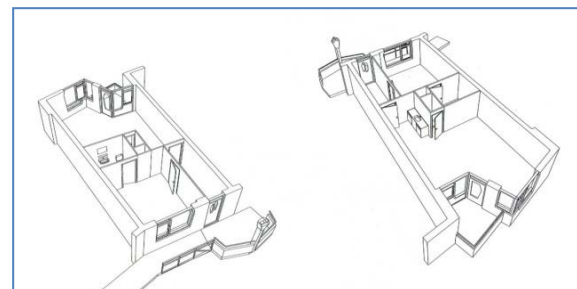
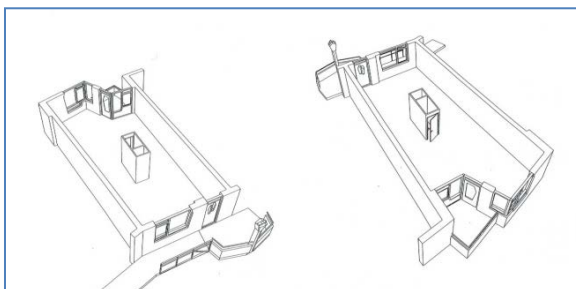
During the sessions a consultant designed a dwelling lay-out in dialogue with a family who prepared themselves by cutting their furniture from the card on the same scale 1:50. After session one they tried the sketches in a true size model.



Furniture card to understand dimensions.



A simple infill lay-out.

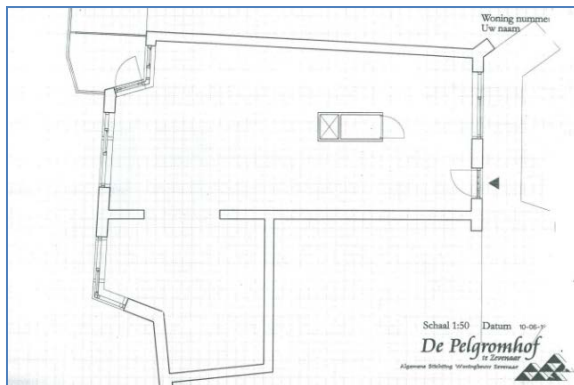


Regarding the building practice, the consultants of the infill sessions had to take into account some preconditions: All doors had to measure a width of 93cm for the passing of wheelchairs. Bathroom and toilet had to adjoin the central shaft and also a kitchen block had to relate to the shaft without passing doors.

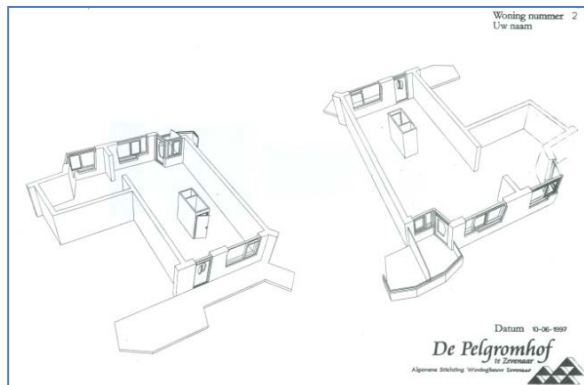
In this project with its restricted dimensions, the freedom to decide on priorities showed the advantage of Open Building, and the fact that elderly people often deal with physical and mental issues proved all the more the benefit of the infill flexibility.



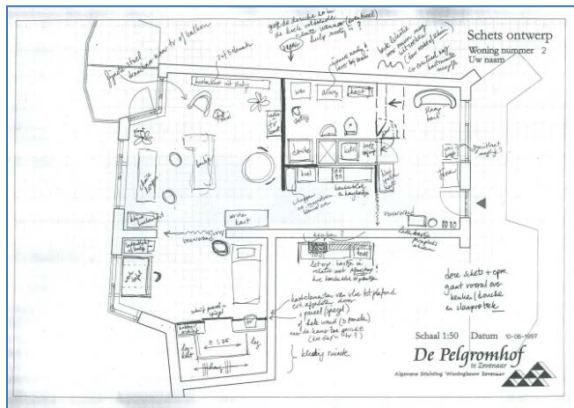
## Process of an infill plan



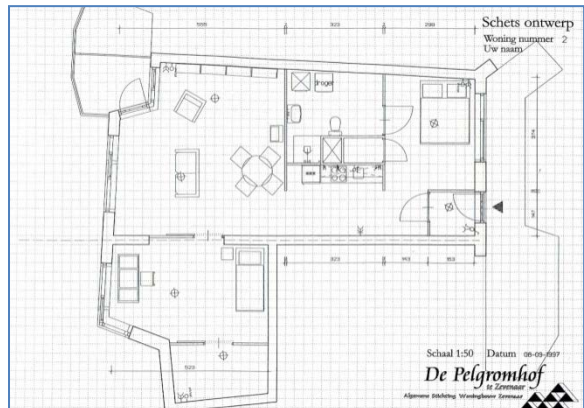
10-06-1997 The empty unit with open 'fontanel'.



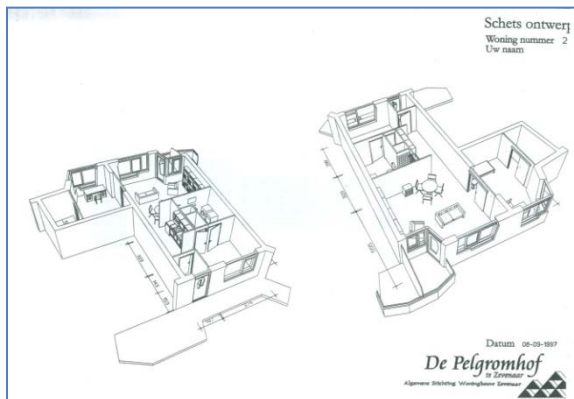
The same in 3D.



Remarks by the occupant during the first session.



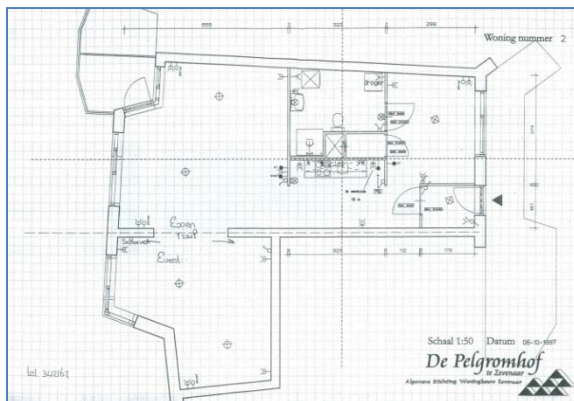
08-09-1997 A first infill plan on the computer



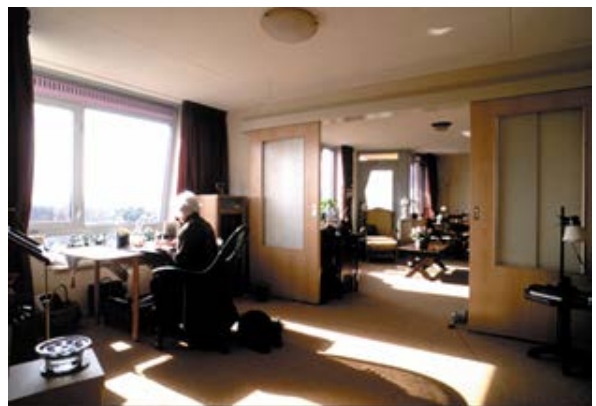
08-09-1997 first plan in 3D presentation



Further ideas of the occupant.



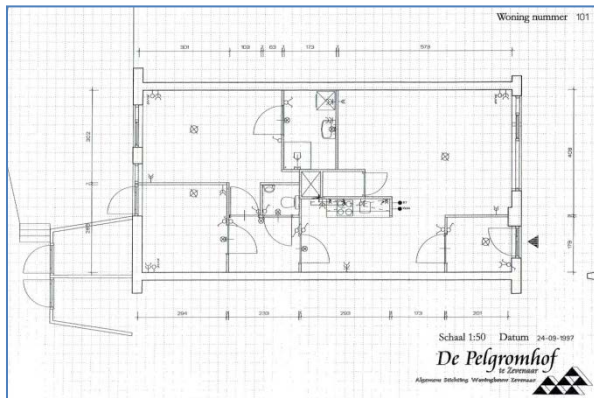
06-10-1997 Final infill plan.



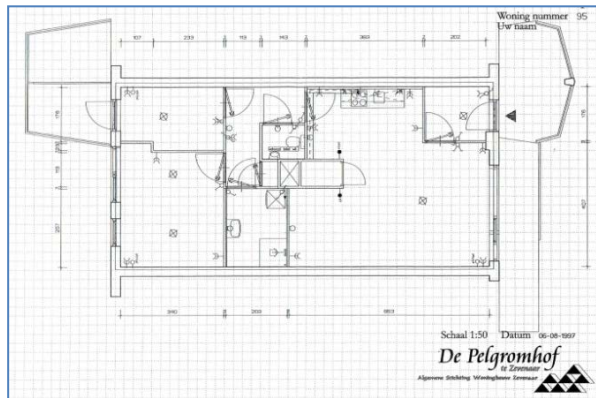
Occupant at work. Sliding doors open fontanel.



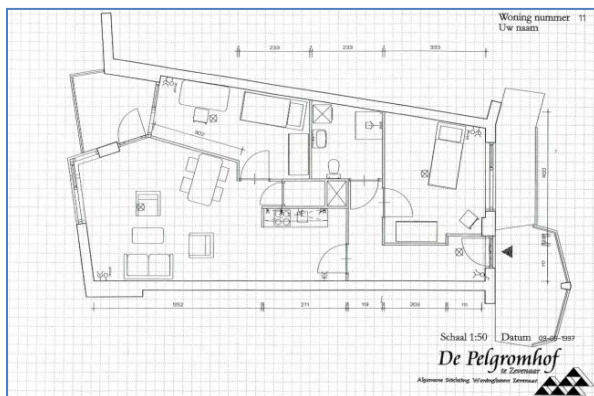
## Some more infill examples



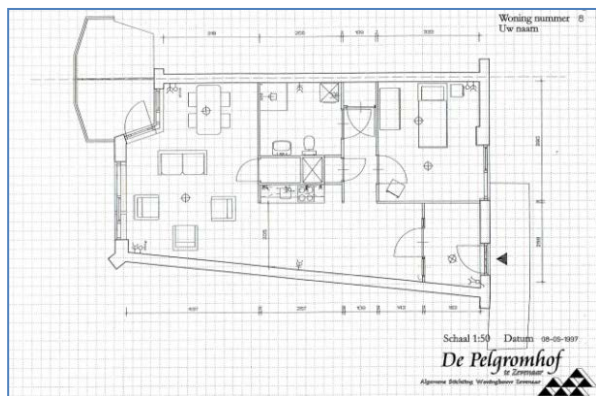
A rectangular plan on the ground floor.



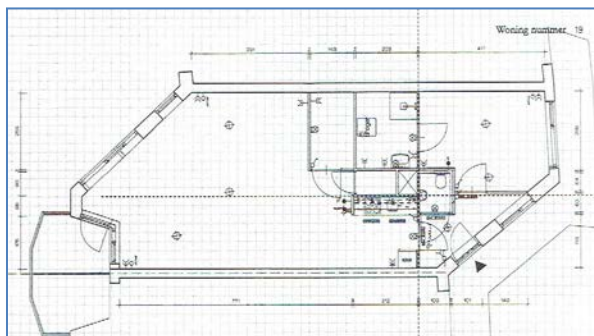
Another rectangular apartment on the first floor.



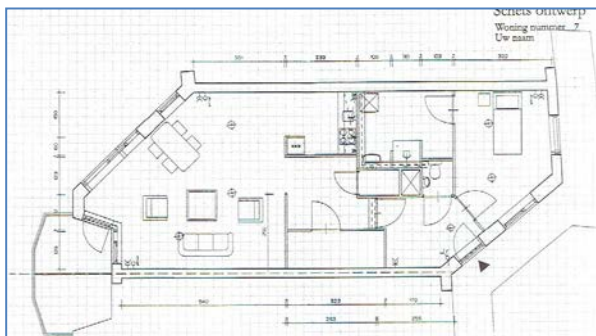
Free form, most partitions are placed on the grid.



Another apartment form.



An exceptional form



A variant



And its interior



View through glass to the front door.



# Thoughts about Architecture



Papendrecht, 1978



Utrecht, 1981



Rotterdam, 1985

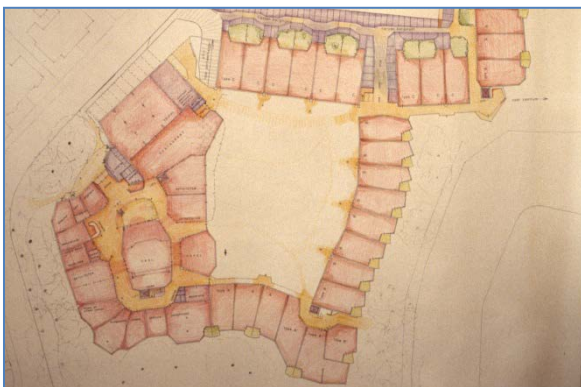


Enschede, 1989

Our projects in Papendrecht, Utrecht, Rotterdam and Enschede focused on the application of open building. on the levels of Urban Tissue, Support Structure and Infill.

Because we know that architecture has an influence on our well being we employed *The Pattern Language* as a tool for communication on quality of spaces related to the quality of daily life. On the level of urban tissue public spaces, like streets, have been discussed with municipalities, for instance in the pattern “Low rise courtyards”. Designing supports we discussed with housing associations common spaces in patterns as “Balconies on long galleries”. And on the level of infill, user participation found its way to a better organization and smarter tools like the furniture card, the full scale model and the drawing/cost calculation. In the book *Open Ontwerpen, 1993 (Open Design)* I reported in detail about those projects.

The ‘Pelgromhof’ project aimed more. A course on ‘Integral bio-ecological architecture’ opened a world of *sustainable* construction materials and systems, introduced natural paints, heat pumps, water management, electro-magnetic fields and more. But also the architectural *form* came more in the picture. In his extensive study ‘Organische Architectuur’, architect prof. Pieter van der Ree explains how leading architects of the 20<sup>th</sup> century like Wright and Gaudi, considered the “aliveness of nature” an important point of reference and inspiration. In his opinion their work belongs to the most loved and appreciated architecture of our time, an architecture that is not only functional but that appeals to our feelings and imagination. For me the main inspiration was, like in nature, the form freedom and the form nuances, to apply in streets, rooms, halls, floors, walls, ceilings, roofs, doors, windows, etcetera. For example, a walk through a corridor could become more interesting when the form is not all along rectangular but differs in width, changes gently its direction, varies in views and brightness and leads the movement of the walker.



1<sup>st</sup> sketch of the ground floor.



Air view.



The Pelgromhof was designed in this 'organic' way, preserving the earlier experiences. It appeared an appropriate, functional and affordable social housing project. And people love it more than the other projects. The quiet green courtyard with the private entrances of apartments appears to be a nice answer for elderly who live in a town center, while from within the apartments residents have a view on life in the city. After years of living occupants still discover details. They appreciate the plantings in the yard and the changing colors of the vegetation on the roofs during the turn of the seasons. The project respond easily to the form of surrounding spaces and offers special experiences when walking through the passages into the courtyard. The differentiated form of the support structure could house more units than was asked for, which generated budget for a rich landscaping of the courtyard.

## References

### REFERENCES in English

St. Kendall and J. Teicher, *Residential Open Building*, E & FN Spon, London, (2000), 149-153  
Anke van Hall, *Opting for Change, Sustainable Building in the Netherlands*, Aeneas Technical publishers(2000), Best, Netherlands, 38 – 41.  
SEV and Novem, *Sustainable Building, Framework for the Future*, , Rotterdam, (October 2000), 116.  
[www.bshf.org/world-habitat-awards/winners-and-finalists/the-pelgromhof](http://www.bshf.org/world-habitat-awards/winners-and-finalists/the-pelgromhof).

### REFERENCES in French

Habitat senior en écoconstruction aux Pays Bas et en Suède – novembre 2002.  
Habitat senior en Hollande, 29 september 2003, Habitat et Participation, Les Cantus, 10-15.  
Julie Barbeillon, *Immeuble participatif*, 'La Maison Ecologique', no. 39, juin-juillet 2007, 18-21.

### REFERENCES in Dutch

Adviesbureau Nieman, De Pelgromhof, Evaluatierapprt DUBO Voorbeeld project W017, Utrecht, Juni 1997.  
Anke van Hall, *Kiezen voor Verandering, Duurzaam Bouwen in Nederland*, Aeneas Technical publishers(2000), Best, Nederland, 38 – 41.  
G.B. Janssen, TH.J.Keultjes, *Pelgromhof Zevenaar, Een voorbeeld van duurzaam bouwen*, Fagus,Aalten (2000) 206 pag..  
[www.vdwerf.nl](http://www.vdwerf.nl)  
[architect@vdwerf.nl](mailto:architect@vdwerf.nl)