It's never too late for a new beginning

A living environment for the young-old
Issue:

Housing shortage in the Netherlands:

- Current shortage of 331,000 dwellings
- Household increase until 2035 of 924,000 households
- Housing need will increase until 2035 with 893,000 dwellings

(Ministerie van Binnenlandse Zaken en Koninkrijksrelaties (2020) Staat van de woningmarkt jaarrapportage 2020)

A lot of people do not live in a dwelling which is their preference:

“If we were to evict people from their home tonight and offer them a home tomorrow that better meets their needs, a much better distribution of the housing stock would be achieved than now.”

- Springco 2018

(Springco (2018) Samenvatting rapportage De grote omgevingstest in de provincie Zuid Holland.)
Hypothesis:

A crucial role is reserved for the young-old (age 55-75 without children living at home)

Developing dwellings that seduce the young-old to relocate contributes to a broader living happiness

1. The young-old get a home that better meets their needs
2. A wider range of single family dwellings will come available
3. The housing stock will become better attuned to future demand
4. Less territory is needed to build these dwellings

(Springco (2018) Samenvatting rapportage De grote omgevingstest in de provincie Zuid Holland.)
Research question:

Who are the young-old?

What are the requirements and demands of the young-old for a suitable living environment?

How to design a living environment for the young-old in a high dense area?
New phase in life: reason

Growing prosperity, introduction of a pension system

Improvement in health care
New phase in life: changing perception of the elderly

**The old-old** (traditional view of old age) someone who is ill and depended

VS.

**The young-Old** someone who is healthy and independent.
New phase in life: characteristics

Spare time
The possibility to contribute to their community in social and political terms
A relatively good health status
Higher level of education than those previously in their age group
Relatively high purchasing power

The current generation is more active, innovative and open to learning, compared to generation before and it values independence, freedom and individual choice more than ever.
New phase in life: changing social collectiveness

Two major changes in social networks, social interaction and in household family units

1. **Social networks outside of the family shift from work-focused to leisure-centred interactions**
   - At the core of these new kind of networks are contact between neighbours, clubs, volunteer associations, courses or hobby classes situated.

2. **A shift during the 20th century of people aged 65 or over to move away from multigenerational households towards smaller households:**
   
   possible reasons:
   - Rising income of elderly meant that they could finally live independent
   - People have less children or other family members that can take them in
   - The increase in supply of affordable and manageable single-person dwellings has provided the opportunity for separate living
   - Changing values related to individualisation have transformed family norms and attitudes

Simpson, D. (2010), *Third Age Urbanism: Retirement utopias of the young-old*
**Living preferences: Household groups**

<table>
<thead>
<tr>
<th>Uncomplicated retiree</th>
<th>Well-aged middleclass</th>
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<tbody>
<tr>
<td><img src="image" alt="book" /> Low educational level</td>
<td><img src="image" alt="book" /> Middle educational level</td>
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<tr>
<td><img src="image" alt="euro" /> Below average income</td>
<td><img src="image" alt="euro" /> average income</td>
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<tr>
<td><img src="image" alt="house" /> Appartment, terraced house</td>
<td><img src="image" alt="house" /> rental appartment, corner or terraced house</td>
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<tr>
<td><img src="image" alt="floor" /> 90 - 135 m²</td>
<td><img src="image" alt="floor" /> 90 - 135 m²</td>
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<tr>
<td><img src="image" alt="euro" /> &gt; € 800 / month</td>
<td><img src="image" alt="euro" /> middle expensive rental or owner-occupied</td>
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<table>
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<tr>
<th>Well-deserverd appreciator</th>
<th>Elite class</th>
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<tbody>
<tr>
<td><img src="image" alt="book" /> Middle to high educational level</td>
<td><img src="image" alt="book" /> High educational level</td>
</tr>
<tr>
<td><img src="image" alt="euro" /> average till double average income</td>
<td><img src="image" alt="euro" /> more than double over average income</td>
</tr>
<tr>
<td><img src="image" alt="house" /> Corner or semi-detached house</td>
<td><img src="image" alt="house" /> Penthouse, detached living, multiple storey appartment</td>
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<tr>
<td><img src="image" alt="floor" /> 90 - 135 m²</td>
<td><img src="image" alt="floor" /> &gt; 135 m²</td>
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<tr>
<td><img src="image" alt="euro" /> &gt; € 800 / month middle and expensive sale</td>
<td><img src="image" alt="euro" /> &gt; € 700.000</td>
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The different household types (source BPD)
Global trends: Retiree communities

The villages, Florida, United states:

Largest retirement community of the world: 129,000 inhabitants, the size equals double of Manhattan

Disneyworld for retirees
- recreation of former home towns of the retiree, so that they return to their 'youthfull' past
- deny the process of ageing
- life is permanent vacation

Sense of familiarity is created

People are detached from society
Global trends: Retiree communities

Collectiveness:

Leisure activities replace the central position of work related activities in the residents social network.

Communal facilities:

Town squares:
- restaurants
- clothing store
- care facilities
- home furnish store
- barber shop
- bowling
- theatre

- bank
- beauty salon
- real estate agency
- gallery
- golf & country club admin.
- insurance company
- golf car dealer

Scattered:
- recreational centre
- golf course
- swimming pool
- postal station
- country club
Government policies: keep them integrated in society

The Dutch government has three policies concerning the Young-Old:

1. People need to be able to live as long as possible independently in their own neighbourhood
2. Encourage the ‘young-old’ to move in time to a suitable dwelling for the live in old age
3. Supporting people financially who cannot afford to move to a better suitable dwelling

They also foresee an important role for the young-old in social cohesion of the neighbourhood.
Conclusion target group:

My goal is to design a living environment where the young-old want to live, where they can grow old over time and where social encounters between the residents are stimulated
**Design principles:**

**Variation in dwelling types:**
To cater for the different household sizes and income groups of the young-old.

**Typologies for young-old**
Optimal floor plans should be designed which are attractive for active elderly and that can be adapted to older age.

**Social collectiveness**
The building should stimulate social encounters between the residents to prevent isolation and provide a safe environment where the young-old feel at ease.

**Privacy**
As people occasionally want to withdraw themselves, it is important that the residents have enough privacy in their dwellings.

**Leisure activities in the living environment**
The design should provide the young-old a natural place where they can create new social networks.

**Outdoor spaces**
Because the young-old are mostly retired and therefore possibly more at home it is important that they have sufficient outdoor space of a good quality.
Design location: where?
Design location: urban masterplan
Design location: plot
Design location: why is this a suitable location?
Design: building mass
Design: building mass
Design: building mass
Design: building mass
Design: building mass
Design: building scheme

Overview
**Commercial spaces:**

- Contributes to vivid urban area
- Adds facilities where residents can meet others people from the neighbourhood
- Located next to the mainstreet to attract as many people as possible

**Design:** building scheme
**Design:** building scheme

**Parking:**
- Parking garage with shared electrical cars
- Bicycle parking for all the residents
**Design:** building scheme

**Acces system:**

- The dwellings on the ground floor have an access to the public spaces by a front garden.

- Two entrances lead from the street to the galleries which connect to the dwellings.
**Design:** building scheme

**Dwellings:**
- Design entails a total of 72 dwellings in 10 different types
Design: building scheme

Collective spaces:
- collective space inside the block for the specific type of residents
- because it is one of the lower buildings in the area, activate the roof
Design: elevation overview

Ground floor:
Design: elevation overview

Second floor:
Design: elevation overview

Third floor:
Design: elevation overview

Fifth floor:
Design: elevation overview

Rooftop:
Design: dwelling typologies

Dwellings:
Total amount of 72 dwellings

- Type A1: 93 m²
- Type A2: 92 m²
- Type B: 78 m²
- Type C: 82 m²
- Type D: 109 m²
- Type E: 61 m²
- Type F: 37 m²
- Type G: 98 m²
- Type H: 78 m²
- Type I: 79 m²
- Type J: 139 m²
Design: dwelling typologies

Stacking of different dwelling types on top of each other

7,20 meter 7,20 meter

7,15 meter

5,72 meter

11,44 meter
**Type F:**
Third and fourth floor
16x Studio
Total surface area: 37 m²
Outdoor space: 5 m²
Design: dwelling typologies

Type F:
Third and fourth floor
16x Studio
Total surface area: 37 m²
Outdoor space: 5 m²

- kitchen/dining room
- bed/living room
- bathroom
Design: dwelling typologies

**Type F:**
Third and fourth floor
16x Studio
Total surface area: 37 m²
Outdoor space: 5 m²

- turning circle
  wheelchair 1,5 m
Design: dwelling typologies

Type E:
Second, third, fourth, and fifth floor
8x Appartment
Total surface area: 61 m²
Outdoor space: 7 m²
**Design:** dwelling typologies

**Type E:**
Second, third, fourth, and fifth floor
8x Apartment
Total surface area: 61 m²
Outdoor space: 7 m²
**Type E:**
Second, third, fourth, and fifth floor
8x Apartment
Total surface area: 61 m²
Outdoor space: 7 m²

**Design:** dwelling typologies
**Design:** dwelling typologies

**Type J:**
Fourth and fifth floor
4x Apartment
Total surface area: 139 m²
Outdoor space: 18 m²
**Design:** dwelling typologies

**Type J:**
Fourth and fifth floor
4x Appartment
Total surface area: 139 m²
Outdoor space: 18 m²

- kitchen/dining room
- bed/living room
- bathroom
**Design:** dwelling typologies

**Type J:**
Fourth and fifth floor
4x Appartment
Total surface area: 139 m²
Outdoor space: 18 m²

- turning circle
- wheelchair 1,5 m
Design: outdoor spaces
Design: outdoor spaces

South west facade
13.00   21/03/2021
Design: outdoor spaces

South west facade
17.00  21/03/2021
Design: social collectiveness

Guest bedrooms for the residents who do not have a spare bedroom

Could also be used by caregivers in the future
Combination of the oversized galleries and the bulging fuse boxes give the opportunity to appropriate a part of the gallery 

Every dwelling has large windows towards the gallery, this makes it possible to look inside the dwellings

**Design:** social collectiveness
High end facilities on the rooftop where the residents are able to work out and/or relax together.
Design: social collectiveness

Vegetable garden, where the residents can grow their own food together
Design: social collectiveness

Inner courtyard, where the residents can meet each other and enjoy the calm place.
Building technology: overview climate

Pv-panels integrated in the facades

Rooftop garden

Water retention and storage

Every dwelling has its own installations to secure most energy efficient heating

Loggia's facing south to prevent the hot summer sun to enter the dwellings but to allow the winter sun to shine deep into the dwellings
Building technology: construction

Ground floor and second floor: concrete construction

Flexible lay-out possible for the parking garage and the commercial spaces.

It can resist a possible flood, building is located in a flood risk area.
Building technology: construction

Wooden construction from the third floor and above

CLT walls and a hollow wooden floor system

Lightweight construction

Less CO$_2$ emissions than concrete construction
Building technology: facades

North west facade

North east facade

South west facade

South east facade
Building technology: facades
Building technology: facades

Brick strips produced from at least 60% waste

Balustrades covered with pv-panels

Woodfiberboard used as insulation

1. Balcony floor:
   - colorcoated polyester steel plate
   - battens
   - UNP 200 steel Profile
   - prefabricated floor of glassfiber reinforced polyester

2. Facade wall:
   - 2x 12.5 mm Plasterboard
   - 140 mm CLT wall
   - 150 mm insulation between vertical mullions
   - 60 mm insulation between horizontal mullions
   - 40 x 85 mm vertical battens
   - brick strips glued on panel
Building technology: facades
Wooden cladding by platowood.

This technology requires only water and heat. No chemical substances are added.

Woodfiberboard used as insulation.
**Design:** dwelling typologies

**Type A1:**
Ground floor  
6x maisonettes  
Total surface area: 93 m²  
Outdoor space: 11 m²
**Type I:**
Fifth and sixth floor
8x Appartement
Total surface area: 79 m²
Outdoor space: 10 m²
Climate: ventilation

- 21 dm³/s
- 7 dm³/s
- 28 dm³/s
- 22.4 dm³/s
- 8 dm³/s
- 14 dm³/s
Building technology: facade fragment
Building technology: facade fragment

1. Kerta ripa floors
2. Clt wall
3. Insulation between vertical mullions
4. Insulation between horizontal mullions
5. Vertical battens
6. Brick slips glued on panel
7. Aluminium window frame
8. Steel balcony
Building technology: balcony

- Steel frame of UNP 200 beams
- Steel frame of UNP 80 beams
- 50 mm steel pipe to bridge the distance between the balcony and the load-bearing wall
- 20 mm steel strip to provide extra stability
- Strips mounted on the floorslabs to connect the underside of the balcony

1. Colorcoated polyester steel plate, battens UNP 200 steel Profile, Prefabricated floor of glassfiber reinforced polyester

2. 2x Plasterboard12,5 mm, 140 mm CLT wall, 150 mm insulation between vertical mullions, 60 mm insulation between horizontal mullions, 40 x 85 mm vertical battens, brick strips glued on panel
‘Polderdak’

1. Plants, 120-250 mm Optigrün extensive substrate E filling mass, 3,6 mm Optigrün filter- en capillary layer RMS 500K, 80 mm Optigrün water-retention layer WRB 80F, 3 mm Optigrün protect absorption layer RMS 300, root and water barrier, 20 mm insulation, 31 mm plywood, 150 mm insulation between 45 x 300 mm gluelam ribs, 50 mm concrete tiles for acoustics, 25 mm plywood, 30 mm spring saddle insulation - 2x 15 mm plasterboard

Total thickness 664 mm
Building technology: dwelling plan

Type F: 1:50