The Green Loop for Active Ageing
The Caring Landscape Design in the Shrinking Parkstad

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2.0 Problem Statement - history

450-1890
Roman and Medieval Settlements
1890-1924
Mining Industry
1. Originated
Mining Industry
2. Development

1924–1969

Amount of Inhabitants
Average Dutch Income

Urban Area
Mine Industry
Train Lines
4km
1969–2017
Mining Industry
3. Closure and Remediation
2.1 Urban Shrinkage—economically driven selective outmigration
2.2 Ageing Society

Senior ageing >75 yrs
Ageing population: projections 2010 - 2060 for the EU

2060
In the Europe:
228 million (+50m)

In the Netherlands:
4.83 million (+1.8m)
40 years later...

Where do you want to live?
So tough.
Why not both?
Compare with Nearby Cities:
- Sunny
- Warm
- Fresh Air
- Transportation
- Facilities
- Activities

Compare with Countryside:
- Communication

Compare with General Cities:
- Green Space
- Cheap Life
2.3 Research Question

How can I design a landscape that reduces the shrinkage and benefits from the ageing society?
3.0 Ageing Economy

“Ageing often have a negative connotation, especially in an economic sense. However, Ageing is not just a story of declining economic potential.

The other side of the coin shows rising demand for products and services that are tailored to the needs of the elderly. Opportunities grow for providers and investors who active in these markets.

As such, the resulting largely market supply further contributes to the option for people to enjoy comfortable life in old age.”

--ING Economics Department, May 2019
3.0 Ageing Economy

Dutch and Italians most willing to pay for quality
Survey question: Suppose you (if 65+) or your parent(s) could no longer live at home because of the need for elderly care. Would you be both willing and able to pay extra, above average costs for a living environment above average quality?

According to 2018 figures from information centre Vektis, half of the money reserved for healthcare in the Netherlands under the Healthcare Insurance Act (Zvw) and Long-term Care Act is used to care for the elderly. 28 billion euros was spent on care for those aged over 65.

Supported by the government:
Total cost for a person in nursing home is on average about 79,000 euro per year (Ministry of Health, Welfare and Sports, 2016). The government expect to encourage elders to age-in-place as long as possible.

Supported by the institutions:
The changing ideas of citizens in terms of expectation of care. Less hospital-like and clinically institutions

More Nursing Homes with better outdoor environment

With Ageing Society, the Netherlands will need an extra 44,000 houses that suitable for elders every year from now to 2021.
3.0 Ageing Economy

Housing Market Potential

Nursing Home

Ageing Community
3.0 Ageing Economy

- Interactive platform to fast-track product and service development
- Olderpreneur
- Driverless cars
- Age-friendly universities
- Knowledge for an active and healthy lifestyle
- Age-friendly built environment
- Integrated care services and improved connectivity
- Silver tourism
- Robotics and games
- Connected health and digital skills for carers

Annual Consumption per elder €10,000

- Hospital and Care: 870
- Connection and Social: 651
- Education, culture and Tourism: 2,260
- Living and Building: 188
- Mobility and Transport: 2,089
- Work and Training: 141
- Financial Services: 1,068
- Food and Nutrition: 2,318
3.1 Caring Strategy – High Quality Ageing

- Ageing is not a stage of life, but a natural process.
- Care of Ageing Process is about the high-quality life strategy of all ages.

**Ready to ageing <65 yrs**
- Exercising time: 1h per day
- Active Distance: 6-7km

**Young ageing 65-75 yrs**
- Exercising time: 30min per day
- Active Distance: 3-4km

**Senior ageing >75 yrs**
- Exercising time: 15min per day
- Active Distance: 1km

Urban Green Infrastructure

Community Caring Landscape
3.1 Caring Strategy—Design Goals

How can I design a landscape that reduces the shrinkage and benefits from the ageing society?

1. **The Caring Landscape**
   - new attraction for the elderly
     - Fits the Requirements of the Elders to Active Age

2. **The Green Infrastructure**
   - new possibility in economy
     - Develop the Ageing Market
     - Improve these Qualities for all the Inhabitants of Parkstad
3.2 Qualitative Research and Research through Design

Qualitative Research

- Interviews
- Observation

Knowledge

- Case Study
- Database Research

Research through Design

design as a “vehicle” to visualise and spatialise the spatial problems, and investigate possibilities and make solutions.
3.2 Interview - Needs from Interviews

- Senior Care
- Pedestrians System
- Waterspace
- Indoor Connection

- Where is the Park?
- Where is the Water?
- Where is the Pedestrian Path?
- Where is the Indoor Space?
Site - the caring landscape

Fits the Requirements of the Elders to Active Age
4.0 Site - the caring landscape
4.0 Site - the caring landscape

The Senior Ageing Population:

2000 (40%) 2035

2020

914 (20%)
4.0 Site – the caring landscape

Senior ageing >75 yrs
Exercising: 15min per day
Distance: 1km

Maximum path length: 1km
4.2 Site Analysis

Indoor Connection

Nursing Home

Building-oriented Square

Hoeven (Restaurant)
4.2 Site Analysis

Indoor Connection

Nursing Home

Bridge over the valley

Hoeven (Restaurant)
4.2 Site Analysis
4.2 Site Analysis

Pedestrians System

Connected Canopy
4.2 Site Analysis

Pedestrians System

Path Separation
keep it flat with enough width
4.2 Site Analysis

Waterspace

Rural Pond

Water square with better rain collecting
4.2 Site Analysis

Waterspace

Rural Pond

Slope Design with water management
4.2 Site Analysis

Senior Care
4.2 Site Analysis

More Interactions

Interactional Planting and Waterforms

Senior Care
4.2 Site Analysis

Colored Planting

space distinguish and emotion change

Help Memory in the Environment

Enhance Function with Emotion Effects
Indoor Connection

Pedestrians System

Waterspace

Senior Care

Building-oriented Square

Connected Canopy

Water square with better rain collecting

Bridge over the valley

Path Separation, keep flat with enough width

Slope Design with water management

Colored Planting and Waterforms

Interactional Planting and Waterforms

Space distinguish and emotion change
4.3 Site Design - Indoor Connection

- Building-oriented Square
- Bridge over the valley
4.3 Site Design - Pedestrians System

Connected Canopy
4.3 Site Design - Pedestrians System

Path Separation
keep it flat with enough width
4.3 Site Design–Waterscape

Digging-out:
3000 m³ Soil
from the pond and
path built

Water square
with better rain collecting
4.3 Site Design - Waterscape

- Almost Flat
- Gentle Slope
- Steep Slope
4.3 Site Design - Waterscape

- Community Activity
- Path-side Interaction
- Slope Control

Slope Design with water management
Community Activity, Irrigation System
Useful Water: From 30% to over 80%
4.3 Site Design - Waterscape

- **Slope Design** with water management
- **Path-side Interaction**
- **Community Activity**
- **Slope Control**
Path-side Interaction, Impermeable Design
Useful Water: From 30% to over 80%

Wider and shallower Water Surface
Root Treatment Zone
Impermeable Material
Water Storage

3-4m 8m
4.3 Site Design - Waterscape

- Community Activity
- Path-side Interaction
- Slope Control

Slope Design with water management
Impermeable Material

Water Flows from the Square

Rainwater Flow

Slope Control, Path Separation
Useful Water: From 30% to over 80%

92.6

93.6

96
4.3 Site Design—Senior Care

Colored Planting
space distinguish and emotion change

Interactional
Planting and Waterforms

Yellow Cameron (zinkviooltje)
Viola calaminaria
10-40cm
Flower Period: late spring and summer

Sanguisorba minor (Kleine pimpernel)
40-90cm
Flower Period: late spring and summer

Orchis militaris (Orchideën)
20-50cm
Flower Period: late spring and summer

Stimulate Mental Activity
Help Memory
Calm Down
Willing to Expression
4.3 Site Design - Senior Care

Colored Planting
- European white elm (Ulmus laevis) (Steeliep)
  - Height: 30m
  - Autumn colour: yellow
- Saucer Magnolia (Magnolia × soulangeana)
  - Height: 6-9m
  - Flower: Pink and White
  - Autumn colour: yellow
- Cornelian cherry (Cornus mas)
  - Height: 2-6m
  - Flower & Fruit
- European pear (Pyrus communis)
  - Height: 10-15m
  - Flower & Fruit
- Apple Tree (Malus spp)
  - Height: 10-15m
  - Flower & Fruit

Interactional Planting and Waterforms

Space distinguish and emotion change
4.3 Site Design - Senior Care

**Water:**

- Static Water
- Active Water
- Irrigation Ponds

**Interactional Planting and Waterforms**
4.3 Site Design - the vision

- Pedestrians Path - RED LINE
- Water Movement - BLUE LINE
- Caring Facility
- City Centre
- Water Square
- Public Transportation
- Independent Path
- Waterside Space
- Forest
- Bridge
- Cafe Plaza
- Dehoeven (Heritage)
- Sheeps and Cows
- Beers and Wines
- Farming
- Orchard Square
4.3 Site Design - the vision

The Caring Landscape
new attraction for people
Fits the Requirements of the Elders to Active Age
Urban - The Green Infrastructure

Develop the Ageing Market
Improve these Qualities for all the Inhabitants of Parkstad
5.0 the green infrastructure - Ageing Market and Landscape Structure
5.0 the green infrastructure - Ageing Market and Landscape Structure

Senior ageing
>75 yrs
5.1 Ring - Qualities for all the Inhabitants

Half-Circumference: 3.5km

Circumference: 7km

Young ageing 65-75 yrs

Ready to ageing <65 yrs
5.1 Ring - Qualities for all the Inhabitants

Senior ageing
>75 yrs
Exercising: 15min per day
Distance: 1km

Young ageing
65-75 yrs
Exercising: 30min per day
Distance: 3km

Ready to ageing
<65 yrs
Exercising: 1h per day
Distance: 6-7km

Behind the 300m lifecircle, we can find the hidden landscape system. In this Green Pattern, based on the priority of the elderly, this system enhances the overall connectivity and...
5.1 Ring - Qualities for all the Inhabitants

- Indoor Connection
- Pedestrians System
- Waterspace
- Active-Ageing Care
5.2 Ring Analysis

Heritages and Facilities
- 12x Hoeve
- 1x Castle
- 1x Watermill
- 1x Roman ruin
- 2x Indoor Playground
- 5x Gyms
- 1x Bowling

Ageing Care
- 13x Nursing Homes
5.2 Ring Analysis

Indoor Connection

Senior ageing >75 yrs

2060
5.2 Ring Analysis

Pedestrians System

Valley

Steep Slope

Gentle Slope

landscape type
- valley floor
- isolated hill
- slope < 4 degree
- slope > 4 degree
- plateau
- intermediate terrace
5.2 Ring Analysis

Pedestrians System

Mixing with other traffic

Path Separation
keep it flat with enough width

Crossing

Connected Canopy
5.2 Ring Analysis

Waterspace with better rain collecting
5.2 Ring Analysis
5.2 Ring Analysis

Waterspace

Useful Water: From 30% to over 80%

Influences of Impermeable Surface Runoff and Grou

Less surface runoff
More infiltration
More storage

More Runoff

More Storage

the Soil

Loam
Young ageing
65 - 75 yrs
Exercising time: 30min per day
Active Distance: 3 - 4 km

Active Ageing Care

Ready to ageing
<65 yrs

Healthy Lifestyle
Excercise 5 - 10min

Too Far to Reach
5.2 Ring Analysis

Active Ageing Care

Ready to ageing < 65 yrs
Exercising time: 1h per day
Active Distance: 6 - 7km

Young ageing 65 - 75 yrs
Exercising time: 30min per day
Active Distance: 3 - 4km

Senior ageing > 75 yrs
Exercising time: 15min per day
Active Distance: 1km

Communication in Activities
Too Wild to Stay
5.2 Ring Analysis

Active-Ageing Care

An Activity Network
Green Loop Design
5.3 Green Loop Design - Indoor Connection

Path through as many nursing homes and public buildings as possible

Ageing Care
- Direct link to 23(+14) Nursing Home
- The rest 4 are in 500m
- Service for ageing communities (people>65yrs: >25%)

Heritages and Facilities
- 11/12 Hoeve
- 1x Castle
- 1x Watermill
- 1x Roman ruin
- 1/2 Indoor Playground
- 1x Bowling
5.3 Green Loop Design - Pedestrians System

Using the pavement and plants to shape the corridor with walking priority

Little mix with the busy traffic work as an independent secure system
5.3 Green Loop Design—Waterscape

- Walking along the Water

- Flat side: walking inside and forest healing

- Slope side: walking along the boundary
5.3 Green Loop Design - Active Ageing Care

- Building-oriented Square
- Water square with better rain collecting
- Green Most Rural Ponds
- More Children
- More Tourists
- More Young
- Therapeutic Garden
- Water Square
- All-ages Playground
- Cultural Immersion
- Fitness Facility
5.4 Green Loop Design - the Ageing Market

The Green Infrastructure

Develop the Ageing Market

2060 Jobs, Health, Leisure

2020 Park Centre
2025 Life Circle
2035 Activity Network
2060 Caring City
5.4 Green Loop Design - the Living Quality

The Green Infrastructure improves these qualities for all the inhabitants of Parkstad.
5.4 Green Loop Design - the Living Quality
5.4 Green Loop Design - the Living Quality
5.5 Green Loop Design - the Vision

2020
25 years old
Park Centre
5.5 Green Loop Design - the Vision

2025
30 years old
Life Circle
5.5 Green Loop Design - the Vision

2035
40 years old
Activity
Network
5.5 Green Loop Design - the Vision

2060
65 years old
Caring City
Green Loop
towards Active Ageing
When you are old
WILLIAM BUTLER YEATS
(1865-1939)

When you are old and grey and full of sleep,
And nodding by the fire, take down this book,
And slowly read, and dream of the soft look
Your eyes had once, and of their shadows deep;

How many loved your moments of glad grace,
And loved your beauty with love false or true,
But one man loved the pilgrim soul in you,
And loved the sorrows of your changing face;

And bending down beside the glowing bars,
Murmur, a little sadly, how Love fled
And paced upon the mountains overhead
And hid his face amid a crowd of stars.

Thanks.