ENERGIZE VACANT LAND

Landscape regeneration in shrinking Kerkrade West

P5 Presentation
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SITE INTRO

Green Metropolis

Parkstad

Kerkrade West

ENERGIZE VACANT LAND: Landscape regeneration in Shrinking Kerkrade West - Jialing Zhang - P5 Presentation
Roman Herigate

Medieval Time (-17th century)

Agricultural villages Network
Mining Industry

Industrial period (1900s-1970s) cause of Transformation
Urban sprawl

Industrial period (1900s-1970s)
Urbanization and agricultural village network
Shrinking
De-Industrial period (1970s-)
Decline of mine
Reference image from IBA project
Site area

Industry: 288 ha
Residential: 240 ha
Mine: 10 ha

Total: about 600ha

Population: 15,600
History development in Kerkrade

1920:
- Terrain
- Agriculture Land
- Village Network

1955:
- Mining - Urbanization
- Few agriculture land

1975:
- Post-mine - Shrinkage
- New Industry appears

MINE caused formation and shrinkage ...

History development in Kerkrade
What kind of energy transition is suitable for the city? What energy type can help the future industry transform but also can become the city's identity?
How fast should the next round of transition be?
Research & Methodology

Starting Point
Research on shrinking city
Process design
a continuous process...
Urban Islands: Plan for Growth
Another round of urbanization?

De-densification: Plan for Shrinkage
City shrinks to a right size.
Living quality > Population.
Landscape takes over!

Research by Justin B. Hollander
<table>
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<tr>
<th>Year</th>
<th>Inhabitants total</th>
<th>Male</th>
<th>Female</th>
<th>German Inhabitants</th>
<th>Male</th>
<th>Female</th>
<th>Foreign inhabitants</th>
<th>Male</th>
<th>Female</th>
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</thead>
<tbody>
<tr>
<td>2006</td>
<td>506,578</td>
<td>254,017</td>
<td>261,561</td>
<td>474,597</td>
<td>226,368</td>
<td>248,229</td>
<td>31,981</td>
<td>18,649</td>
<td>13,332</td>
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<tr>
<td>2008</td>
<td>515,469</td>
<td>250,018</td>
<td>265,451</td>
<td>481,941</td>
<td>230,729</td>
<td>251,121</td>
<td>33,528</td>
<td>19,289</td>
<td>14,335</td>
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<tr>
<td>2009</td>
<td>518,862</td>
<td>251,748</td>
<td>267,114</td>
<td>486,544</td>
<td>233,397</td>
<td>253,167</td>
<td>32,298</td>
<td>18,351</td>
<td>13,947</td>
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<tr>
<td>2010</td>
<td>522,883</td>
<td>253,533</td>
<td>269,350</td>
<td>492,686</td>
<td>236,809</td>
<td>255,877</td>
<td>30,197</td>
<td>16,724</td>
<td>13,473</td>
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Strategy transformation in Leipzig
Reference from www.shinkingcities.com
Shrinkage becomes Potential! Landscape as approach!

Reference case

Sell the land

the former infrastructure kept as a strong image and place essence very low price lent to youth who would like to have a career

Hofpleinlijn - Rotterdam

One book teaches everything

Landscape designers work on a book to show how gardens can be operated at very low price

public participation to turn vacant land into gardens

Vacant-land use Pattern book - Detroit

Landscape takes over

whenever a house breaks down, landscape appears red to make the existence of a lost building

Pixelation - “Stadtumbau Dessau” planning workshop

RESEARCH & METHODOLOGY  Fascination Image  Research on shrinking cities  Process design for landscape approach  ENERGIZE VACANT LAND  Landscape regeneration in Shrinking Kerkrade West - Jialing Zhang - PS Presentation
Research of the Landscape approach process

Landscape shows a continuous social process

Stir the process of change
## Analysis

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**Problem statement**

Possibility assessment

Conclusion
Isolated from the city

Brings the city

Isolated from the city
Most hardscape turns out to be Parking lot

Poor management in the shrinking space; lots of barriers

Misuse

Undesigned useless landscape; no playground or other working landscape
ANALYSIS

Outside facilities
- Heerlen
- Megaland
- Snowworld
- Gaia Zoo
- City Center

Topographic
- Main bus station
- Light-rail station

Force line
- Mostly relied on Vehicles

Living facilities
- Relies on vehicles
- Lost of inner link
  Neighbourhood isolated
- Mostly gathers on the main street
Heating as a big problem

Current business
Main Heating Grid

Residual heat is let out in the air.

Sub Heating Grid

Heating Cluster

Not only demands a lot of heat, but also waste a lot.

Heating Grid
Problem list

1. Heating demand
2. Isolation
3. Inner unaccessible
4. Monotonous function
5. Identity loss

Landscape approach
Shrinking as opportunity
STRATEGY

BOTTOM UP!

Case Reference

Toolbox
Reference from Municipality Plan

STRATEGY

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Backbone structure

BOTTOM UP!

Case reference
Investment

Output

Benefits

Vacant land distribution

Property shifting

Parblic welfare
Two strategies in one

Top Down

Bottom up

Public Participation

History calls for new image!
Urbanisation in El Alto, Bolivia

Land Distribution
Change from public space to private property

Urban Acupuncture
Little intervention by cooperating with local entrepreneur

1st year: living and growing vegetables for own use

3rd year: opening a shop at the street side of the plot

15th year: extension of work space, bigger house

30th year: very dense plot in an urban setting

Reference from Spontaneous City

Strategy for the City
Urhahn Urban Design
improve the transformation, by increasing accessibility of a promenade, adding life on water, by densifying, and by adding housing.

the Binckhorst, The Hague
Mostly relies on BOTTOMS UP!
Back to productive landscape!
Role of Designer

Inspire End users' Fantacy

- Private house/garden
- Working places
- Taking possession of left-over spaces
- Reprogramming community centers

Control on the end product

- FREEDOM
- CONTROL
Toolbox

1 Shifting property

Family scale
Building area < 50%
Height < 15M
Building area < 75%
Height < 20M
Building area < 25%
Height < 20M

Business scale

Community scale

Making accessibility

2 Guideline

Landscape intervention

Bare soil
Parking lot
Groundcover
Forest
Basement
Shrinking building
Orchards
Energy base
Urban agriculture
Glass house
Passive building
Cooling water storage

Building Guideline

Family scale
Building area < 50%
Height < 15M

Business scale
Building area < 75%
Height < 20M

Community scale
Building area < 25%
Height < 28M

owned by everyone

Young family
Artists
Entrepreneurs
PROCESS PLANNING

Process planning  Roles of the up and the bottom  Main street as backbone

How to apply the strategy in to a process planning?
2015 Emptiness calls for awareness

From mining history to shrinking colony
From Parkstad to Germany
Free use and overview of the empty land

Industrial land
Vacant space
Sustainable road construction
Government's plan on building
Basement/Foundation of vacant buildings
Cooling ponds for industry buildings
Sustainable business
Wind turbines
Waste Mine pit (recovery stage)
Building for temporary exhibition (photos of old Heilust or paintings)
Memorial place of shrinkage [Free use]
Vacant space in neighbourhood.
2020 Identity establishment

Open up the vacant space
Make it accessible
Land distribution
2025 - Regeneration

Land sale
Public participation!
Neighbourhood & business grow together!

Industrial land
Vacant space
Sustainable road construction
Government's plan on building
Basement / Foundation of vacant buildings
Cooling ponds for industry buildings
Sustainable business
Wind turbines
Church
Cooling ponds for neighbourhood
Light Railway
Public space
Participation space
Green energy business
Recycling business
Green energy experimental lab
Green connection
Productive park in business area
Productive landscape in neighbourhood
What the government need do?

1. Open up the shrinking space
2. Make it accessible
What the government need do?

1. Open up the shrinking space
2. Make it accessible
3. Infrastructure
What the government need do?

1. Open up the shrinking space
2. Make it accessible
3. Infrastructure
4. Policy making & land sale
Cooperating with potential group. **STAGE IS OFFERED!**

**Citizens**

Record the shrinking process. hopes to make a change in the neighbourhood

**Artists**

The drawing of the Old Heilust, created by painter and illustrator Show Willemsen from Heerlen.

**Youth**

Who wants to start up a career or wants to build their own house.

**Entrepreneurs**

Who wants to start up a career or wants to build their own house.
Cooperation with various groups of different initiated people
Main shopping street as backbone!
Exhibition plaza (working with residents and artists)

Parking lot

W-S Mine

Post-mine landscape (working with local entrepreneur)

Vacant space into productive landscape (working with residents or neighbourhood)

Little intervention of shrinking building (working with new house owner)

Shrinking building transform into studio (working with young people who hopes to start with a career)

Vacant space into productive landscape (working with residents or neighbourhood)

Central Church

Central Heilust

Shrinking building

Parking lot

Central Church

Vacant land

Shrinking neighbourhood

Snowworld

Germany

Master Plan of the main street
Problem zone becoming Display zone!
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**Design Sites**

**Mine Colony & Mine remain**

**Location**

**Basic Information**

**Scale**

Colony Heilust

- 150m
- 10 ha
- 180m

Willem-Sophia Mine

- 250m
- 13 ha
- 200m

**Terrain**

- 0m
- 2.5m
- 5m
- 8m
- 10m
- 12.5m
- 15m

**Time**

- 1900
- 1920
- 1960
- 1970
Two guidelines
Strong Image from black to green.
1970 Coal remain

2009 Remain of Rock dump (red) & Coal (Black)

2020 Remain of Rock dump (red) & Coal (Black)

Transformation
1 Public forbidden land
1 Public forbidden land
2 Visible
3 Soil Reused
1 Unaccessible
2 Visible
3 Soil reused
4 Soil moved
5 Accessible
1 Unaccessible
2 Visible
3 Soil reused
4 Soil moved
5 Accessible
6 Intervention
7 Land sale

Clay covers the mine pit
Soil Landscape

Clay

Rock Dump

Coal

Excated area
Energy Potential in Kerkrade West

Mine water project

WILLEM SOPHIA

Central Heilust

DESIGN EXPERIMENT

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Coal ---> Recycle Plant
Rock Dump ---> Road Material

1 Soil re-use

2 Separate the rest

3 Soil re-cover

Silt like Clay

4 Intervention

5 Mine water

30 degree
Rock Dump Plaza
Excavated area into Lagoon
Light bridge made from aluminium
Recreational area
Making access in existing forest
Shaft Machine into new public building
Caly cover
Coal

DESIGN EXPERIMENT
ENERGIZE VACANT LAND
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1 Platform in the lagoon

Section of the excavated area
Birdeye view

Existing Mining rail

Platform (light steel)

Cross Bridge
A bridge makes accessibility
Bottom sealed for making a lagoon
Mining rail kept
A platform is made based on the mining rail structure
Excavation area used for recreation
Excavation area for recreational use
Function of the inner space can be decided by public participation
Detailing

2 Mining sculpture

Wood deck to separate the soil and works for spectators.

Coal storage
Site Choice

- Central Heilust
- Willem-Sophia Mine

Industrial site

Sports field

Light rail Station
Bottom up! Making the city little by little.
Experiments on possibilities

**Living (original plan)**

- New housing & massive building rely on the government investment which works as initial project.
- New business and conservation of the housing can be conducted by the neighbourhood or individual after initial projects.
- Landscape combines everything and will show the difference.

**New Business / Public use**

- Possible business: green energy studio / Culture or art business
- Investment mostly goes to the conservation and reconstruction several buildings in the middle kept while others showing the history of the land

**Empty lands with new function**

- Landscape showing the process of the city development
- Working landscape with multi-functions instead of doing nothing focusing on meditation (identity seeking) -> Identity -> Regeneration

**Combination**

- New housing & massive building rely on the government investment which works as initial project.
- New business and conservation of the housing can be conducted by the neighbourhood or individual after initial projects.
- Landscape combines everything and will show the difference.
Shrinking Process & building investigation

2015

2020

2025

DESIGN EXPERIMENT
Site Choice
Willem-Sophia Mine
Central Heilust

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DESIGN EXPERIMENT

Awareness

Identity

Participation

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Stage 1 Vacant landscape

1 One sinking plaza
2 Tree transplant
3 Earthwork - open up the space
4 Optional
Bare basement.

Trees replanted

Leave it green. Little intervention.
Residential area is separated with the public space by height differences.
Stage 2 Possibilities for public participation!

1. Accessibility
   Possibilities show case
2. Public building / Productive landscape
3. Transformation of existing building
4. Transformation of removed building
Possibilities: Vacant land re-use
Vacant flat becomes private gardens; Community shares the outside garden. Private garden turns into semi-private orchards.
Possibilities: Basement re-use
Productive landscape takes over vacant space and provides programme. Water feature also absorbs the residual heat.
Buildings with the basement can be used flexibly. Height difference figures out the open and semi-open atmosphere.
DESIGN EXPERIMENT

ENERGIZE VACANT LAND

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Site Choice
Willem-Sophia Mine
Central Heilust
Possibilities: House renovation
Buildings can be re-constructed into new living housing, public buildings or offices. Instead of making new buildings, old buildings provide enough space to build up new relationship between landscape and architecture.
Optimum Master Plan

Site Choice

- Willem-Sophia Mine

Central Heilust

Shops

- apple orchard
- pear orchard

Main Plaza

- *0.00
- *1.00
- *2.00
- *3.00

Business area

- *0.00
- *1.00
- *2.00
- *3.00

Cherry orchard

- *0.00
- *1.00
- *5.00

Residential area

- *0.00
- *1.00
- *6.00

Central church

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Material reuse!

Mine residual

Recycle

Glass

Parking lot into playground

Wood deck

Trees put into garden

Brick into stairs

Brick for garden interior

Glass for garden interior

aluminum water bed

Glass house

public building
Energy Calculation

85 Mwh

Production

- 10m²: 5 kWh/d
- 3000m²: 36 kWh/d

Consumption

- 1 kwh/d
- 15 kWh/d
- 15 kWh/d

Cooling: 20
Feed: 200
Vision 2050

Land sale of empty land transforms into business area

Central Heilust Park

Main shopping street

Industry ecology

Post mining park

Light rail
Property shifting

Initiative group starts landscape intervention first

Progress follows itself

A case in Tubigen, Germany
Reference from Spontaneous City
Thanks for your attention!

26.06.2012 P5 Presentation
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