



The Future Oilscape

The Transformation of the Oil Industry Area of Pernis in the Harbour of Rotterdam

Nicole Alewijn | 6 November 2018 | TU Delft

Industrial Heritage

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Industrial Heritage

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- Technical Complexity
- Social Consequences
- Economic Factor
- Scale and Magnitude
- Negative Perceptions that hinder the Appreciation

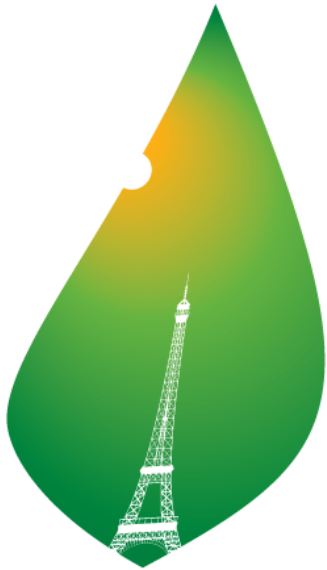


- Problem Definition & Research Question
 - Energy Transition
 - Future of Oil
 - PICH Project
- Location Analysis
 - Oil Industrial area of Pernis
 - Historical Development of Harbour of Rotterdam
 - Characteristics of Pernis
 - Value & Mental Map
 - Core Values
- Design
 - City & Region Connection
 - Zoning Plan
 - Three Possible Designs
- Conclusions

Problem Definition & Research Question

Energy Transition

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PARIS2015

UN CLIMATE CHANGE CONFERENCE

COP21·CMP11

Energieagenda

Naar een CO₂-arme energievoorziening



Energy Transition

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1500 – Peat Landscape



Energy Transition

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1600/1700 – Wind Mills



Energy Transition

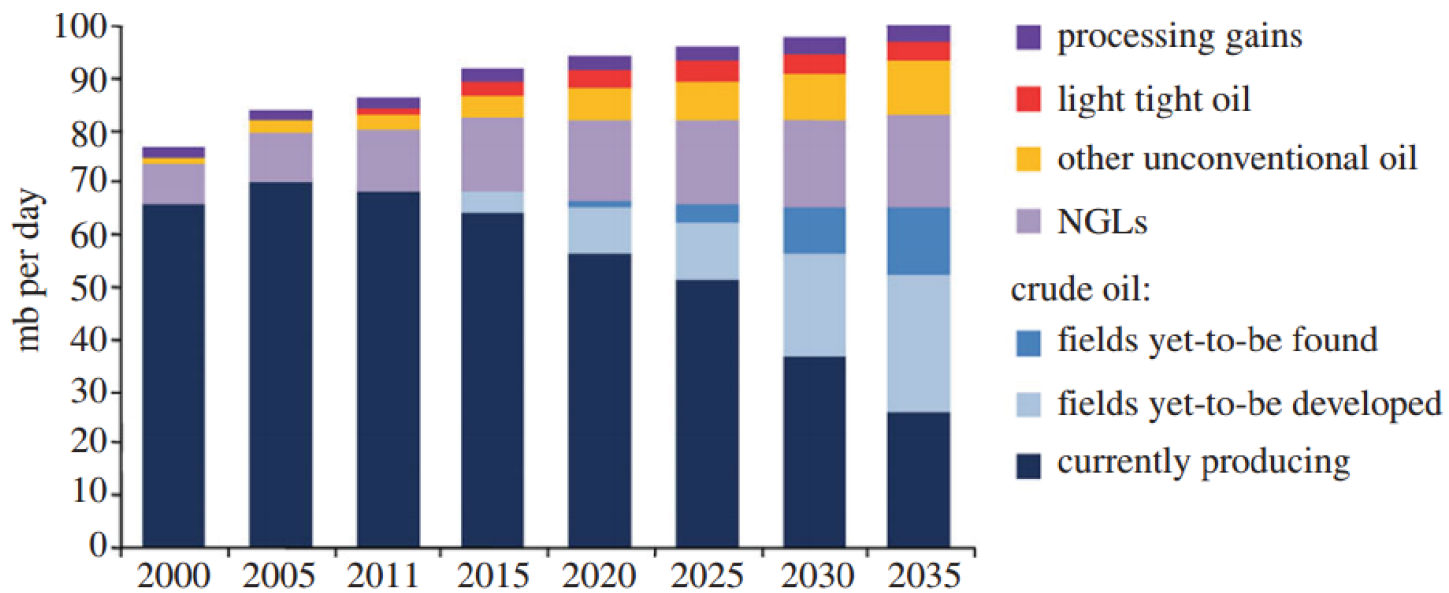
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1800/1900 – Fossil Fuels, Mining



Future of Oil

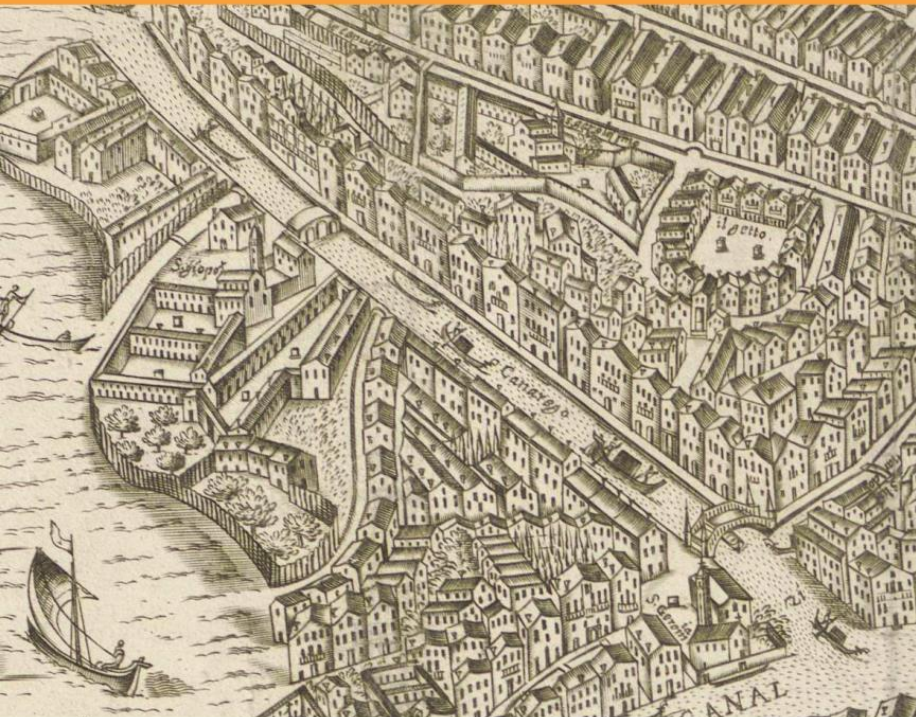


PICH Project

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Cultural Heritage: a Challenge for Europe

The impact of urban planning and governance reform on the historic built environment and intangible cultural heritage (PICH)



- EU Funded Research Network
- The Netherlands, England, Norway and Italy
- None of the cases provides much interpretation of heritage



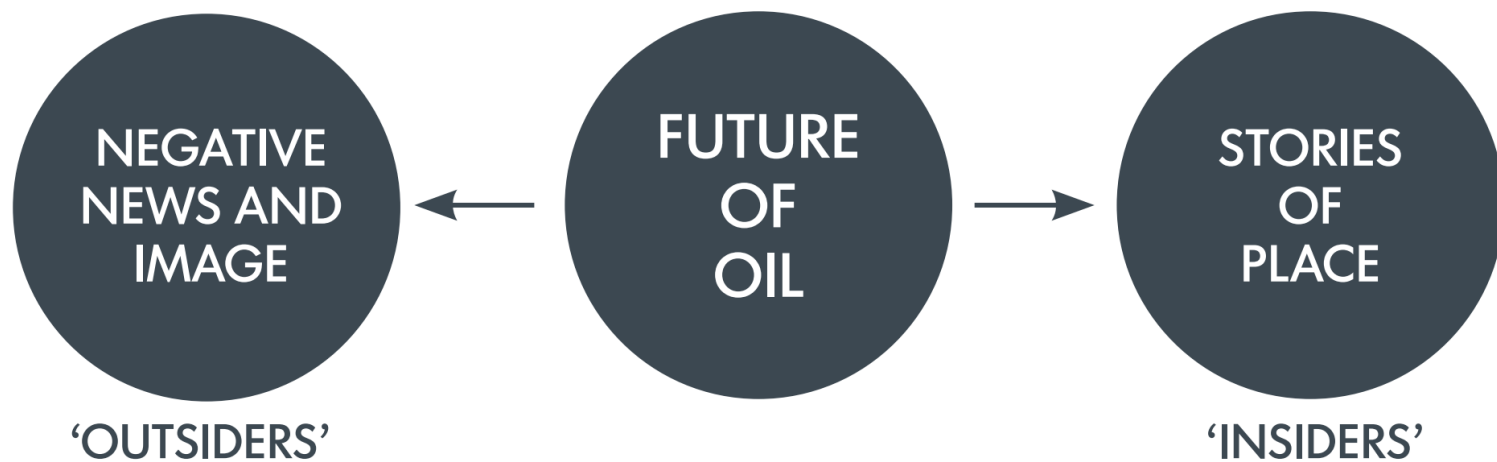
Research Question

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How can we transform oil industry into a new function while maintaining the physical and mental elements of the past oil industry?

Research Question

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Location Analysis

Oil Industrial Area of Pernis

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- Personal
- Largest Refinery of Europe
- Other reason...

Historical Development Harbour of Rotterdam

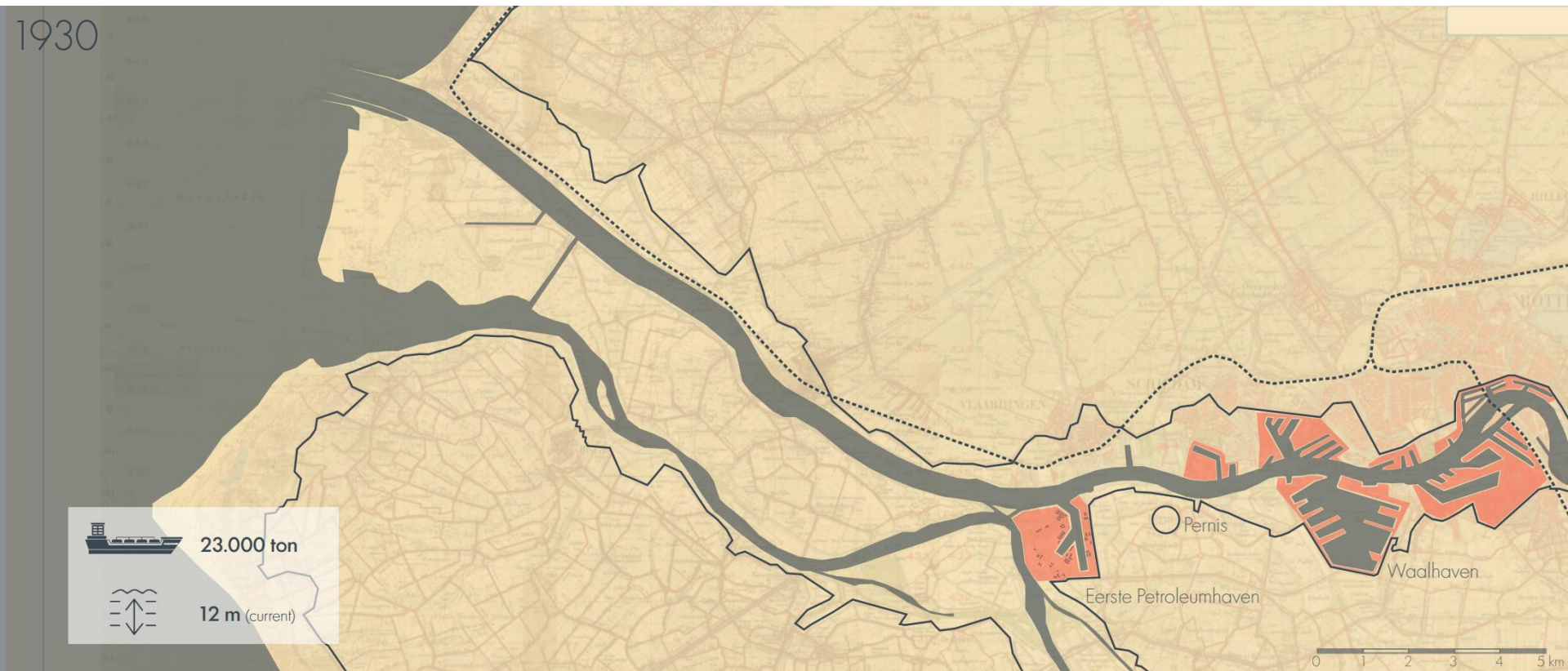
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- 1920 – First Refinery at Sluisjesdijk
- An Alternative was needed by the end of 1926

Historical Development Harbour of Rotterdam

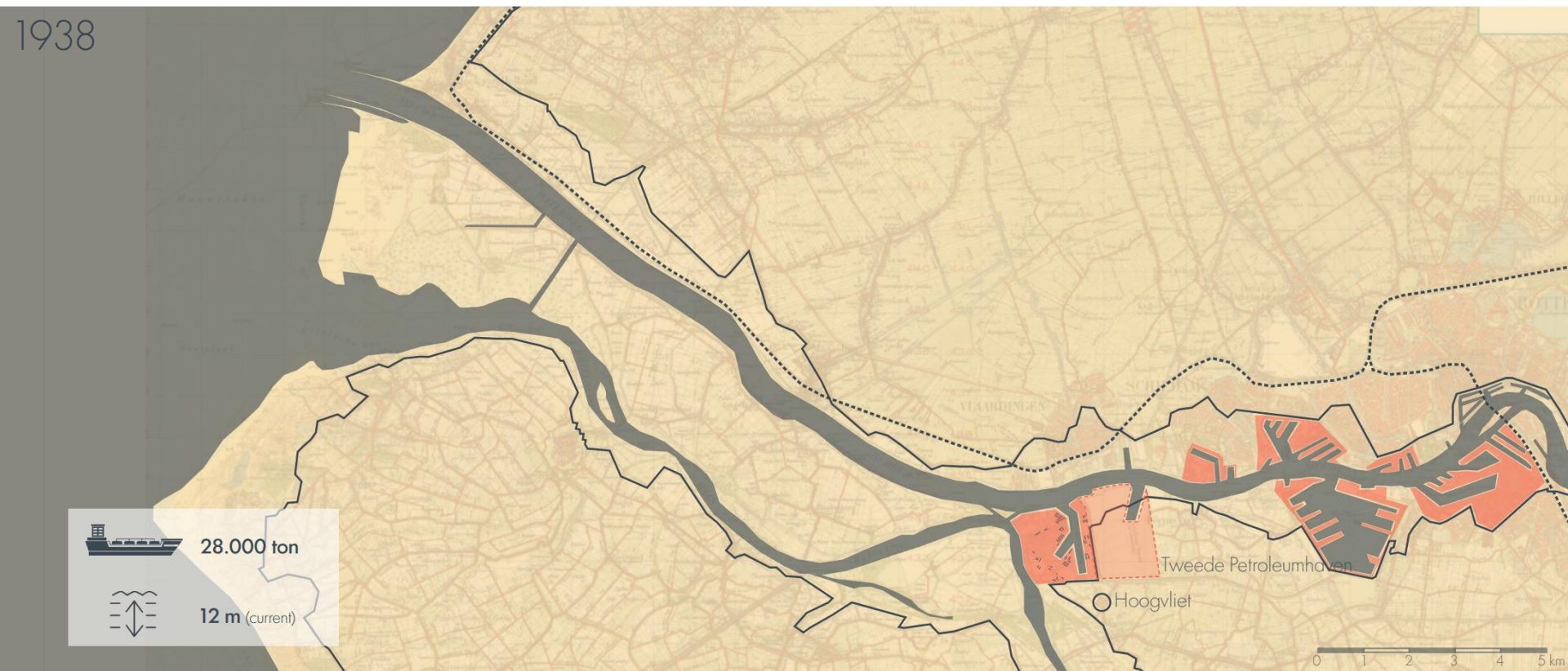
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- Municipality of Pernis gave away their grounds
- 1929 – Eerste Petroleumhaven
- 1936 – Refinery in operation

Historical Development Harbour of Rotterdam

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- 1930 – Tweede Petroleumhaven
- First directors houses in Hoogvliet

— Main dike structure
 ■ Harbour developments

Historical Development Harbour of Rotterdam

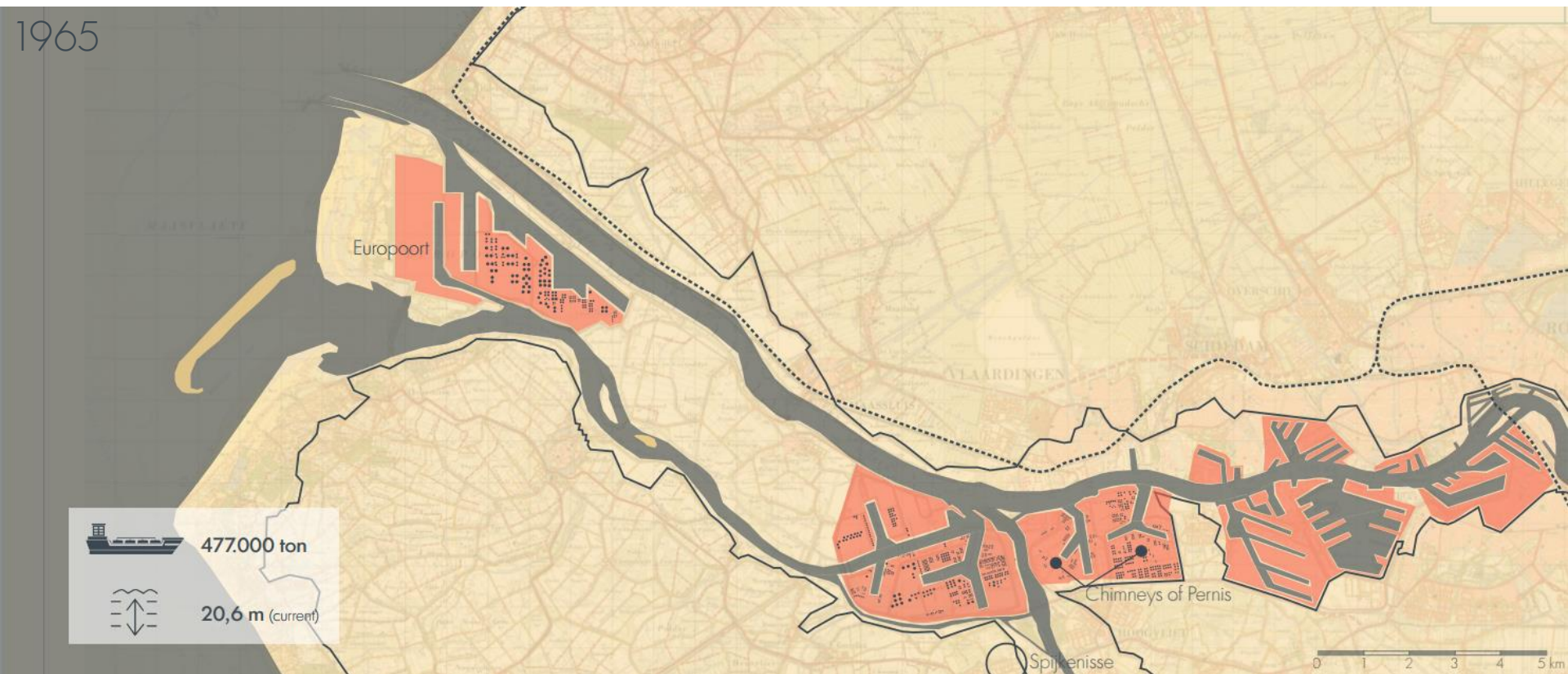
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- 1951 – Expansion plan Vlaardingen
- 1954 – Derde Petroleumhaven

Historical Development Harbour of Rotterdam

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- Large scaling-up of tankers -> Europoort
- Housing shortage Spijkensisse
- 1967 - Chimneys of Pernis (213 m)

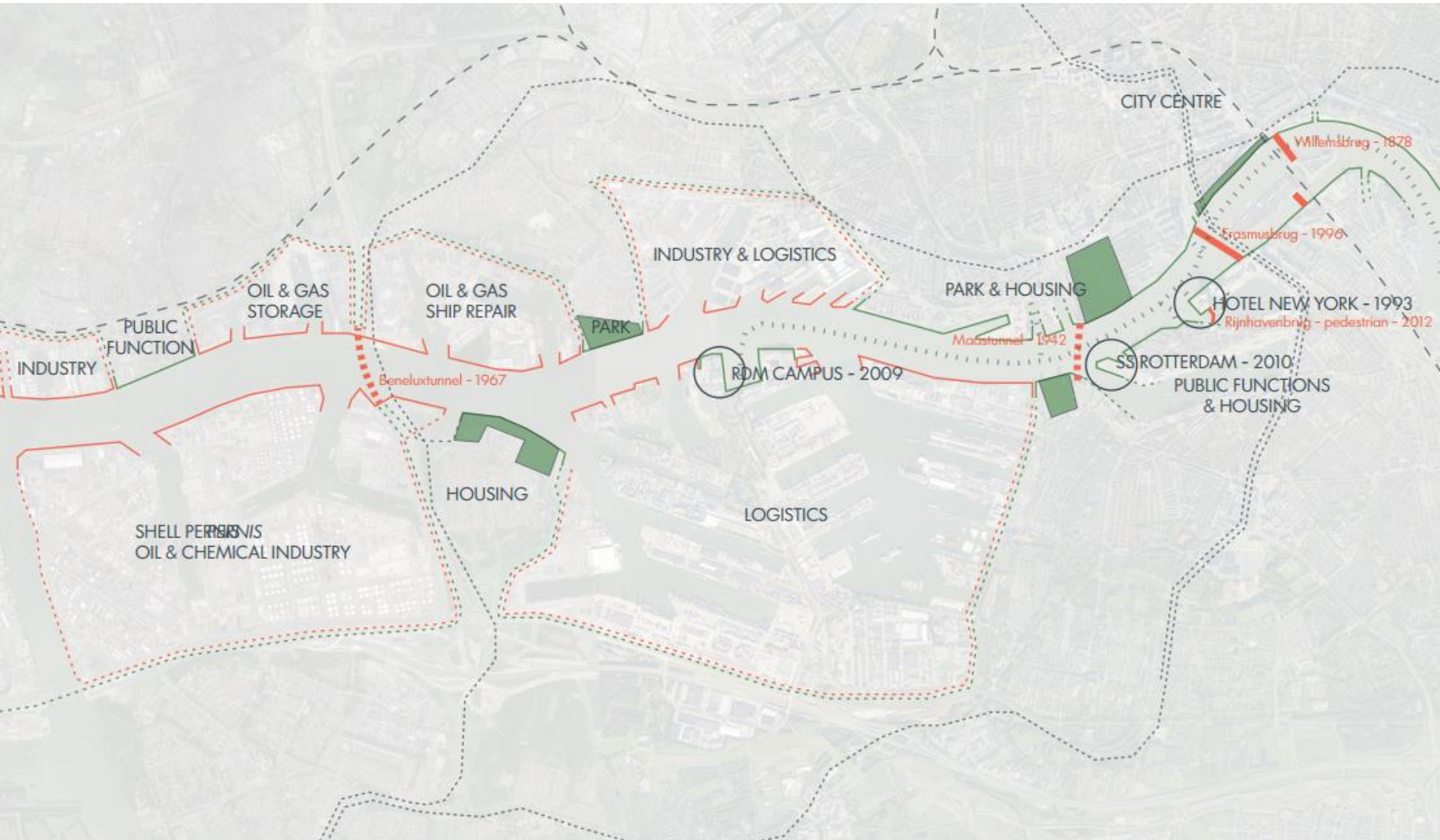
Historical Development Harbour of Rotterdam

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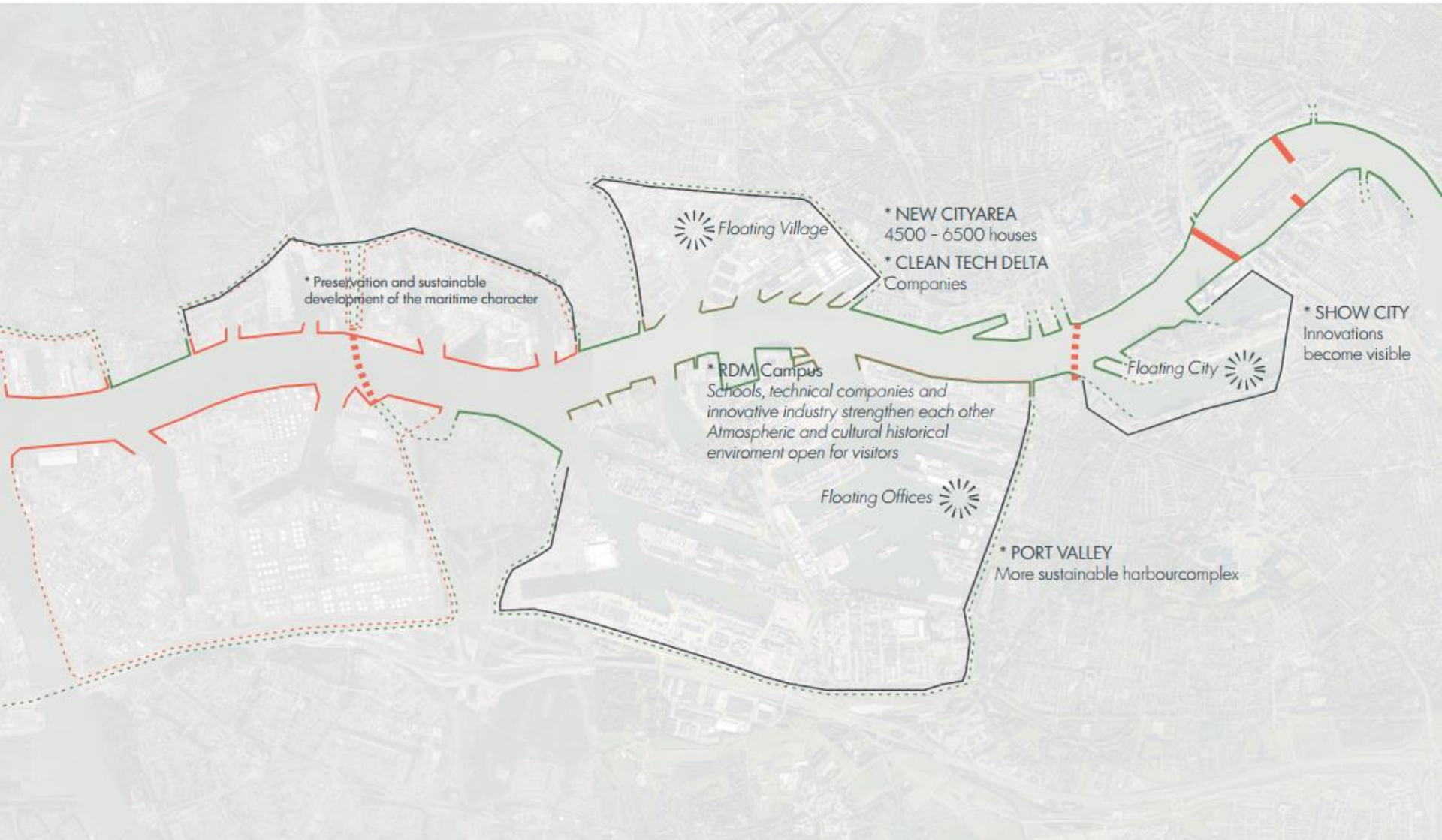
- Maasvlakte I
- Constantly checking the environment

Region

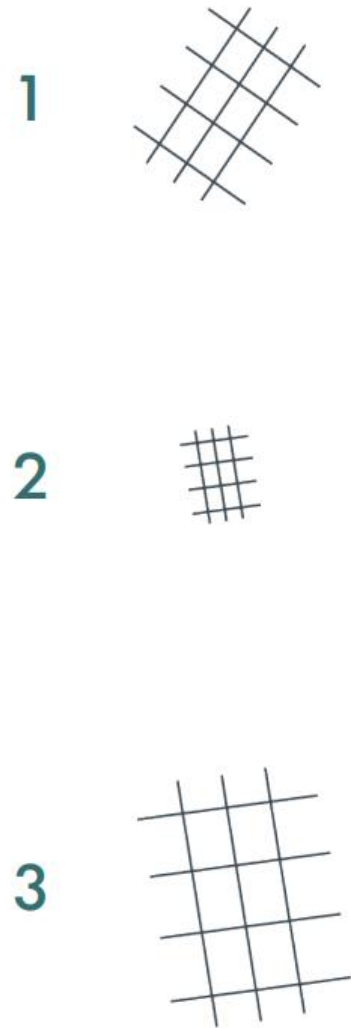
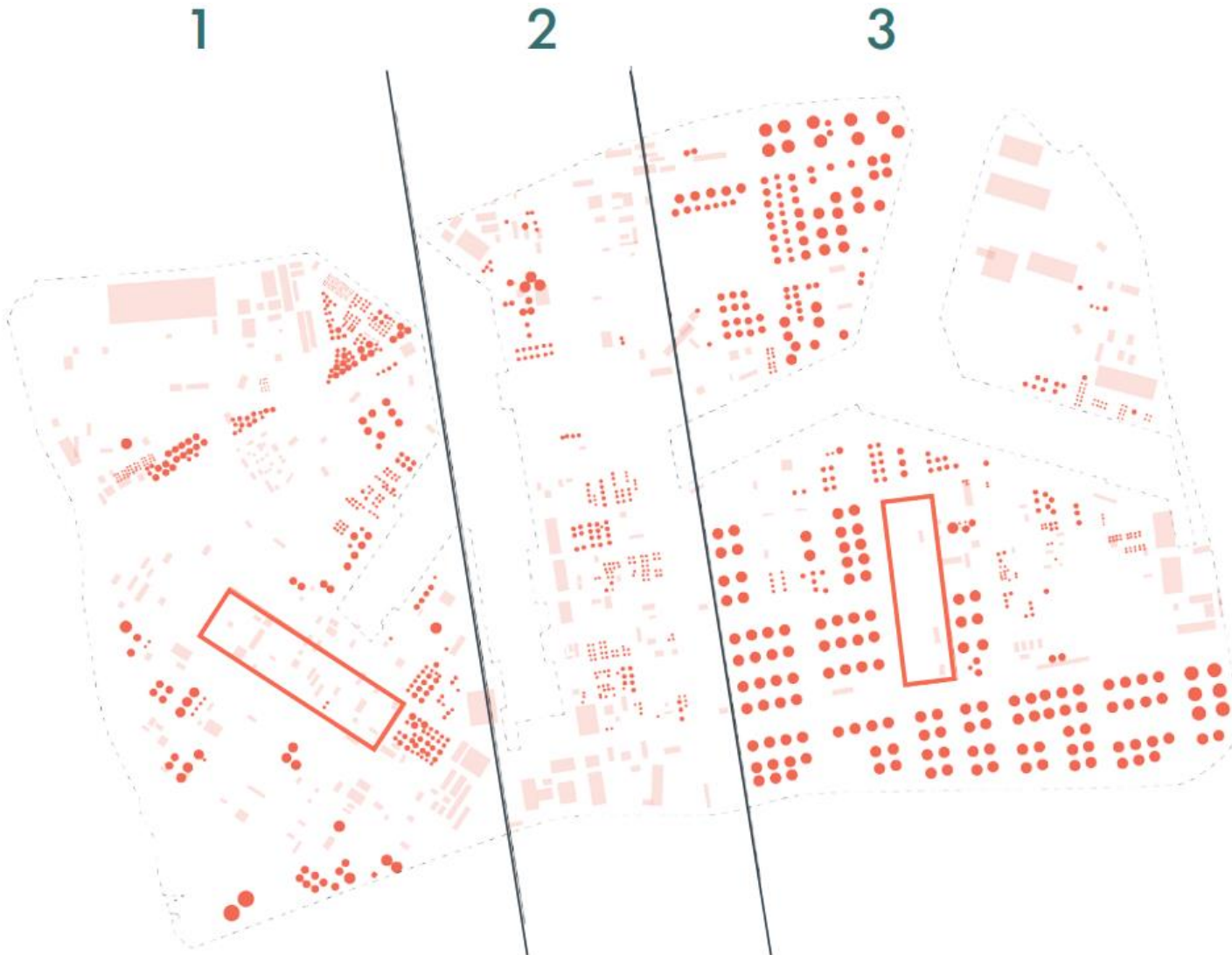


Future Developments Region

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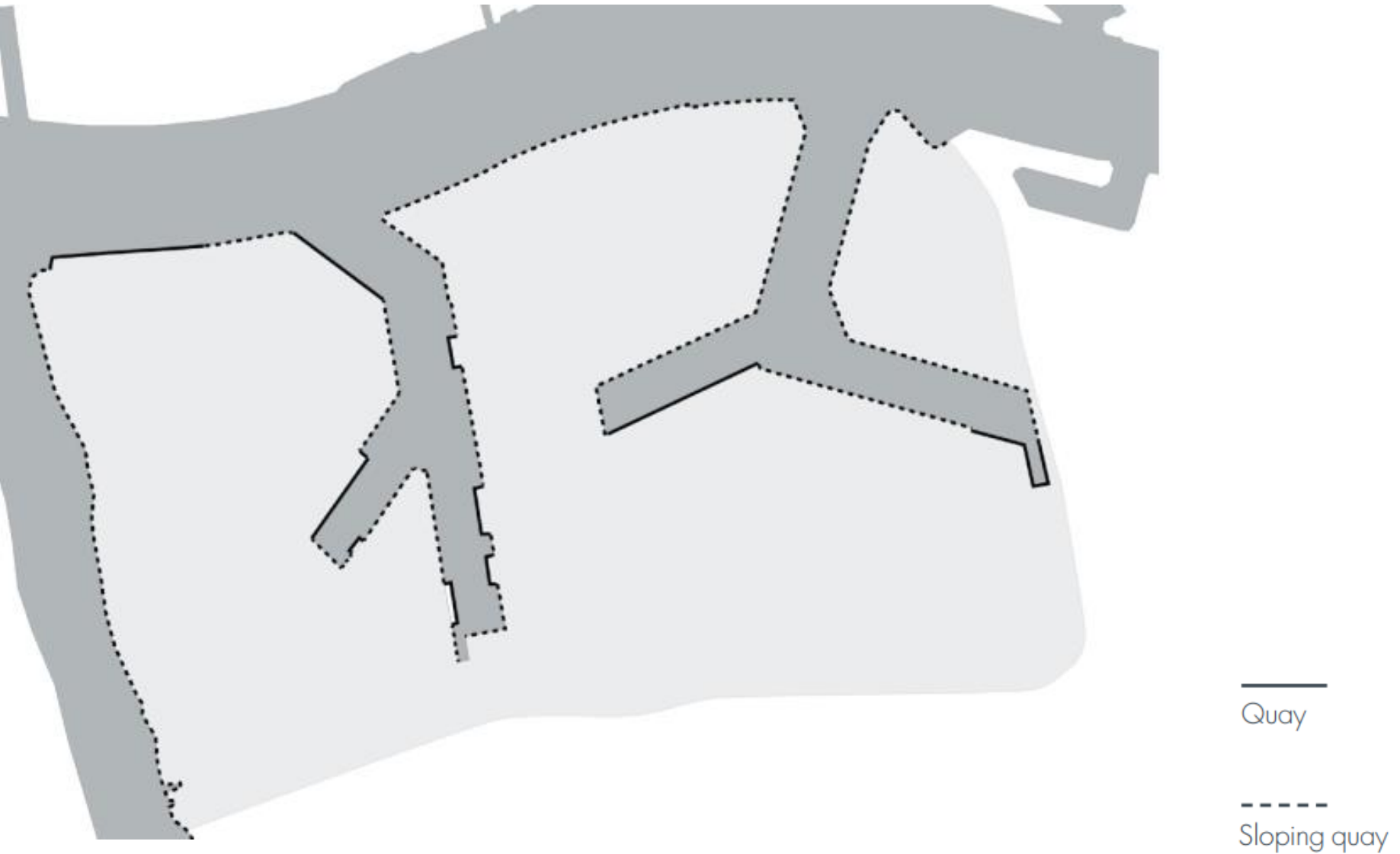


Characteristics of Pernis



Characteristics of Pernis

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Characteristics of Pernis

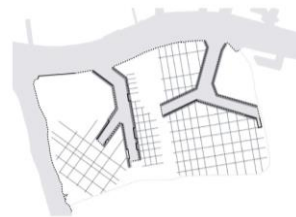
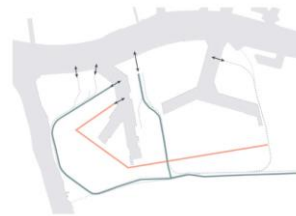
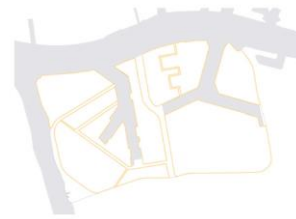
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Image of the City

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- Kevin Lynch
- 5 elements
 - Districts
 - Paths
 - Edges
 - Nodes
 - Landmarks



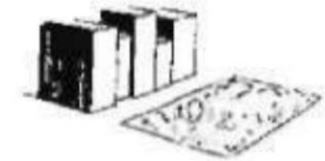
Districts



Paths



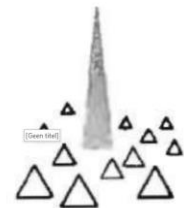
Edges



Nodes



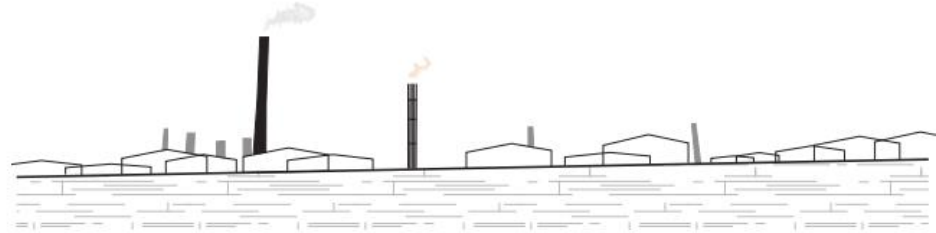
Landmarks



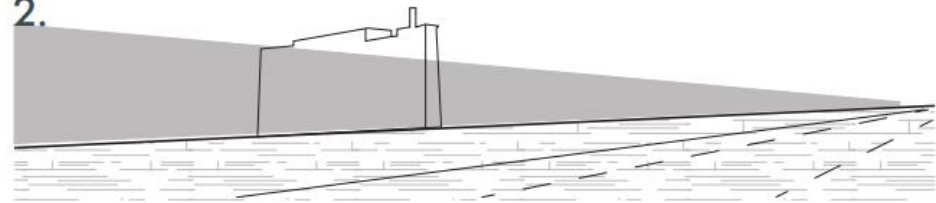
Silhouette



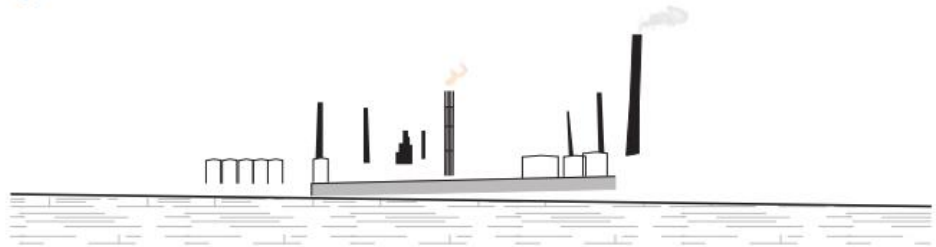
1.



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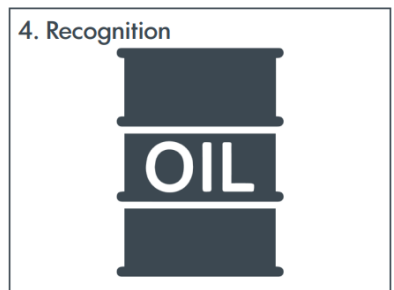
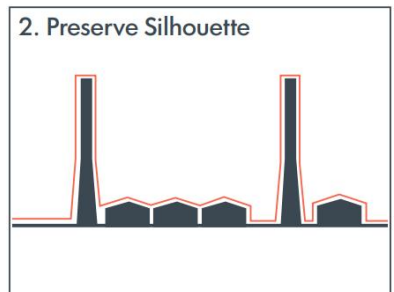
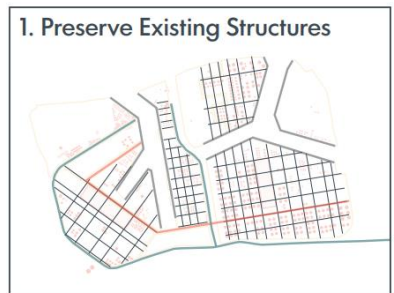
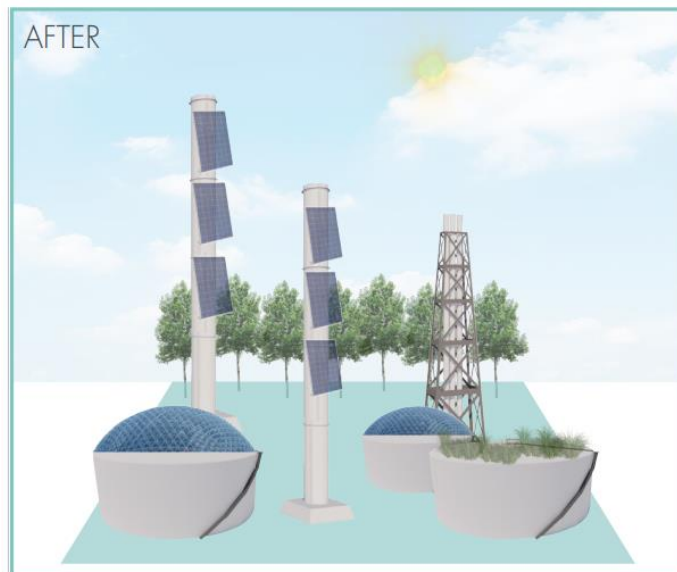
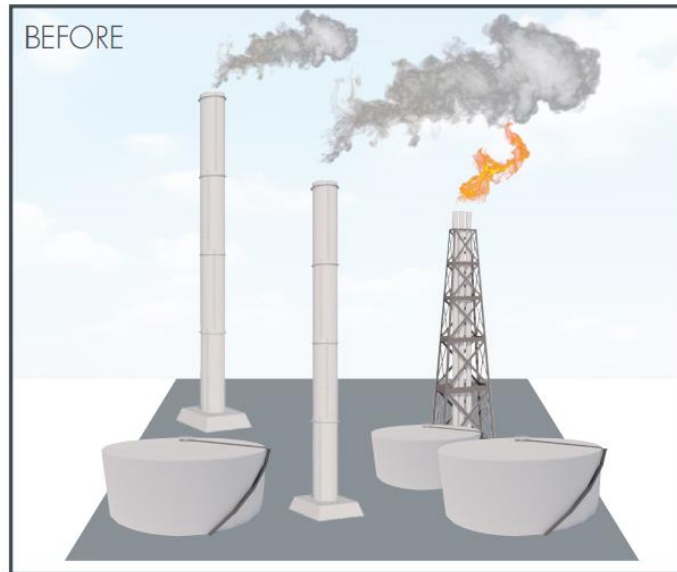


Value Map & Mental Map

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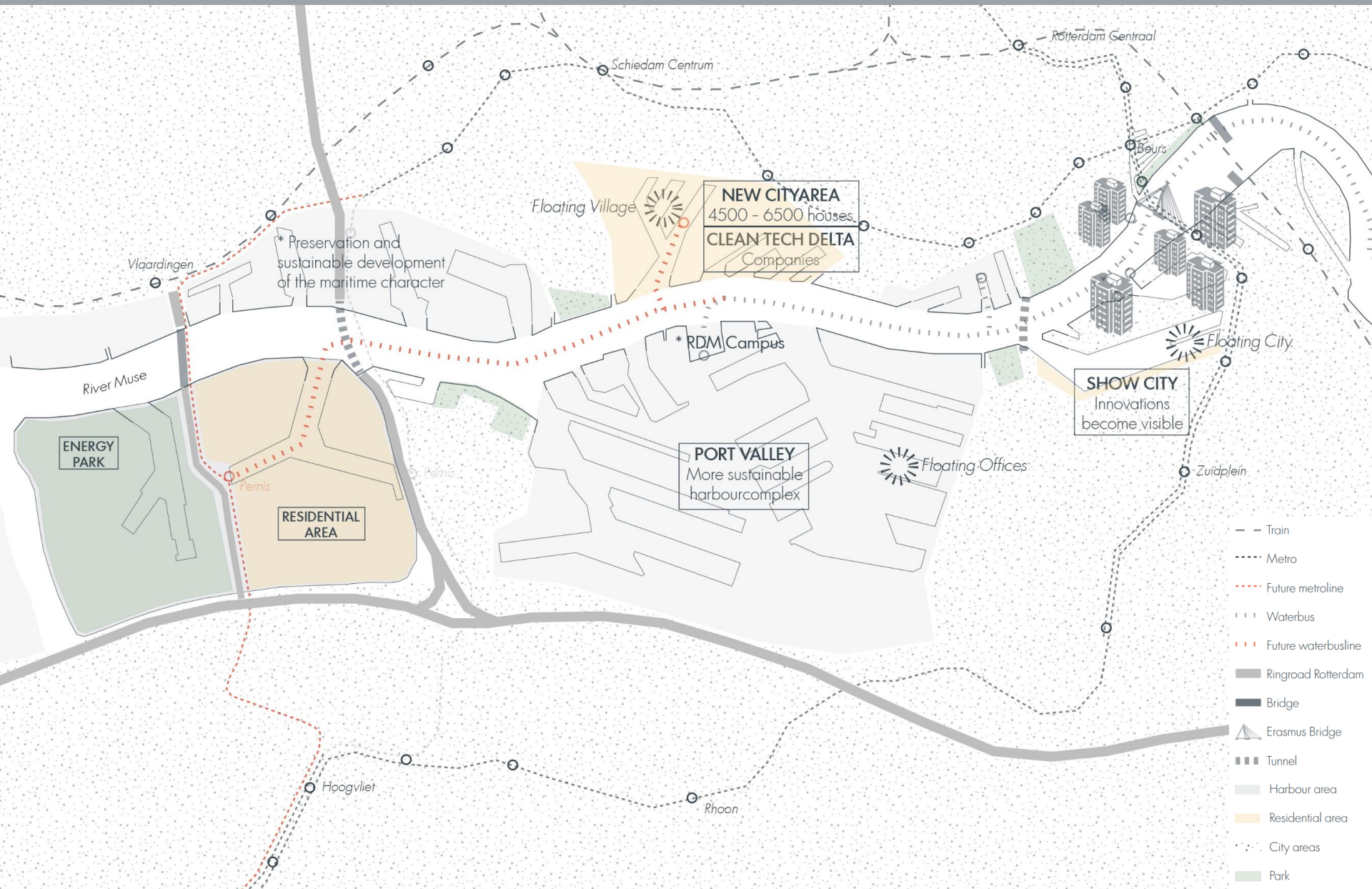


Core Values



Design

Zoning Plan City & Region



* Preservation and sustainable development of the maritime character

NEW CITYAREA
4500 - 6500 houses
CLEAN TECH DELTA
Companies

PORT VALLEY
More sustainable
harbourcomplex

SHOW CITY
Innovations
become visible

Zoning Plan



Zoning Plan



Zoning Plan



Zoning Plan



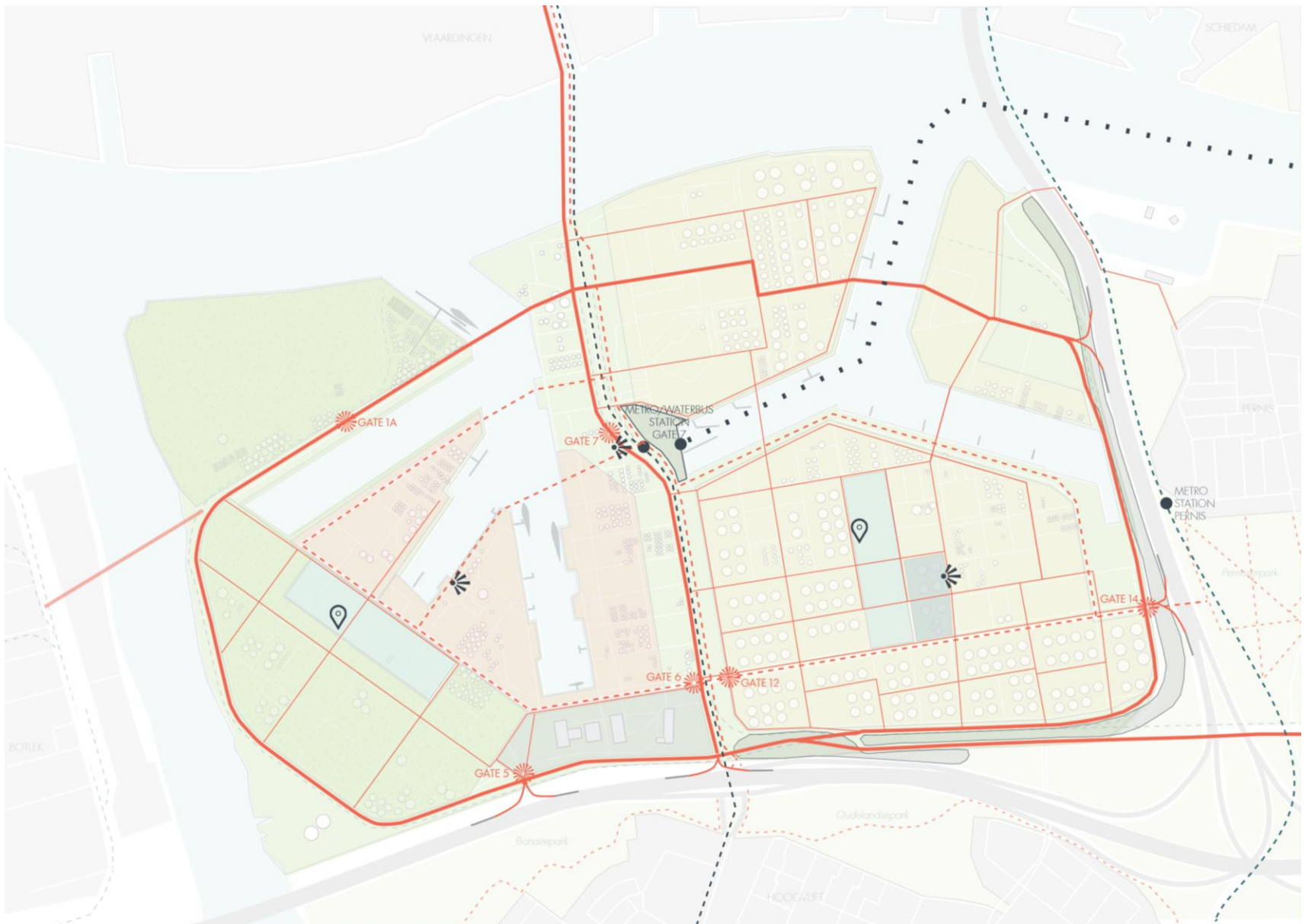
Zoning Plan



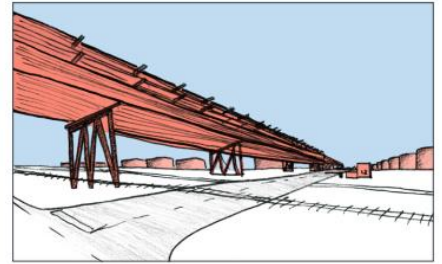
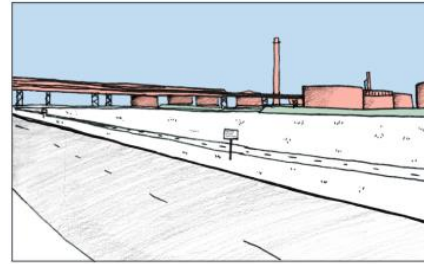
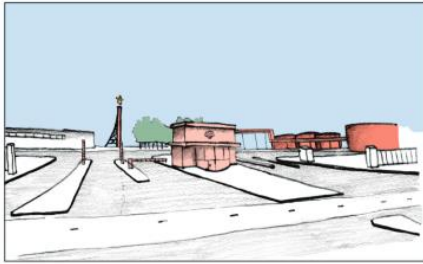
Zoning Plan



Zoning Plan



How to Enter?

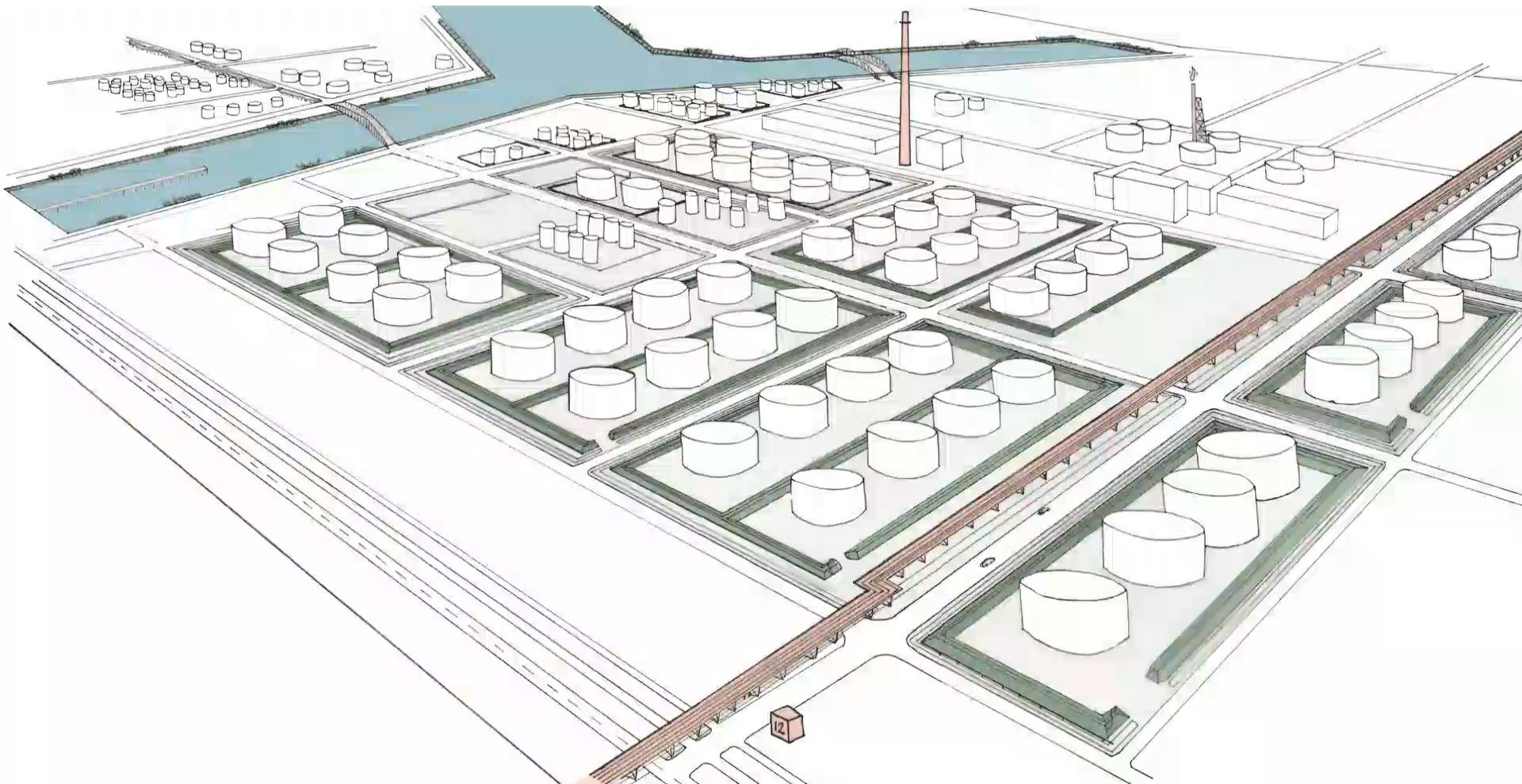


Gate 5



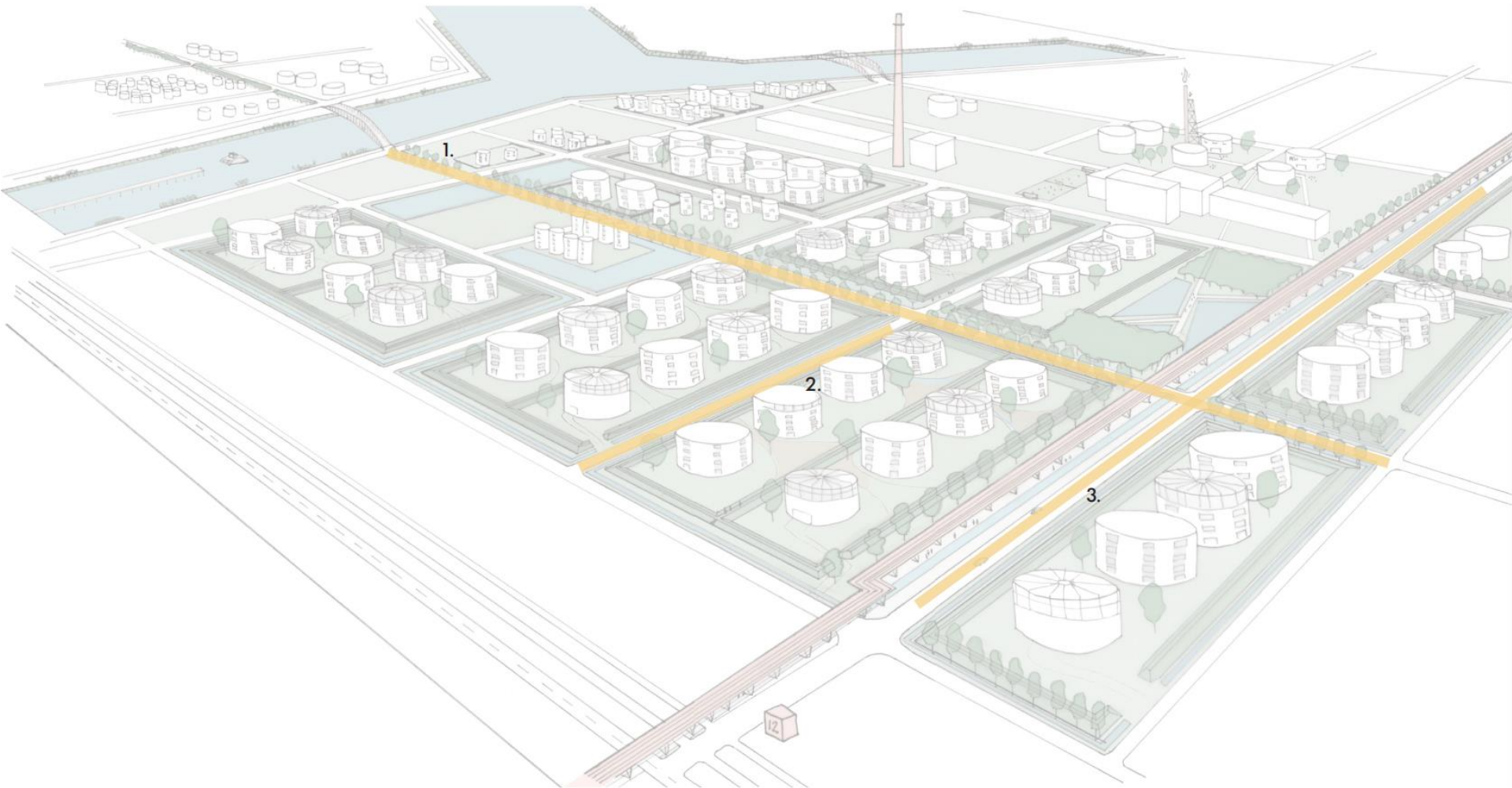
Overview Residential Area

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Overview Residential Area

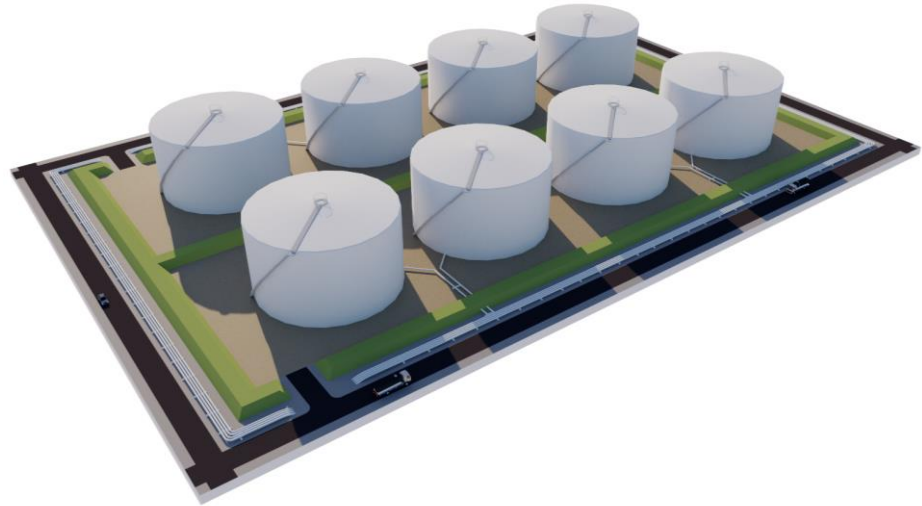
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Three Possible Images

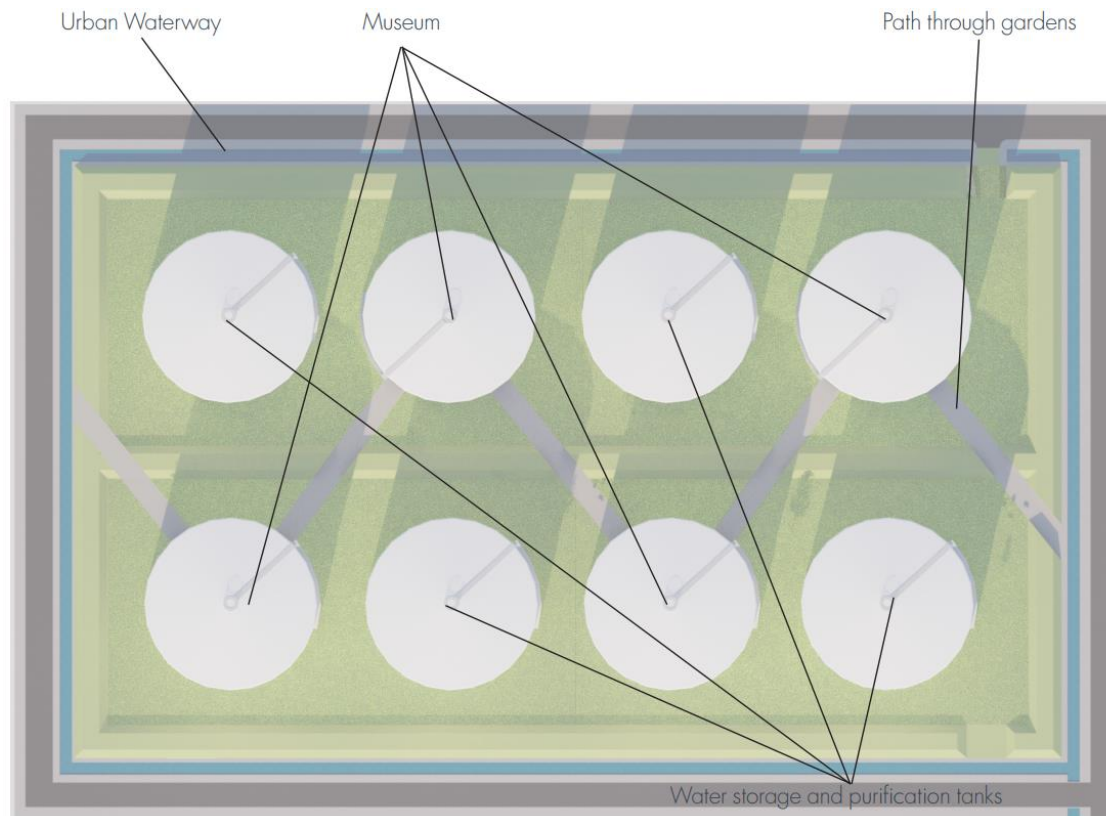
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- Monumental
- Residential Area
- (Energy) Park



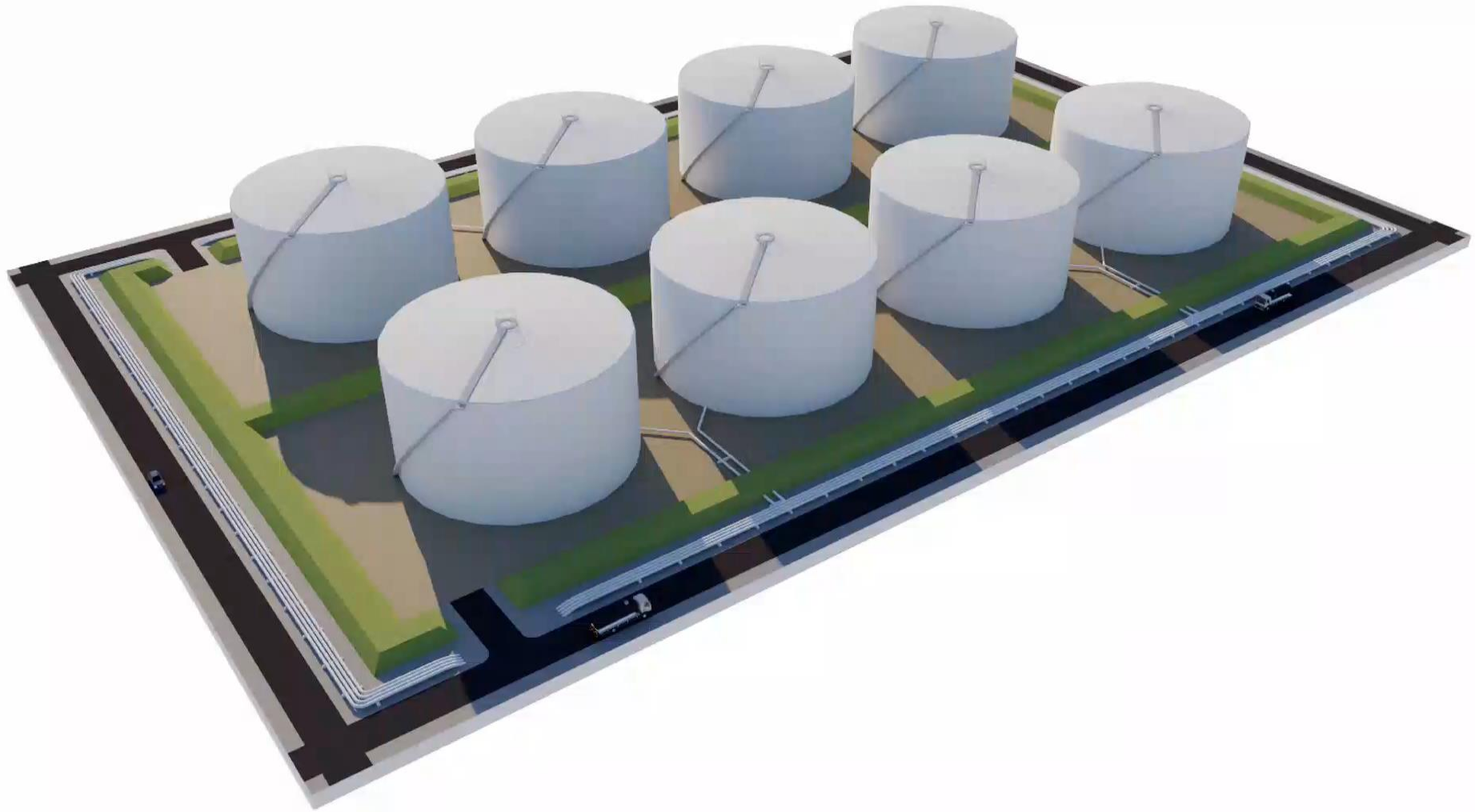
1 Monumental

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1 Monumental

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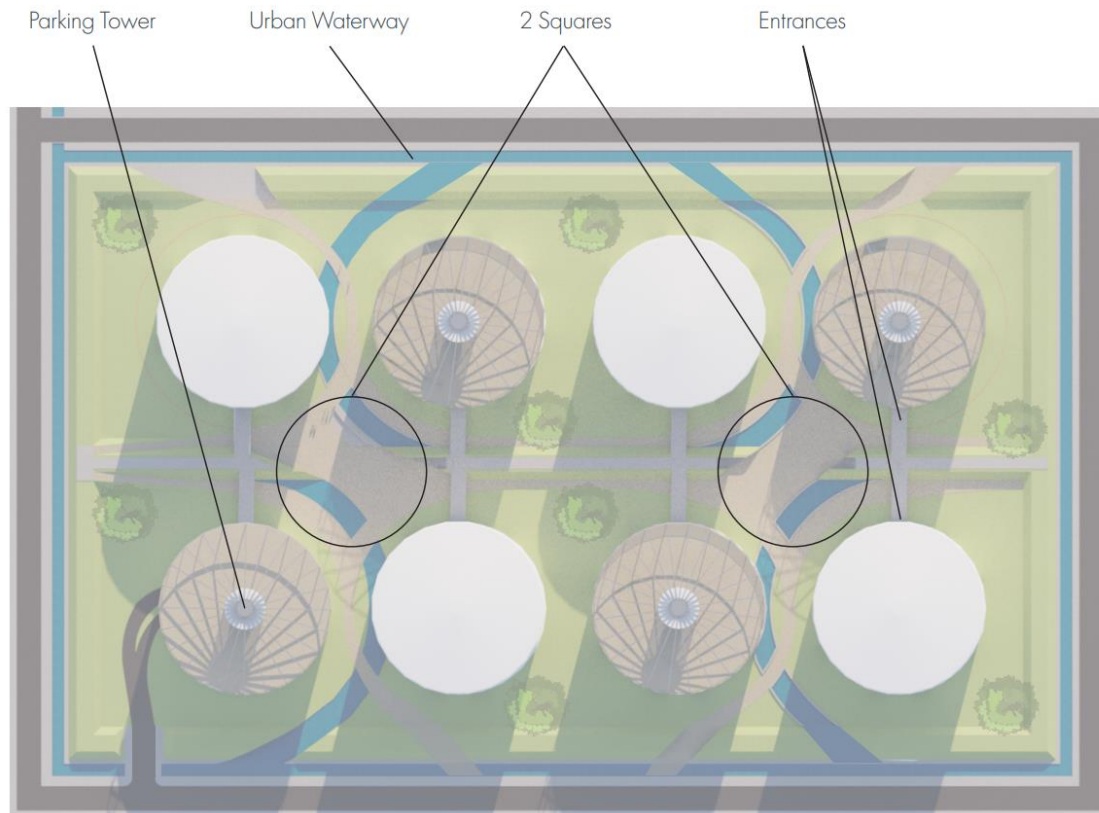


1 Monumental



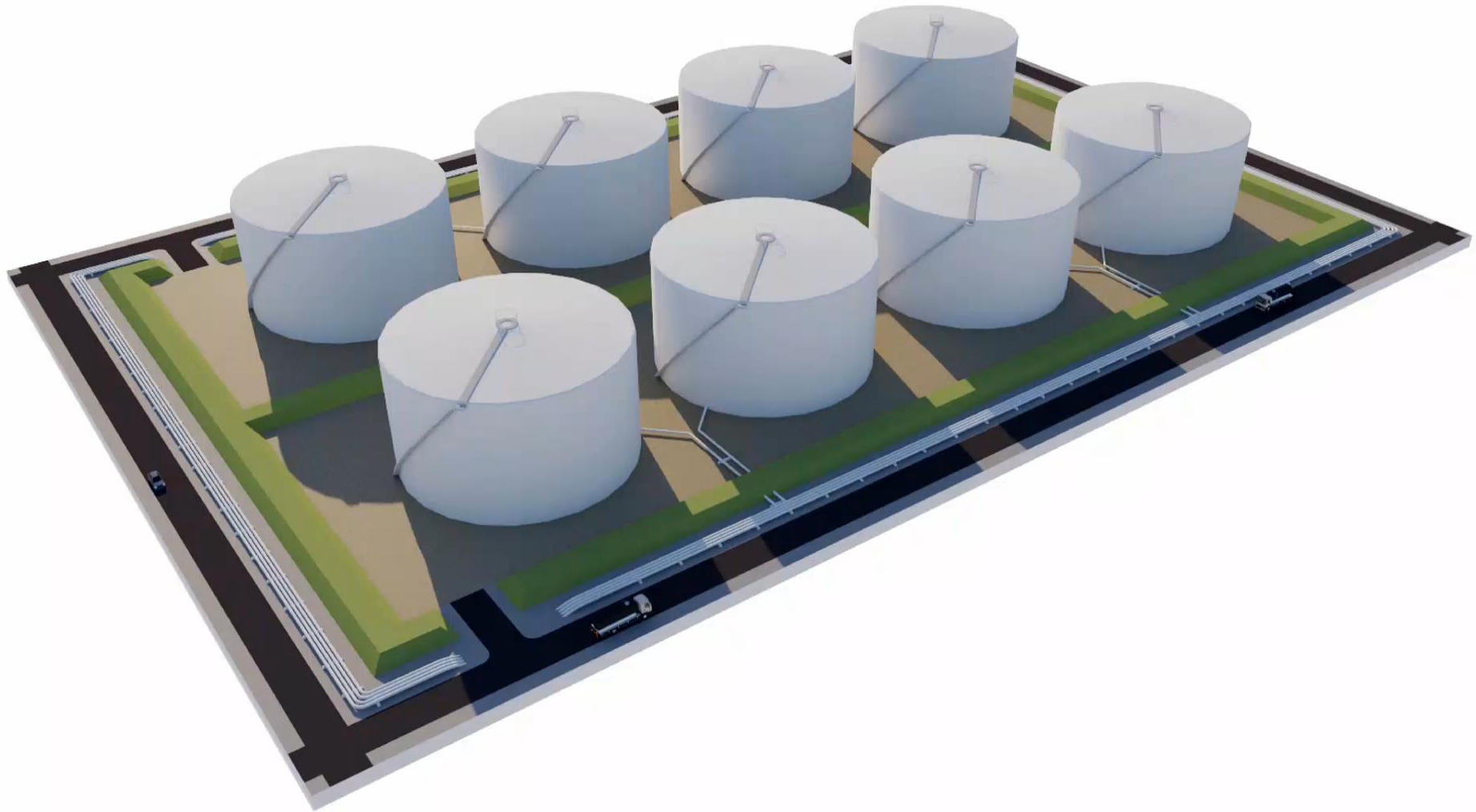
2 Residential Area

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2 Residential Area

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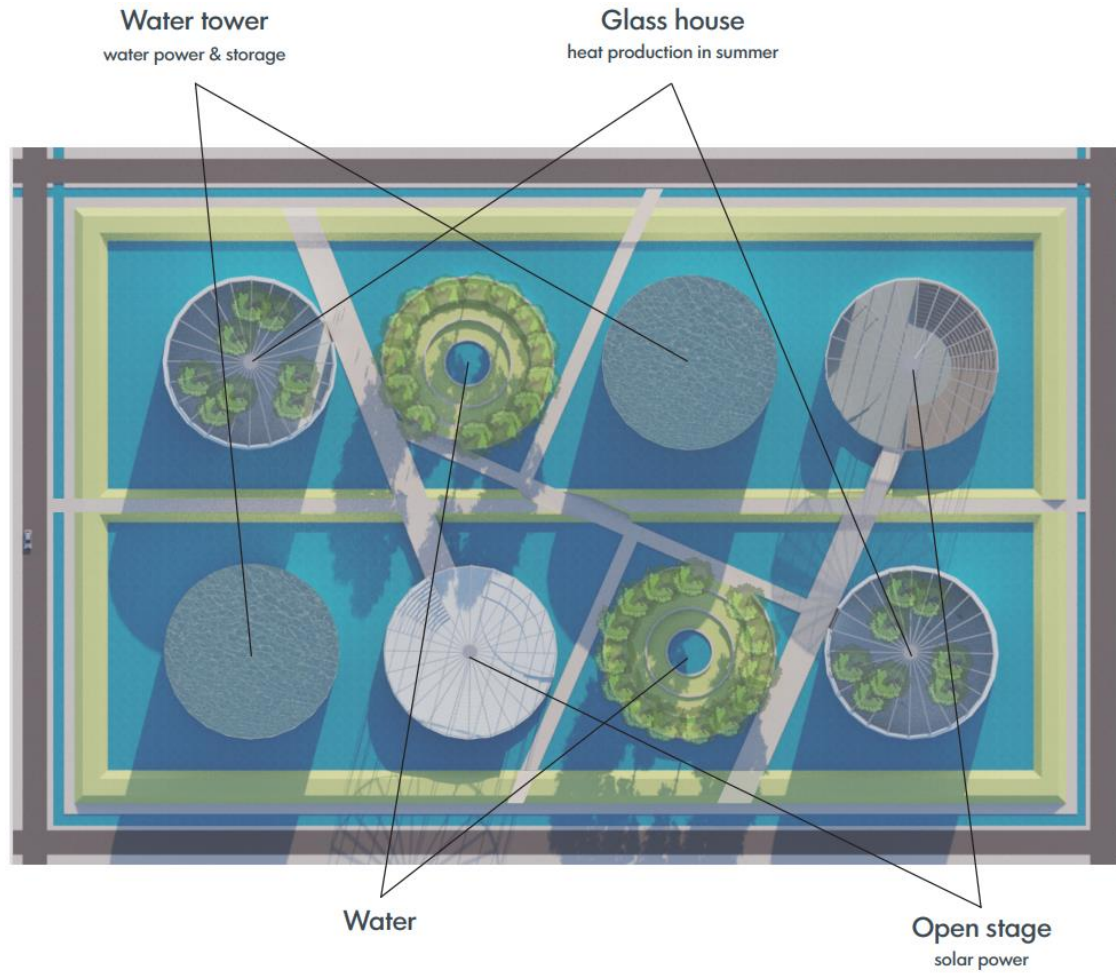


2 Residential Area

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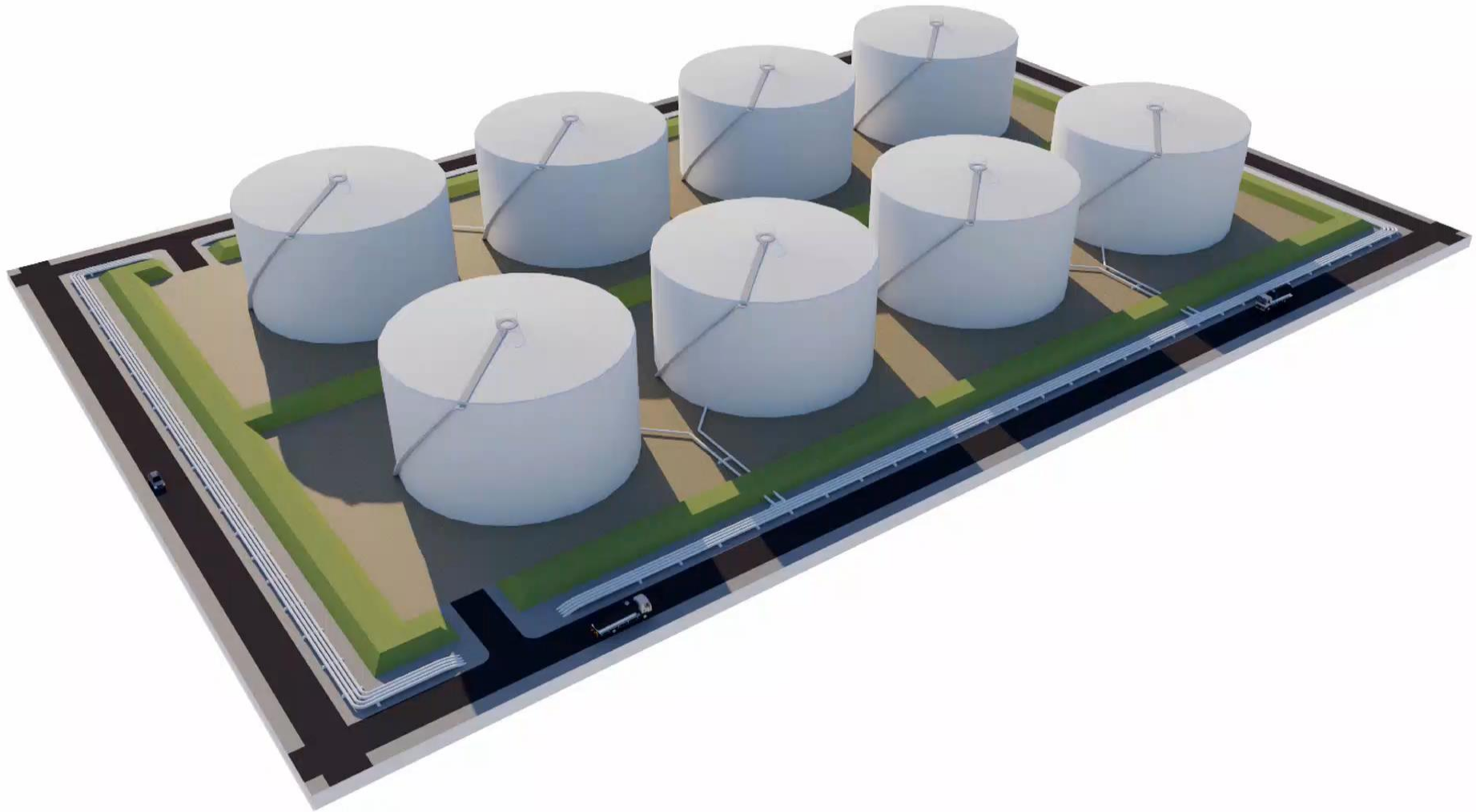


3 (Energy) Park



3 (Energy) Park

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3 (Energy) Park

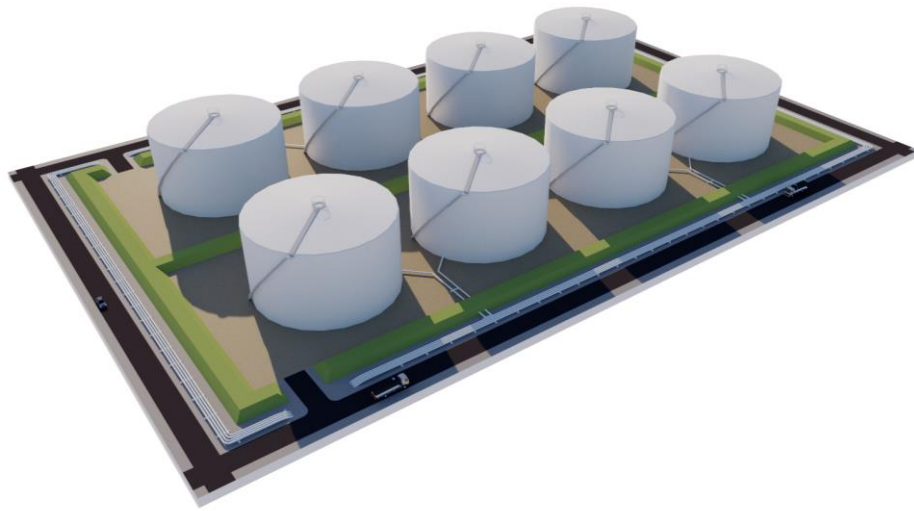


Conclusions

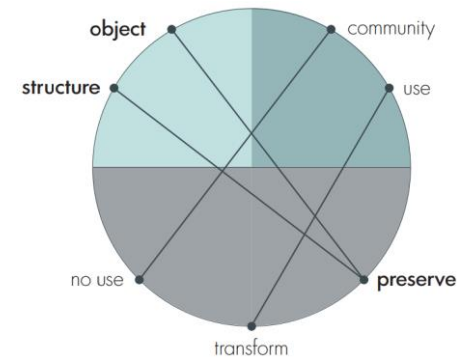
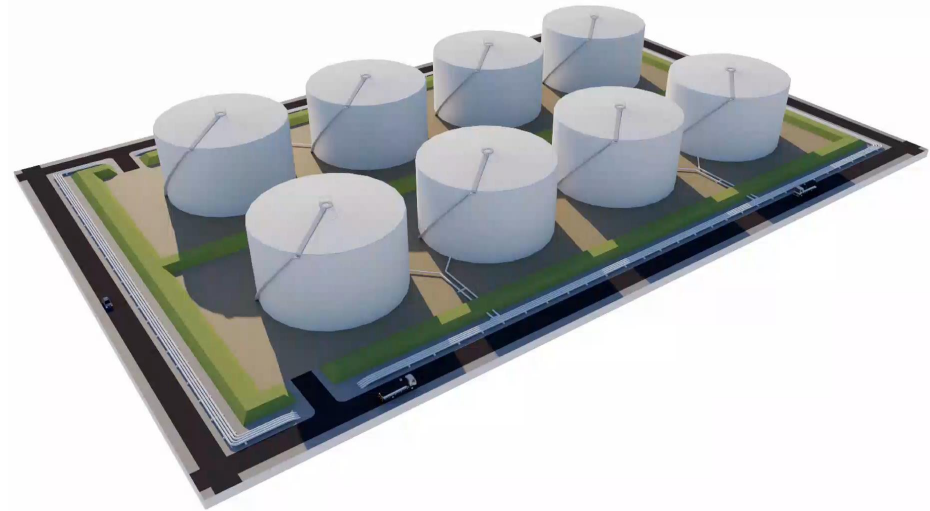
Conclusion: Three Possible Designs

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Current Situation



Monumental



Conclusions

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- Fossil Fuels to Renewable Energy
- Harbour grows out of the city – New Function Pernis
- Oil Industry has become a landscape
- The former use tells the Story
- Residential Area and Energy Park

Questions?