

Stedenbouw in de delta - verleden, heden, toekomst

Han Meyer 7 september 2010



1e uur:

Stedebouwkundige typologie in de Hollandse delta

- Amsterdam en Rotterdam: overeenkomsten en verschillen

2e uur:

- ontwerpend onderzoek Rotterdam

- ontwerpend onderzoek Purmerstad

1e uur:

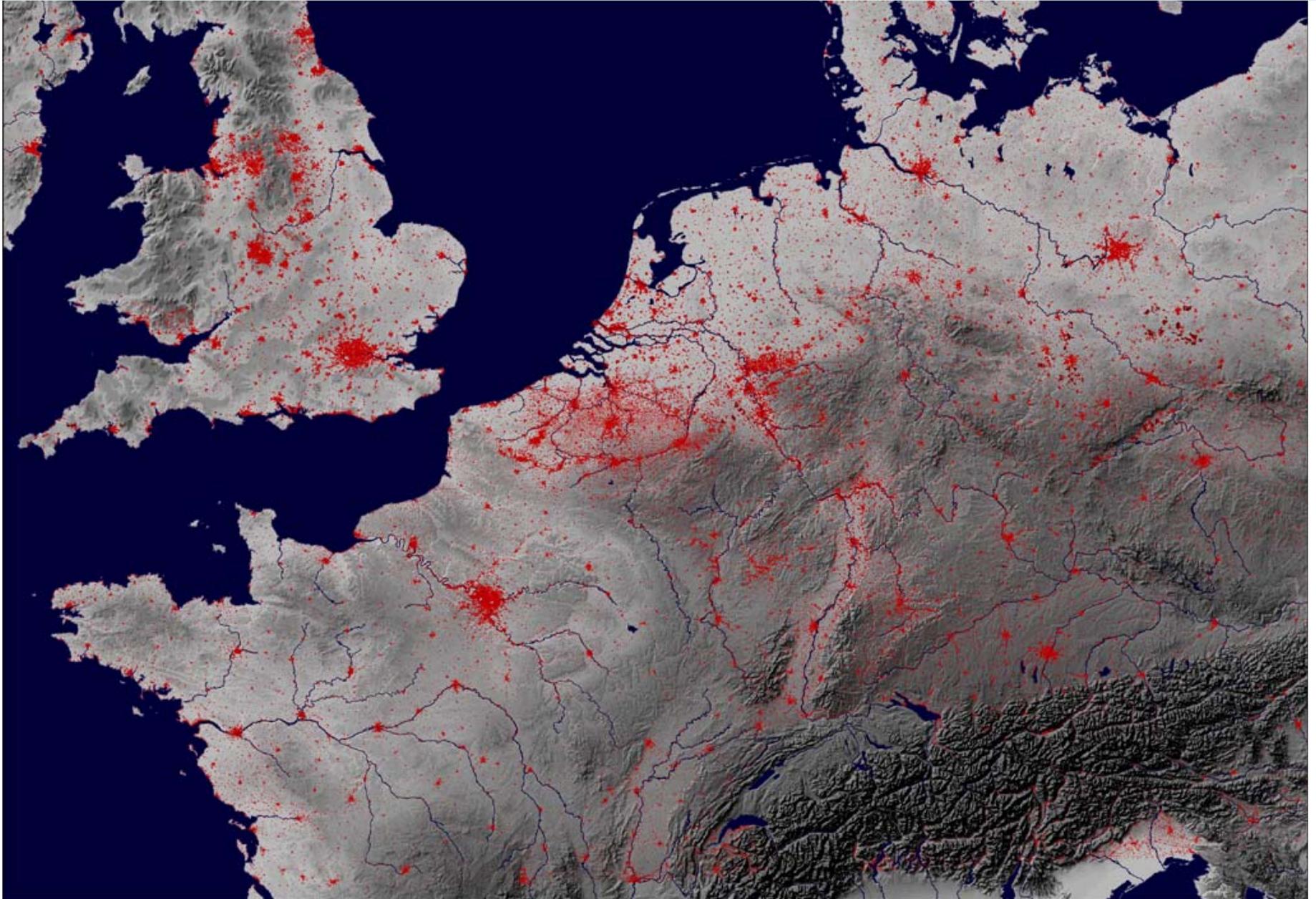
Stedebouwkundige typologie in de Hollandse delta

- Amsterdam en Rotterdam: overeenkomsten en verschillen

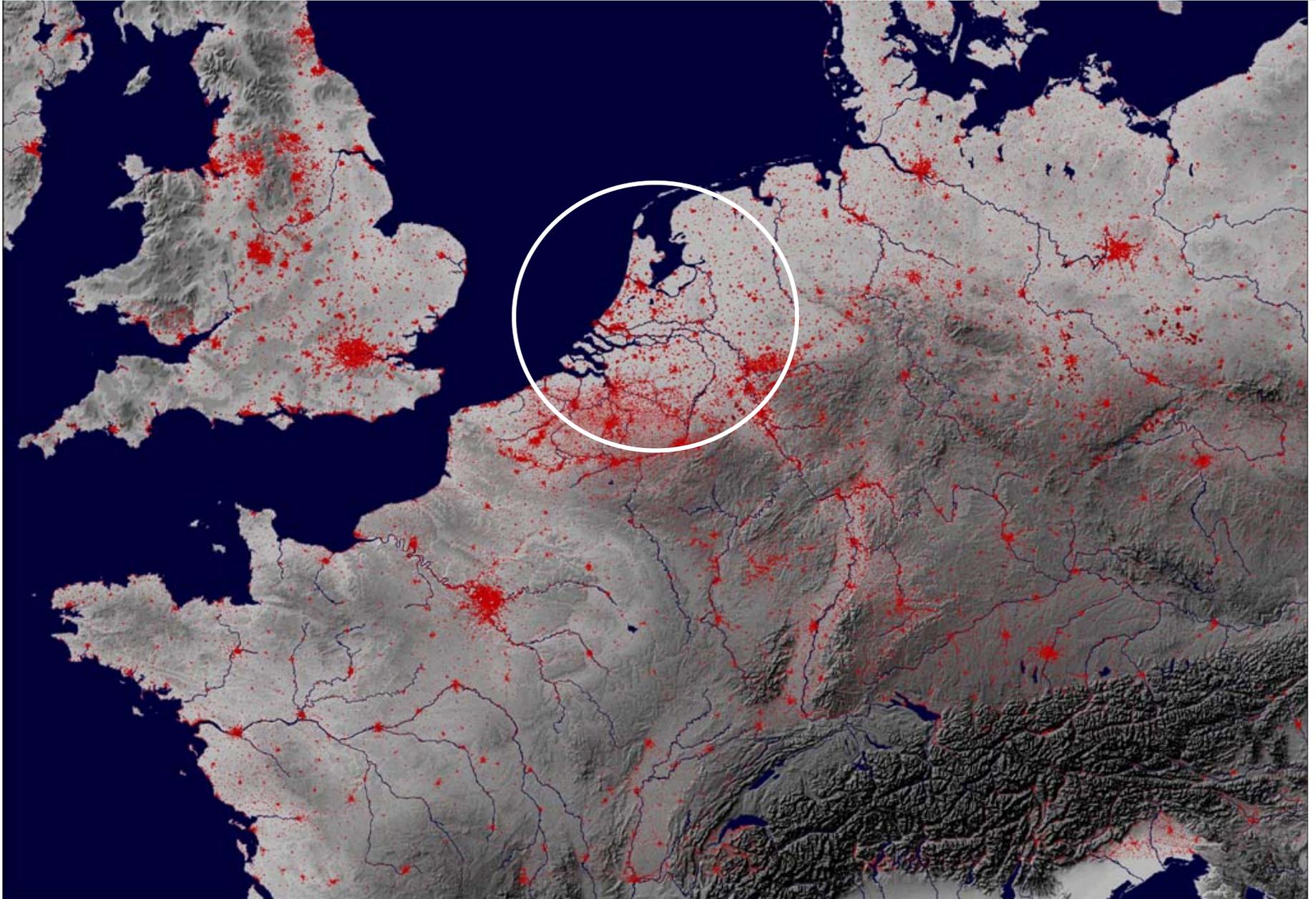
Urbanization in the Dutch Delta



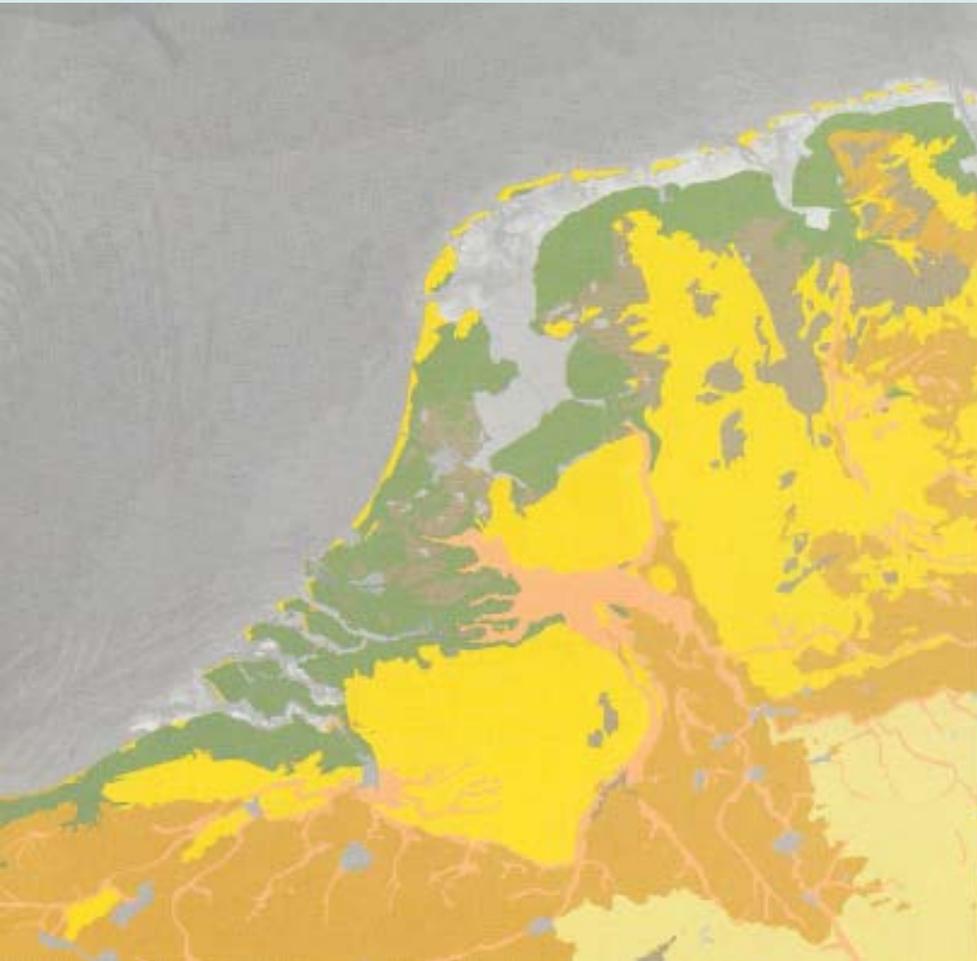
Urbanization in the Dutch Delta



Urbanization in the Dutch Delta



A transition-zone between sea and land



Soil qualities
(green = peat, very soft)



Ground levels
(blue = below sea level)

Man-Made Land

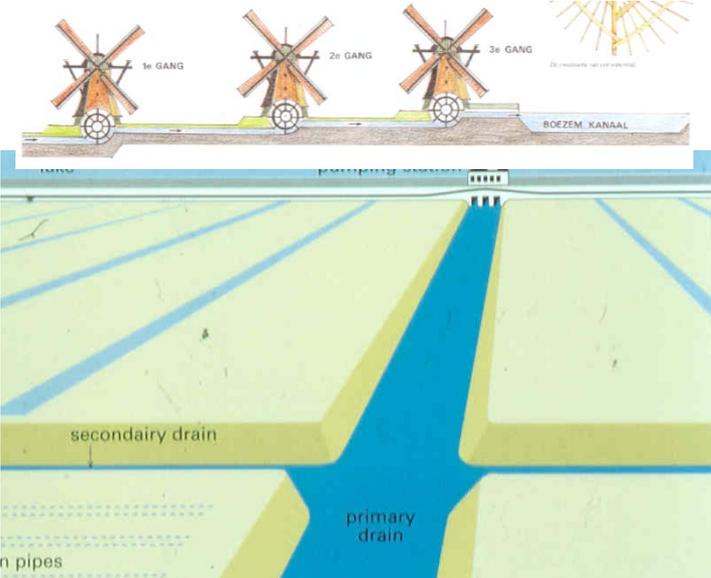
Dredge Drain Reclaim

THE ART OF A NATION

BY

DR. JOH. VAN VEEN
CHIEF ENGINEER RIJKSWATERSTAAT

Drainage



Reclaiming new land



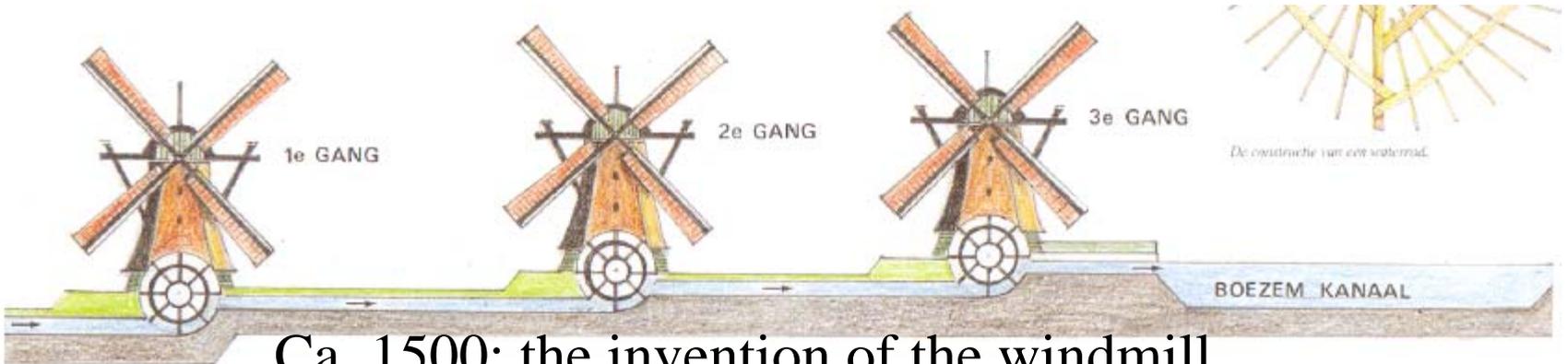
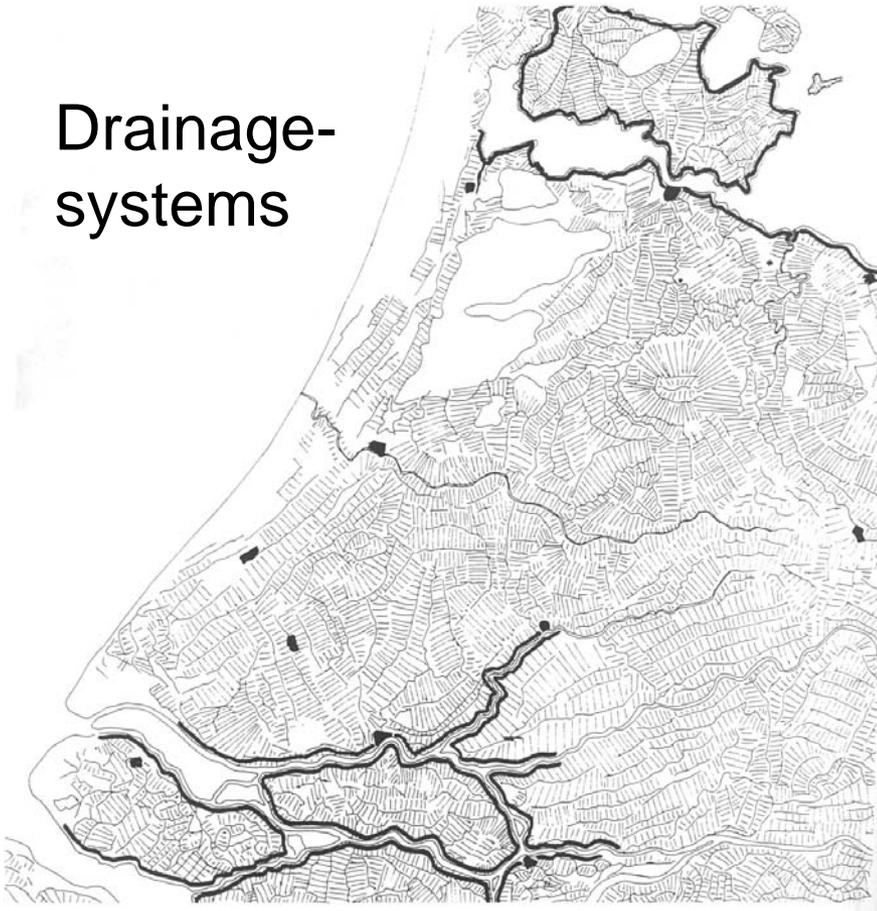
Building dikes



POLDERS drainage, reclamations

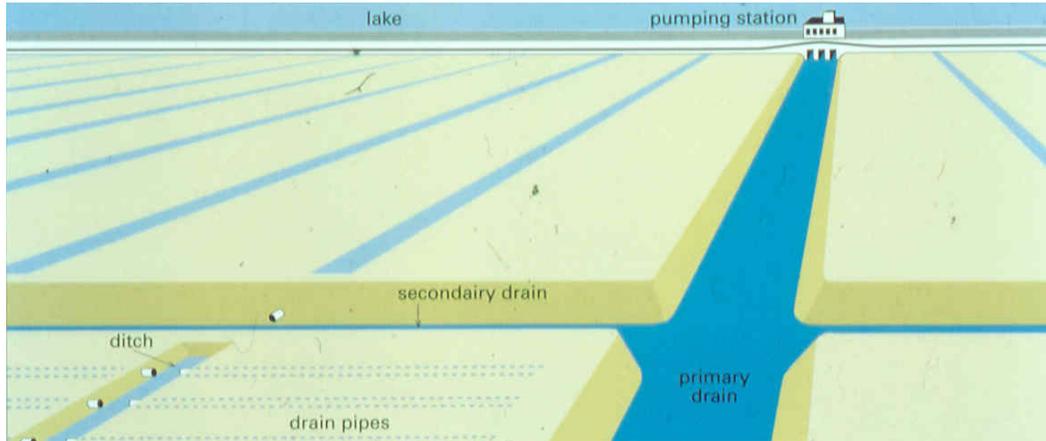


Drainage-systems

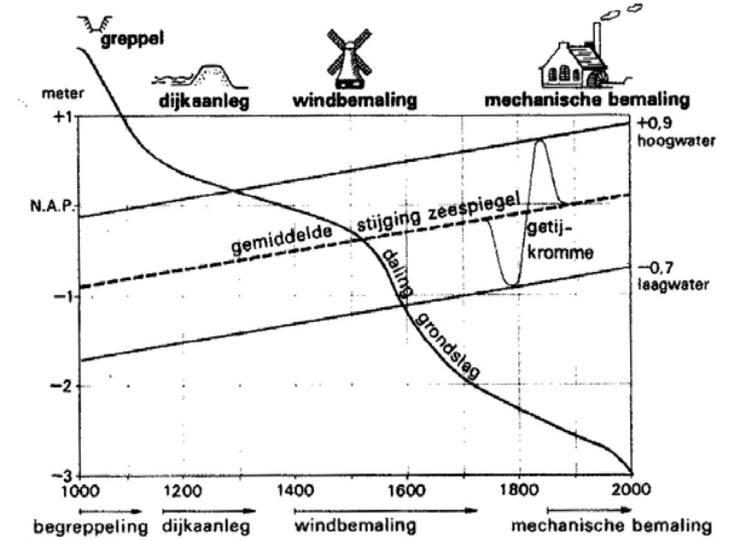


Ca. 1500: the invention of the windmill

Bodemdaling



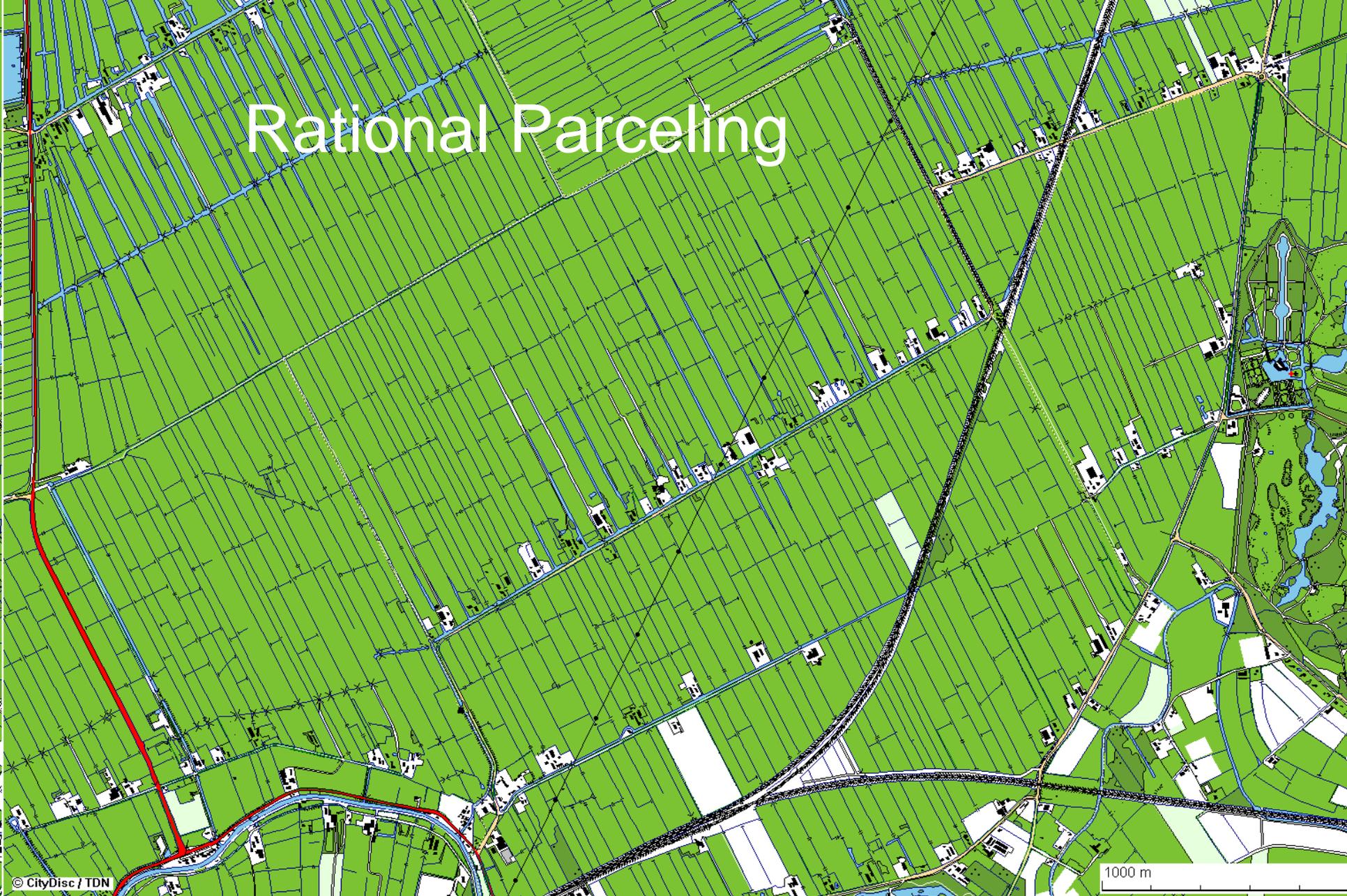
De daling van het veenoppervlak (schematisch)



Daling van veenbodems door de eeuwen heen.



Rational Parceling



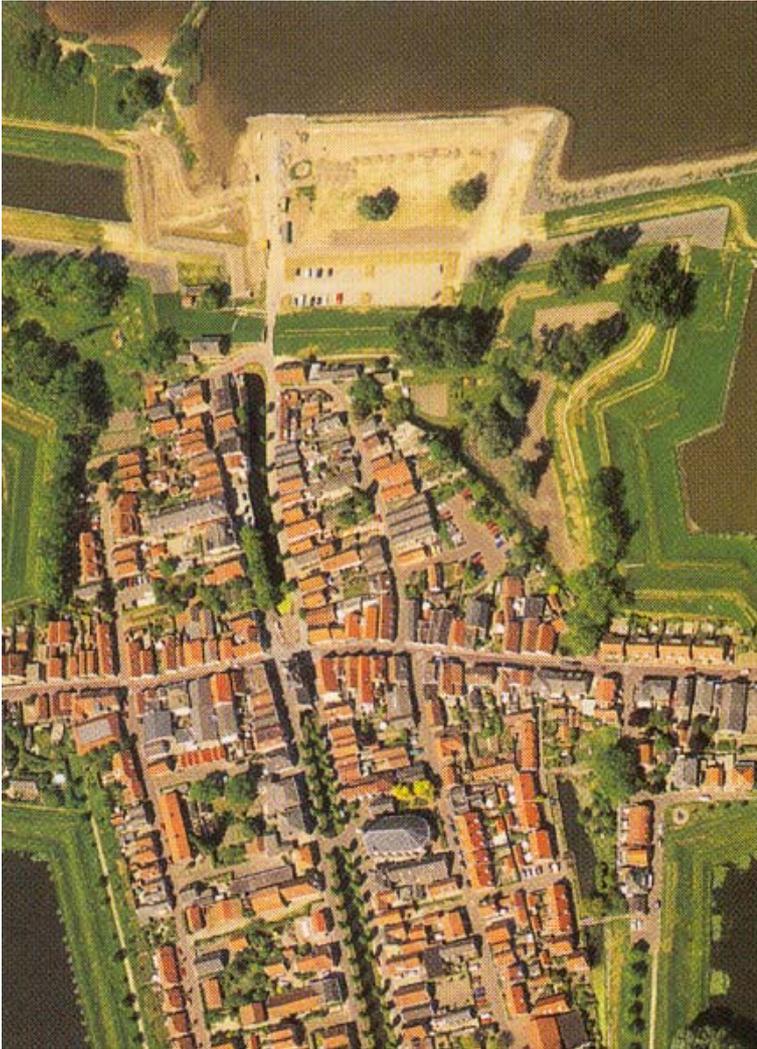
1000 m

The *City* as an hydraulic construction



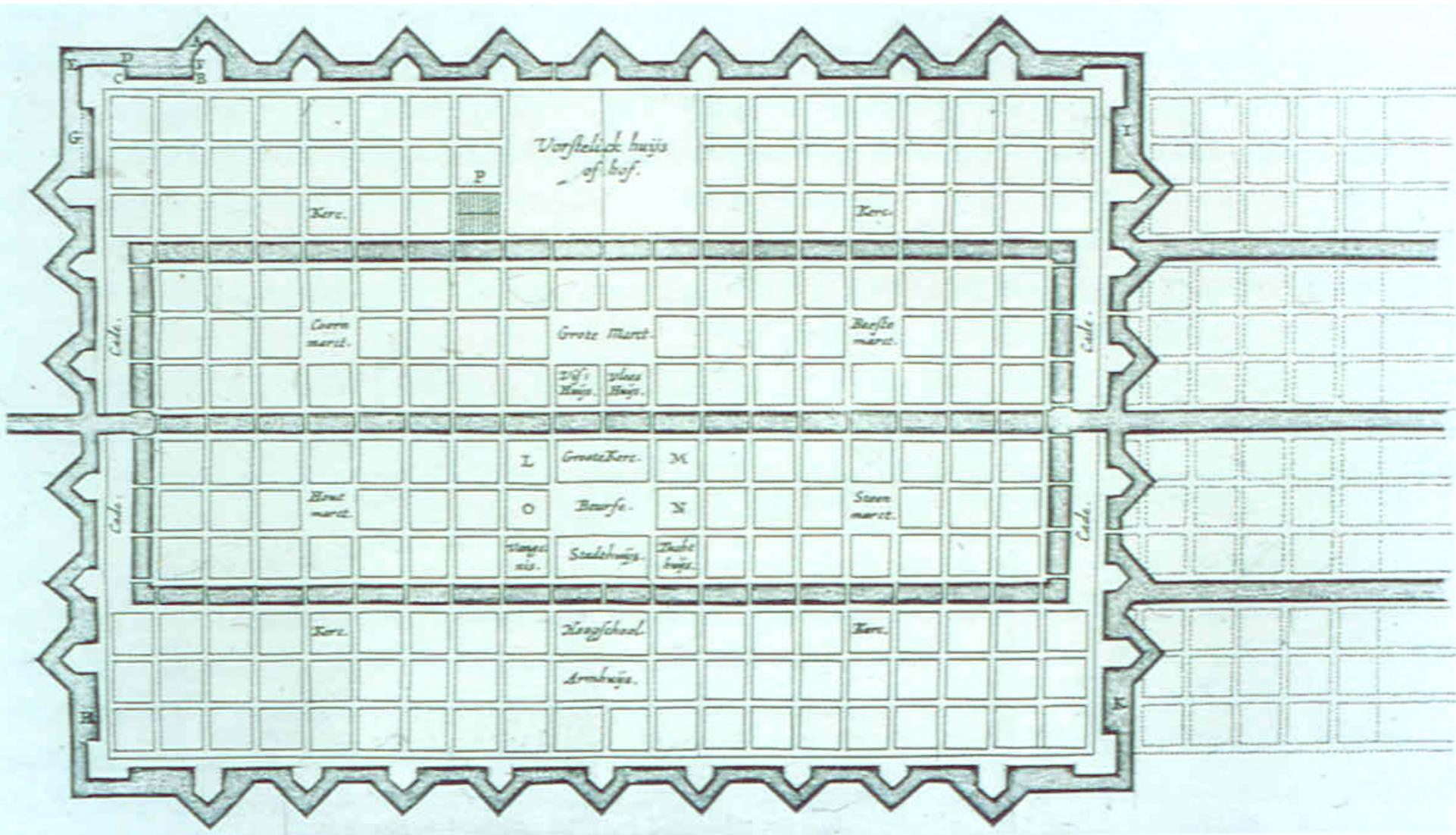


The *City* as an hydraulic construction

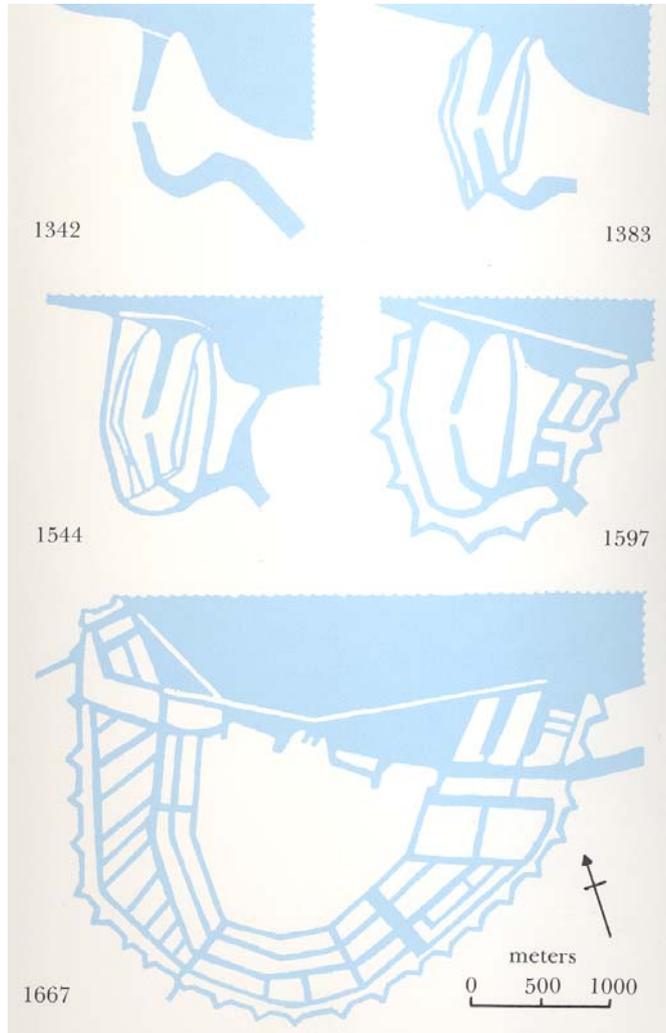


City of Nieuwpoort,
Dam-square

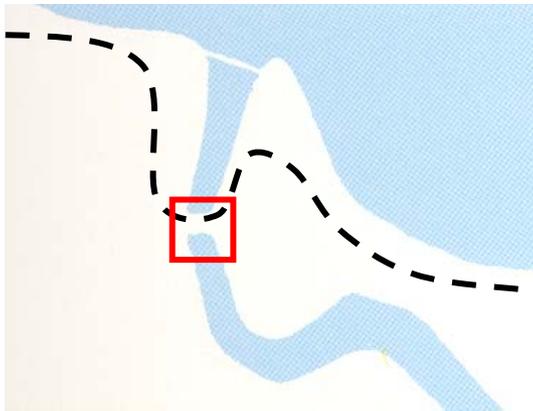
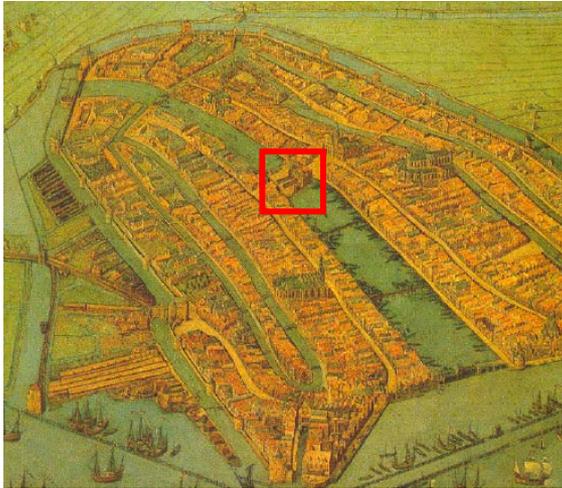
The *City* as an hydraulic construction



The *City* as an hydraulic construction

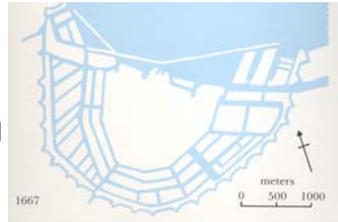


The *City* as an hydraulic construction



The *City* as an hydraulic construction

Grachten



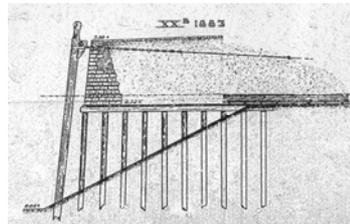
Singels



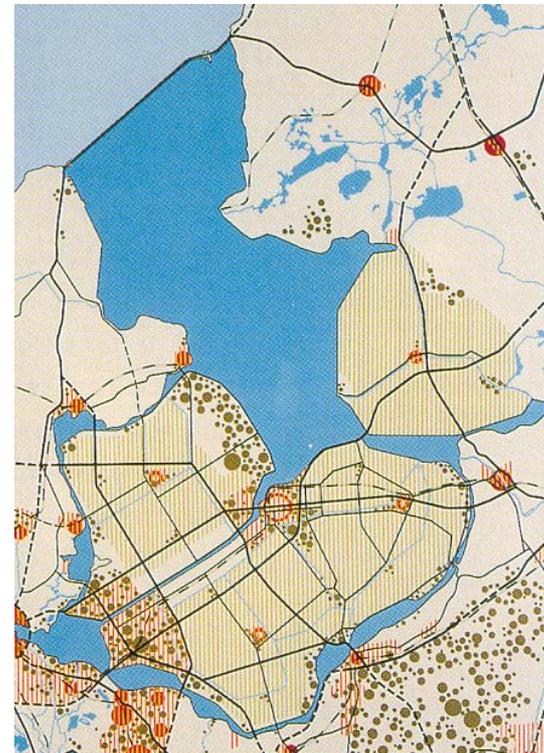
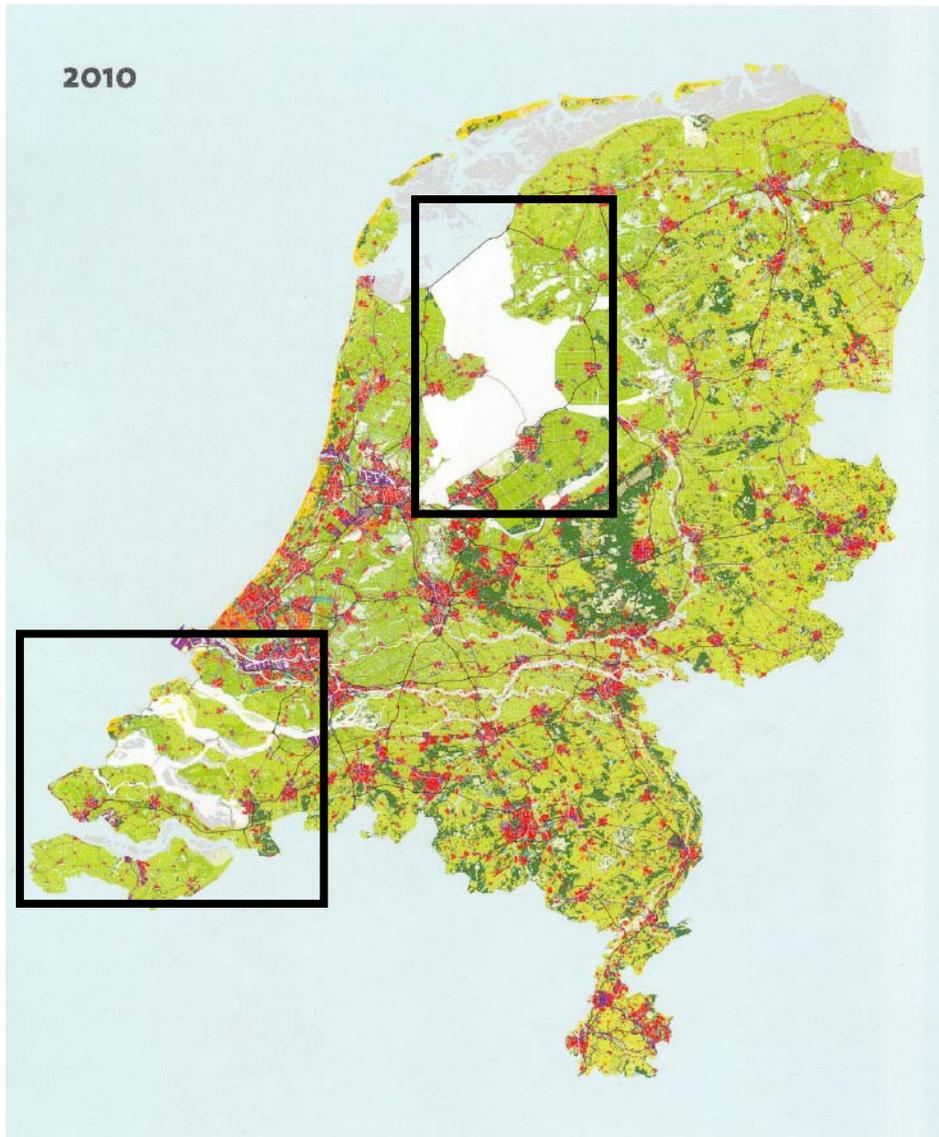
Dijken



Kaden



'The Art of a Nation'



Afsluitdijk
1930s



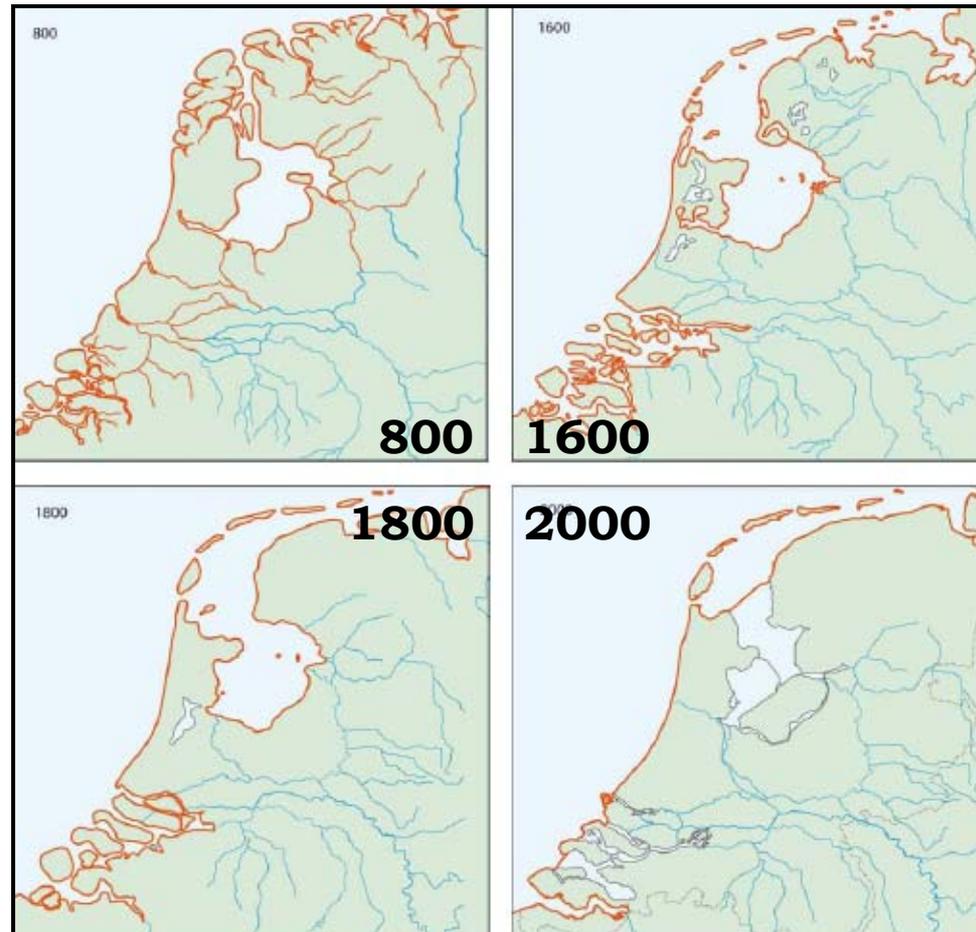
Deltaworks
1960s – 70s

'The Art of a Nation'



'The Art of a Nation'

Shortening the coastline



'The Art of a Nation'



Canalizing the rivers

'The Art of a Nation'

'dike-belts' with safety-norms



urbanization - pattern



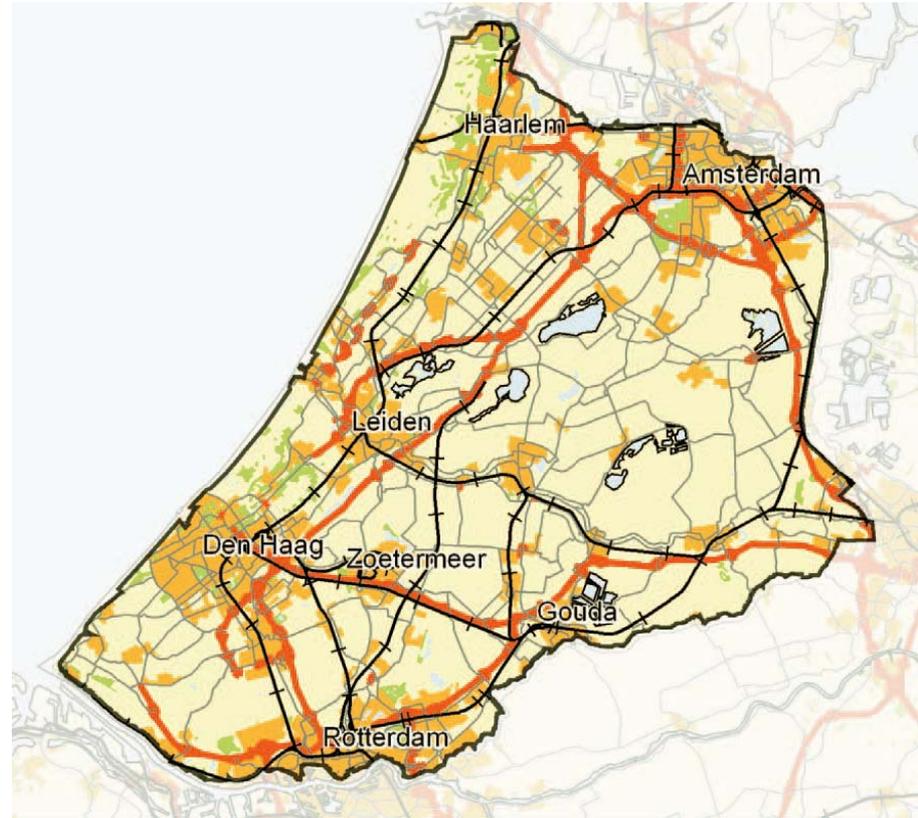




Dike-ring 14



14th century

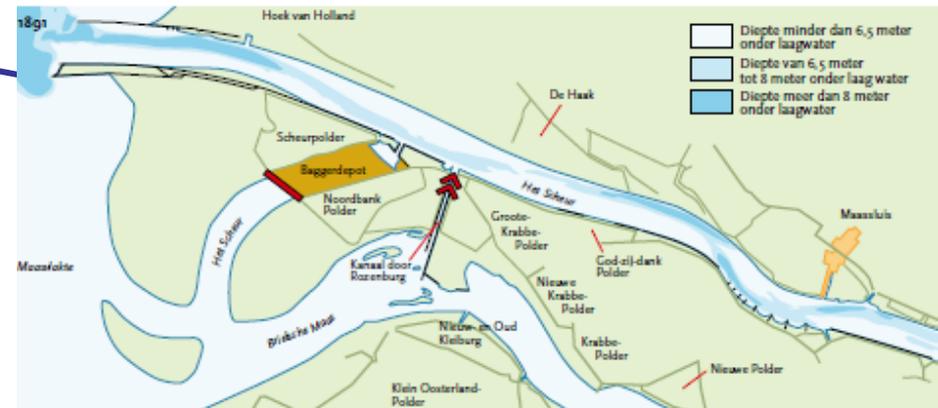


21st century

19th – 20th centuries: 'Randstad Holland' with new accesses



North Sea Canal



Nieuwe Waterweg

Amsterdam

1650



Amsterdam

1680



Amsterdam

1912



Amsterdam

2000



Zuidwestelijke delta

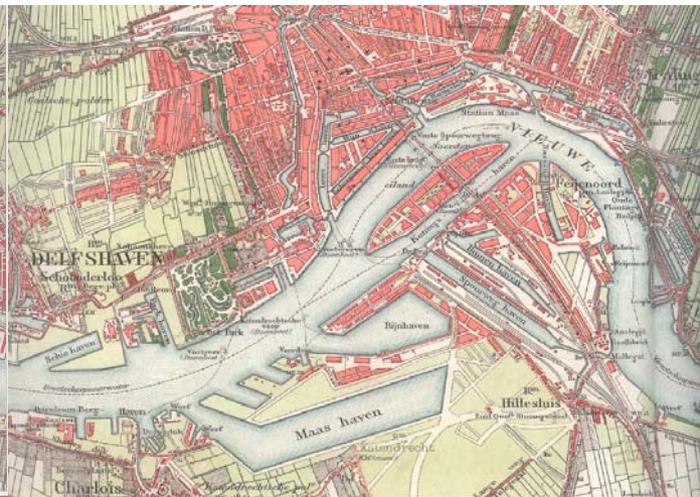
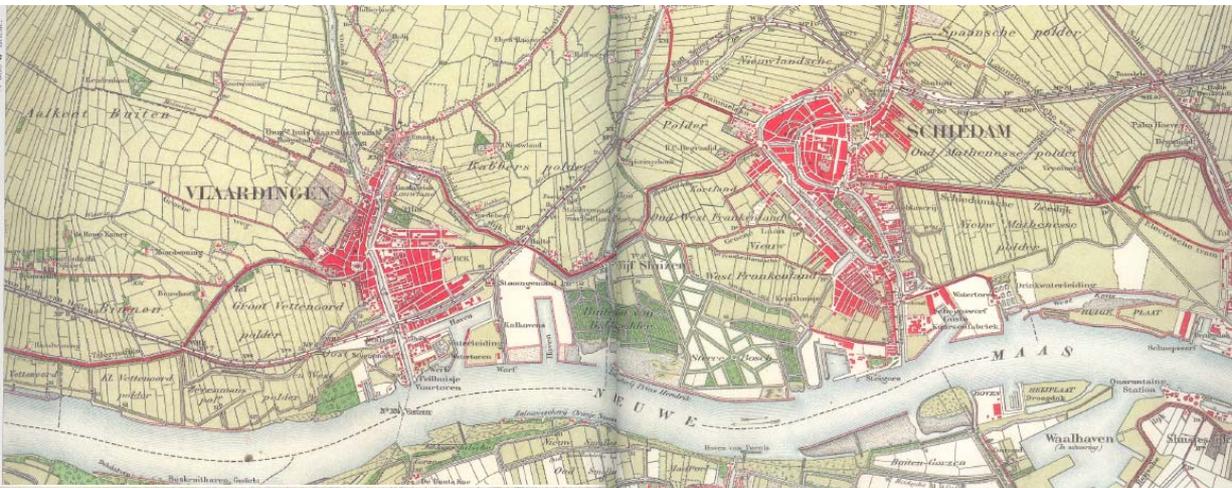
1850



Zuidwestelijke delta

2000

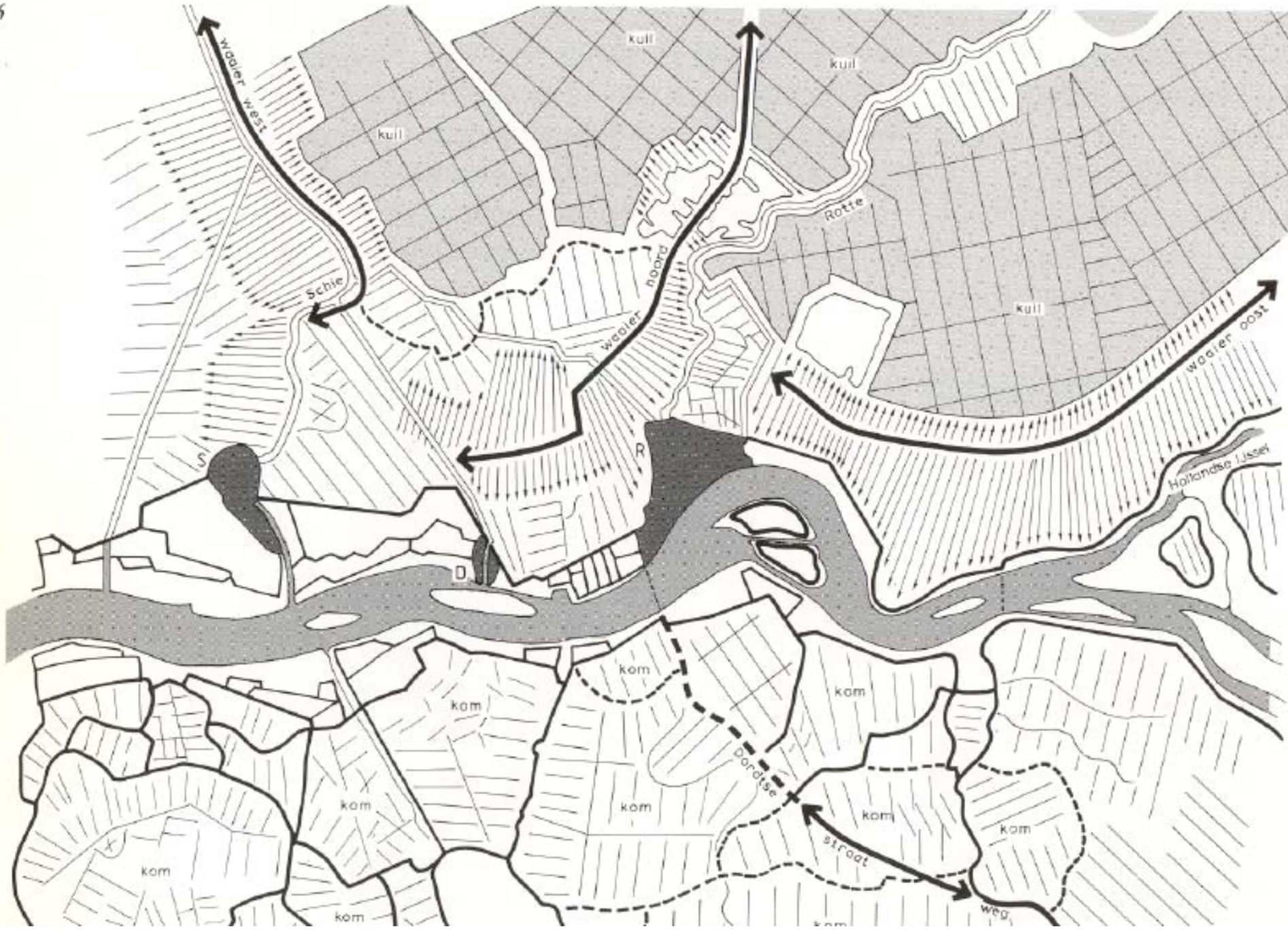




VLAARDINGEN

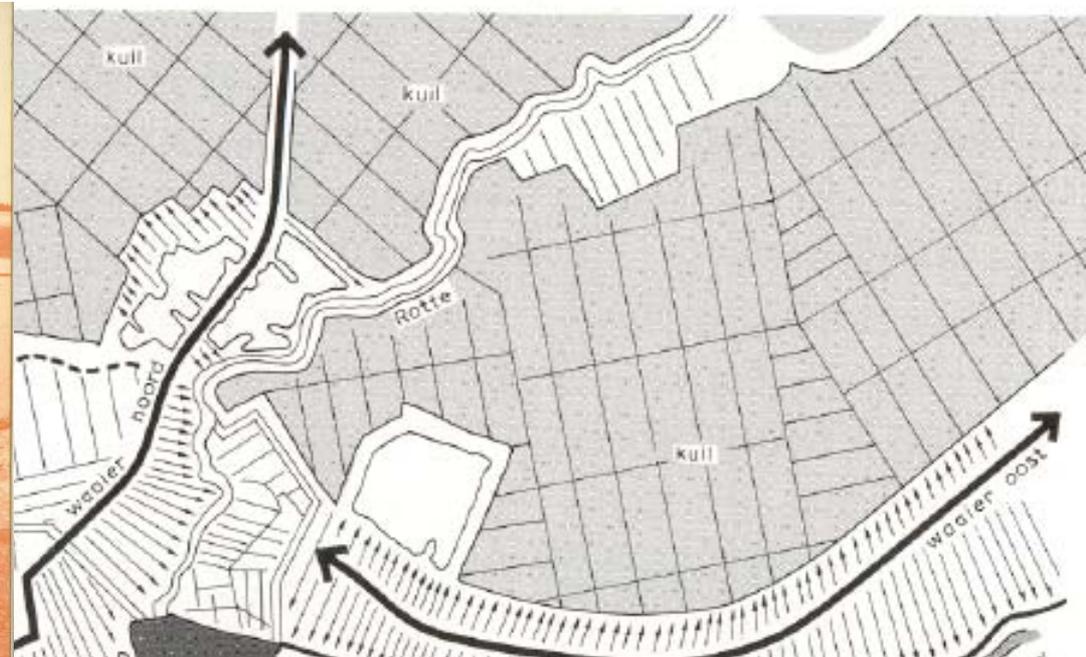




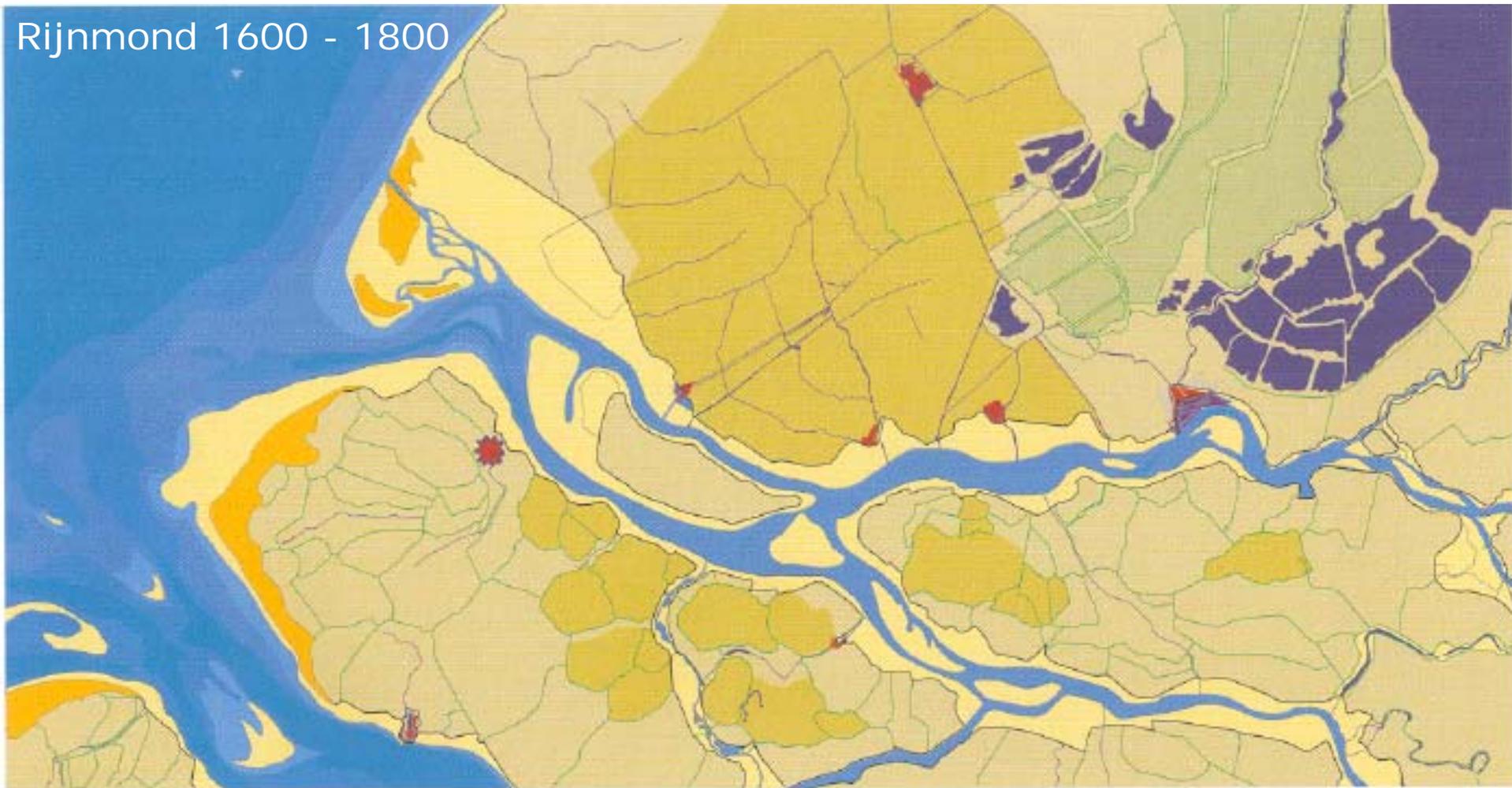


ROTTERDAM, VERSTEDELIJKT LANDSCHAP

Frits Palmboom

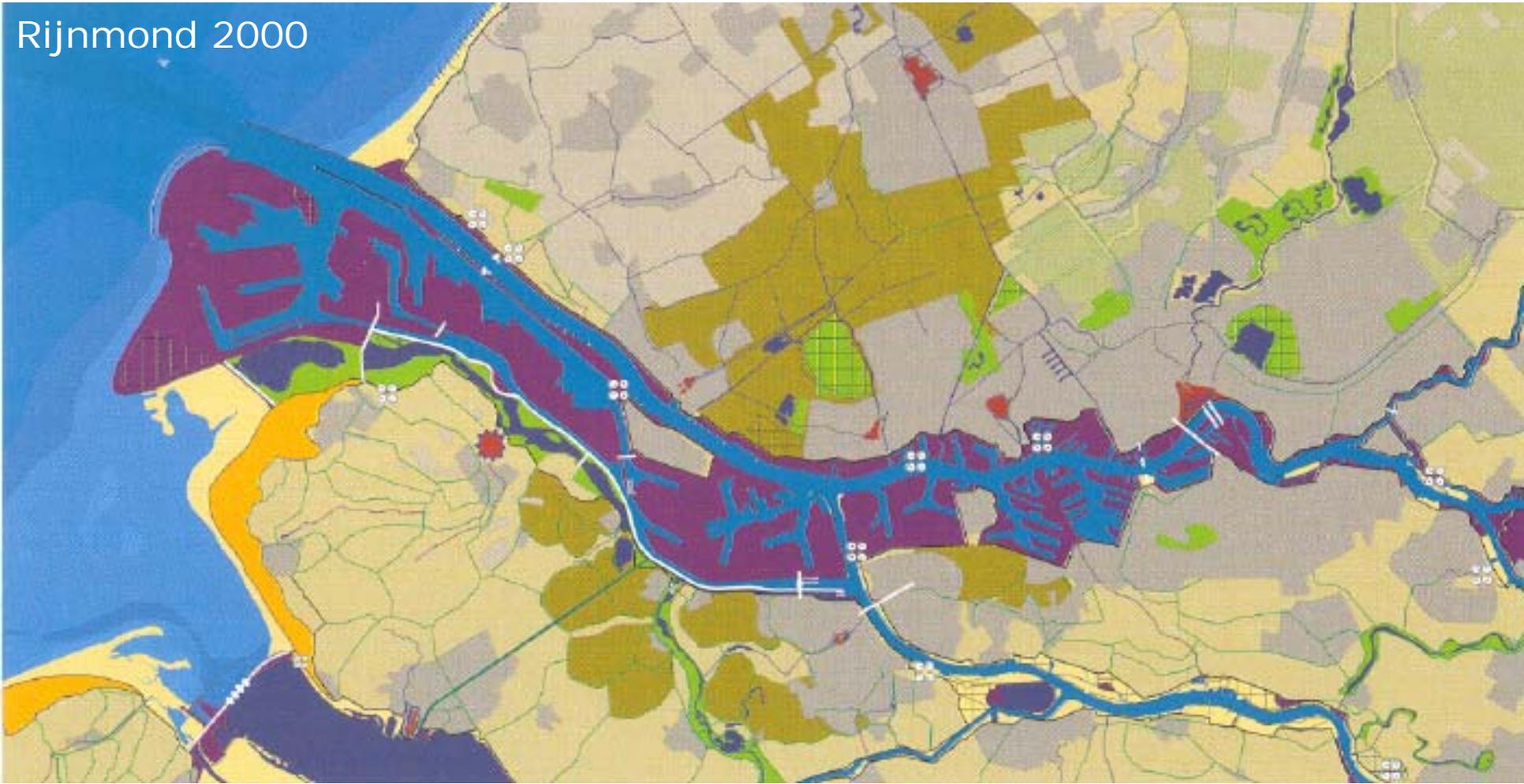


Rotterdam



Rotterdam

Rijnmond 2000



Rotterdam

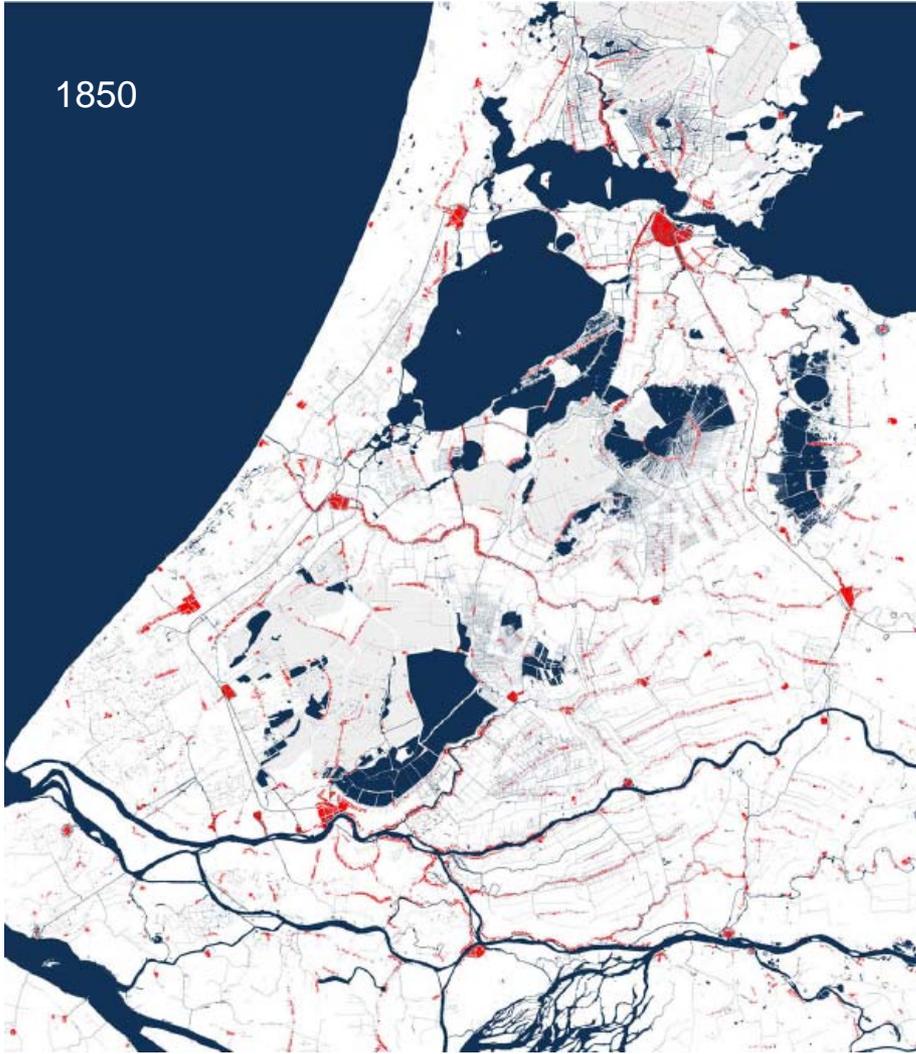
Rijnmond 2000



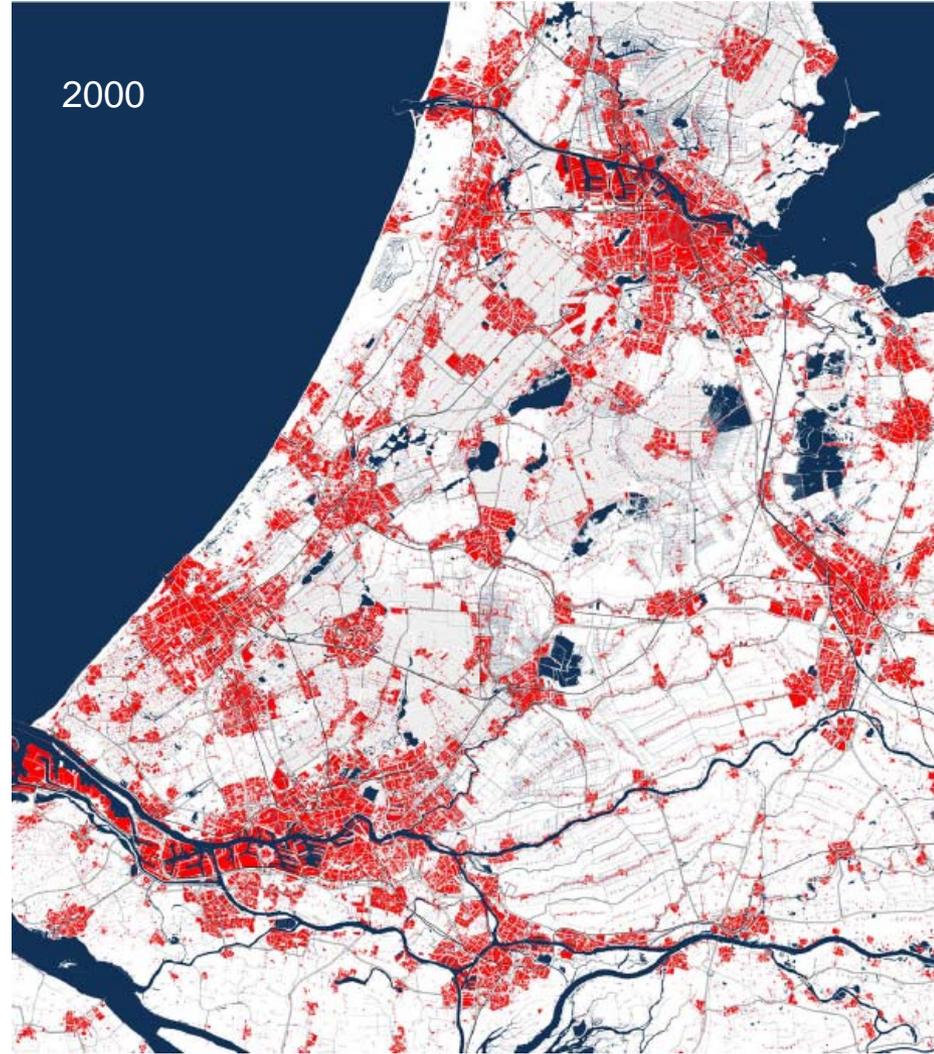
← Dam will close in case of expected water-level 3m+ NAP

19th – 20th centuries: 'Randstad Holland'

1850

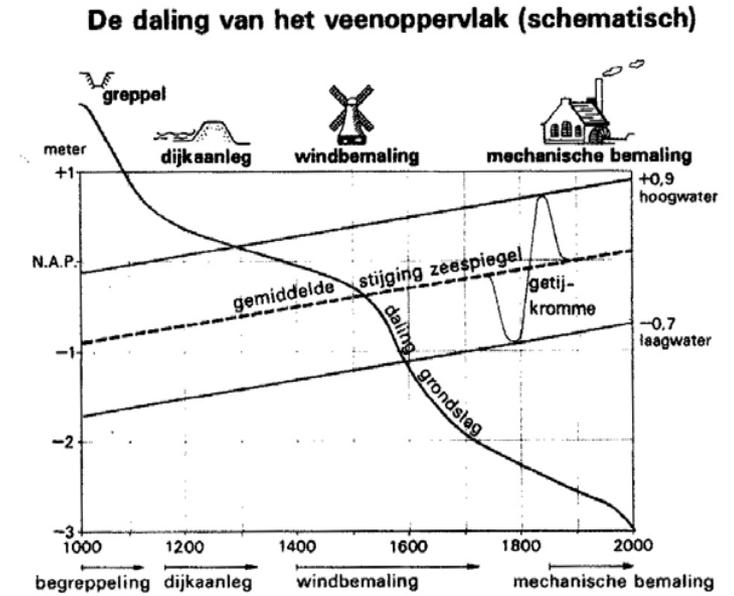
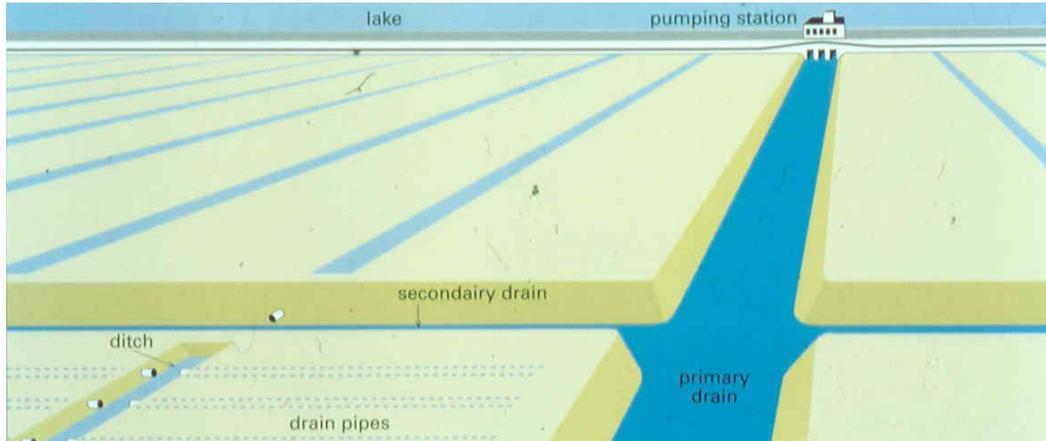


2000



4 reasons to develop another approach

1. Subsidence



Daling van veenbodems door de eeuwen heen.



2. Concern with the environment



3. Urban Waterfront development

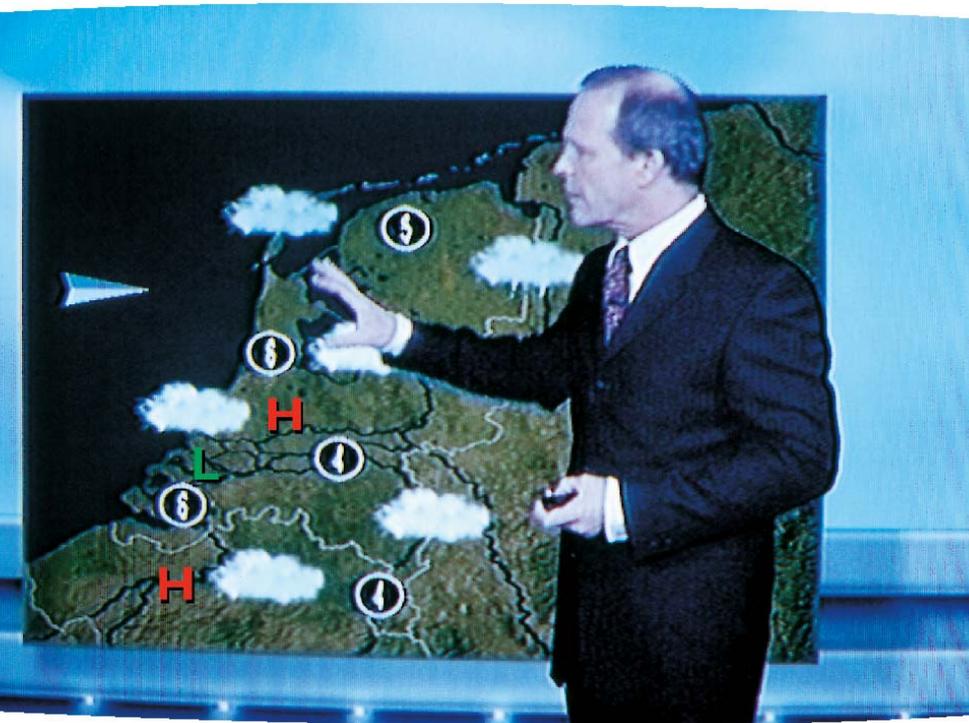


Amsterdam Eastern Docklands



Rotterdam Kop van Zuid (1990 – 2012)

4. Climate Change



Towards: 'working **with** water'



Urban Waterfronts in the Dutch Delta

A Tale of two cities



Amsterdam (looking to the east)

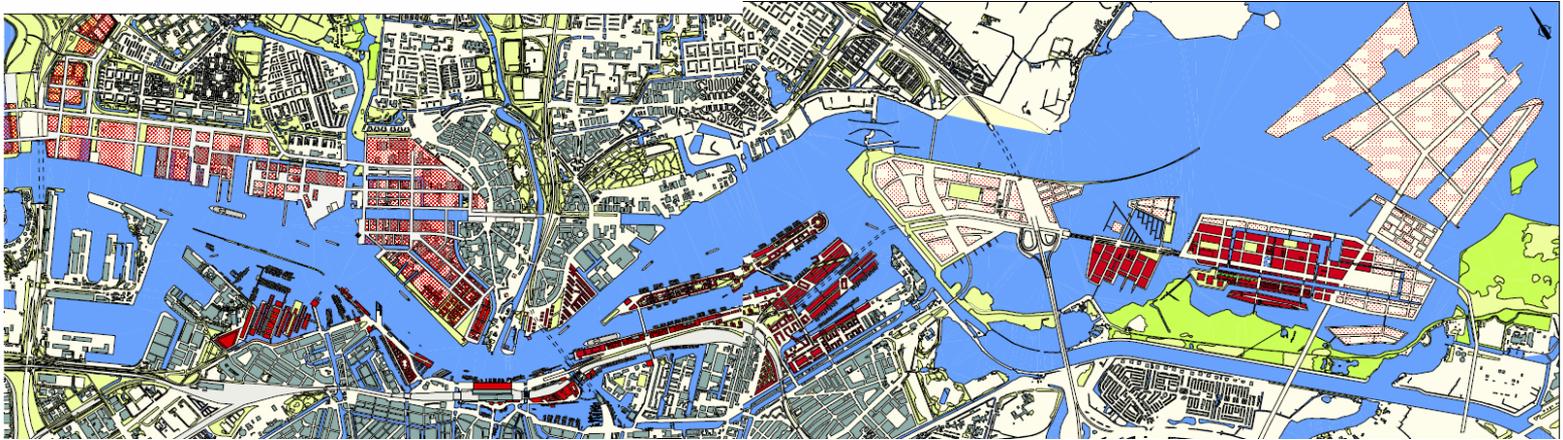


Rotterdam (looking to the west)

2e uur:

- ontwerpend onderzoek Rotterdam
- ontwerpend onderzoek Purmerstad

Urban Waterfronts 1980 - 2020



Amsterdam



Rotterdam

Urban Waterfronts in the Dutch Delta

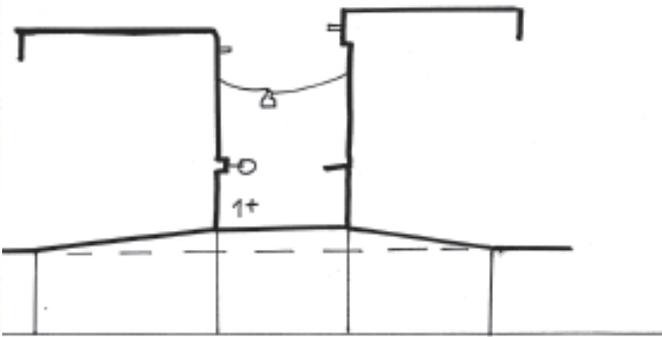
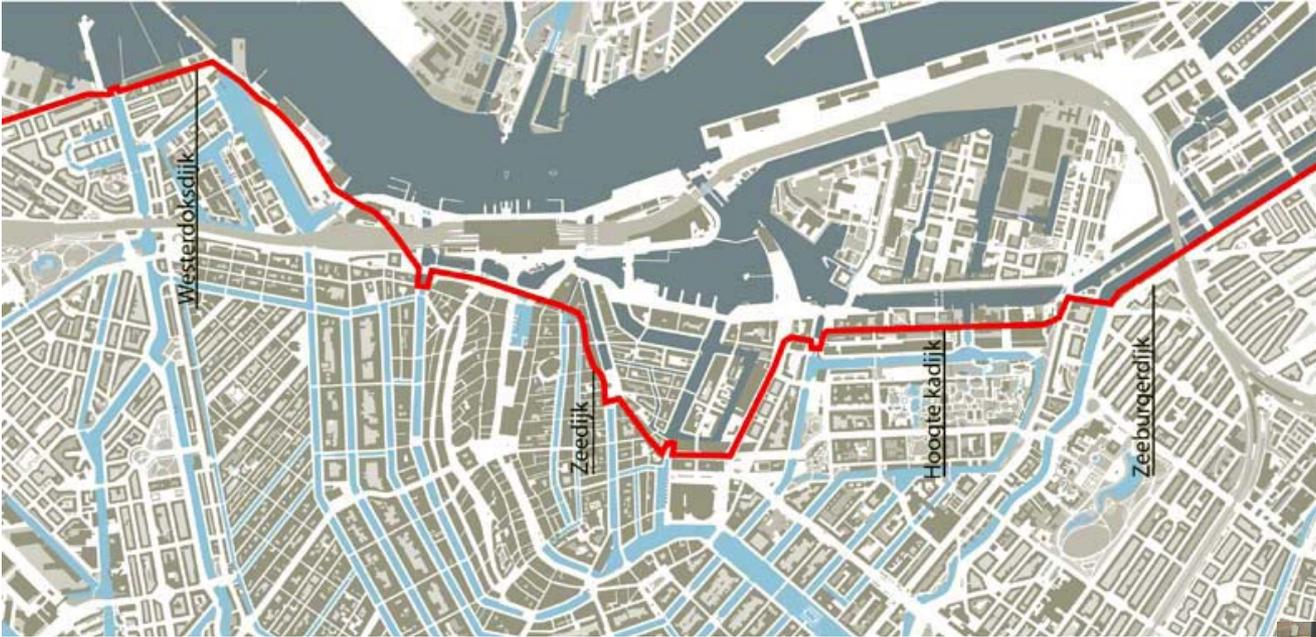


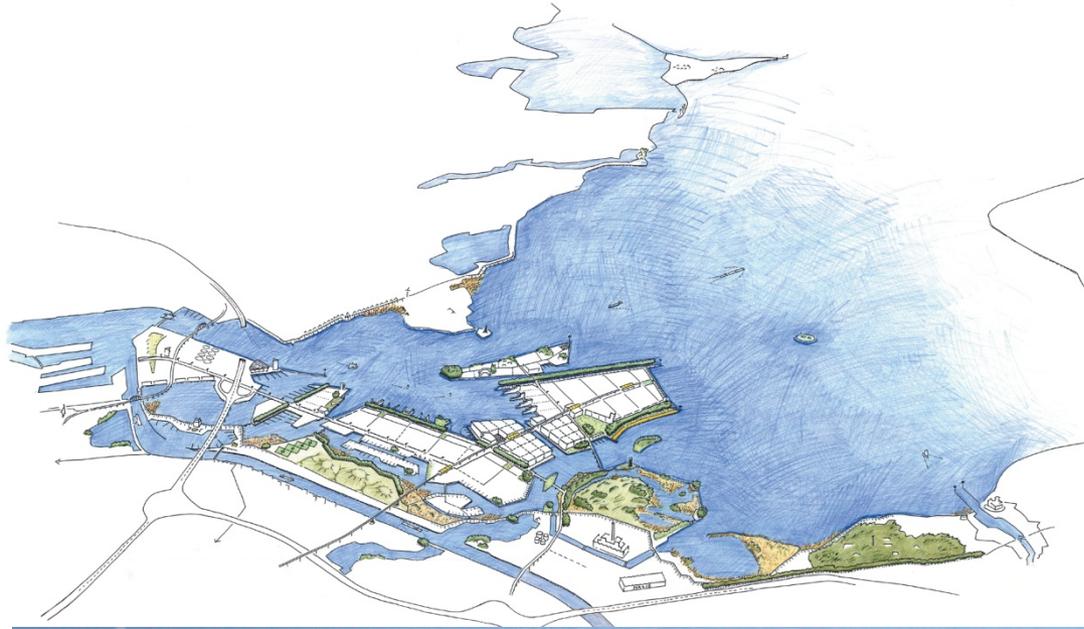
Amsterdam, 'urban beach' IJburg



Rotterdam, 'urban beach' Boompjes

Flood-defense Amsterdam: 4m+ NAP; integrated in the urban fabric





Amsterdam
IJburg 1995 -

IJburg: strong and 'hard' edges at the North side....



.... 'soft' edges at the South side



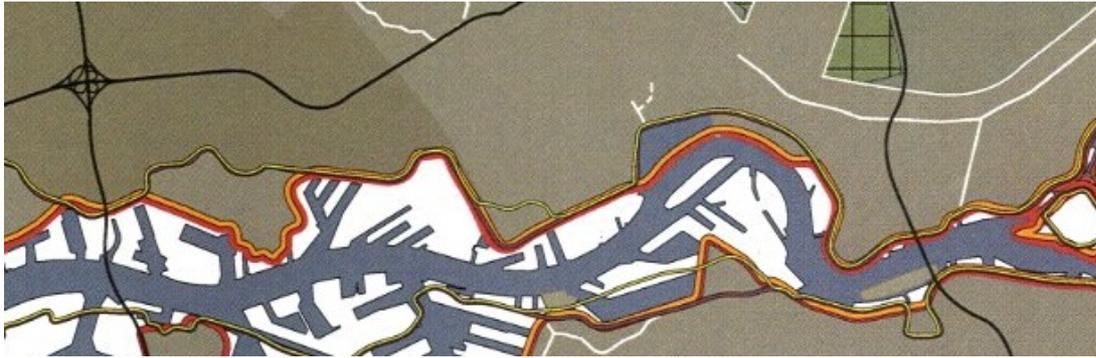
Rotterdam



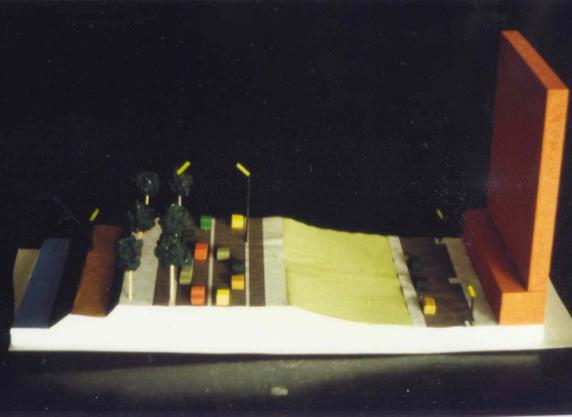
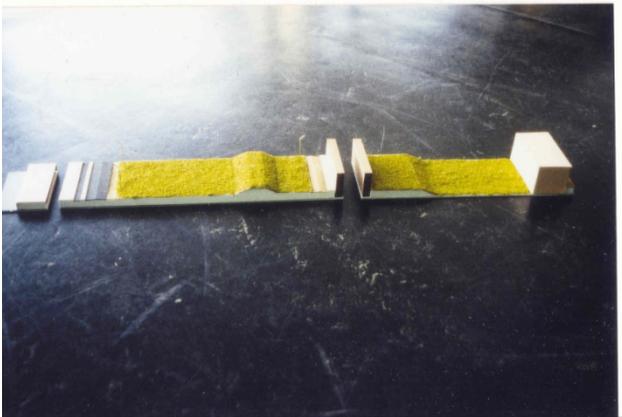
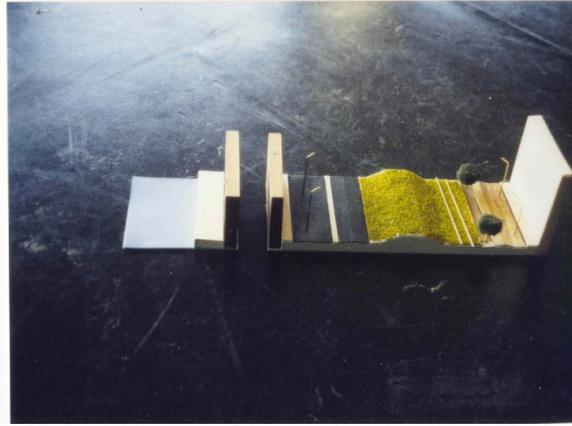
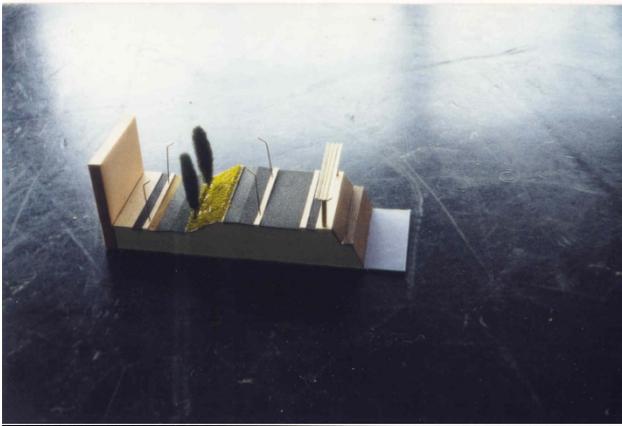
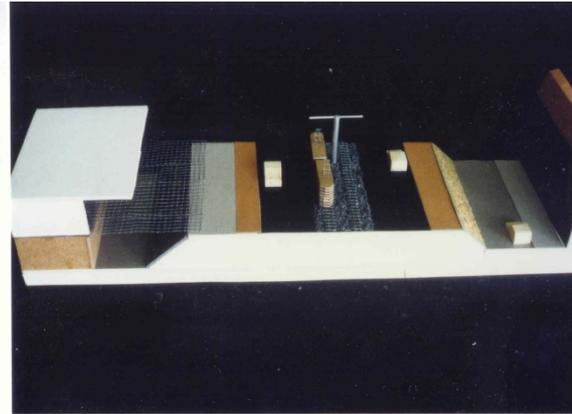
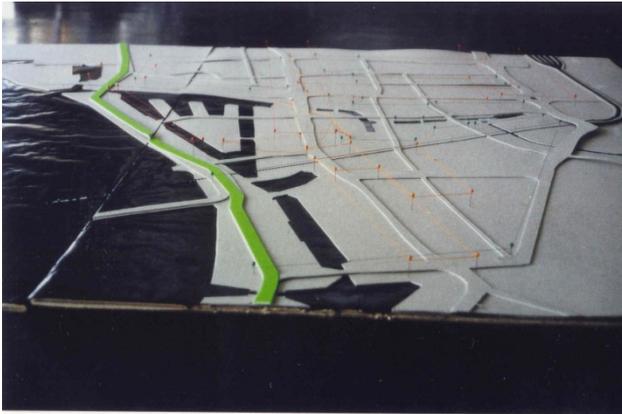
Rotterdam: flood-defense



Flood-defense Rotterdam: 5m + NAP; autonomous structure



Flood-defense Rotterdam: differentiation of sections



flood-defense structure: from barrier to connector



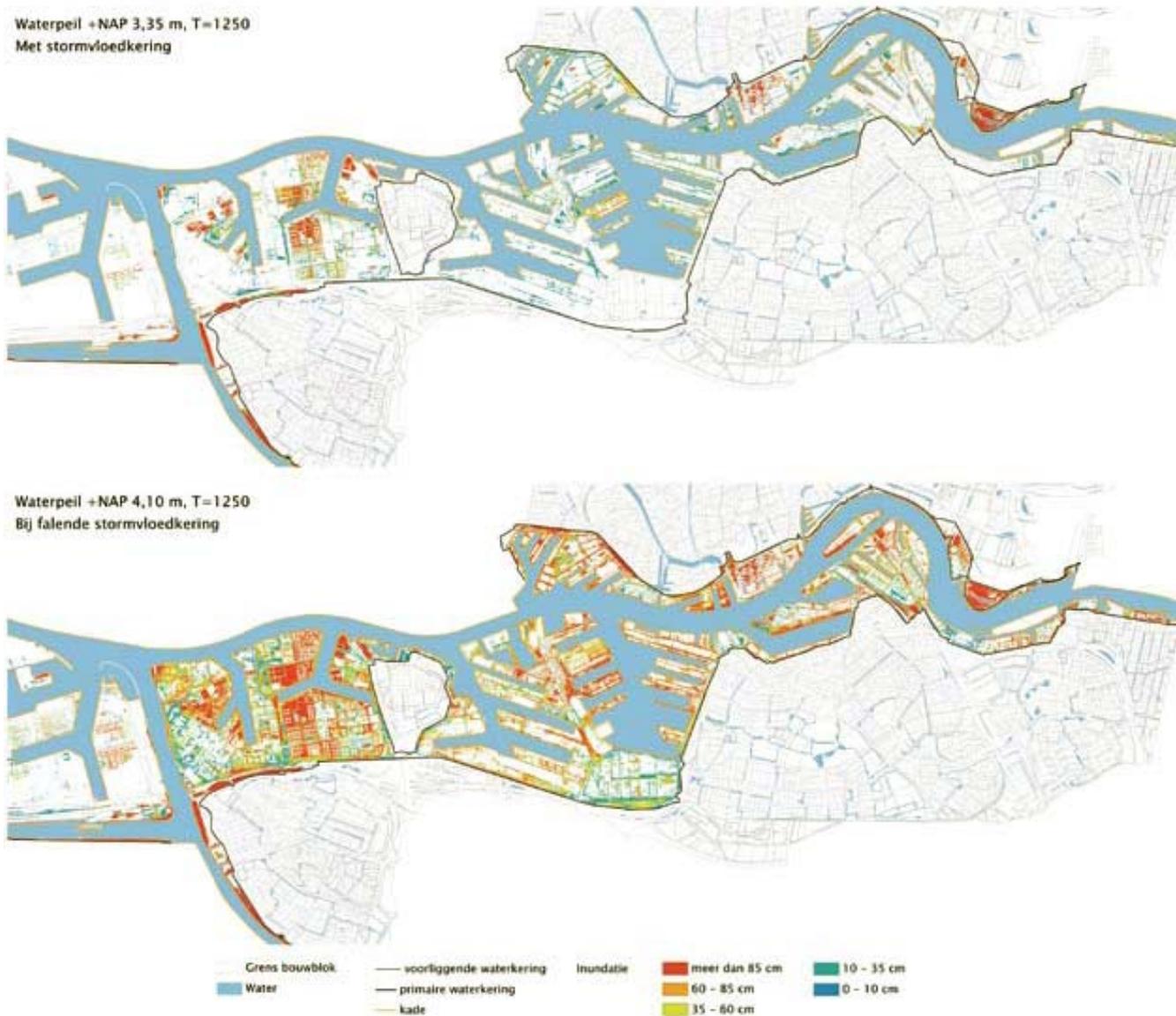
'roof-park' Rotterdam-West

flood-defense structure: from barrier to connector

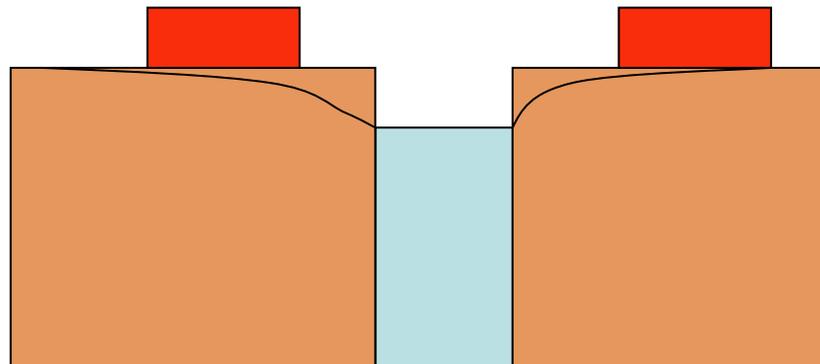


'roof-park' Rotterdam-West

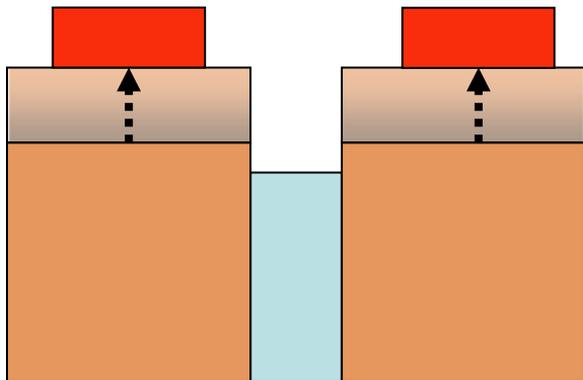
Rotterdam: Flood-risks waterfront-sites 'outside the dikes'



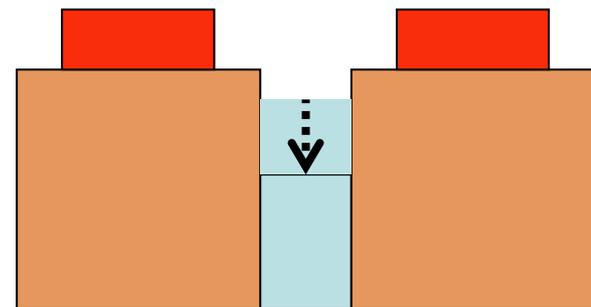
Managing ground-water level 'behind the dikes'



Managing ground-water level 'behind the dikes'



Amsterdam: raising ground-level



Rotterdam: lowering water-level

Different ground-levels inner-cities

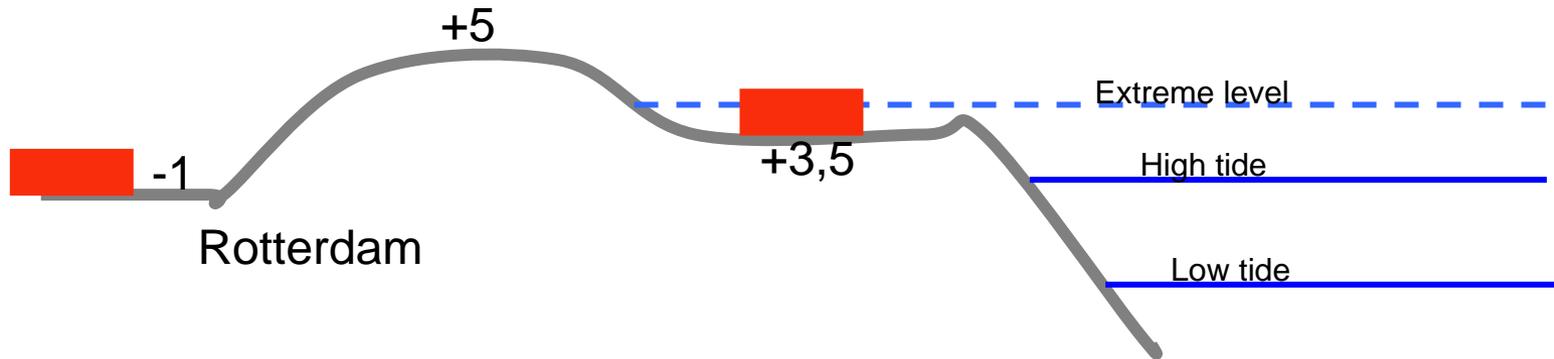
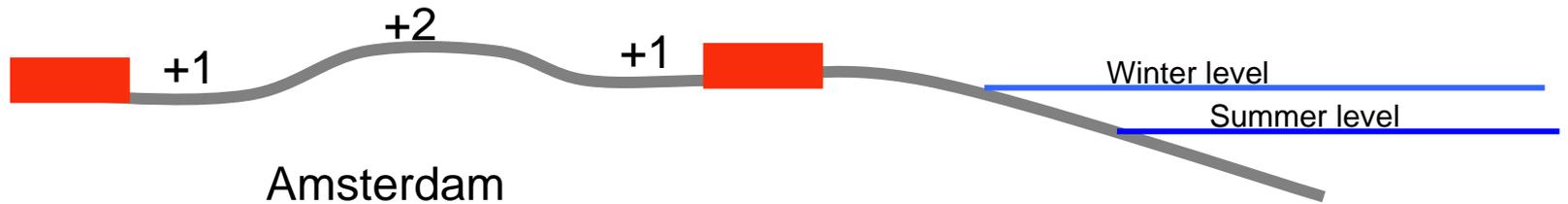


Amsterdam

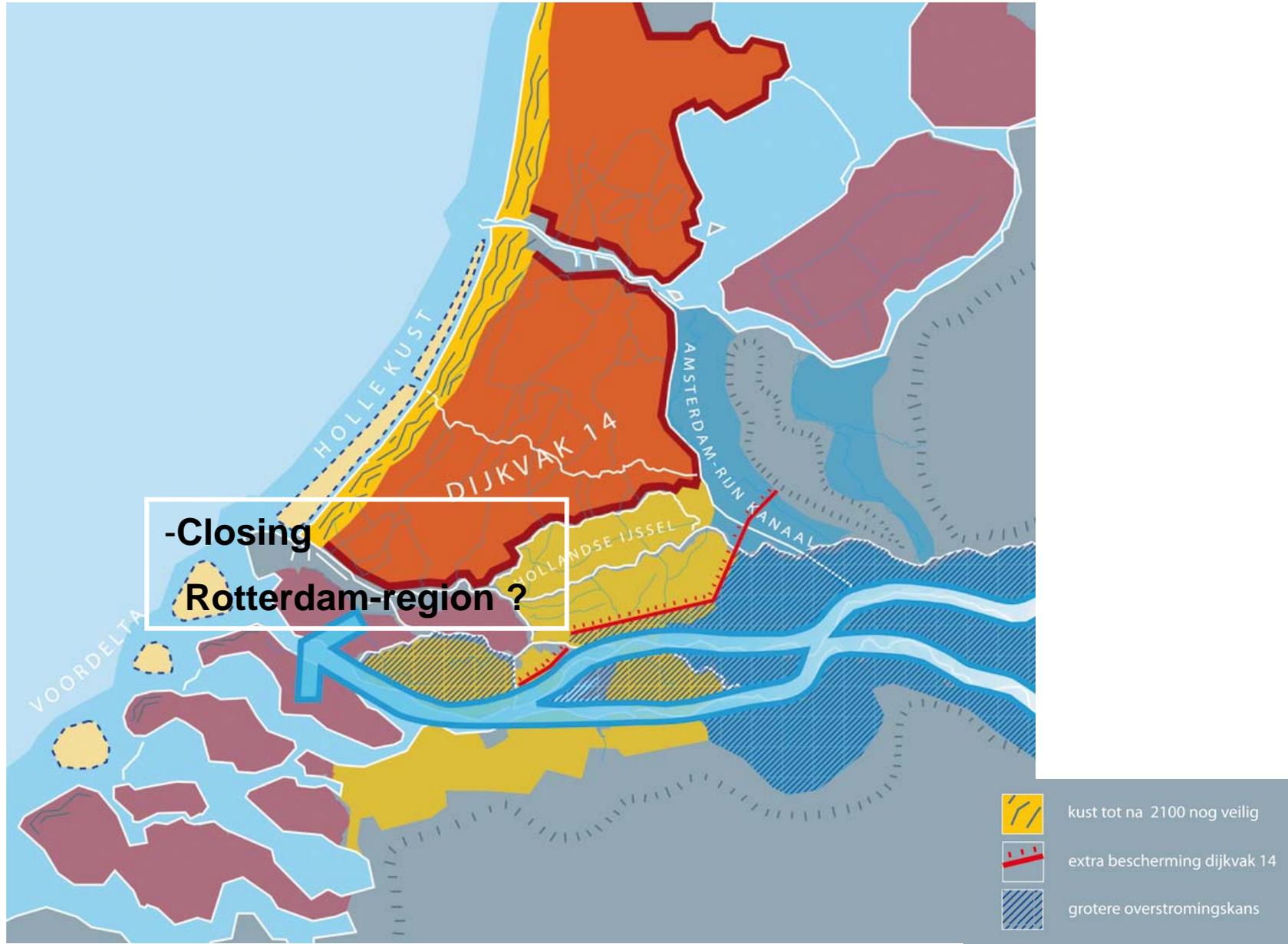


Rotterdam

Different conditions Amsterdam and Rotterdam



Flood-defense Rotterdam: 5m + NAP; autonomous structure



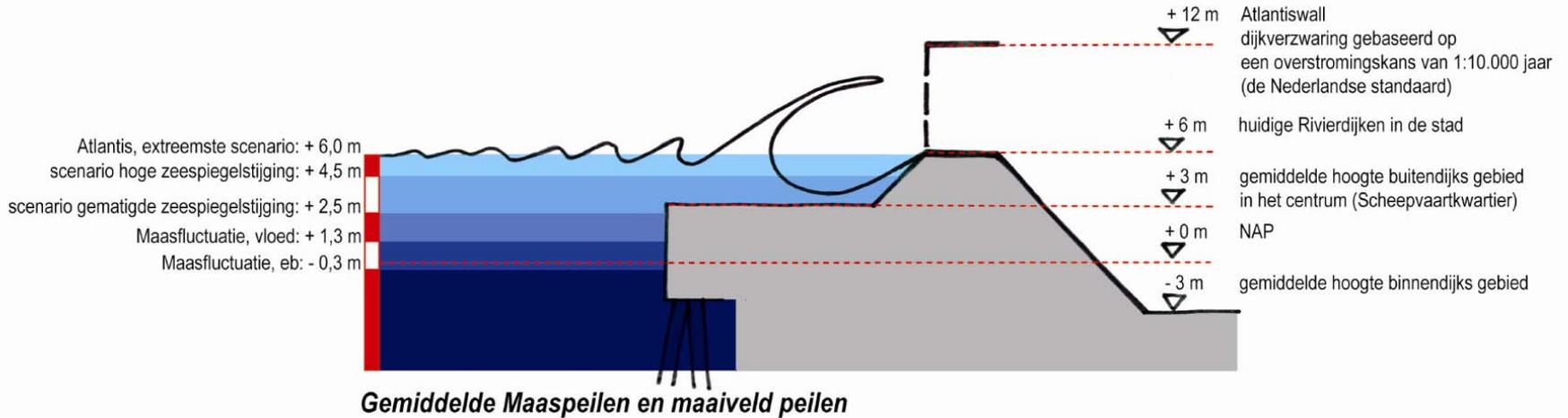
Flood-defense Rotterdam: Scenario A



Closed system: wild water-landscapes next to the urbanized region

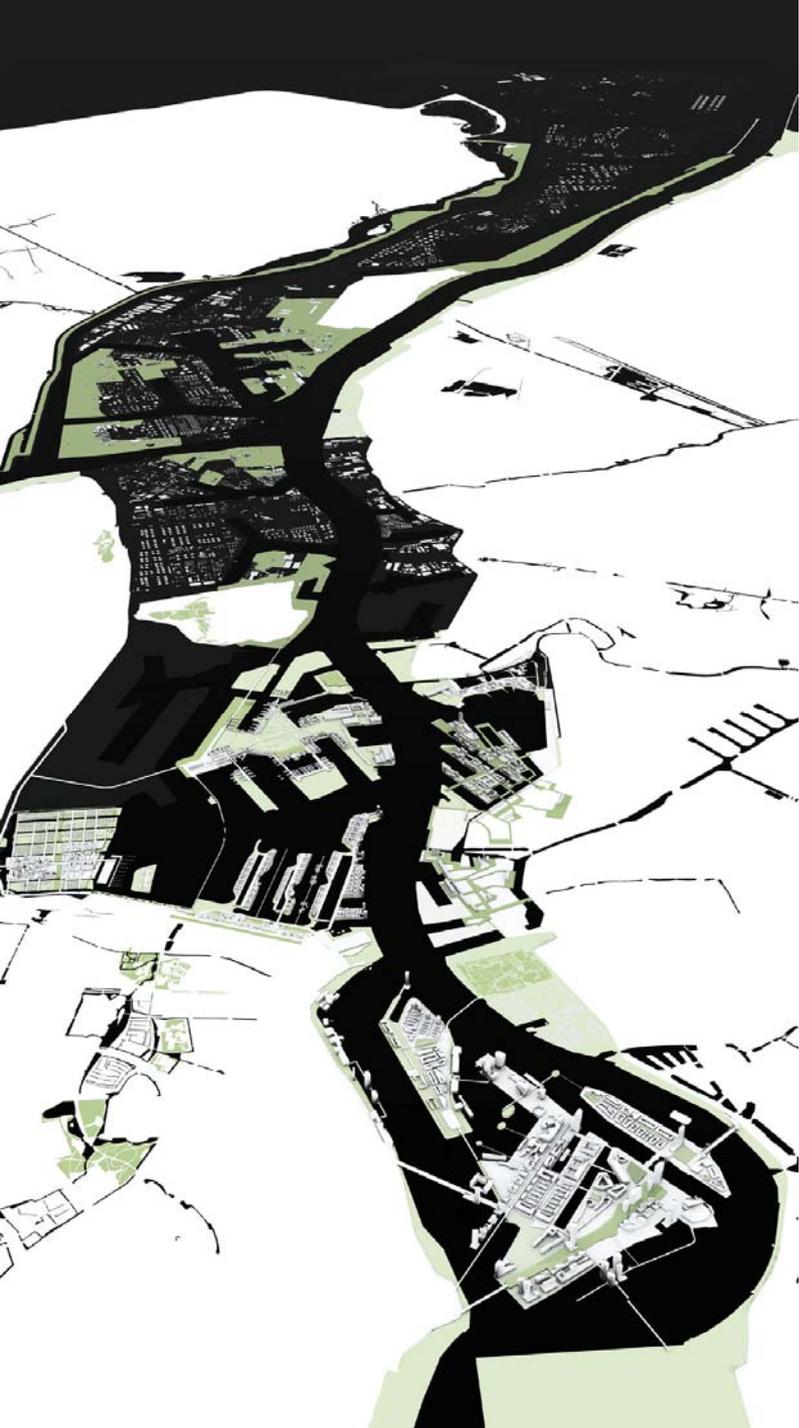


Flood-defense Rotterdam: Scenario B



Atlantiswall

Bandbreedte variatie op de vereiste dijkverzwaring voor het Atlantis-scenario (van + 6 naar + 12 m)



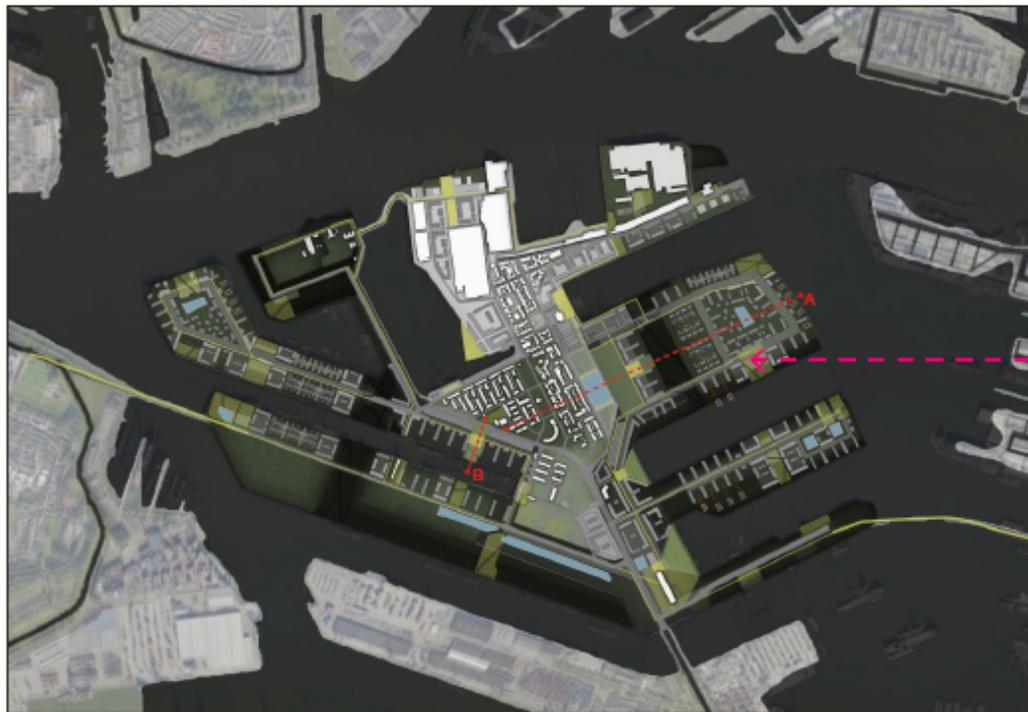
EMU
european postgraduate master in
URBANISM
strategies and design for cities and territories

Constructing the City

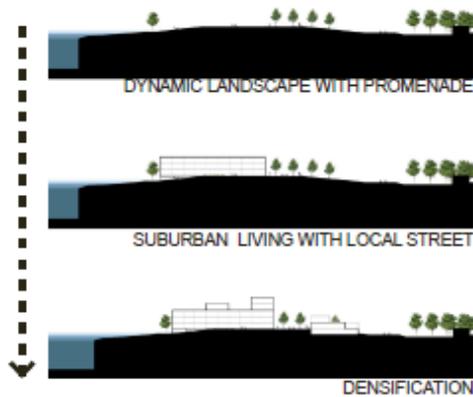
Spring 2010



HEIJPLAAT ISLAND WINTER FLOODING: WATER LEVEL +3.5m

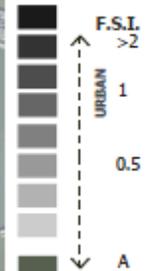


TRANSITION STRUCTURE_(B)

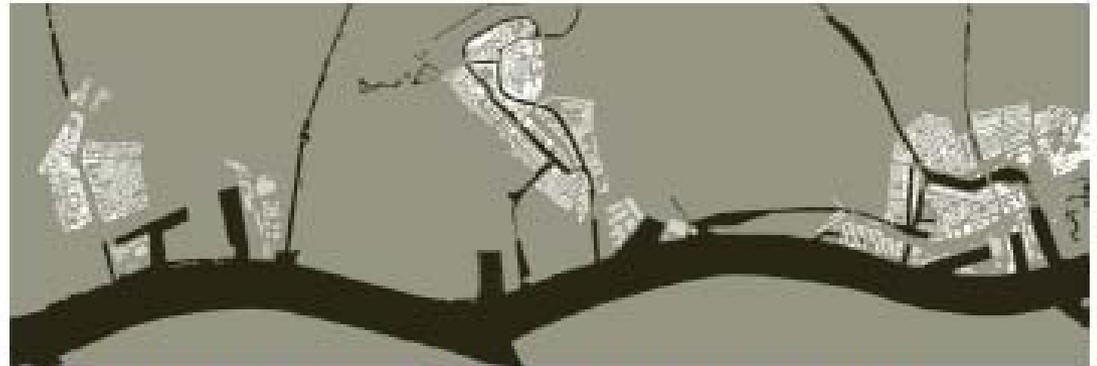


DYNAMIC DENSITY CONDITIONS

TRANSPORT POTENTIALS
OVERLAID ON FIRST SAFE ZON



SECTION THROUGH TRANSITION SPACE ON DIKE AND NEW URBAN AGRICULTURE DEVELOPMENTS_(A)



Coherent tissue of Rotterdam west in the beginning of 1900



Clusterization process after the insertion of industrial water basins



+1.00 NAP



+2.00 NAP

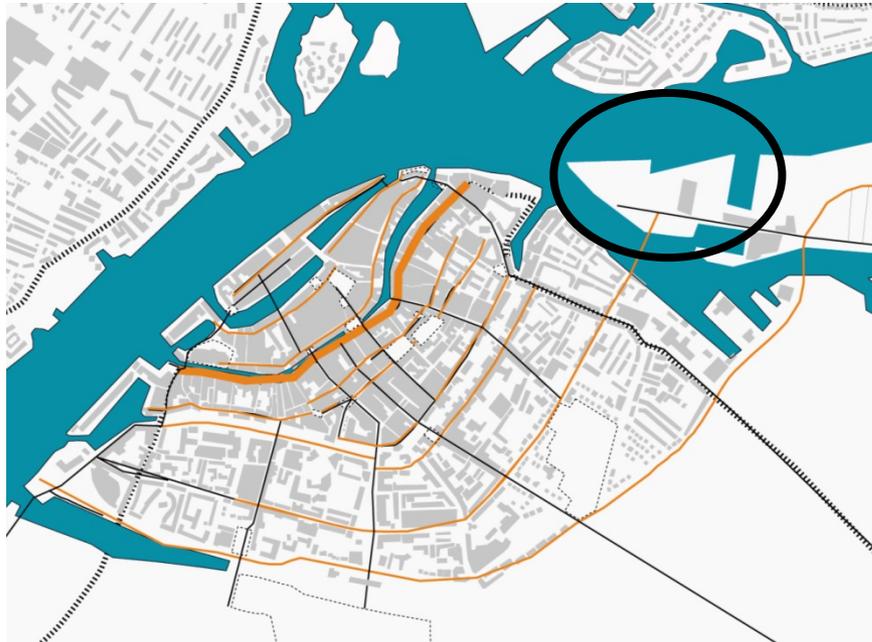


+4.00 NAP

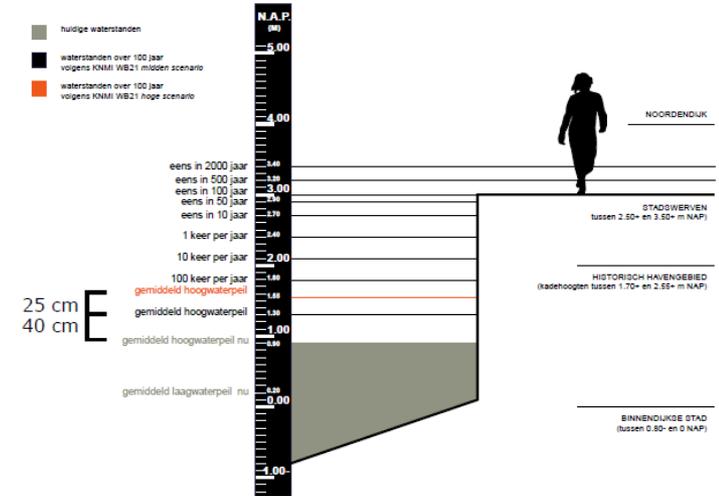
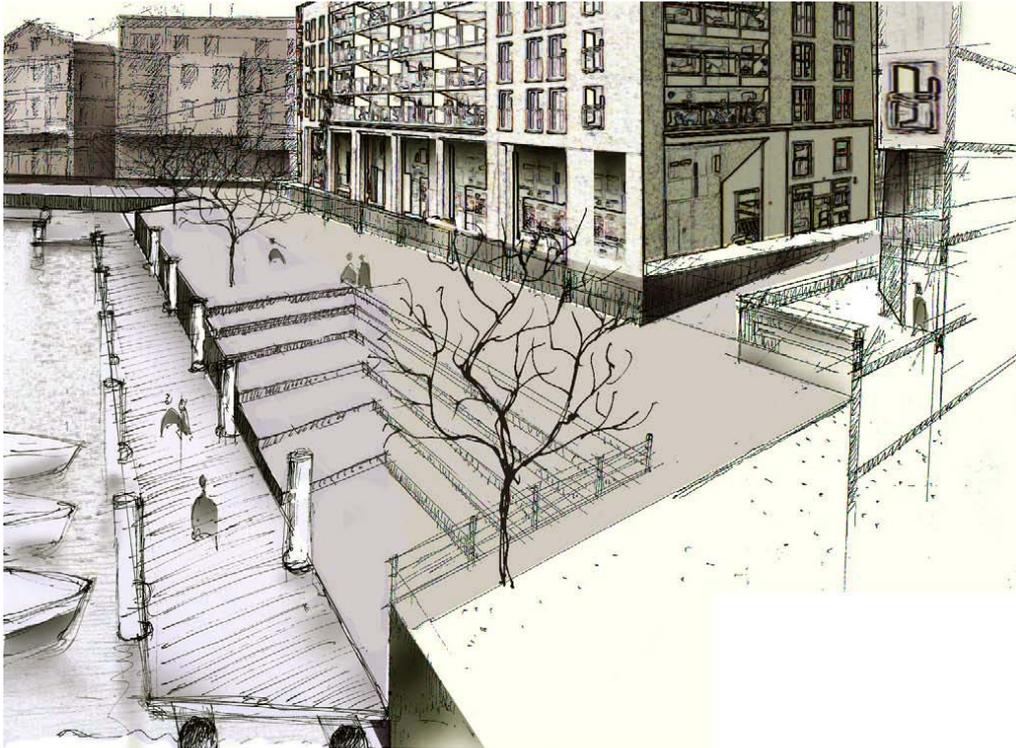


+5.00 NAP

Dordrecht: Urban Flood Management

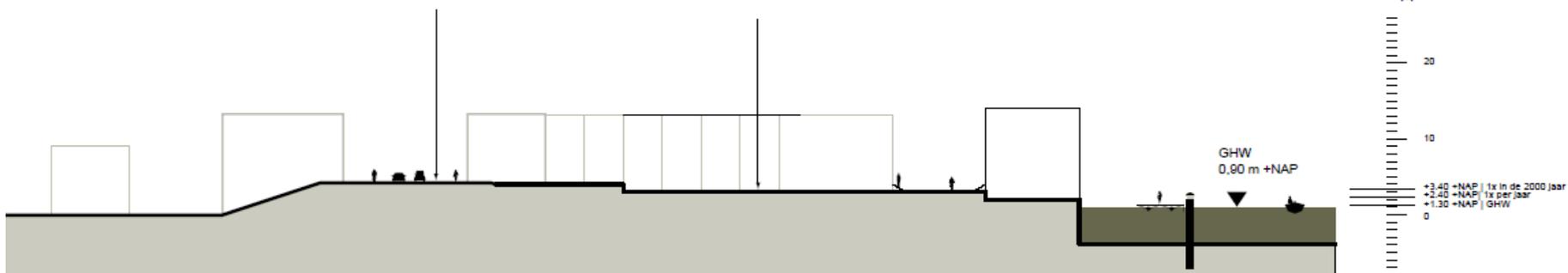


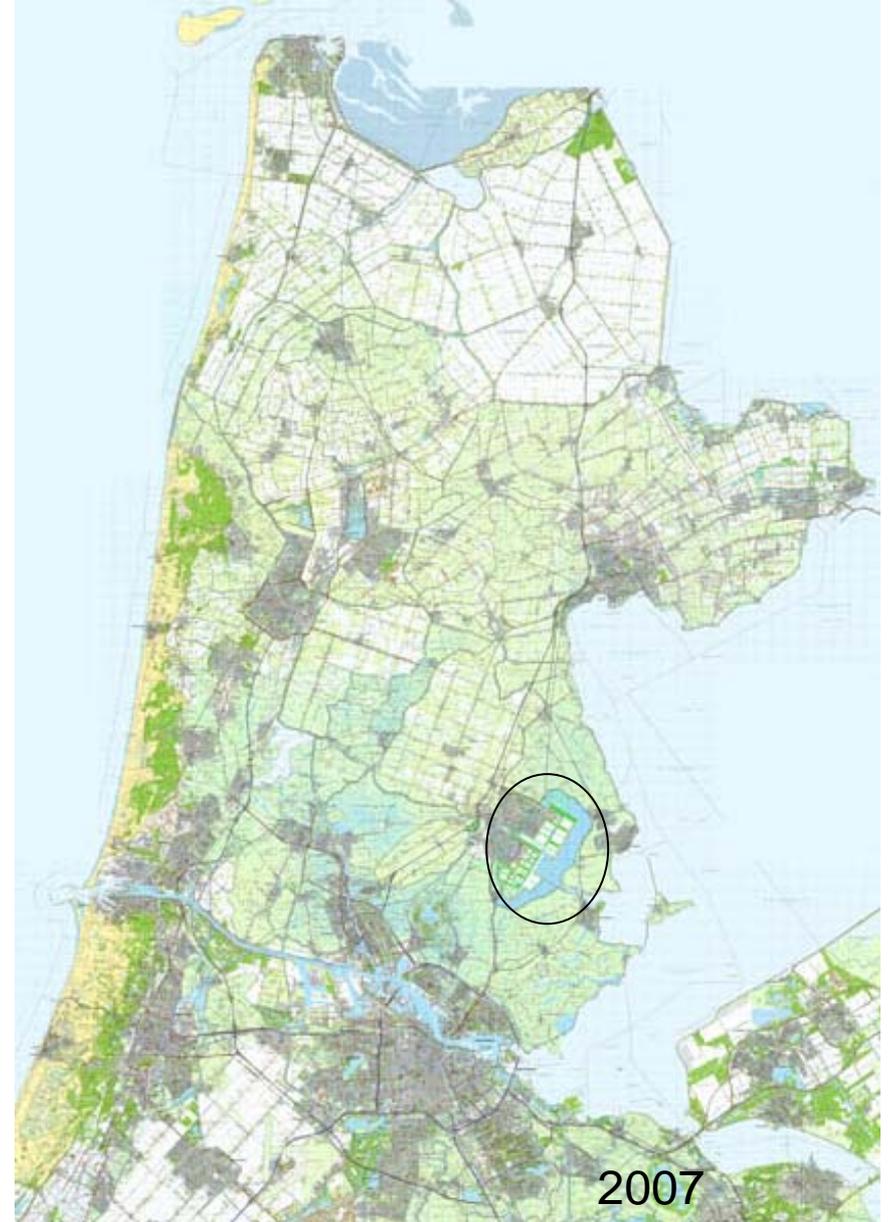
Dordrecht: Urban Flood Management



DIJK
4 m +NAP

MAAIVELD BUITENDEKKS GEBIED
variërend tussen 2 m en 4 m +NAP





Design -project Purmermeer

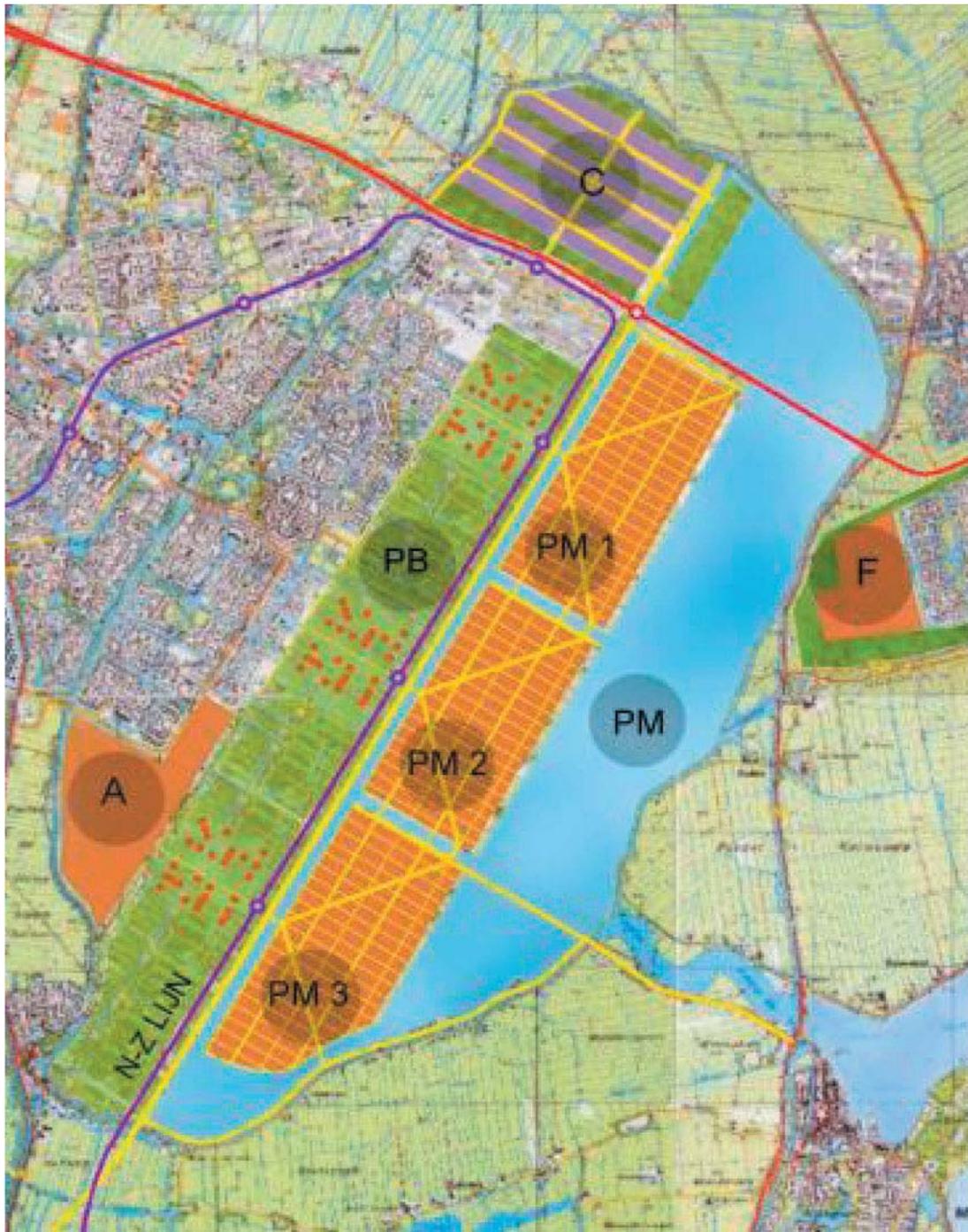
Foundation Purmermeer (NGO) with TU-Delft



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Beemster Polder



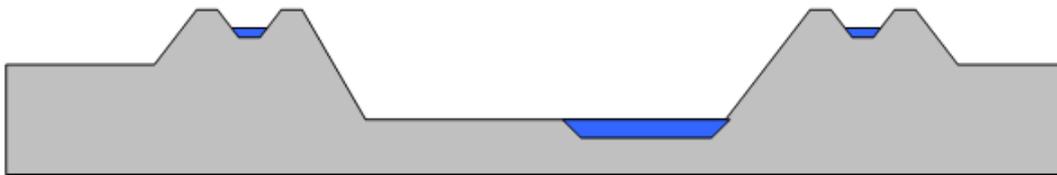




huidige situatie



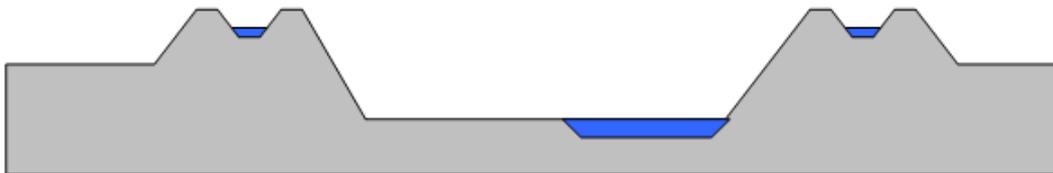
huidige situatie



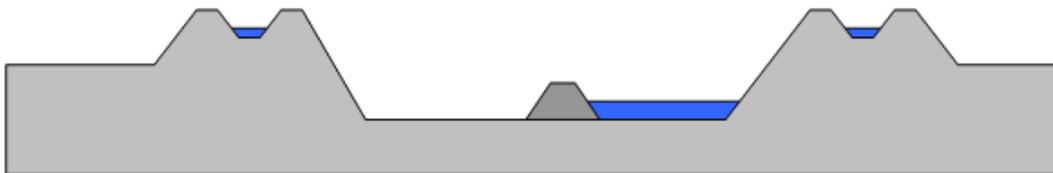
A. uitgraven



huidige situatie



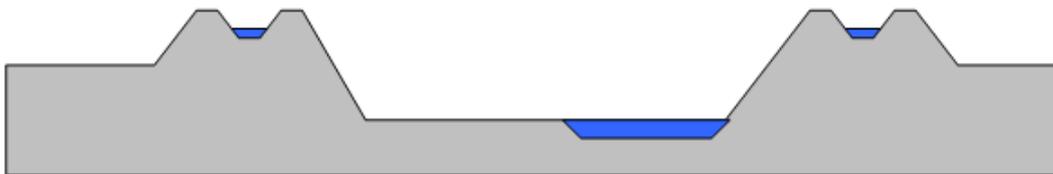
A. uitgraven



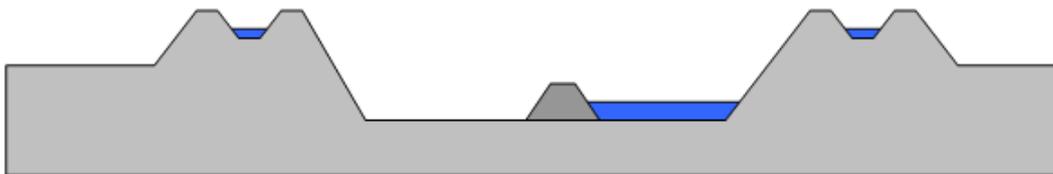
B. dijk



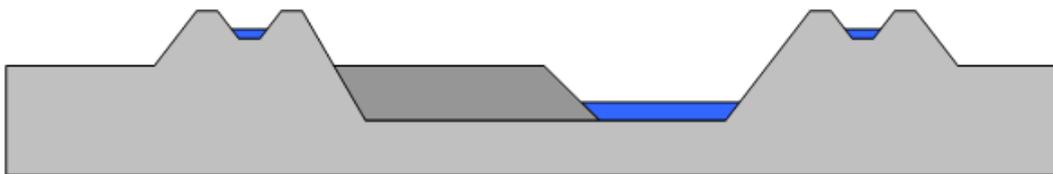
huidige situatie



A. uitgraven

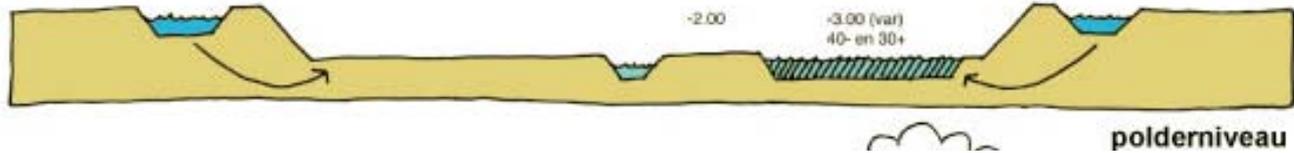


B. dijk

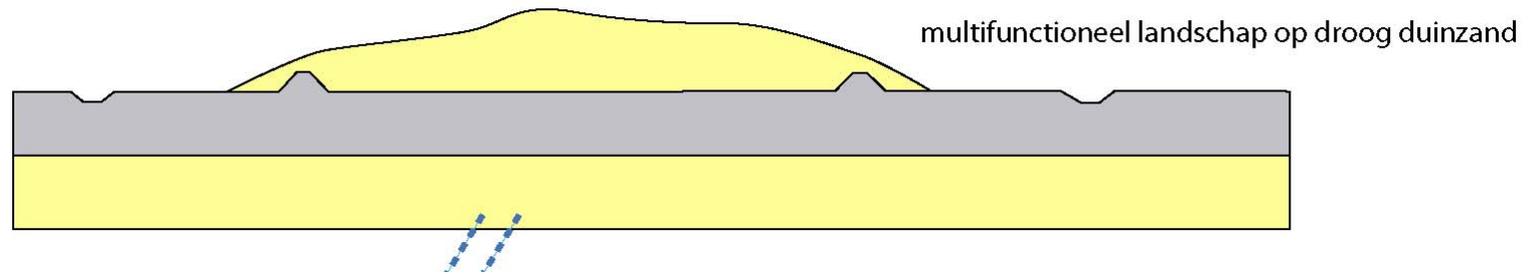


C. ophogen

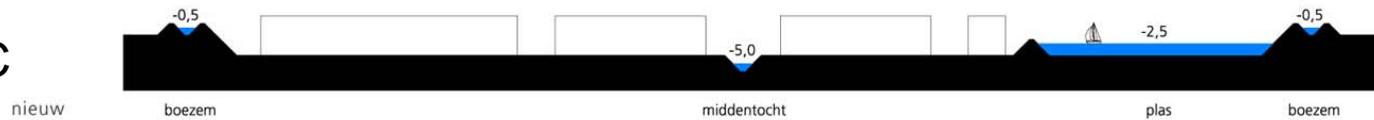
Team A

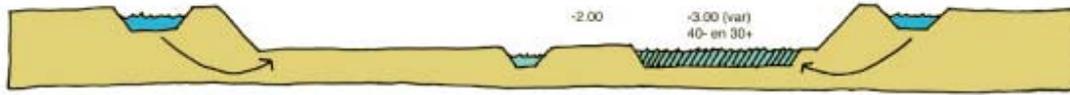


Team B

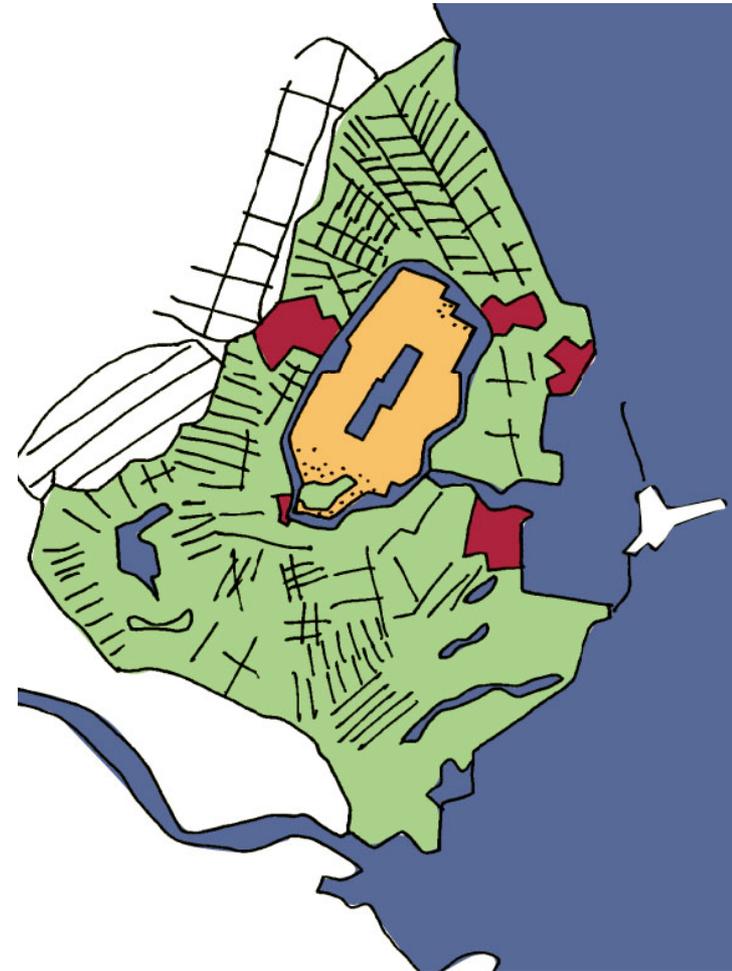
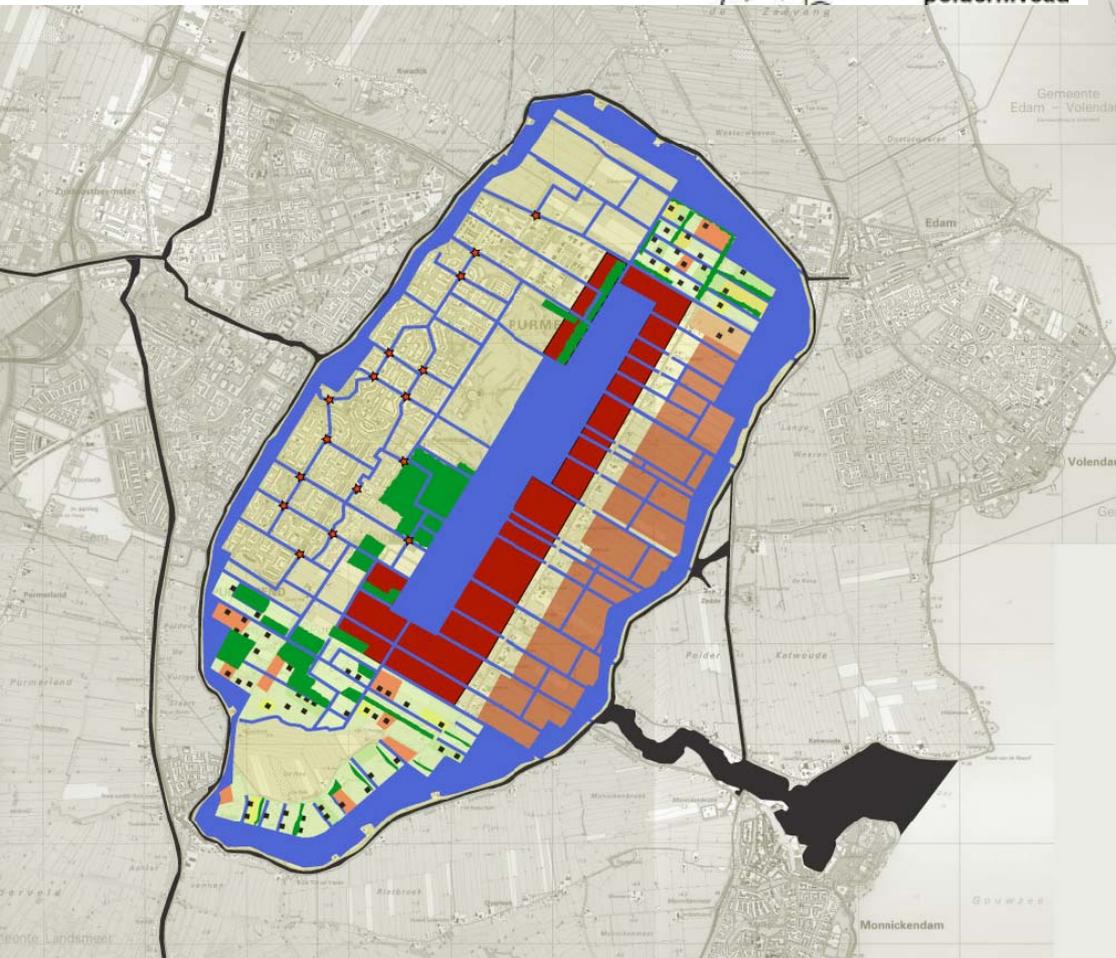


Team C

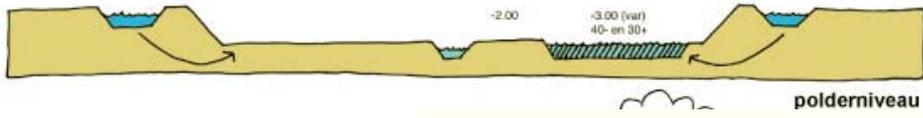




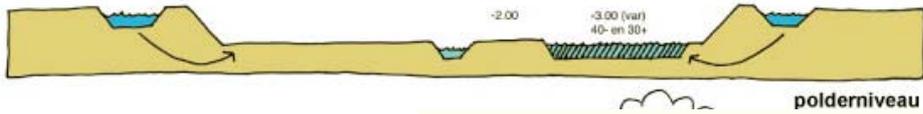
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TEAM A

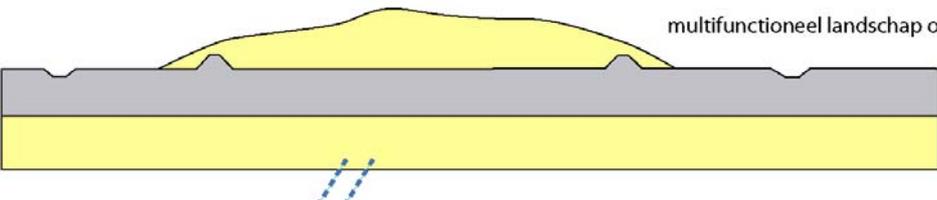


TEAM A



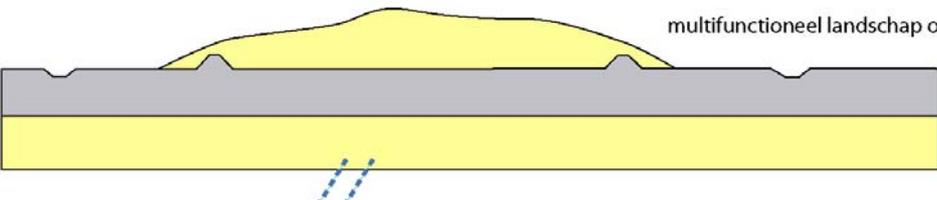
TEAM A

multifunctioneel landschap op droog duinzand



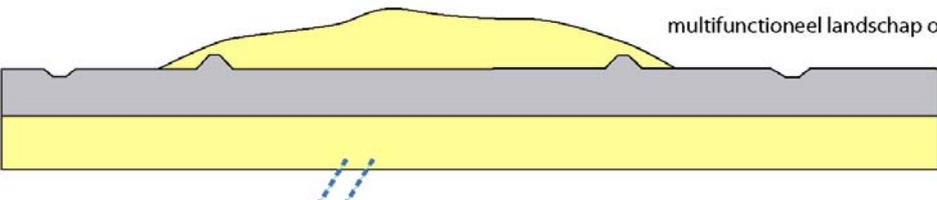
TEAM B

multifunctioneel landschap op droog duinzand

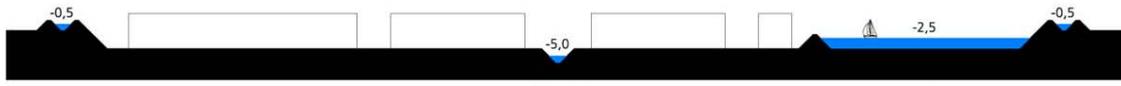


TEAM B

multifunctioneel landschap op droog duinzand



TEAM B



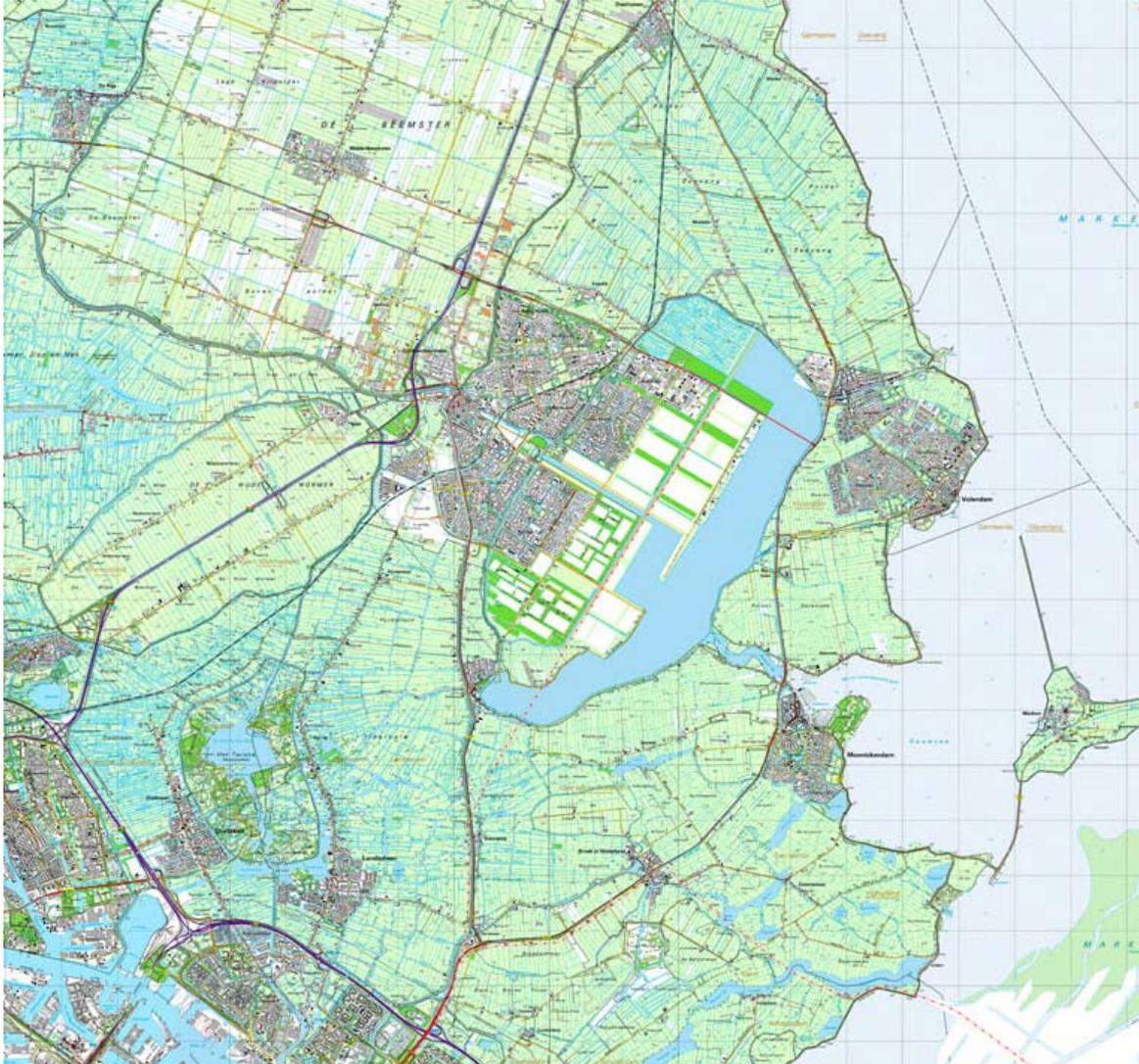
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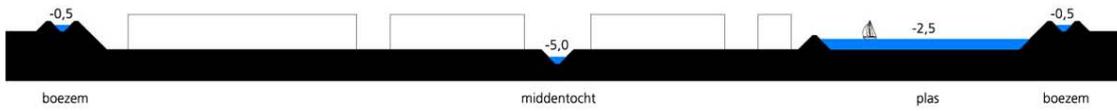
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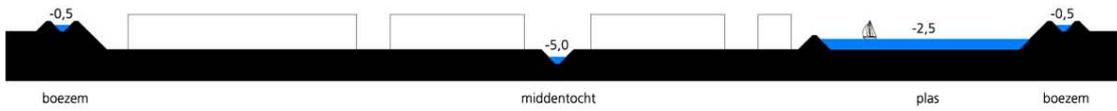
TEAM C



nieuw



TEAM C



nieuw

boezem

middentocht

plas

boezem



TEAM C