Dordrecht floodscapes
Towards the amphibious city
dordrecht
water as a threat
Dordrecht is faced with a major flooding hazard, in which climate change adds up to its inherent vulnerable nature.
In an era of rapid climate change, how can Dordrecht transform into an amphibious, multifunctional spatial entity?
Green-blue network that:

- accommodates excessive rainfall
- acts as a series of public spaces
- enhances biodiversity
- fosters social dynamics
- offers contrasting spatial experiences
- strengthens the identity of Dordrecht

*Water as a visible and tactile feature*
water as a threat → water as a chance
sustainability + experience
precedents
Copenhagen cloudburst plan, Tredje Natur

The soul of Nørrebro, SLA

Benthemplein watersquare, De Urbanisten

Potsdamer Platz, Studio Dreiseitl

Copenhagen cloudburst plan, Tredje Natur
Principles:

- rainwater collection, storage and re-use
- increase of permeability
- creation of wet and dry zones
- visible flooding techniques
- link flood protection-ecology-social life
- different typologies for different street profiles/public spaces (toolbox)
- infrastructure as waterways/public spaces as basins
- changing, adaptive, dynamic city
flows-networks
MESO

water

mobility

ecology

landscape characters
a system of lines and nodes

CONCLUSIONS
- water, ecology and recreational networks along main lines
  - water compartments
  - species migration
  - main infrastructural connections
- dikes-green lines
  - inland water habitats
  - major waterways
  - main infrastructural connections
- creeks-blue lines
- the lines as a city-nature connection
- lines connecting a system of nodes
- nodes forming zones as gaps in the urban fabric
- densification of all 3 layers within zones

POTENTIAL
- lines
  - water compartments enclosing sub-systems
  - main water flows-distribution of rainwater
- nodes
  - water retention areas (flood protection)
  - ecology
  - recreation
principles
city-nature transition
the city as a sponge

1. RETENTION

2. STORAGE

3. DISPOSAL
multifunctionality
everchanging landscapes

WATERLINES

BUFFERS

Typical condition

Light rain (30 times/year)

Heavy rain (once/year)
the 19th cent. schil
STREETS

- the outdoor living room
- the waterfront
- the retention strip
- the waterfall
- the gutter

PUBLIC SPACES

- the hofje
- the private garden
- the parkway
- the watersquare
design proposal
PLANTS FILTER AND PURIFY THE WATER

STORMWATER FLOWS FROM PAVEMENT INTO GREEN GUTTER

INCLINATION 2%

WATER FLOWS THROUGH THE GUTTER - WATERLINE

STORMWATER FLOWS FROM STREET INTO GREEN GUTTER

INCLINATION 2%

WATER IS PURIFIED BY HELOPHYTES AND NATIVE PLANTS

EXCESS WATER STARTS FORMING PONDS

WATER INFILTRATES THROUGH SOIL

WATER FLOWS FROM WATERLINES TO LOWEST BASINS

STORMWATER FLOWS ALONG WATERLINE

INCLINATION 2%
climate adaptation
current situation

2048 (without intervention)  
*after prolonged heavy rainfall*

2048 (design proposal)  
*after prolonged heavy rainfall*
transformation
holfjes start to fill up

low basins of watersquares fill up
water keeps flowing in waterlines

hofjes are completely filled up

park basins start to fill up

watersquares completely fill up
park basins completely fill up

water keeps flowing in waterlines

hofjes start to drain

watersquares start to drain
the area returns to initial dry condition
the hofje
the park
a “dordtse” story
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thank you