

Governance and Land Use Resiliency and Water Management Reshaping edges to keep the water out Large scale infrastructure: Nijmegen Rainproofing: Amsterdam and Rotterdam **Adaptation and Waterfront regeneration** NDSM Werf, Amsterdam RDM Campus, Rotterdam



Resiliency and Water Management: Reshaping edges to keep the water out

The Netherlands: delta of 4 rivers

The Netherlands





Flood sensitive area



Watermanagement in a region below sealevel





Cross section Amsterdam





Watermanagement: 1673 Locks in Amstel river

Flood control: 1683 dike

Drink water:

Water boats

ZYNDE NEGEN VOET VAR DUYM

ZEE DYKS HOOGHTE

Groundwater control: 15th century: pile foundations, canals, embankment

Waterquality control: 1665 Flushing with the tide

17th century: canal rings (map 1680)

Past: Water control





Scheveningen Waterfront reconstruction

58°





Resiliency and Water Management Room for the River Waal





One of the narrowest bends in the Dutch river system

OLD SITUATION

DIKE RELOCATION

1 forta

NEW FLOOD CHANNEL

NEW BRIDGES









Within integral models everything technical and creative is possible



Watersafety became a Riverpark for Peoplenk / Aeropicture.nl



Nijmegen: shift of the original dyke













Resiliency and Water Management: Rainproofing








how to make a water square ?



a very simple idea



the watersquare model



water comes from all sides

rain



the problem of combined sewers





the problem of combined sewers













Rotterdam rain risk map Wateropgave no lateration the





- Stop gelager tefrastructuur

prove NEW hand

01-05

05-01



the watersquare in Rotterdam



photo by Ossip van Duivenbode

waterstorage spaces



480000 US gal





catchment area of basin 1



catchment area of basin 2



catchment area of the deep basin 3

a fine piece of engineering



orchestration of rainwater





the "rain well" leads the water from the roof into the gutter





the "water wall" takes the water from further surroundings into the deep basin











Adaptation and Waterfront Regeneration: Amsterdam NDSM Werf



























Adaptation and Waterfront Regeneration: RDM Campus, Rotterdam




























Learning from the Netherlands

SPUR

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