



2016 STUDENT LANDSCAPE ARCHITECTURE DESIGN COMPETITION PRIZE WINNERS

FIRST PRIZE <i>IFLA Group Han Prize for Student Landscape Architecture</i>	TITLE AUTHOR(S) INSTITUTION	<i>Responsive Land: a sustainable future for the Dutch historical peat meadows</i> Sander Hermans Wageningen University, Netherlands
SECOND PRIZE <i>IFLA Zvi Miller Prize</i>	TITLE AUTHOR(S) INSTITUTION	<i>Grace of Flood</i> Wei He, Lanlan Jin, Li Tan, Menghan Zhang, Jiahui Cui Beijing Forestry University, China
THIRD PRIZE <i>AIAPP Merit Award</i>	TITLE AUTHOR(S) INSTITUTION	<i>Back to Lake Poopo</i> Xi Wang, Qi-ya Zhang, Lin-yi Lu, Ya-ling Yan, Chen Chen Beijing Forestry University, China

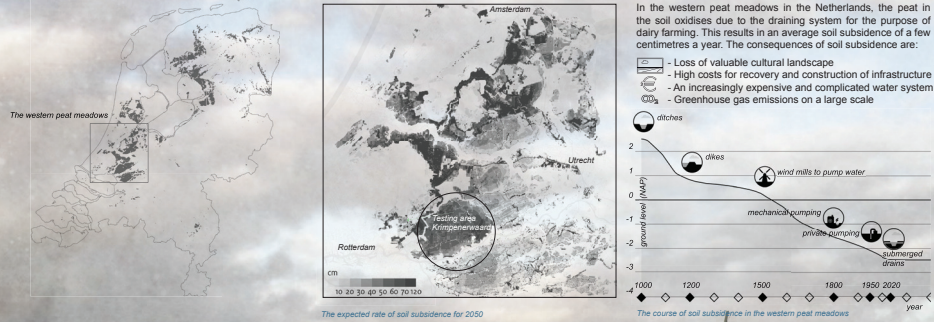
FIRST PRIZE <i>IFLA Group Han Prize for Student Landscape Architecture</i>	TITLE AUTHOR(S) INSTITUTION	<i>Responsive Land: a sustainable future for the Dutch historical peat meadows</i> Sander Hermans Wageningen University, Netherlands
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JURY NOTES

This is a project dealing with the very real issues surrounding the historical peat meadows in the Netherlands. The jury commends the clarity and simplicity of the presentation, which was ultimately highly sophisticated. The project deals with a real issue in real time and was carefully researched, reviewed, and presented in a logical and consequential manner. The graphics supported the thought process, and were chosen with great relevance. The project was illustrated at multiple scales, demonstrating an understanding of the problem as a whole as well as the detailed application.

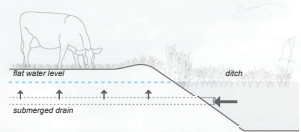
Responsive land A sustainable future for the Dutch historical peat meadows

1. Problem: soil subsidence in the Dutch peat meadows due to peat oxidation



2. Solution: implementation of submerged drains in plots

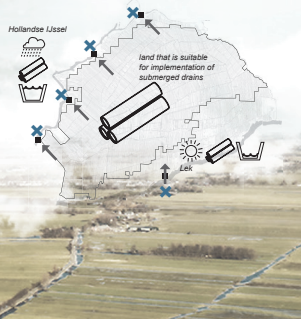
Submerged drains infiltrate the water deep into the plots in dry periods, therefore peat oxidation doesn't take place and the rate of soil subsidence will be reduced significantly.



3. Consequences of implementation on a large scale

- The water system will respond faster in wet periods resulting in frequent water troubles in wet periods
- Increasing demand for water in dry periods

The river Hollandsche IJssel is already often overloaded, the polders need to be able to store their water to prevent water troubles in wet periods. The river Lek is an important shipping river that cannot provide the extra amount of water in dry periods that will be needed when submerged drains are implemented on a large scale.



4. Concept: constructing a fast responsive reservoir canal to store water in wet periods that can be used in dry periods

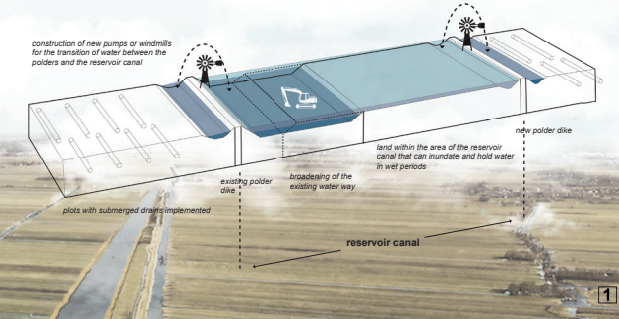
connect to main discharge routes, polders and pumps

design within the pattern of historical polder dikes

a reservoir canal and submerged drains embedded within the historical landscape



- Enhances the historical landscape pattern of medieval peat dikes
- Significant diminishing of the rate of soil subsidence
- More than 50% less emissions
- More income for dairy farmers
- Reservoir canal is designed as a boating world resulting in significant opportunities for recreation in the area
- Opportunities for nature development within the reservoir canal like wetlands on inundation areas



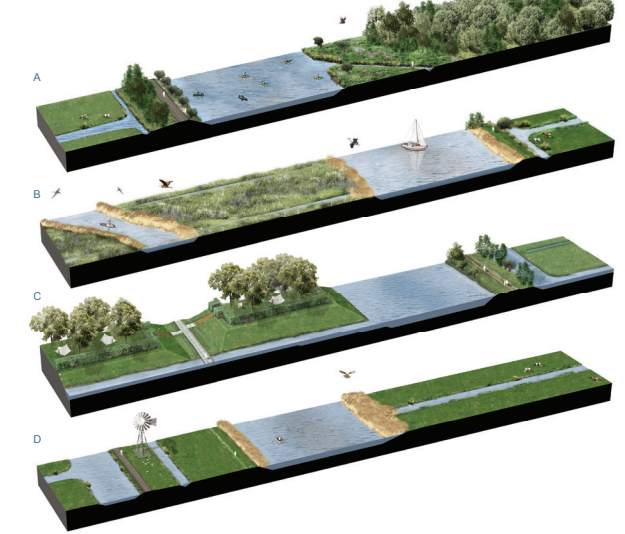
Responsive land A sustainable future for the Dutch historical peat meadows



5. Regional design of the reservoir canal



This regional design provides as a tool for communication within the discussion about the future of this historical landscape and shows what role landscape architecture can play within this discussion.



6. Design summer camp



The reservoir canal provides many opportunities for the inhabitants of the surrounding urban area. As an example a summer camp for youngsters from the urban surroundings is designed based on the historical reclamation pattern.

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JURY NOTES

This project deals with flooding in the basin of the Niger River. The project proposes a relatively low key intervention in order to minimize issues of flooding that would typically otherwise result in widespread social deprivation. It views the process as a long-term engagement in an attempt to mitigate the flooding and allow for the improvement of various areas along the river valley. The approach could potentially be transferable to other locations. The graphics were perhaps more complicated than necessary, but demonstrated real skill.

GRACE OF FLOOD

01/02

LOCATION

Ukoko is the local Government Area of Kogi State in Nigeria, located at the confluence of the Niger and Benue rivers with an area of 3,182 km², more than half of which are floodplains where people subsists a lot from the deposit of silt from flooding in Niger Benue River.

RIVER ANALYSIS

Over flow of the River Niger that led to the flooding in Ukoko and other parts of Kogi State was caused by inflow of excess water from the discharge into the Niger River and Benue. The 2012 rainy season has been worse than earlier years, and from early of the end of August and the beginning of September till to now in Kogi in most parts of the country.

PRESENT CRISIS

Rainfall impact level rises as houses from hydro-power dam were identified as major cause of floods, which destroyed the lives and livelihoods.

TIMELINE

1875 SETTLEMENT
The present settlement of Ukoko was established with small population and city.

1991 CITY DEVELOPMENT
City was established with this administrative boundaries, as a large population and city with available settlement.

2012 RIVER FLOODING
Agricultural losses and death again water caused by the flood in seasonally, occupy the land and environment.

RELATIONSHIP BETWEEN CITY AND THE RIVER

2016
With the expansion of the city and the river, urbanization is suffering a lot from the flood which caused heavy losses and damages.

2030

The situation is worsening the ecological management of the flood.

2060

Crisis are no longer threatened by floods. On the contrary, cities benefit a lot from the flood and exist in harmony with the river.

CONCEPT

SOCIETY
The ecological management of the flood will benefit the ecological management of the city and the environment.

ECONOMY
Agricultural development is based on the ecological management of the flood, bringing a variety of income, improving the development of economy.

ECOLOGY
The ecological management and protection of the flood, among the harmonious development of society, economy and ecology.

WHERE IS OUR FUTURE?

THIS SHOULD BE THE FUTURE

MASTER PLAN SCALE 1:70000

GRACE OF FLOOD

02/02

DETAILED PLAN

- Arable land
- Shrub wetland
- Flood scouring area
- Deep wetland
- Flood scouring direction
- Sediment
- Urban area
- Pastoral area
- Woodland
- Farm/land
- Farm/ridge
- Hill path
- Agricultural water storage facilities
- Fish pond
- Water purification facilities of wetland
- Abso/underground inlet channel

STRATEGY

1. Minimal intervention
The design takes the labor and low resource consumption into account by recycling construction waste to build the dam with the structure of the mass body and gabion filled with stones.

2. Let nature work
With the help of gabion-filled structures, a larger area will be covered by nature to trap water during a period of time. The flood increases the fertility of the soil and contributes to forming the wetland.

3. No crisis + Sustainable development
The flooded area and the floodwater are recycled (to be used for irrigation) to reduce the threat of flooding in the city. With gabion-filled structures, the floodwater is gradually infiltrated into the soil and contributes to the sustainable development of the city.

PHASE OF DEVELOPMENT

Present: Flood prone overflows.	Phase 1: Soil gradually reclaimed to build the dam supported by the gabion filled with stones.	Phase 2: Water and sediment are separated. Excessive water and sand run out through a gap between each two arch dams.	Phase 3: The area near the dam is constantly silted and expanded. The outer side of the dam forms into the wetland.	Phase 4: A relatively stable shape of the concave area and the wetland are formed with water storage capacity enhanced.
Present: The area is rarely affected by the flood.	Phase 1: The dam is composed of several segments.	Phase 2: A dam is built along against the dam is formed by floodwater rushing past.	Phase 3: The gabion built dam guides the flood to form a concave area.	Phase 4: In order to release flood water, stone water for irrigation and increase biodiversity.

SEASON ANALYSIS

PRESENT **15 YEARS** **45 YEARS**

MODEL

Present: On ground
Phase 1: On ground
Phase 2: On ground
Phase 3: On ground
Phase 4: On ground

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JURY NOTES

This project dealt with the gradual disappearance of a large saline lake in the Altiplano Mountains in Bolivia. The project considers how numerous families are being forced to leave their hometown as the lake and area are no longer sustainable. The project describes a variety of adverse effects due to climate change and the associated impacts on the local human population. The graphics illustrate a range of phased interventions to help resolve the decline.

