RIVERSCAPE IN BASEL REGION

FLOWSCAPES
Infrastructure as Landscape, Landscape as Infrastructure
Graduation LAB Landscape Architecture 2014 - 2015

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Father Rhine and River Engineer, An argument between Father Rhine and a River Engineering

Illustration by Jakob Albrech
Rhine River involves nine countries of Europe including Germany, France, Switzerland and The Netherlands.
The river begins in the Swiss Alps and goes to the North Sea, it has a "length of about 1,250 km long with a drainage area of about 185,260
Basel, point of fragmentation of the river

WATERWAY - RIVER
Inaccessibility to water blocked by industry

LOST AWARENESS OF THE RIVER
Fragmentation of the natural system

LOST BIODIVERSITY
How can we provide an spatial balance where opportunities for people and nature can develop in the Rhine, reinforcing the relation of the river with its surroundings through the river borders in the region of Basel?
BASEL REGION – Changes of the Rhine through time

Years of the river
- 1856
- 1909
- 1958
- 2000
- 2015

UPPER RHINE
- Braided river / flood areas

BASEL - CITY
- Confined river by city edges since the establishment of the Celts.

HIGH RHINE
- Confined river by the morphology of the terrain.
BASEL REGION - UPPER RHINE Braided river

- No water processes
- No water free flow
- Less habitats
- Agriculture
BASEL REGION – City
BASEL REGION - HIGH RHINE Confined by morphology

New border / Industry

Less habitats

Agriculture
LAND USE - Nature

- Broad leave forest
- Mixed forest
- Moors and Heathlands
- Inland Marshes
LAND USE - Agriculture / Non irrigated arable land
1-ECOSYSTEM RESTORATION
1.1 RIVER EDGE
1.2 CONNECTION WITH SURROUNDINGS - RIPARIAN ZONE

2-ACCESSIBILITY TO THE RIVER

NO RELATION BETWEEN THE RIVER AND THE SURROUNDINGS
LOW BIODIVERSITY - FRAGMENTED GREEN STRUCTURE
Current river edges situation:
- Artificial
- Natural

Current river connections situation:
- Poor
- No connections

ECOSYSTEM RESTORATION - ARISING NATURE
ECOSYSTEM RESTORATION - ARISING NATURE

New river edges situation:
- Alternated
- Integrated

New river connections situation:
- Industry/Settlements
- Agriculture
NEW RIPARIAN ZONE - HABITATS GREEN AREAS

Wetland
- Populus nigra
- Salix alba
- Aesculus hippocastanum
- Tilia cordata
- Phalaris
- Linum usitatissimum
- Thylia lanifolia
- Tufted duck
- Common merganser
- Kingfishers
- Eurasian beaver
- European tree frog

Deciduous Forest
- Alnus glutinosa
- Fraxinus excelsior
- Ptelea trifoliata
- Quercus robur
- Ulmus minor
- Eurasian nuthatch
- Eurasian blackcap
- Boar
- European badger
- Roe deer

Meadow
- Agrostis zimnica
- Dianthus superbus
- Leucanthemum vulgare
- Grass snake
- European green lizards
- European tree frog

Island
NEW RIPARIAN ZONE - AGRICULTURE

EXAMPLE OF AGRICULTURAL DEVELOPMENT

Agroforestry

Biomass crops

Populus alba
Populus canadensis
Populus nigra
Quercus robur
Robina pseudoacacia
Hemp
Brassica napus
Beta vulgaris
Miscanthus
Maize
NEW RIPARIAN ZONE - INDUSTRY

EXAMPLE OF INDUSTRIAL DEVELOPMENT
NEW RIPARIAN ZONE - SETTLEMENTS

- Add vegetation
- Retain water system
- Materials
- Streets
- Green connection
- Coniferous
- Deciduous
ZONE 1 - NATURE TAKING OVER - Water

ZONE 2 - BUILT TAKING OVER - Industry, Future development

ZONE 3 - STITCHING BUILT AND NATUR - Basel

ZONE 4 - CONTRAST - Forest
STRATEGY ZONE 1

New dynamics in the border and connections

Ecological aim

Agriculture connection

Large patch + finger

Wetland park

Alternated

Modification of the river edge

Agriculture

Green connection

River edges

Expansion inland marsh

Typologies

Improve edge: more accessible to people

PATCH

CANOPY

Boat connection
PHASE 1

- Modification border
- Excavation
- Passive recreation - new paths
- Modification border
- Sleeping riverbank reinforcement
- Entrance
- Recreation spots
- Agroforestry
- Biomass
PHASE 2

- Natural development
- Wetland

- Passive recreation - new paths following the older agriculture paths

- New recreational areas

- Agroforestry

- Entrance

- Inland water

- Deciduous forest expansion

- Passive recreation - new paths following the older agriculture paths
PHASE 3

Natural development
Wetland

New recreational areas

Deciduous forest expansion

Entrance
Built spot in nature
Agroforestry made by annual crops combine with oaks, at the same time they function as stepping stone for the species to reach the river.
The river will have a free flow. In high level seasons can flood and expand enriching the habitats and the experience for people. Beaver can build their dams and help with the water processes and regulation. Atlantica salmons can breed near the beaver dams and have resting spaces before the breeding.
**Deciduous forest**

- *Salix alba*
- *Ptelea trifoliata*
- *Populus nigra*
- *Fraxinus excelsior*
- *Alnus glutinosa*
- *Quercus robur*
- *Ulmus minor*
- *Eurasian beaver*
- *Eurasian blackcap*
- *Eurasian nutthatch*

**Wetland**

- *Atlantic salmon*
- *Tufted duck*
- *Tilapia*
- *European tree frog*
- *Common merganser*
- *Aesculus hippocastanum*
- *Phalaris arundinacea*
- *Thylia latifolia*
- *Kingsfishers*
- *Salix alba*
- *Phylocarpus tomentosus*
- *Linum usitatissimum*

**SECTION NATURAL DEVELOPMENT**

**JUVENILE**

**SPAWNING**
VIEW ZONE 1
ZONE 2 - BUILT TAKING OVER - Industry, Future development

BORDER

CHEMICAL INDUSTRY SMALL SETTLEMENTS

OVER VIEW BASEL HARBOR
New dynamics in the border and connections

River edges

Ecological aim

Linear edge + steppingstones

Integrated Industry

STRATEGY ZONE 2

Typologies

Boat connection

Modification of the river edge

Park + new edge

Meadow park

Recreational water

Housing

WATER

MEDIUM

TROUGH BUILDING
New residential areas
Local biotopes
Lineal park
Active recreation extension over the river
Water selected expansion with the development of local biotopes
Water retention - streets connected with the river
New residential areas
Water retention
Beach - infiltration and recreation area
Open spaces: wind flow and experience of the river
Recreational expansion over the river. Skycoaster, jet ski, canoeing
Open flow for water and wind
Water selected expansion with the development of local biotopes
Pedestrian axis
Connect path
Improve edge

Ecological aim
Steppingstones
New dynamics in the border and connections
Integrated
Settlements
River edges

Typologies
LINE
LEVELS
STRIPE
Incorporating vegetation even to the buildings or the street to create connections.

Improving the border, extending the pedestrian space and adding resting biotopes for species.

Continuing the path.

Water retention street and bridge.

Green connections using the buildings.

Water over bridge.

Balconies.

Tolerating.
VIEW BORDER BALCONIES 2
GREEN TERRACES

SMALL HABITATS RESTING SPACES FOR SPECIES

CAN BE FLOODED IN HIGH WATER LEVEL

VIEW BORDER TOLERATING
ZONE 4 - CONTRAST - Forest
Green connection

Improve edge for accessibility

Ecological aim

Linear edge + steppingstones

New dynamics in the border and connections

Alternated

Industry

River edges

Typologies

Line

Patch
Green connection, steppingstones

Logistic and transportation industry - space for water retention

Accessibility to edge by hidden pedestrian paths

Green connection, breaking the edge to allow the passage of amphibious
AMPHIBIOUS PASSAGE

HIDDEN PASSAGES FOR PEOPLE

VIEW ZONE 4
Thank you