THE DANCING BOUNDARY
Towards regional development of the border lands between Bratislava and Vienna
CONTEXT
Fascination
Problem Statement
Research goal
Case study

METHODOLOGY
Landscape as entity
Landscape as process
Landscape as infrastructure

ANALYSIS
Natural system
Low Dynamic conclusion
Urban system
High Dynamic conclusion
SWOT analysis

REGIONAL DESIGN
Regional spatial concept
Design principles
Regional design
Regional Projects
Phasing

PROJECT ELABORATION
Urban-rural recreation network
Wetland Reserve
Devinska Waterfront
Landscape is an important concept within humanities, social sciences as well as natural sciences.

---Forman 1995
At the border land...
At the border land...
The Dancing Boundary -- Towards regional development of the border lands in Bratislava

At the border land...
A cross-border region (CBR) is a territorial entity that is made of several local or regional authorities that are co-located yet belong to different nation states.

There are 70 crossborder regions in Europe today under the name of “euroregions”.

The number of cross-border co-operation is gradually increasing from economic points to sociology, yet the spatial planning is still a relatively new area.
Question: How to use landscape approach to facilitate the spatial development and social interactions in a cross border region?
The Danube river basin
Length (km): 2885 km
Drainage Area (km²): 817 000
Discharge (m³/s): 6 500
Countries: 19
Population: 80 000 000
Sea at Mouth: Black Sea

Danube river basin in Slovakia
River length: 1869 km, area: 131338 km²
old Meander belt
Increased precipitation and irregular flows
Connectivity:
- International Bycicle path
- Twin city water line
- High way
- Road
- Train
The Dancing Boundary -- Towards regional development of the border lands in Bratislava

- High salary
- Low housing rent
- Cheap product
- Industrial development

67km, one hour to Vienna

2000 daily commuters

R = 1.5 km
Historical connections

12 crossing bridges

Railroads & Waterways
Austro-Hungarian Empire
A direct tram (1848-1968)

Bratislava
Historical connections

**Austrian**
- 12 crossing bridges
- Railroads & Waterways
- Austro-Hungarian Empire
- A direct tram (1848-1968)

**Bratislava**
- Individual growing
- Defense position: afraid of ecological problems, inundation of cheap products
- Twin city line/ bicycle bridge

### Austrian
- Individual growing
- Defense position: afraid of ecological problems, inundation of cheap products
- Automotive industries

### Bratislava
- Individual growing
- Offense position: decline of production/unemployment/social degradation
- Member of EU, 2004
- The need for land

**Spatial Development?**
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Historical flooding events
- Sep, 1899
- July, 1954
- June, 1965
- August 2002

Problem Statement I - Transnational water management

The Dancing Boundary -- Towards regional development of the border lands in Bratislava
Problem Statement II- No man's land

The Dancing Boundary -- Towards regional development of the border lands in Bratislava
Problem Statement III- Fast transit
Problem Statement IV- Regional identity

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The Dancing Boundary -- Towards regional development of the border lands in Bratislava
RESEARCH GOAL

To facilitate the spatial, social and ecological development in Bratislava-Vienna cross border region by an integral regional design perspective.

Sub-questions:
How does Landscape system work in the CBR?
What are the potential aspects for redevelopment?
How can I use design approaches and tools to give it in a spatial expression?
What can I learn from the above process?
Case Study

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  Devinska Waterfront
Landscape as **Entity**  

Landscape as **Process**  

Landscape as **Infrastructure**
Theoretical Structure

Landscape as Entity

Natural system
- geomorphology
- water
- soil
- wetland
- forest
- species...

Urban system
- urban fabric
- transportation
- park
- cultural land
- history...

Landscape as Process

Landscape as Infrastructure

The Dancing Boundary -- Towards regional development of the border lands in Bratislava
Theoretical Structure

Landscape as **Entity**  
Layer approach  
Landscape as **Process**  
Landscape as **Infrastructure**

**Natural system**
- geomorphology
- water
- soil
- wetland
- forest
- species...

**Urban system**
- urban fabric
- transportation
- park
- cultural land
- history...

**Low Dynamic**
- Land use/function with long-term development

**High Dynamic**
- Land use/functions with short-term development

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The Dancing Boundary -- Towards regional development of the border lands in Bratislava
Theoretical Structure

Landscape as **Entity**  
Low Dynamic  
Land use/function with long-term development

Landscape as **Process**  
High Dynamic  
Land use/functions with short-term development

Landscape as **Infrastructure**  

Natural system  
geomorphology  
water  
soil  
wetland  
forest  
species...

Urban system  
urban fabric  
transportation  
park  
cultural land  
history...

Layer approach  

The framework concept  

Blue  
river  
pond

Green  
wetland  
meadow  
forest  
urban green space

Transport  
rail  
road  
port  
bicycle path

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Natural System - Geomorphology
confluence of two rivers, two mountains
Two natural phenomena forms the main open space of this region
Natural System - Hydrology

The water comes from the mountain and higher part of the field, flowing into the canal, finally into the river. The lower floodplain is vulnerable to be flooded when it is rain season.
People built up dikes and levees along the floodplain to protect inland settlements. In some parts it is not efficient so that they built more dikes and temporary levee in case of heavy rains.
The areas of wetlands and marshlands are mainly located in the north part of the River Morava. This is due to the long period regulation of the old Danube.
The main green structure are designated as bird directive habitat. The most sensitive part is at the edge of the mountain and river.
The water absorptive capacity from upstream determines the flexibility of downstream. The wetland is fragmented but has the potential to reconnect with the surrounding green structure. The small green patches can be connected as ecological corridors for ecotypes.
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Urban System - Fabrics

Compact urban area in Bratislava. Low density in Austria

Devin is the most vulnerable part to be affected by floods. Devinska Nova Ves is in suburbanization process.
Urban System – Fabrics

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Historical Castles are highly protected as cultural heritage, attracting lots of tourists. The old elements left by the Iron Curtain are gradually faded away.
Green open space is very little in the rural area near the border line. Heritage-based open space and sports are the main recreational programme in rural area.
Urban System - Rural pattern

Rural pattern: main public open space is based on churches and memorial places. Less open space is connected to the surrounding environment.

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Urban System - Cultural Landscape

Bratislava: collective farmland, traditional vineyards
Vienna: open field with sunflowers, peanuts etc.

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The Dancing Boundary -- Towards regional development of the border lands in Bratislava

no circle (return) route between two countries.
Fast mobility only passes through the rural centre, no chance for seeing the surroundings.
Insufficient of the bicycle path
Few stops of commercial waterway
Less water programmes for the local communities
The transportation mobility limits people connecting with surrounding environment. Regional transportation system needed. Few public space is offered for social communication. More activities could be projected with its surroundings. The need for land from Bratislava’s side is crucial. The solution from its neighbouring countries should be a radical suburbanization.
When overlapping two dynamic systems, in some parts, the high dynamic and low dynamic separate from each other, in some parts they come to one place. Therefore the regional development should make a balance between these two dynamic systems: one the one hand, make room for individual development; on the other hand, determine strategies for the overlapping parts.
<table>
<thead>
<tr>
<th>Low dynamic</th>
<th>High dynamic</th>
</tr>
</thead>
<tbody>
<tr>
<td>border location</td>
<td>short distance between two cities</td>
</tr>
<tr>
<td>well preserved landscape</td>
<td>stable population</td>
</tr>
<tr>
<td>high aesthetic potential</td>
<td>international bycicle path</td>
</tr>
<tr>
<td>capacity of unbuilt areas for another uses</td>
<td>good condition for agriculture</td>
</tr>
<tr>
<td></td>
<td>tradition of vine</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Low dynamic</th>
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</tr>
</thead>
<tbody>
<tr>
<td>embedded in the mountains</td>
<td>mutual transportation limited</td>
</tr>
<tr>
<td>irregular water flow</td>
<td>low quality infrastructure</td>
</tr>
<tr>
<td>discontinuous ecotype habitat</td>
<td>absence of car bypass</td>
</tr>
<tr>
<td></td>
<td>industrial left-over land</td>
</tr>
</tbody>
</table>

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</thead>
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<tr>
<td>regulation of old Danube river belt</td>
<td>improve settlement structure</td>
</tr>
<tr>
<td>preserve more ecotype habitat</td>
<td>improve regional transportation system</td>
</tr>
<tr>
<td>ecological flow along the border land</td>
<td>development of green open spaces</td>
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</tbody>
</table>

| the fear of ecological problems | the fear of economic problems |
| cultural barriers | decrease of traditional characteristics |
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The Dancing Boundary -- Towards regional development of the Border lands in Bratislava
"The job of landscape architect is to provide constantly pleasing movement patterns such that our lives can be given the continuous sense of dance." -- Lawence Halprin
Design Principles

- Splash water
  Enhance the hydrological Structure

- Land
  Develop green structure

- Spin around
  Regulation of fast and slow mobility

HIGHLIGHTS:

- Wetland retention
- Increase water storage capacity
- Integrate water into urban tissue
- Enhance water infrastructure

- Protect and develop ecological area
- Develop regional park structure
- Enhance water-edge green open space
- Ecological sound agriculture development

- Waterway as recreation structure
- Densification bicycle path
- Create transition point of fast and slow
- Highlight thematic routine
The Dancing Boundary -- Towards regional development of the border lands in Bratislava
Design Principles

- Splash water
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Wetland retention
Increase water storage capacity
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Develop regional park structure
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ecological area

green open space

main social interaction space

farmland

ecological corridor

vine yards

wetland sponge

new urbazation

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Wetland retention  Increase water storage capacity  Integrate water into urban tissue  Enhance water infrastructure

Protect and develop ecological area  Develop regional park structure  Enhance water-edge green open space  Ecological sound agriculture development

Waterway as recreation structure  Densification bicycle path  Create transition point of fast and slow  Highlight thematic routine

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Vienna

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Regional Projects

- 2. Wetland Reserve Transformation
- 3A. Devinska Waterfront Construction
- 3B. Petralka Waterfront Construction
- 4A. Eco-agriculture Transformation
- 4B. Industrial quarry Transformation
- 5. Water Adaptive Suburbanization

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Develop Rural-Urban Recreational Network

Wolfsthal Water Adaptive Suburbanization

YEAR 2016 2020 2025 2030 2035 2040 2045

Wetland Reserve Transformation

Devinska Waterfront

Petrzalka Waterfront

Eco-agriculture Tourism Transformation

Industrial quarry Transformation

The Dancing Boundary -- Towards regional development of the border lands in Bratislava
- Existing recreation attractions
  - Devin Castle
  - Schlobhog Castle
  - Devinska Kobyla
  - Nation Park
  - Hainburg Roman town
  - Wolfsthal Castle

- Proposed recreation attractions
  - Bratislava old city centre

The Dancing Boundary — Towards regional development of the border lands in Bratislava
Existing recreation attractions

- Vine yards adventure
- Bunker Museum and Camping site
- Iron Curtain routine
- Bird observatory
- Devinska Kobyla
- Hainburg Roman town
- Wolfsthal Castle
- Devin Castle
- Eco-agriculture tourism

Proposed recreation attractions

- Devinska Waterfront
- Schlobhog Castle
- Nation Park

The Dancing Boundary -- Towards regional development of the border lands in Bratislava
half-day routine
distance: 16-18km
One-day bicycle routine
distance: 35-38 km
two or three-day bicycle routine
distance: 50-55km
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- Urban-rural recreation network
- Wetland Reserve
- Devinska Waterfront
Wetland Reserve
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Holiday Cottage

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Reflection

1. Regional design as a strategy for spatial development in the cross border region.
2. The relation between landscape concepts and Regional design.
3. The relation between regional design and small scale elaboration.
4. The relationship between the project and the wider social context.