THE DANCING BOUNDARY

Towards regional development of the border land between Bratislava and Vienna
PREFACE

The border land has always been where a country ends, designated as the “End of the Plan”. It also draws a line between people from different sides of the space. However, the introduction of the euro and Schengen treaty has brought us an opportunity for transfrontier spatial development which may establish a new relationship in the border land.

In industrial cities like Bratislava, people turn to escape away from city centre to the outskirts. Therefore the border land is an interesting place to develop a sense of belongings. Additionally, in terms of transnational ecological, social issues related to Vienna, the cross border region need to be re-valued by providing an integrated vision for a real barrier free landscape.

The master thesis contains a set of research from regional analyses, dynamic conclusion, design and project elaboration, aiming at building up a spatial framework by landscape infrastructures and giving design possibilities for specific projects. I hope it will offer some inspirations for who are interested in the cross-border land.
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1. CONTEXT
1.1 Fascination
1.2 The Danube River Basin
1.3 The border land of Bratislava-Vienna
1.4 Problem Statement
1.5 Research Question

2. METHODOLOGY
2.1 Landscape as entity
2.2 Landscape as process
2.3 Landscape as infrastructure
2.4 Case study

3. ANALYSIS
3.1 Natural system
3.2 Urban system
3.3 SWOT analysis
3.4 Dynamic Conclusion

4. REGIONAL DESIGN
4.1 Regional spatial concept
4.2 Design principles
4.3 Regional plan
4.4 Application

5. PROJECT ELABORATION
5.1 Rural-Urban Recreational network
5.2 Wetland Reserve at the confluence of two rivers

6. REFLECTION

7. APPENDIX
1. Context

1.1 Fascination

The term “cross border region” (CBR), known as the cooperation between geographically contiguous border regions, including maritime borders (S. Duhr, 2010), is a territorial entity where several local or regional authorities are co-located yet belong to different nation states.

There are 70 cross border regions in the Europe nowadays. With the process of Schengen Agreement and the introduction of euro, more free movement is offered, and the cooperation in the CBR gets frequent, verifying from economic, social, and cultural aspects. Yet the spatial development is still lack of references.

The current border land has always been regarded as the end of the ‘Plan’ between countries. The spatial development in the CBR is ignorant and less concentrated due to different policy management. However, the existing problems, for instance, the flooding problems, the duplicate transport system, the language barriers, gradually challenges us to focus more on the border region.

In the meantime, we could see that the most of the CBRs are not only metropolitan areas but also related to a level of Peri-urban and rural interaction. There are amount of urban fabrics, rural settlements, cultural landscape and natural landscape co-located in the CBR, the conflict between each other requires a careful consideration of how these compositions could be better networked. Therefore the spatial development is not only desired to meet current demands but also should be regarded in a shared sustainable perspective.

The Danube Floodplain area is a significant zoom-in template for the cross-border cooperation.
1.2 The Danube River Basin

The Danube River Basin is the world’s most international river basin as it includes the territories of 19 countries. The river flows freely among countries, making itself as an important connection in ecological, economic and social terms. Additionally, most of the border regions are located along the river basin, which means the relationship between nature and urban are highly evaluated here. However, the increasing human impacts and pressure from communities, irrigation, and industry result in problems which may affect not only in a specific point but also in a transnational scope.

Hereby I choose the border region in Bratislava-Vienna CBR as a research site. It is located in the end of the upper basin of the Danube river basin with its old meander belt and increasing irregular flows.
1.3 The border land in Bratislava-Vienna CBR

From a large scale of Bratislava-Vienna CBR, there are many rural areas in-between two cities. The fast transport is the main connection among these areas. Since Slovakia became a member of the EU, the border has become barrier free, and the transport communication is more efficient that it takes only one hour by highway within two cities. However, the development between two countries is far different in terms of spatial, social and economic aspects. Especially the region near the border line, Problems seem to be more obvious.

In a small scope of the border region (radius of 1.5 km along the border line), it lies at the edge of Bratislava. On the left wing is the Vienna’s national park (Donau-Auen), which has a high ecological value along the Danube. On the right wing is the Danube Floodplain, where waterways are heavily modified to share the burden of flood. In between, the current border situation is an old meander river belt with huge amount of farmland. Mixed group of Slovakians and Viens live here with language barriers and little social interaction.

The need for land from Bratislava’s side and the fear of ecological problems, inundation of cheap products from Vienna, making it complicated to develop the region after 40 years separation by the Iron Curtain. Apart from accessibility, the quality of living environment in the CBR are still in poor condition. Furthermore, there are 2000 daily commuters between two cities, weakly connected with the surrounding environment. A potential development is required to revive the regional identity as well as spatial cohesion.
1.3 The border land in Bratislava-Vienna CBR

When Vienna and Bratislava belonged to the Austro-Hungarian Empire, there were several connections including bridges, railroads etc. However, the Iron Curtain has resulted in individual growing until the fall of the Iron Curtain. The boundary was barrier free when Bratislava became a member of EU in 2004. Communication is increasing via transportation, yet the afraid of ecological problems, inundation of cheap products has led Vienna standing in a defense position of cross border spatial development.

Most of the existing cross border cooperation are focusing on education and economic projects. While the spatial development projects are towards the nature, cultural heritage and tourism. There is no expression for an integral perspective for the whole region. In my perspective, the increasing awareness of redevelopment of the border region may be a new spatial dialogue between two countries. The need to contain regional communication and redevelop the space has increasingly become the focus of the cross border cooperation.
1.3 The border land in Bratislava-Vienna CBR


The effort from Bratislava is to provide its inhabitants with access to the border area and regulation of the development in suburban areas in order to maintain good relations with nearby foreign communities, as well as to prevent devastation of the natural environment and the green belt. Its territorial and functional relations with the neighbouring countries will be renewed.
1.3 The border land in Bratislava-Vienna CBR

The timeline map of the border region illustrates that river tributaries has gradually disappeared, this is due to the continuous Danube water regulation. Whileas the the urbanization of Bratislava starts to touch the edge of the border line. In the past, the social and commercial activities used to happen based on the river, but now, the river lost its function and even cause more problems for future development. Here I will conclude four main problems of the cross border region as a starting point to do the research and regional design project.
1.4 Problem Statement

A. Hydrological structure
The river does not stop at administrative borders by its nature. Therefore the confluence of the River Danube and River Morava from upstream results in flooding problems down to the Bratislava. High levees were built in the city, and people gradually lose relation with water and nature These water construction will also affect regional sustainability.

B. No man’s Land
Some parts of the border land has been inaccessible for 40 years because of the Iron Curtain. The border land has a high ecological value but economically and socially isolated. Moreover, the mining industrial in the early time left baregrounds as a scar embedding in the landscape. No complete public space structure, especially in the rural areas, resulting in less communication and the cultural barriers still exist.
For most of the main road between Bratislava and Vienna, the function is to reach the rural centre, people can quickly pass-by but remain little accessibility for the surrounding environment. Even the local people can not have a good accessibility to the nature. Although there are some existing bicycle structure, but the facility is not efficient even for a circle routine.

The urbanization process has started to invade into rural district with ignorance of the characteristics of traditional settlement. In the cross border region, there are many cultural similarities and differences which should be reconsidered so as to retain their identities. And this can be expressed from a regional spatial dimension, for instance, the shared memories of the Iron curtain, the different views of the rural open filed.
1.5 Research Question

Based on the problems and current border situation, my research question is how to facilitate the spatial development and social interactions in a cross border region? And here I choose regional scale because: a) The hydrological structure has mutual relationship between upstream and downstream. b) The balance between nature resource and urban process can only be re-evaluated when regarding the whole region as a system. c) The desire to connect people with their surrounding environment may be based on a transnational transportation structure. d) The importance to retain regional characteristic and identity.

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?
2. Methodology

Landscape as entity
Landscape as process
Landscape as infrastructure
Case study

Regional design shapes the physical form of the regions. It takes a regional perspective in guiding the arrangement of nature resource and human settlements. It is a strategy to accommodate growth by providing a physical framework to determine or guide the most beneficial location, function, scale, and inter-relationships of communities within a region (M. Neuman, 2000). And landscape here is an important vehicle to drive a sustainable cross-border region as it: a). forms an entity that all natural and cultural components are intermingled together b). respects each level of dynamics and superimposes them into one time-related system c). facilitates the infrastructural design and regulates the flow of the region.

In the following pages, I am going to apply landscape concepts and approaches into the cross border regional development. Three landscape concepts will be selected as a starting point of this position thesis: a). Landscape as entity, b). landscape as process, c). landscape as infrastructure.
Theoretical Structure

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

Nature system
topography
hydrology
soil
vegetation
ecotype...

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

Blue
river
pond

Green
wetland
meadow
forest
urban green space

Transport
rail
road
port
bicycle path
2.1 Landscape as Entity

Concept: Landscape itself is a medium through which natural, social and ecological transactions must pass.

Landscape is a concrete space and story container for allowing components from different dimensions to be developed together. The components such as topography, hydrology, soil, vegetation, urban fabric, transportation are the basis to form the region and it can be divided into two main systems, that is, nature system and urban system. From a regional context, landscape is an integrator and the spatial-continuum, which offers a relational structure connecting scales and spatial, ecological, functional, social entities (S. Nijhuis, 2013).

Application: Layer approach

Here I will also start with a lay-by-layer reading of the landscape from nature and urban systems. Thus the complexity of the physical reality will be unravelled in a series of maps. The spatial characters will become more obvious to help me draw conclusions upon the comparison.

2.2 Landscape as Process

Concept: Landscape deals with time and provides a condition for dynamic processes.

The complexity of landscape here is considered as a continuous changing model which deals with time and uncertainty. It shows the respect of the evolution of the place, both from urban and nature. In a long run, landscape deals with the effects towards sustainable development. In a short-term, it may also accompany with existing structures to meet current demands.

Application: High dynamic and Low dynamic system

Introduced by ‘the framework concept’ from Dirk Sijmons and Klaas Kerkstra, landscape is a process of high dynamic and low dynamic system. The low dynamic system means a relatively stable function with a long-term consideration, such as geo-hydrological landscape patterns. Within the ‘gaps’ of the framework are complementary opportunities for ‘high-dynamic’ land uses (Van Buuren and Kerkstra, 1993). The high dynamic system refers to a system that functions with short-term development. For
instance, the urban system illustrates a rapid change in transport and urban extension.

The idea is important in the cross border region, where the extension of urban occupation interweaves with abundant natural treasures. In my perspective, the nature here offers a rather low dynamic condition for ecology and sustainability. While the urban system is high dynamic as it changes faster and more unstable than nature. Therefore, after analysing the layers of nature and urban system, I will draw dynamic conclusion of each system to offer a clue to rethink the nature and urban process.

### 2.3 Landscape as Infrastructure

Concept: The ‘Landscape as infrastructure’ defines infrastructure as a type of landscape and the landscape as a type of infrastructure (cf. Strang, 1996).

Infrastructures are understood as “constructed facilities and natural features that shelter and support most human activities – buildings of all types, communications, energy generation and distribution, green spaces, transportation of all modes, water resources, and waste treatment and management” (PERSI, 2012). While landscape is a durable impact resulted from human and natural environment. Thus the landscape infrastructure seems to meet multiple demands and keep a dynamic balance in-between human and nature.

The integration of high dynamic and low dynamic system creates a rhythm for the dance of the border region, especially where they meet together. In order to redesign the border region, I use landscape as infrastructure to re-construct the spatial framework which may allow high dynamic and low dynamic system to grow together.

Application: Green-blue-transportation regional infrastructure network and regional to local intervention

Spatial framework is important for a region as it gives a direction for where to develop and how to balance between restoration and development. Hereby, I regard green-blue-transportation as a tool to respond to the regional context. This physical integral network provides a condition for redeveloping the regional spatial structure. For instance, green infrastructure may reconstruct ecological corridors from a low dynamic view, while enhance the regional park system at the same time. Blue infrastructure consists of wetland retention, flood control system etc. Transportation infrastructure facilitates the flow of the region. Thus the space is reframed and able to accommodate with time process.

In addition, the intervention can also be seen from small local scale, as landscape is a spatial continuum, the infrastructural network, for instance, public green open space and agricultural recreation can also benefit for the local communities even for the private stakeholders.
2.4 Case Study

The “Room for the River project” encompasses four rivers with morphological impacts extend upstream into Germany, portions of France and Belgium, and may reach to the Rhine headwaters in Switzerland over time. The design presents an integrated spatial plan to improve the overall environmental conditions. By measures such as removing dikes, increasing the depth of flood channels and green bypass, the project is able to deal with climate change and thus stimulate sustainable spatial development for both long-term and short-term consideration.

Another project, The Moselle Landscape, lies at the cross border land between Germany and Luxembourg and acts as a short representation of the Greater Region, Moselle landscape. From last decade, the number of cross-border commuters is increasing and the need for housing and residential land is rising as well. On the other hand, the decay of traditional agricultural production and the need for better infrastructure, forcing it to have a better landscape network along this region. The project was launched to accommodate with rapid development and to promote an integrated river-landscape in the cross-border region. Hereby, I will specifically explain the significance of landscape concepts applied in this regional development.

The Moselle Landscape is an entity which brings the common identification for residents of regions bordered by rivers. is a shared connection illustrating the significance of the region. By this connection, the natural and cultural system are integrated as a whole river-landscape.

The development of Moselle Landscape not only allows for natural condition but also provides room for dynamics process of urbanization.
2.4 Case Study: Luxemburg-Germany CBR - the “Moselle Landscape”

The whole regional landscape forms a spatial infrastructural network. From blue infrastructure, the project analyses potential flooding zones along the Moselle and avoids urban constructions built on the sensitive area, thus preserving natural landscape and leaving efficient room for settlements and transport. The water course can run into neighbors, creating water-related open spaces and multi-functional purpose of flood areas. From green infrastructure, the preserved forest connect to European nature network. Historical vine yards in the narrow part of the Moselle Valley and lavender production are revived again to recover the cultural landscape. This continuous green open space also provides urban recreational activities. From the view of transportation, waterfront infrastructure, port construction are intensifying to increase accessibility and mobility, ensuring the quality of stay.
3. Analysis

3.1 Nature System

In the geometry layer, the border land is at the meeting point of the Mountain Carpathian and the last peak of the Alps. The confluence of River Morava and Danube acts as a physical border between countries. Here, two natural phenomena forms the main open space of this region. And the underlying soil shows that the each side of the border land shares the same condition of fluvial soil in the floodplain area. From hydrology layer, The water comes from the mountain flowing into the canal, finally into the river, therefore, in the rain season, lower floodplain is vulnerable to be flooded. People built up dikes and levees along the floodplain to protect inland settlements. However, it is still not efficient so they have to build up temporary levee in case of heavy rains. From vegetation structure, the mountain itself has a rather stable forest system, while the floodplain area, vegetation is highly related to human intervention. The areas of wetlands and marshlands are mainly located in the north part of the River Morava, but the old Danube belt has less diversity due to long period regulation. The same as ecotype: the main green structure are designated as bird directive habitat. The edge of the mountain and river are the most sensitive parts of the region.
Geomorphology

The border land is at the meeting point of the Mountain Carpathian and the last peak of the Alps. The confluence of River Morava and Danube acts as a physical border between countries. Two natural phenomena forms the main open space of this region.
**Hydrology structure**

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.
Vegetation structure

The mountain itself has a rather stable sustainable system, while the floodplain area, vegetation is highly related to human intervention. 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 mountain itself has a rather stable sustainable system, while the floodplain area, vegetation is highly related to human intervention. 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.

**Low Dynamic Conclusion**
3.2 Urban System

Most of the urban fabric in Bratislava are high density continuous fabric. Whileas in the edge of the city and rural areas of Vienna are covered with low density discontinuous fabric. In the meantime, Devinska Nova Ves is in suburbanization process. Petrzalka has a high population density where people may try to find land from its neighbouring country. From height elevation, Devin is the most vulnerable part to be affected by floods. The rural pattern in Austria was built in Roman Empire Period. Therefore the main public open space is based on the churches and memorial places. The green public open space is very limited. Moreover, little open space is connected to the surrounding environment, for instance, the river and forest. On the other hand, The industrial development has left several sites in bare grounds without treatment.

Arable farming is the dominant land use in the border landscape. In Bratislava, the traditional vineyards are the main products on the slopes of the mountain. In Vienna, they grow beet, sunflowers on the floodplain, which map provide an open view of the environment. Trams and car road are effective to reach the rural city centre. However, less accessibility is provided to see the abundant landscape. The existing bicycle path has little circle routine so that it is suitable for one-day trip but not dense enough for few hours' biking. The commercial waterway, such as twin city line, has few stops along the river. From a local point of view, less water programmes is built for the local communities. From cultural preservation, historical Casttles are highly protected as cultural heritage, attracting lots of tourists but the old elements left by the Iron Curtain are gradually faded away.
Most of the rural area and the edge of city are covered with discontinuous fabric. Devin is vulnerable to be affected by floods. Devinska Nova Ves is in suburbanization process. Petrzalka has a high population density while the Austrian side remains a low density.
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.
Rural pattern

The rural pattern in Austria was built in Roman Empire Period. Therefore the main public open space is based on the churches and memorial places. Less open space is connected to the surrounding environment, for instance, the river.
Arable farming is the dominant land use in the border landscape. In Bratislava, arable areas are less numerous and located in the slopes, where traditional vineyards are the main products. In Vienna, most areas grow beet, sunflowers etc.
Fast mobility
Trams and car road are effective to reach the border land. However, there is no circle (return) route between two countries. Fast mobility only passes through the rural centre. There is no chance for seeing the surroundings.
Existing bicycle path is suitable for one-day trip but not dense enough for few hours' biking. The commercial waterway has few stops along the river. Less water programmes for the local communities.
High dynamic conclusion
Transportation mobility limits people connecting with surrounding environment. Few public space is offered for social communication. More activities could be projected with its surroundings.
When overlapping two dynamic systems, we see that for 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. On the one hand, make room for individual development. On the other hand, determine strategies for the overlapping parts.
3.3 SWOT Analysis

To make it more clear, the SWOT analysis here is a tool to help summarize dynamics in the cross border region. Either low dynamic or high dynamic system has its strength and weakness. And the opportunity can be regarded as potential aspects based on these evaluations. Importantly, when they integrate with each other, for instance, when increasing capacity for flooding meet agriculture transformation, we may think of eco-agriculture or wetland transformation, when preserving more ecotype habitat meet the development of social open spaces, green open spaces may be a strategy for both dynamics. And thereby two dynamic systems can work together by an integrated design.
4. Regional Design

4.1 Regional spatial concept
4.2 Design principles
4.3 Regional plan

As Forman says, “Landscape is an important concept within humanities, social sciences as well as natural sciences.” Landscape contains nature and urban, integrating them into one system which allows dynamics to happen.

Based on the understanding of landscape system from layers and dynamics, my idea of facilitating the spatial development in the cross border region is to build an infrastructural spatial framework.

“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
Fascinated by the picture above, to perform a whole dance, two sides of the dancers should work together. They may have different steps and gestures though, the mutual coordination keeps them in balance.

In a similar way, to perform a regional dance at the border land, nature and urban become two main rhythms of the landscape body. In order to establish new relationship of the movement patterns, I use the flows of hydrological, green and mobility system to help reconstruct the cross border region. Under this condition, the physical barrier will have more communications in terms of dynamic development and finally be integrated as a dancing boundary.

The spatial framework will refer to three principles: splash water, land and spin around.
4.2 Design Principles

Splash water
Enhance the hydrological structure

Land
Develop green structure

Spin around
Regulation of fast and slow mobility

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
4.2 Application

Splash water- Enhance the Hydrological structure

A. Wetland retention. By connecting the existing fragmented water canal and making more branches for the river. Some parts of farmland outside the dike will be replaced by wetland structure, able to accommodate more water and provide diversity for ecotype.

B. Increase water storage capacity. Ponds are built from upstream, working together with river branches as a sponge. Meanwhile, the ponds could also benefit for recreational use in the rural area.

C. Connect water into urban tissue. The new constructed waterways will again go into the local community, bringing in fresh water and interwaving with existing urban tissue.

D. Enhance water infrastructure. Two water inlet will be added at the mouth of the canal to improve drainage system. The dike in the middle stream will be reallocated to make more room for flooding period.
existing condition

room for the water (dry period)

Traces in the farmland
4.2 Application

Land- Develop green structure

A. Protect and develop ecological zones
For riparian forest and the edge of the mountain where nature has a high ecological value, only limited access or visual connection

B. Develop regional park system
By developing levels of park structure to ensure urban and each rural district has its accessibility to parks.

C. Enhance water-edge green open space
More green open spaces related to water with proper facilities will attract people to celebrate activities along water's edge.

D. Ecological sound agriculture transformation
Tree lanes in the farmland to enhance corridors for wild life. Corns, peanuts and other products can be sold at local cooperative.
4.2 Application

Land - Develop green structure

The different sections show the proposed green structure which consider both natural process and rural environment quality.
4.2 Application

Land- Develop green structure

Section C

Dike  Wetlandhal Park  Riparian forest  River Danube  Wetland

Section D

Fast&Slow transition  Eco agriculture  Riparian open space  Wetland  River Danube  Riparian forest
4.2 Application

Land - Develop green structure

B. Densification bicycle path
To provide accessibility to the surrounding environment, some of the existing rural path can be transformed into official bicycle path with better pavement.

D. Highlight thematic routine
Emphasizing the routine which connects most of the attractions.

A. Waterway as recreation structure
Waterway is re-introduced along the both of the Danube and River Morava. More ferries are constructed so that local people can also enjoy water activities and barrier free for landscape at Austrian or Slovakian side.

C. Create transition point of fast and slow
Green transition hub will replace the original low facilitated open space at the transition point. Programs such as bicycle renting, open market can take place here so as to let people have more interaction and access more local products.
4.2 Application

Spin around - Regulation of fast and slow
4.2 Application

Spin around- Regulation of fast and slow
4.2 Application

Spin around - Regulation of fast and slow

Transition of fast and slow

- Proposed bike path
- Proposed car path
- Proposed train line
- Highway
- Proposed waterway
- Fast & slow connection
- Ferry construction
From regional Perspective, we can see that water go through communities, then into wetland sponge, and finally go down through the city of Bratislava. Green open spaces are provided instead of no man’s land, thus stimulating more possibilities of social interaction along the boundary. The improved slow transit making it possible to access this land.
4.2 Regional Projects

1. Develop Urban-Rural recreation Network

2. Wetland Reserve Transformation

3. Devinska Waterfront Construction

4. Eco-agriculture Tourism Transformation

5. Industrial quarry Transformation

5. Water Adaptive Suburbanization
4.3 Phasing

Wetland Reserve transformation would be the first phase because of long-term ecological consideration. At the same time, rural-urban recreation network is a strategy to use tourism sector to bring in regional identities and economy. The second phase will focus on urban and rural waterfront construction, which contribute to real enjoyment for the local community.
3. Analysis

3.1 Nature system
3.2 Urban system
3.3 SWOT analysis
3.4 Dynamic Conclusion

The original recreation attractions are highly related to the castles and old traditional towns. However, there are also other historical traces and interesting products such as the bunkers left by the Iron Curtain and traditional. By creating a regional recreational network, the attractions separated by the border line can again interwoven together as a miniature of regional identity.

To give an example of recreational network, I propose three different time schedules for a tourist starting from Bratislava by bicycle.
1. Regional recreational network

4.3 Project Elaboration

Existing recreation attractions
- Vine yards adventure
- Bunker Museum and Camping site
- Iron Curtain routine
- Bird observatory
- National forest
- Bratislava old city centre
- Hainburg Roman town
- Wolfsthal Castle
- Devin Castle
- Eco-agriculture tourism

Proposed recreation attractions
- Devinska Waterfront
- Nation Park
- Schlobhog Castle
- Bunker Museum and Camping site
half-day routine
distance: 16-18km
One-day routine
distance: 35-38 km

two or three-day routine
distance: 50-55 km
4.3 Project Elaboration

2. Wetland Reserve

At the confluence of River Morava and River Danube, a sensitive zone, the farmland inside of the dike is vulnerable to be flooded. To transform this traditional agricultural land, wetland reserve will be a good way as it provide flood control, water quality improvement, recreation and biodiversity. The area is 331ha. The estimated cost of site creation and management will be less than 800,000. Compared with valued 70,000 annually benefits, the wetland reserve will be a positive project.
Regulation of the ditches

Water-adaptive plant

Holiday cottages

emphasis on forest and renaturalise wetland habitats

recover river biodiversity

limited accessibility, e.g. bird observatory

reintroduce wetland structure

reintroduce grazing animals

renaturalised Morava island

Existing situation

Agriculture recreation zone

Renaturalised buffer zone

Ecological zone

phase 0-5 years

phase 5-8 years

phase 8-12 years

Limited accessibility, e.g. bird observatory.

Renaturalised Morava island.
Agriculture recreation zone (dry seacon)
Agriculture recreation zone (rain seacon)
Renaturalised buffer zone (restore river dynamics and biodiversity)
Ecological zone (educational function with limited access)
4.3 Project Elaboration

2. Wetland Reserve

The pedestrian bridge at the mouth of River Morava is a significant process as it not only provide accessibility to the wetland reserve, but also will be an identity acrossing above from Slovakian side to Austrian, walking through two sides of the riparian forest but touching the same texture. Thus it remains a feeling that the border land is not physically cut. Creating a space to dissolve fears, language barriers.
Perspective at the confluence of River Danube and River Morava
6. Reflection

1. Regional design as a strategy for spatial development in the cross border region. At the starting point, I choose regional scale for the cross border region because it is important for tackling spatial issues which may jump out of municipal boundaries, for instance, hydrological, transportation problems. These problems can only be considered when regarding the whole region as a system. And regional design, as a strategy, shapes the physical form of a region, having the possibility to enhance the spatial and social cohesion. Therefore, in the Flowscape Studio, my research is focusing on how to facilitate the cross border region by an integral regional design. And I use design-oriented research under the three main landscape concepts to further my thinking process.

2. The relation between landscape concepts and Regional design. When thinking of regional design, my interest starts with rethinking the role of landscape in facilitating the spatial development. We know that infrastructure is an essential feature of regional planning, and here landscape can be a vehicle to facilitate spatial transformation when regarding landscape as a system which contains green, blue and transportation infrastructure. But why and how? Therefore I regard landscape as entity, process and infrastructure as three parallel views in understanding and planning the region. On the one hand, each of them represents landscape features from multiple layers, dynamic process and spatial infrastructural framework. On the other hand, they offer a sequence of thinking what the potential is in the region. Finally, the regional design is a tool to test how these landscape knowledge can work together to provide an integral perspective.

3. The relation between regional design and small scale elaboration. Regional design shapes the condition where potential projects may happen. In return, the projects let things become more tangible which may influence the decision on the regional level. In my case, the thinking process is not always going from large scale
to small. Actually regional scale, middle scale and local intervention always influence on each other. Their mutual relationship forces me to consider each scale at the same time and overlap them to make an integral decision. In the meantime, the flows (ecological flows, transportation flows and social flows) are good mediation to help me establish their relationship throughout the scales.

4. The relationship between the project and the wider social context.
Nowadays, there are amount of cross border regions where people don’t have a shared perspective for dynamic and sustainable spatial development. From a large context, it is an opportunity to rethink of facilitating the cross border region by landscape approaches. Provided with regional landscape condition, the border issues can be addressed by a shared regional perspective. When zooming in, the design interventions can also benefit for the local communities.

5. Feasibility
The Europe has also drawn attention to cross-border cooperation, focusing on the European spatial condition. Therefore the stakeholders relevant to the projects can also extend to a European level, for instance, the European Regional Development Fund, which aims at reducing the gap between the levels of development of Europe’s regions and contributing to territorial cooperation. And of course, the cooperation will not be able to realized without co-operation with local stakeholders. Therefore involving multi-levels of stakeholders can be a challenge but also an opportunity that may stimulate a sustainable regional redevelopment.