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PART ONE
INTRODUCTION
The Garden Of Earthly Delights (1503-1515) - Hieronymus Bosch
This video is a short story about my project. In February 2017, I attended the workshop "Let's Talk about Water", this workshop aims at... As the product of the intense week, and under the help of teachers and friends, I made this short video in playing with clays, in order to talk about the storyline of my graduation project.
“Urban and landscape fragments contrast, blend and mix with each other. Together they form an urban conglomerate, a ravishing cacophony of built and not built-up spaces.” There is no clear-cut definition but hybrids forms on interface.
Cheonggyecheon, South Korea
After Riverside recreation
Human interventions are the vulnerable factors for natural environments.

Nature threat the living environment around.

Interface as a concept to study the interaction
What is the interface and why design on interface?

1. For this project, interface refers to the zone of transition between unoccupied land and human development. It is the confrontation of urban systems and natural systems. There are no clear boundary between nature and urban on it. It is the place where urban environment and natural environment are porous into each other and interact and conflict with each other most frequently.

2. Interface is a complementary approach to study the interaction of urban and nature.
One of the most important thing of interface is the *adaptivity*. Considering the highly frequent interactions between urban and nature, interface should be a changeable structure which conveys urban dynamism and natural process.

So the concept I am going to work with is *not only interface but the adaptive interface.*
PROBLEM STATEMENT

Nijmegen, NL
New urban land

Cheonggyecheon, South Korea
Riverfront Promenade

Mill Race Parl, US
Recreation Park

In which way should we develop interface and assure its adapticity?
Main Objective: To consider ‘adaptive interface’ as an instrument to facilitate the interaction between urban and nature through the method of research by design.
TORONTO AS CASE STUDY

PART ONE: INTRODUCTION

Dramatic ravine features
22% Population growth
PART TWO

METHODOLOGY FRAMEWORK
**METHODOLOGY**

**PART TWO: METHODOLOGY**

- Occupation
- Networks
- Substratum

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**Urban-nature Interface**

<table>
<thead>
<tr>
<th>Layer</th>
<th>Occupation Layer</th>
<th>Infrastructure Layer</th>
<th>Nature Landscape Layer</th>
</tr>
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<tbody>
<tr>
<td>Dimensions</td>
<td>5-50 years</td>
<td>50-100 years</td>
<td>&gt;100 years</td>
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<tr>
<td>Analysis</td>
<td>Occupation</td>
<td>Infrastructure</td>
<td>Nature Landscape</td>
</tr>
<tr>
<td></td>
<td>1. Building morphology</td>
<td>1. Transportation network</td>
<td>1. Habitats</td>
</tr>
</tbody>
</table>

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**Accessibility**

**Building Typology**

**Transport Network**

**Water Network**

**Natural Landscape**
PART THREE
UNDERSTANDING SITE
1. Substratum, as it is the lowest dynamic layer which provides natural conditions on interface.

2. Infrastructure networks, its transformation and development goes faster than the natural conditions.

3. Land use and urban settlement enjoys the highest dynamism, and it determines how people use the interface in a short time.
TORONTO INTERFACE

**Substratum**
- Natural Landscape
- Soil conditions
- Habitats

**Infrastructure Network**
- Water Network
- Underground Tube
- Transportation Network
- Transportation service
- Water body

**Occupation**
- Spatial Relationship
- Building Typology
- Spatial Experience
- Accessibility
The largest ravines are home to the rivers running south from the Moraine to Lake Ontario. These rivers and creeks flow through high land (North) to waterfront area (South). And the river basin formed the lowland in city area.

Toronto's ravine systems, with its river, dramatic geography and forest defines the landscape.
Different Soil type

Sharp Height Different

Urban-nature confront

Ravine Valley Position

TORONTO INTERFACE
HISTORICAL DEVELOPMENT OF WATERSHED

1. grow independent
2. grow dependent
EXPERIMENT SITE: Lower Don River

The Lower Don River before and after straightening, 1882 and 1894

- Reshape Geomorphology condition
- Industrial land
- Pollution
- Infrastructure Corridor
- Left-over

Winchester St
PART FOUR
FINDING PRINCIPLES
Large river ravine landscape is disserting these two sloping plains - north of the Iroquois bluff in undulating till plain, south of the Iroquois bluff has more dynamic height difference.
NATURAL LANDSCAPE

Analysis

Soil Distribution
Habitat Distribution
Rainwater Runoff
NATURAL LANDSCAPE

Problem Statement

Runoff

Low Biodiversity

Storm water overflow

Problem Habitat

Low Wetland Feature

Polluted Aquatic

Low Biodiversity
Problem Statement

- Remove exotic Habitat
- Increase Biodiversity
- Vegetation Cover on Slope
- Connect Habitat
- Wetland Feature
- Cleansing Aquatic Feature
NATURAL LANDSCAPE
Adapt Principle

Levee Setback
Space for River
Vegetation Terrace
Analysing the typology of geomorphology units of River Don to understand the natural river system.
WATER NETWORK

Analysis

Modeled 50 year Storm Peak Flows (cms) and Amount
TRANSPORTATION NETWORK
Analysis

Transport Hierarchy
Cycle Path
Public Transportation
TRANSPORTATION NETWORK

Problem Statement

Transport Hierarchy

Bicycle circle path

Light traffic zone

Free Zone
TRANSPORTATION NETWORK
Adapt Principle

Transportation Corridor 1  Green Bicycle infrastructure  Transportation Corridor 2
Building
Adapt Principle

Openning up

Connectin
PART FIVE
DESIGN APPLICATION
DESIGN LOCATION
POTENTIALS OF THE SITE

1. Recreation Hub
- School
- Parkette
- Sport Field
- New Recreation Space
- Waterfront Trail
- Community Park
- Parkette

2. Regeneration Extension
- In Regeneration
- New Community
- Auto Dealership
POTENTIALS OF THE SITE

3. Water resilient community
NATURAL LANDSCAPE DESIGN
SWOT EVALUATION
SWOT EVALUATION

Strengths collage

opportunities collage
1. It was a powerful structure to analyze Toronto interface through different aspects, and finding the principles for each aspects, providing the potential solutions.

2. The five-dimension-approach is also contribute to identifying design principles in the later part of my project.

3. The five-dimension-principles were justified within the certain context and new principles were generated through the designing.

4. This may lead to certain limitation of design principles, and the principles should be justified through designing repeatedly in the same site or in different sites. But within the structure of dimension-approach for developing adaptive interface, the design is open-ended which can be repeated and provide new principles for interface.

5. The method helps people to positioning themselves in making designing choices with the interaction of human and nature environment.