Edge city, beyond edge city

Evolutionary urbanization by the dynamics of landscape ecology

Seul Lee
7 viewpoints of the watershed
Residential area in Silicon valley
Business area in Silicon valley
Salt pond with 1.5m sea level rising
Underated value of landscape

Absence of Urban form after edge city
Evidence of urban transformation by transport system in history
Urbanization with the highway structure

Infrastructure

Industrialization

Post-Industrialization
Evidence of Suburbanization
Current issues of the area from Suburbanization

- Downtown
- Edge city
- Disconnection
- Migration of Silicon valley
- Flood risk
- Downtown
Density gap
Problem statement

The site is structured by transportation network as the key of agglomerative economy of the region, which caused the current situation of ‘disconnection’ between city centers, in terms of spatial condition and economy.

Today, it reveals its limits for providing adaptive urban development model for the edge city in the trend of climate change.
How to improve territorial connectivity and water adaptivity through the restructuring of landscape elements for future urban development?
Stage 2 to 3 of a big edge city’s life cycle “push out”, “push up” in Post-industrialization

Stage 3 of a big edge city’s life cycle “push up” by sea level rising
Current development trend
Guiding of development pressure
Bridging by filling the density gap
Ecological pattern for bridging
Vision
New Urban core

New development for Silicon valley

Re-concentration by re-development

New occupation pattern in Post-Post-industrialization
Connecting two river streams to make a new urban core of San Jose

Network of Blue/green infrastructure
Tools

1. Sub-coring
2. Splitting
3. Braiding
4. Stitching
5. Binding
6. Netting
1. Sub-coring

The core of new water system

Marsh restoration

The core of new water system
2. Splitting

Splitting the stream of river to settle sediment through the area
3. Braiding

Splitting the stream of river to distribute sediment in the area
4. Stitching

Connecting existing rivers
5. Binding
6. Netting
1. Sub-coring
2. Splitting
3. Braiding
4. Stitching
5. Binding
6. Netting

New development by sediment concentration

Re-development with sediment control
Phase 1.
Phase 2.

The core of new water system by marsh restoration.
Phase 3.

- Marsh
- Making a sub stream for drainage in the island
- Make a new additional stream
Phase 4.
Phase 5.
Landscape setting for the new development area
Different water levels by layered levees for water management
Different water levels by layered levees for water management

Clustering islands
Different water levels by layered levees for water management

The core of water management system in the new development area
Different water levels by layered levees for water management

Higher water level for water friendly environment prompting new development
Blue-green infrastructure

- Extention of existing infrastructure to induce new development
- Higher water table
- New species by Succession
- Hightened island for starting new development
- Open space
- Buffer between islands (type 1)
- Buffer between islands (type 2)
Phase 2
Soft urbanisation

Festival ground
Higher water table
Complete new development along the edge
Sports
Urban farming
Access to mash for tourism
Buffer between islands (type 1)
Buffer between islands (type 2)
Agriculture
Phase 3
New development I

- Hightened ground for new development
- Higher water table
- More developed access to mash for ecological park
- Open space until the island is densified
- Buffer between islands (type 2)
- Agriculture
- Hightened ground for new development
Phase 4
New development II

- Higher water table
- Waterway for leisure
- Hightened island for starting new development
- Upscale housing
- Office buildings
- Open space
- Buffer between islands (type 1)
- Buffer between islands (type 2)
- Energy production
- Tourism
- Phase 4
- New development II
Open space: New(re-) development = 1:1
Elements of open space
Density for development
Development for the edges

Waterfront type 1
Maximum

Waterfront type 2
Medium

Waterfront type 3
Minimum

-building coverage

50%

Garden

25%

Semi-public open space

25%

-building coverage

30%

Garden

30%

Semi-public open space

25%

-building coverage

25%

Garden

50%

Semi-public open space
Edge types

- Promenade
  - Type 6
- Entrance of the ecological park
  - Type 1
- Marsh view
  - Type 2
- Drainage canal
  - Type 3
- Riverside
  - Type 4
- Soft edge for sediment
  - Type 5
## Criteria

### Water way

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### Edge

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<td>slope (access to water)</td>
</tr>
<tr>
<td>soft/hard</td>
<td>slope/no slope</td>
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<tr>
<td>soft (natural)</td>
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### View

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### Proximity

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<tr>
<td>close</td>
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</tr>
<tr>
<td>medium</td>
<td>irrelevant</td>
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<td>far</td>
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Location of the edges
Entrance of the ecological park

Water way

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<td>soft(natural)</td>
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### Marsh view

**Water way**

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**Development type**

- Waterfront type 1
- 2-A: Open form
- 2-B: Semi-open form
- 2-C: Closed form

**Proximity**

- Close
- Irrelevant
- Far

**Program of the edge opposite**

- Housing
- Park
- Marsh
- Commercial/business
Drainage canal

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Riverside

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Program of the edge opposite

Housing park
marsh
commercial/business
### Riverside

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**View**

- Housing
  - park
  - marsh
  - commercial/business

**Development type**

- Waterfront type 3

- Infrastructure (Arterial)
  - close
  - medium
  - far

- Proximity
  - Building coverage
  - Garden
  - Semi-public open space
### Soft edge for sediment

#### Water way

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Promenade

Water way

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Entrance of the ecological park

Promenade Type 6

Marsh view Type 2

Drainage canal Type 3

Riverside Type 4

Soft edge for sediment Type 5
Edge development

- Promenade
- Drainage canal
- Train station
- Marsh
- Park
- Entrance of the ecological park
- Soft edge for sediment
- Type 1 and Type 2
- Type 3
- Type 4-a and Type 4-b
- Riverside
- Type 5
- Type 6
- Alviso
- Entrance of the ecological park

Legend
- Waterfront
- Type 1 mixed use
- Type 2 housing
- Type 3 upscale housing
- Type 3 upscale housing
Development of the edges

- Development of the edges
- FSI
- GSI
- Compact
- Minimum
- Medium
- Maximum

Waterfront type 1
- Maximum
  - Building coverage 50%
  - Gardens 25%
  - Semi-public open space 25%

Waterfront type 2
- Medium
  - Building coverage 30%
  - Gardens 30%
  - Semi-public open space 30%

Waterfront type 3
- Minimum
  - Building coverage 25%
  - Gardens 50%
  - Semi-public open space 50%

Examples:
- e.g.
- e.g.
Densification

Existing housing typologies

- **Type 1**: Low density
- **Type 2**: Low-medium density
- **Type 3**: Medium density
- **Type 4**: High density

New housing typologies based on existing typologies

- **Modified residential type 1**
- **Modified residential type 2**
- **Modified residential type 3**
- **Modified residential type 4**
Neighborhood type 1

Option B.
Modified residential type 1

Modified residential type 3

Option A.
Openspace

Waterfront type 2

Canal

Road

Waterfront park

Mixed use

River

Park

Possible development model
Neighborhood type 2

Logic of forming a neighborhood

1. Modified residential type 2
2. Modified residential type 3
3. Modified residential type 4

Higher density
Neighborhood type3

Possible development model

Waterfront type3

Waterfront type2

Higher density
Rules for development

Structure of the rules
Masterplan

Legend
A1-D3  Sub-district
1-3  neighborhood type

waterfront
- type 1  mixed use
- type2  housing
- type3  upscale housing

Dike type
- type1
- type2
- type3
Scenario: Business as usual

Waterfront development type 1 on the edge of island
Scenario: Growth

Forming a neighborhood based on the rule of neighborhood type1
Scenario: Growth

Forming a neighborhood based on the rule of neighborhood type 2

Waterfront type 2

Public open space

Waterfront type 2
Scenarios

Scenario: Shrinkage

Scenario: Business as usual

Scenario: Growth
New connection between the downtown - Secondary downtown - Silicon valley by waterfront development along the blue/green infrastructure
New urban core
From salt pond to ecological park by marsh restoration
Re-development area
Alviso

View

Existing condition

After the intervention

Bio-swale
pedestrian bike lane
Re-development area
Business area in edge city

View
Existing condition
After the intervention
Business area in Silicon valley
Re-development area
Residential area in edge city

View
Existing condition
After the intervention
Residential area in Silicon valley
Re-development area
Airport

View

Existing condition

After the intervention

Urban park
New office with the incentive for building height
Pedestrian bike lane
Re-development area
Downtown

View
Existing condition
After the intervention
New urban core by blue-green network
Possible core of new development
Applicable zone
Former salt pond

Re-structuring the bay with the new design method
Existing condition of Neighborhood (Alviso)
Existing condition of Neighborhood (Alviso)

Neighborhood

- Water Board
- Inhabitants (local communities)
- Land owners
- Developers
- Municipality
- Federal/national government
Conclusion

agricultural period

industrialization

Post-industrialization

Prospect occupation in Post-post-industrialization
Conclusion