

Syracuse University

SURFACE

Architecture Senior Theses

School of Architecture Dissertations and
Theses

Fall 2010

Reconnect the Urban Surface — By Making Landscape and Infrastructure

Ming Gao

Follow this and additional works at: https://surface.syr.edu/architecture_theses

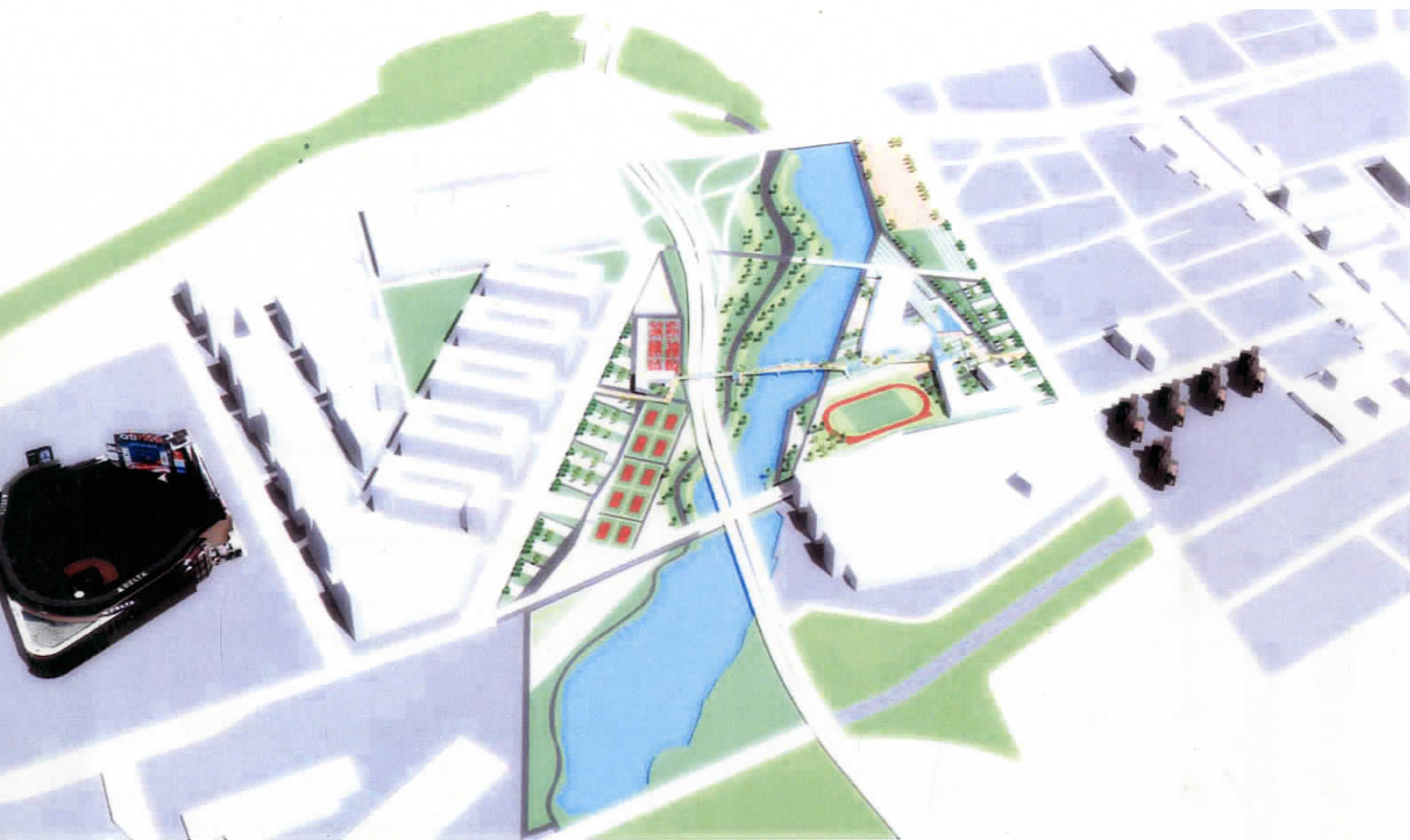


Part of the [Urban, Community and Regional Planning Commons](#)

Recommended Citation

Gao, Ming, "Reconnect the Urban Surface — By Making Landscape and Infrastructure" (2010).
Architecture Senior Theses. 130.
https://surface.syr.edu/architecture_theses/130

This Thesis, Senior is brought to you for free and open access by the School of Architecture Dissertations and Theses at SURFACE. It has been accepted for inclusion in Architecture Senior Theses by an authorized administrator of SURFACE. For more information, please contact surface@syr.edu.



RECONNECT THE URBAN SURFACE

----by making landscape and infrastructure

Author: Ming Gao

Advisor: Francisco Sannin & Susan Henderson

Date: Dec 15th. 2010

CONTENTS

1. Theis Statement

2. Site Analysis

3. Case study & Research

3.1 Case 1 - Buffalo Bayou Promenade

3.2 Case 2 - The High Line

3.3 Case 3 - Seattle's Olympic Sculpture Park

3.4 Case 4 - Brooklyn Bridge Park

4. Project

4.1 Park and Landscape

4.2 Bridge and Building

**Reconnect the urban surface
by making landscape and infrastructure**

1. Thesis Statement

Today in the post industrial city, the connection between different places relies mostly on transportation by way of automobiles, public buses, and subway. By walking or biking, people are able to talk with nature directly. However, by modern transportation, people are confined in a closed machinery space which prevents them from experiencing nature directly. They are separated from nature by consciously choosing to use modern transportation during their daily lives, and they get less and less direct access to nature. Nowadays, nature experienced space within walking distance in the city is limited to the tiny front yard garden, where landscape designers plant grass, trees and place sculpture or where the architects celebrate their interior and exterior space flow of a building. Even if a real natural area like natural parks is within walking distance, it is separated from the neighborhood by vacant, waste, non-program area. In order to get to those parks, people have to rely on cars, buses, and trains. The vacant land between neighborhoods becomes an unwalkable isolation gap across which only highways, subways and railways are established. However, there is a potential landscape chance in this vacant area. My intention is to make those places revival and offer people opportunities of direct nature experience. It is a study of how to make a landscape transition space instead of a linear transportation system on that dead urban land.

Willels Point and Flushing Downtown (Queens, New York City) is a location that already has the conditions described above. The aim of the project is to solve the problems of the isolation gap and connect these two neighborhoods according to Landscape Urbanism theory. In this thesis, landscape should be able to integrate with infrastructure, buildings, and open spaces to stimulate connections between different neighborhoods or communities, to provide a landscape experience that is both spatially and visually interesting, and to juxtapose the culture and economy in an urban surface.

The goal of this thesis is to organize knowledge of landscape urbanism and explore strategies of infrastructure in urban surface.

If we think of landscape as an infrastructure which underlies other urban systems, rather than equating it with nature or ecology we have a much more workable conceptual framework for designing urban systems. This is particularly apt where those systems no longer function in a core/ periphery model but as a matrix. This framework of landscape infrastructure should provide the most permanent layer of urban development to preserve the viability of natural systems and regional cultures.

-Elizabeth Mossop

Reconnect the urban surface
by making landscape and infrastructure

Reconnect the urban surface by making landscape and infrastructure

Because of its bigness- in both scale and scope – landscape serves as a metaphor for inclusive multiplicity and pluralism, as in a kind of synthetic 'overview' that enables differences to play themselves out ... a synthetic and strategic art form one that aligns diverse and competing forces (social constituencies, political desires, ecological processes, program demands, etc.) into newly liberating and interactive alliances.

-James Corner

The influx of people, vehicles, goods, and information constitute what urban geographers call the 'daily urban system.' Painting a picture of urbanism that is dynamic and temporal. The emphasis shifts here from forms of urban space to processes of urbanization, processes that network across vast regional-if not global surfaces.

-Alex Wall

In my opinion, Landscape Urbanism is re-establishing connection by making dynamic urban surface rather than conventional linear connections like roads, highway, subway and railway do. In terms of landscape as urban surface, I refer it as the field that accommodates natural land, infrastructure, buildings and public spaces. All the elements making up this thickened surface should support activities, give mobility and be able to support events at different times. For example, the surface should be flexible enough for diverse movement of pedestrian, and people can go through not only with vehicles or other modern transportation but also by biking or walking.

The Willets Point and Flushing site is an ideal location to investigate, because they are two communities within a walking distance but separated by a vacant riverbank - an isolated gap. There are waste industrial land and non-program highways along the river between these two communities. Actually, both Willets Point and Flushing already have redevelopments and diverse culture in their neighborhoods, but the potential land between them becomes an ignored place. By addressing this site and re-establishing connection it will be possible to create a hub of recreational public space that can include landscape infrastructure, commercial paths with various programs, and a museum of international culture together. The reconnection strategies of Flushing and Willets Point will no longer be the conventional transportation system, but a dynamic urban surface that has the capacity to support diversity and social activities at different times. Therefore the significance of urbanization today is a renewed concern with landscape, infrastructure, services and mobility. Re-establishing connection should deal with landscape and infrastructure simultaneously to generate flexible, multifunctional and dynamic urban surfaces.

2. Site Analysis

Reconnect the urban surface

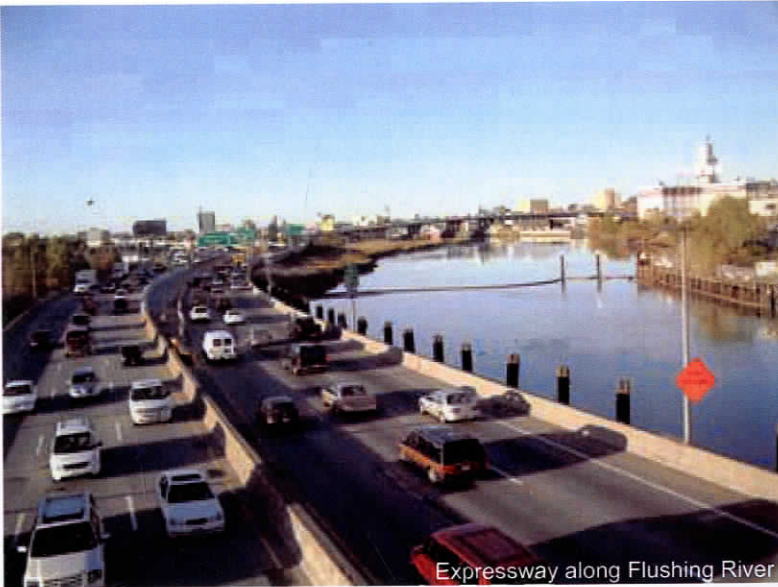
by making landscape and infrastructure

SITE LOCATION

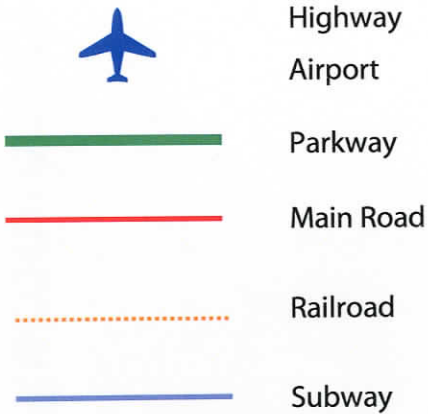
- *At the Crossroads of Queens
- *Subway, Railway, Highways to Manhattan
- *Minutes from LaGuardia and JFK
- *Nearby recreation and entertainment
(Flushing Meadows-Corona Park)



Airplane on approach to LaGuardia



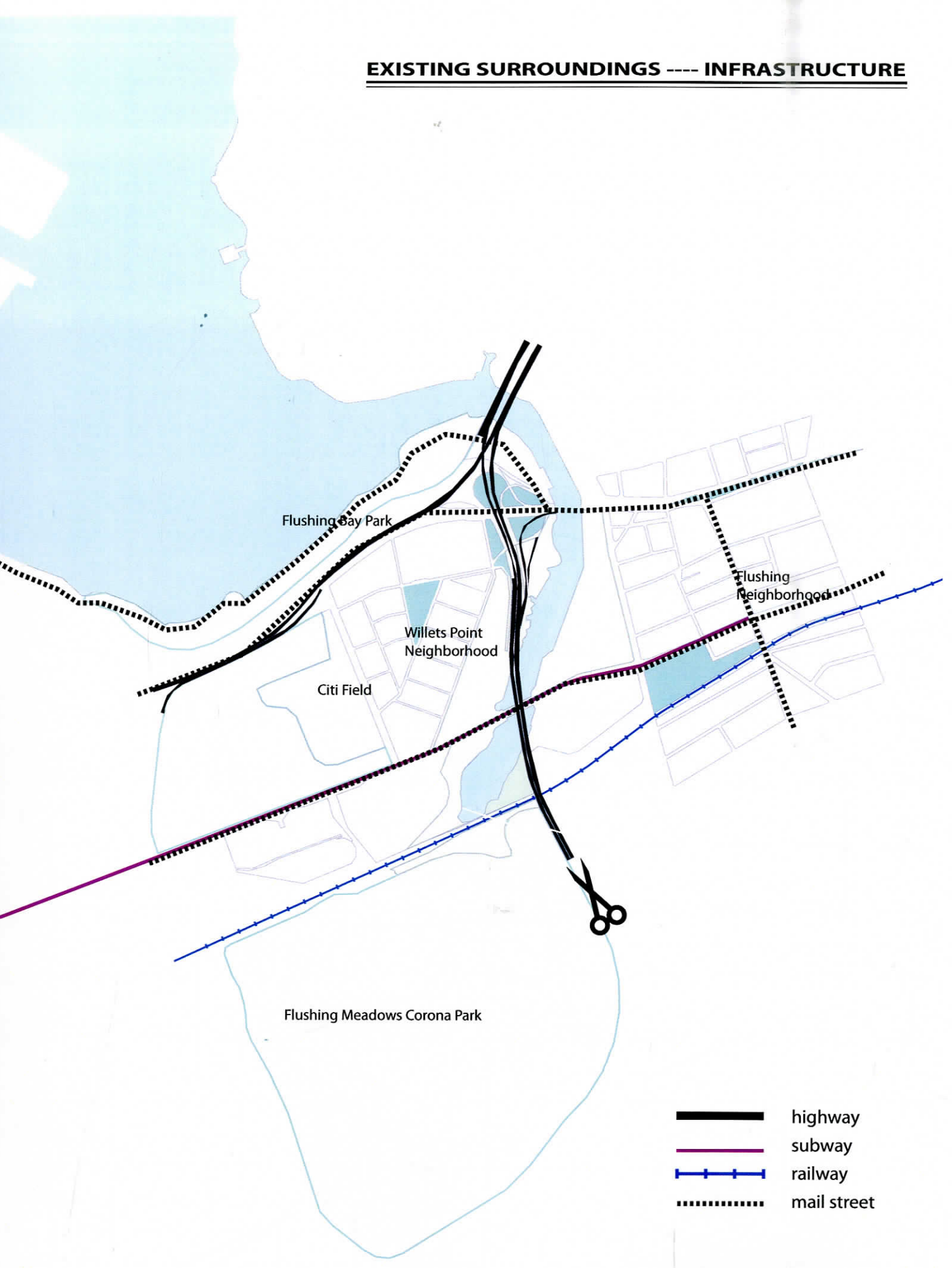
Expressway along Flushing River



Willets Point Subway Station to Citifield



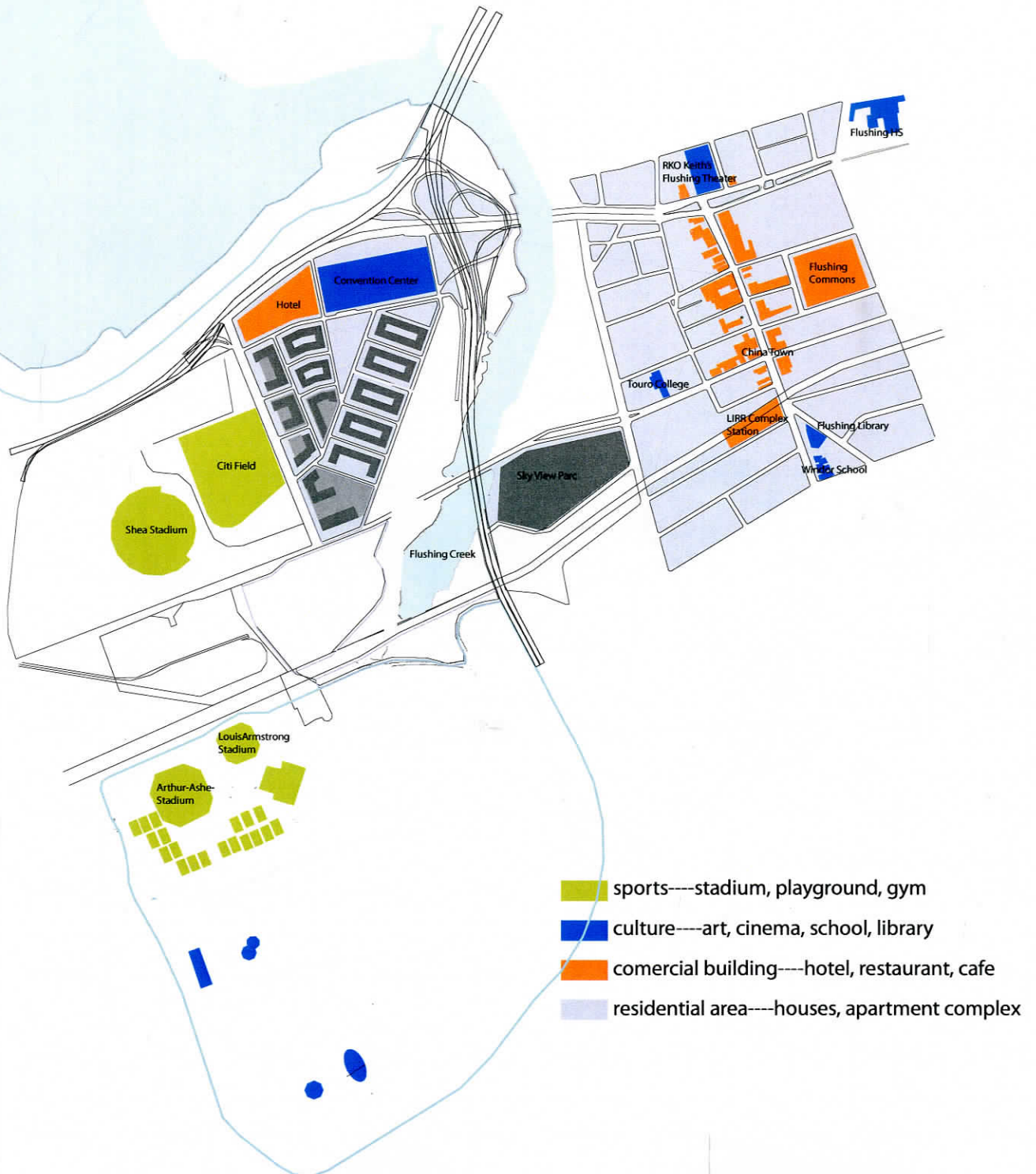
EXISTING SURROUNDINGS ---- INFRASTRUCTURE



EXISTING SURROUNDINGS ---- LANDSCAPE



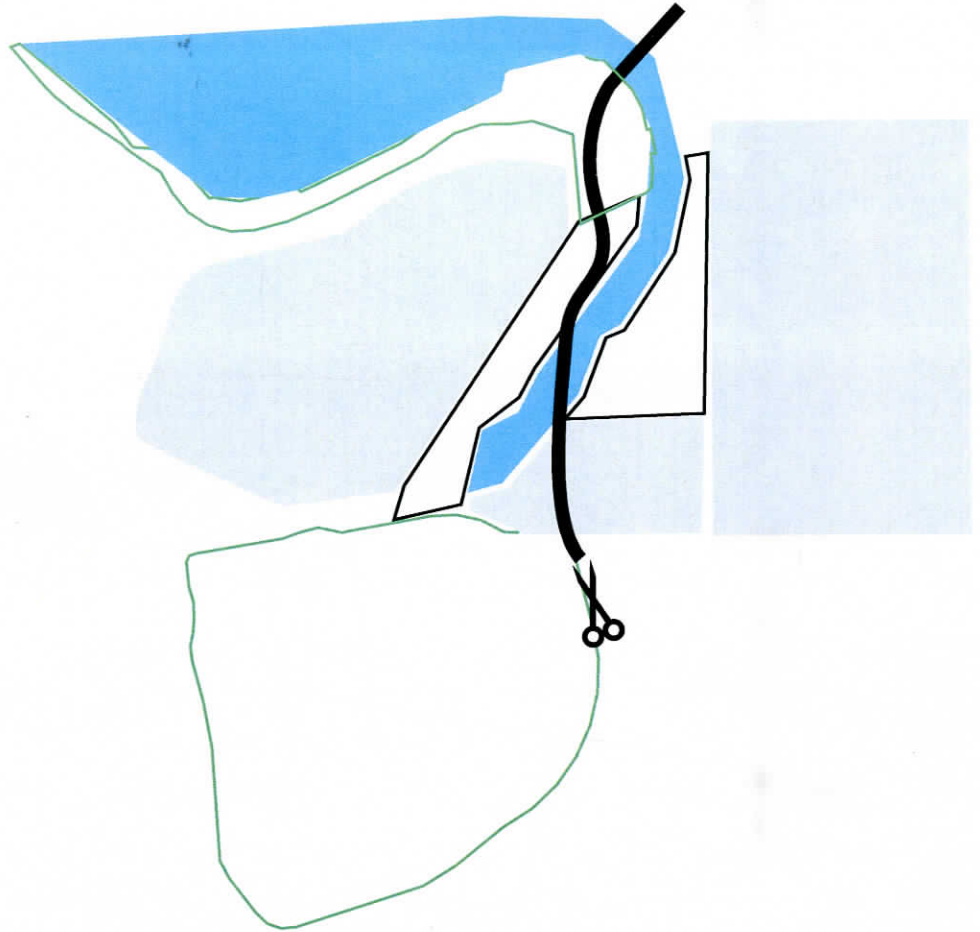
EXISTING SURROUNDINGS ---- MAIN PROGRAMS



CURRENT ISSUES ANALYSIS

Between two neighborhoods

- Vacant lands
- Highway
- Creek

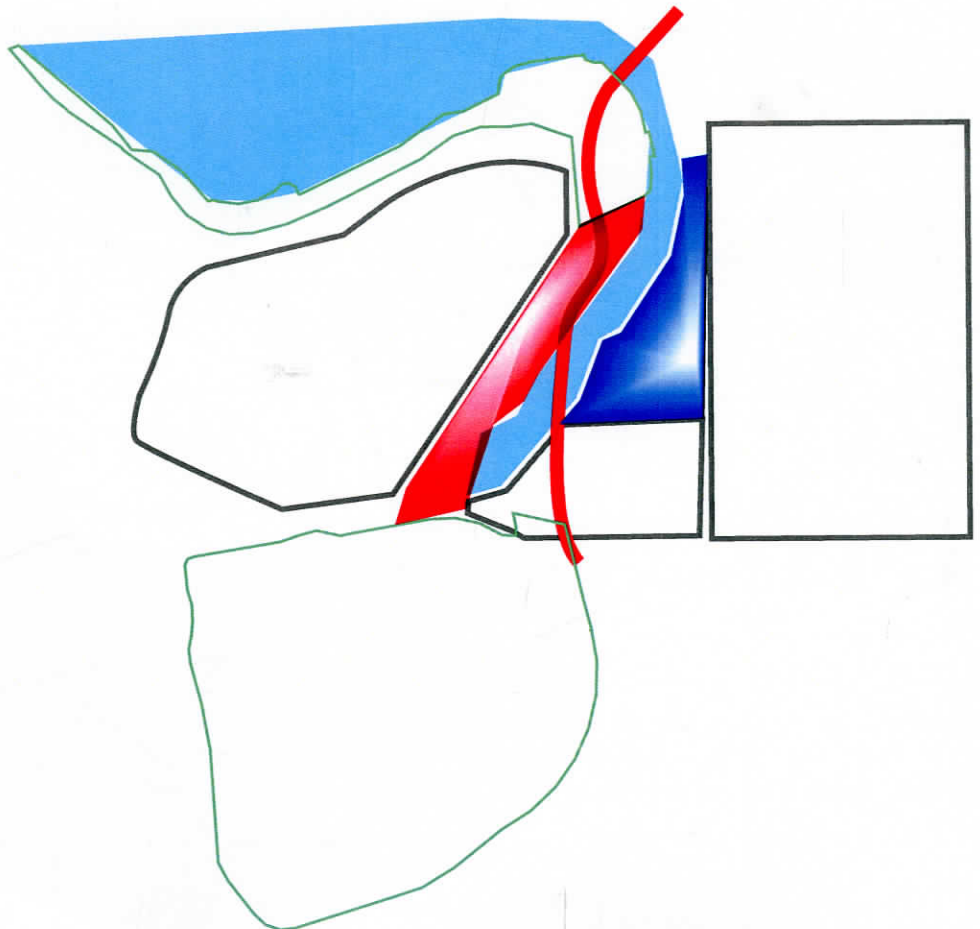


Risk:

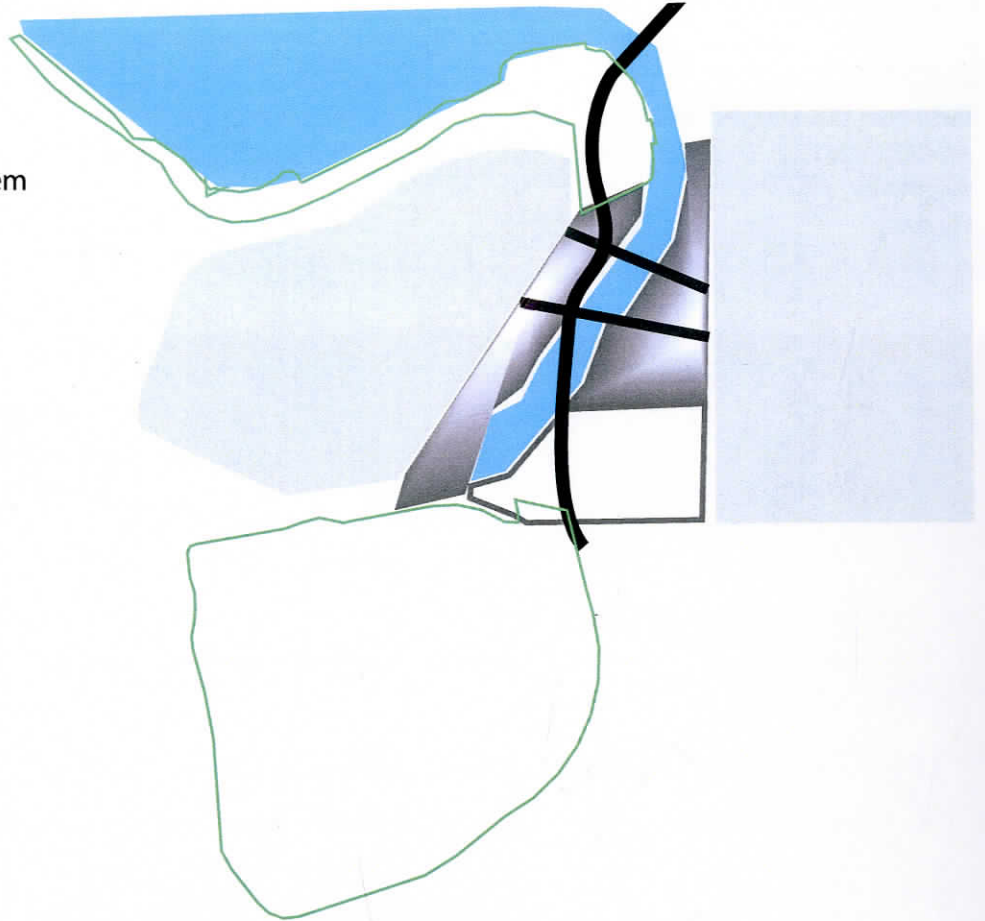
Highway ---- Noisy, View Block

Opportunity:

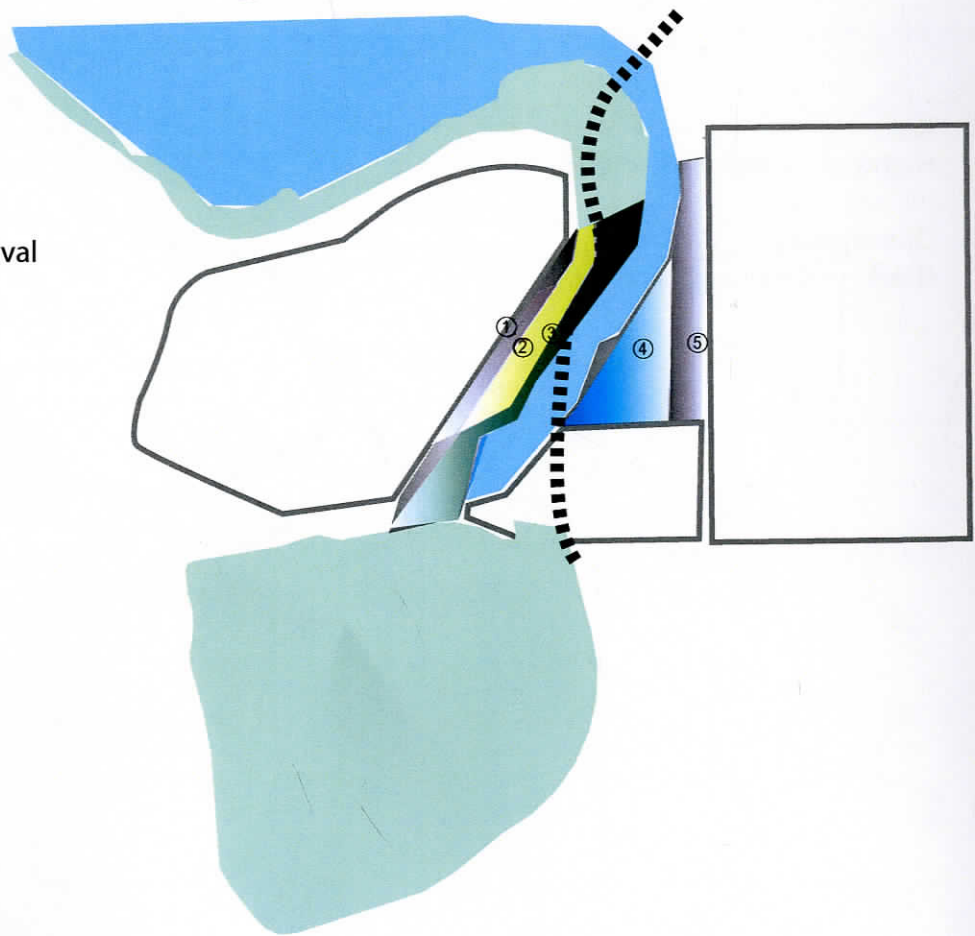
Creek ---- Open and Nice View



1. Infrastructure:
Add two bridges to connect them

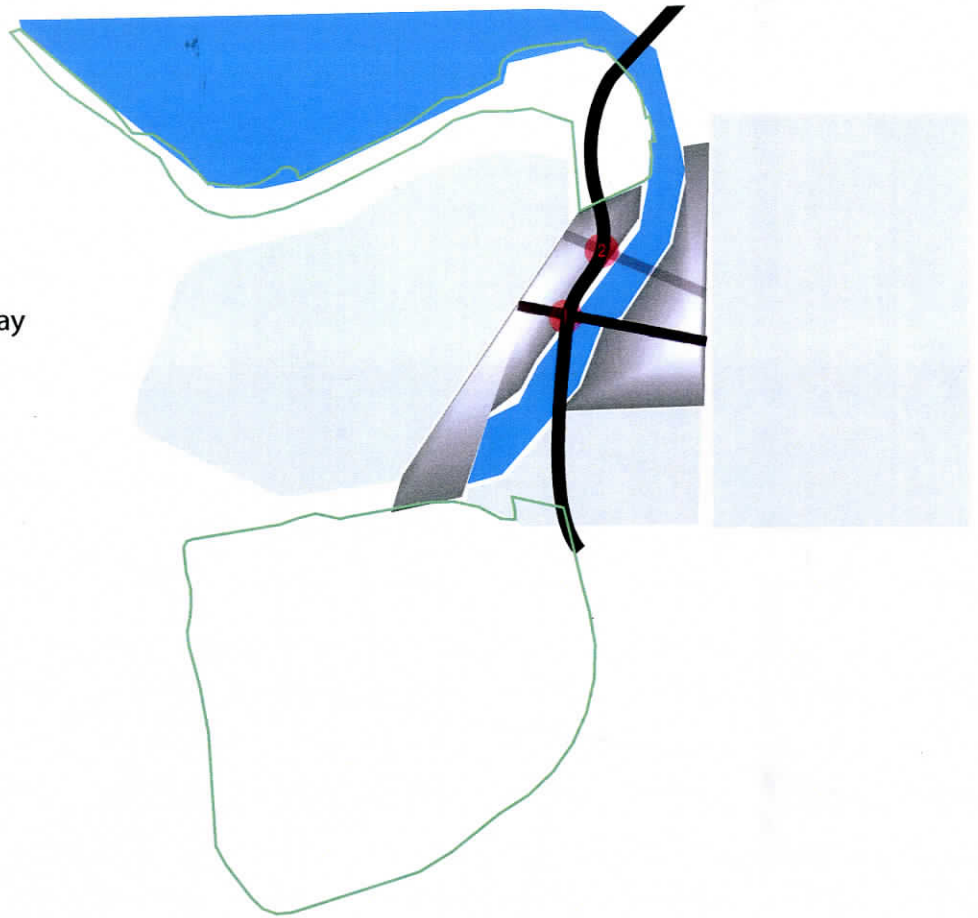


2. Landscape:
Make those nonprogram areas revival



Phase 1: (Lowest Point of Highway)
The first bridge is above the highway

Phase 2: (Highest Point of Highway)
The second bridge is under the highway

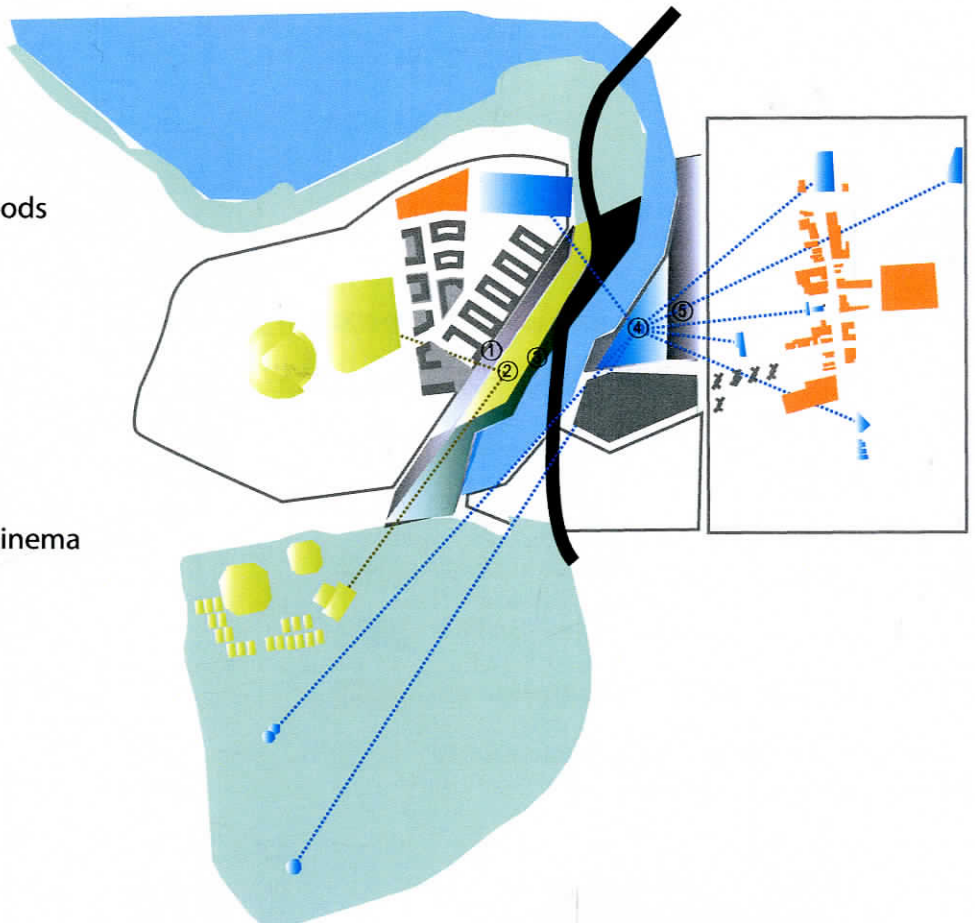


Park 1 & 5: Urban Plaza
public space adjacent to the neighborhoods

Park 2: Sports Park
Noisy area for energetic activities

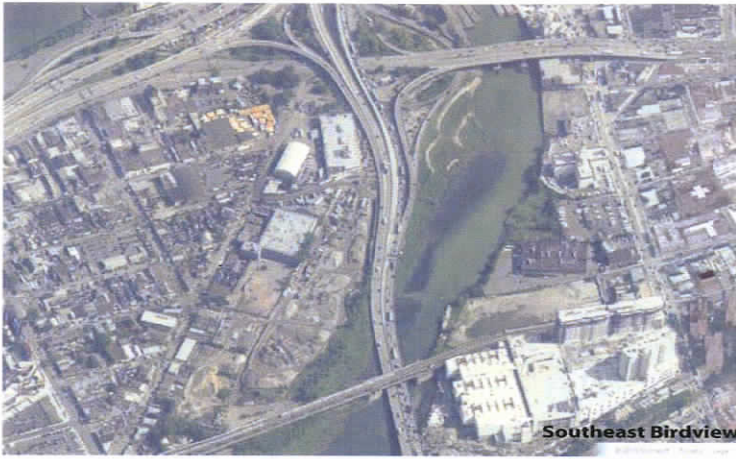
Park 3: Restoration Park
Natural land along river and highway

Park 4: Culture Park
Quiet area for school, library, outdoor cinema
exhibition activities

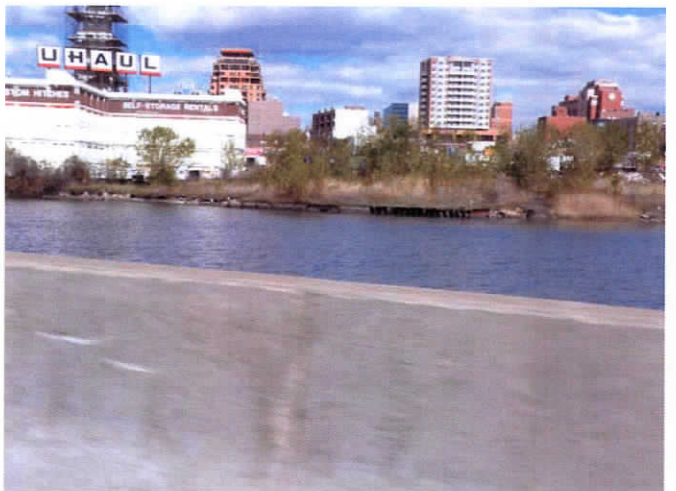
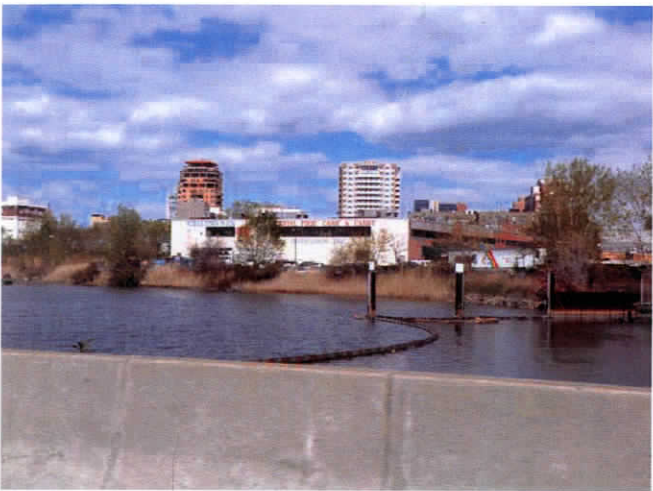
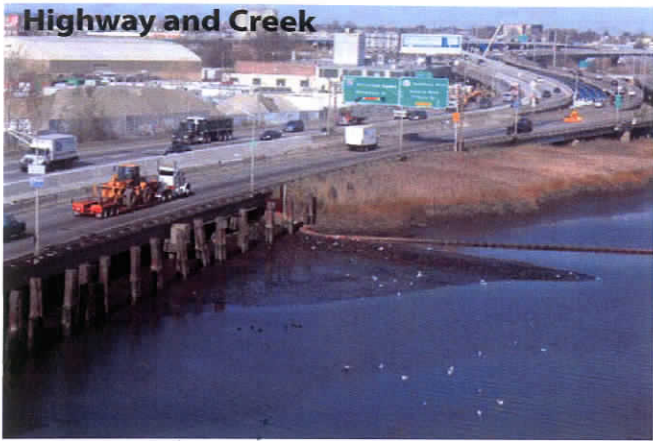




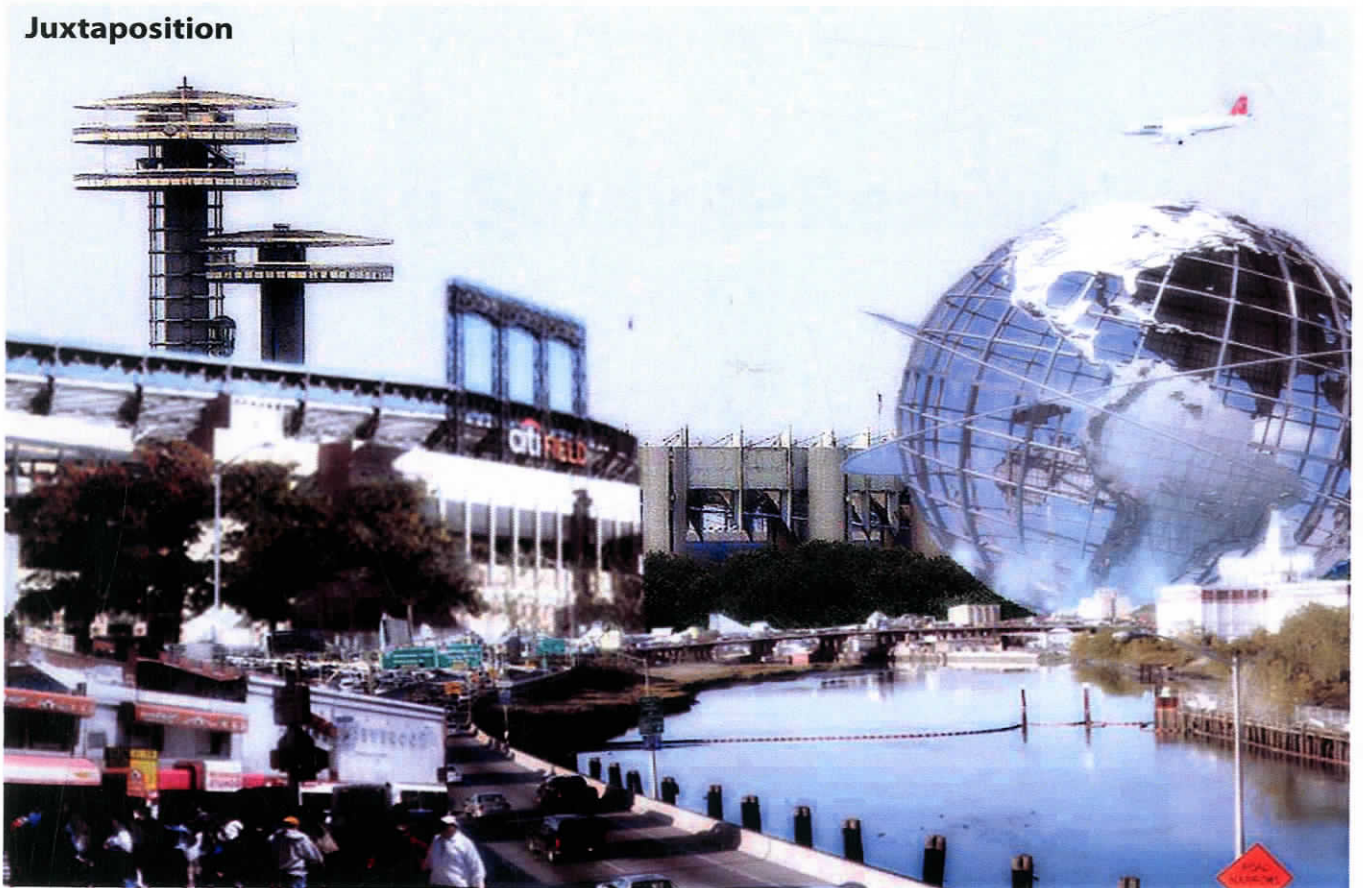
SITE PHOTOS



Highway and Creek



Juxtaposition



3. Case Study & Research

Reconnect the urban surface

by making landscape and infrastructure



Buffalo Bayou Promenade

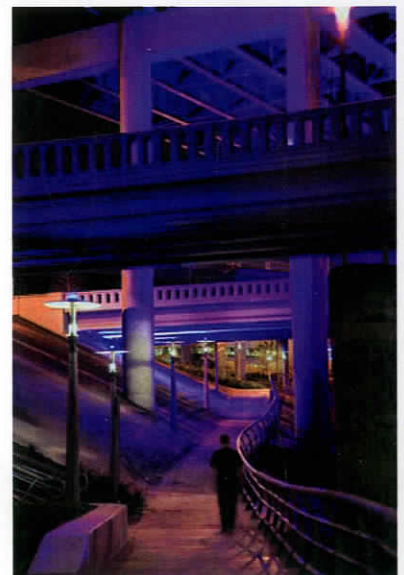
SWA Group

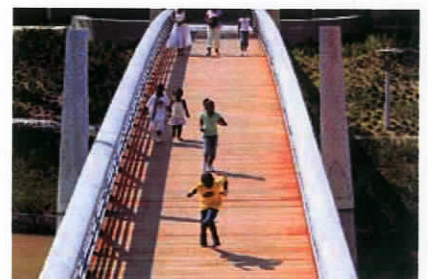
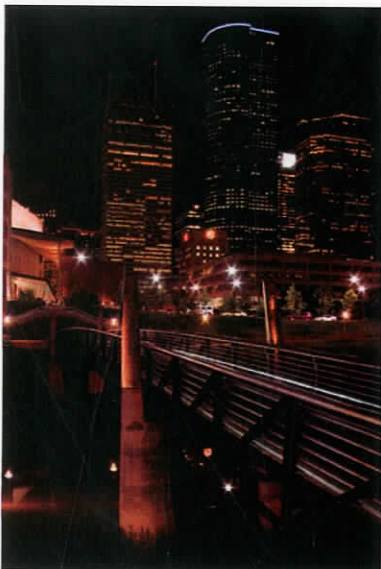
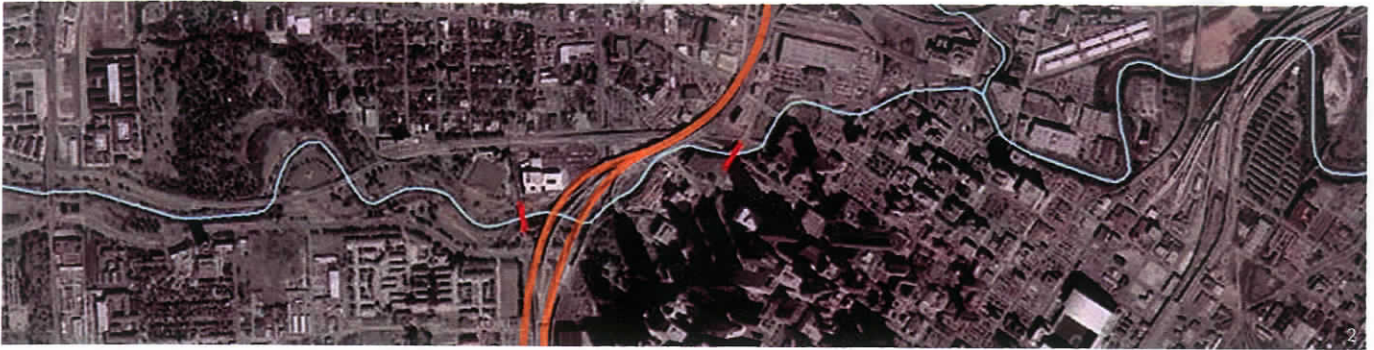
Introduction

Name: Buffalo Bayou Promenade
Address: Houston, Texas
Area: 93,078 m², 1.93 km Length
Designer: SWA Group

Photos from
http://www.worldarchitecturenews.com/index.php?fuasection=wanaplprojectview&upload_id=12240

This project is a park along the river, which connecting two river banks by a pedestrian and Bike Bridge. It also deals with the landscape with highways. Those conditions are similar to my site. I am interested in the accesses down to river, the lighting of infrastructure at night, and the bridge structure.







The High Line

James Corner Field Operations

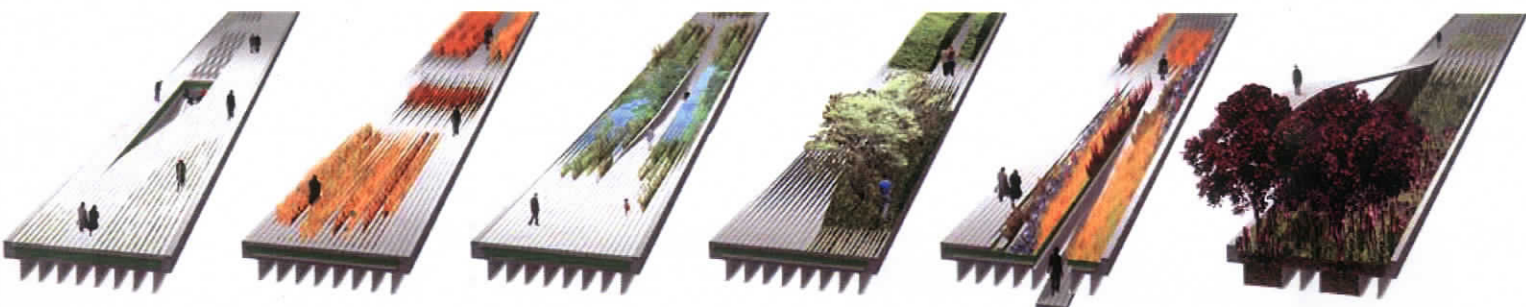
Introduction

Name: High Line
Address: Western Manhattan in New York City
Area: 2.87hm², 22 blocks, 2.3km length
1st part: 1.14hm², 9 blocks, 0.8km length
2nd part: 0.87km², 10 blocks, 0.8km length
3rd part: 0.87km², 0.7km length
Landscape: James Corner Field Operations
and Diller Scofidio + Renfro
Cost: 1st + 2nd 152,300,000 dollars
Design time: 2004-2009
Complete time: 1st part 2009.6.7 open
2nd part 2010 open



This project integrated landscape with railway to create a new public space through the city. The thickened surface strategies could be a model for my project. Different plants with various infrastructure is better represented in section and axonometric drawing with montage.

Photos from <http://www.thehighline.org/>



PIT
0% : 100%

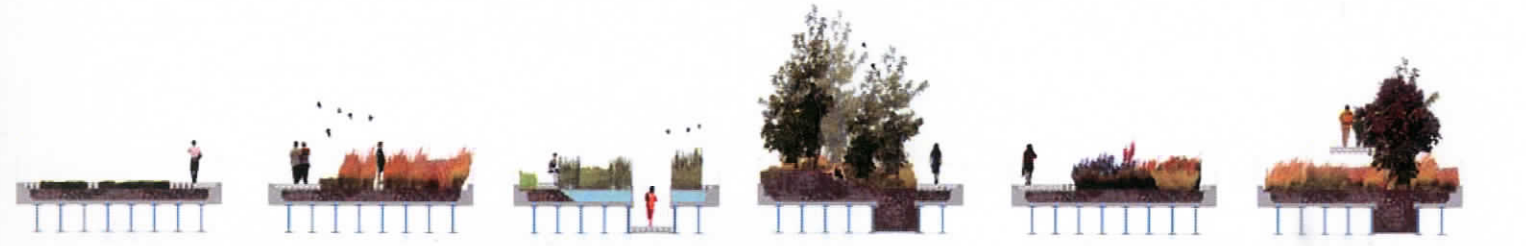
PLAINS
40% : 60%

BRIDGE
50% : 50%

MOUND
55% : 45%

RAMP
60% : 40%

FLYOVER
100% : 10%



MOSSLAND
Dicranum
Leucobryum
Polypodium
Thuidium

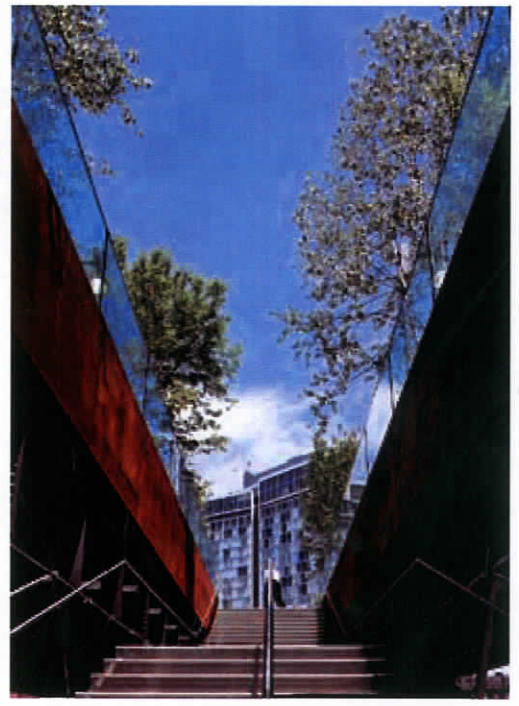
TALL MEADOW
Avena
Festuca
Miscanthus
Pennisetum
Sorghastrum

WETLAND
Asier
Carex
Epimedium
Luzula
Lysichiton
Veronica

WOODLAND THICKET
Adiantum spp.
Azalea
Betula nigra *Heritager*
Claytonia virginica
Saxifraga spp.
Samolus spp.
Viburnum dentatum

MIXED PERENNIAL MEADOW
Artemisia
Eryngium yuccifolium
Heuchera
Monarda
Penstemon
Sanguinaria officinalis
Salvia

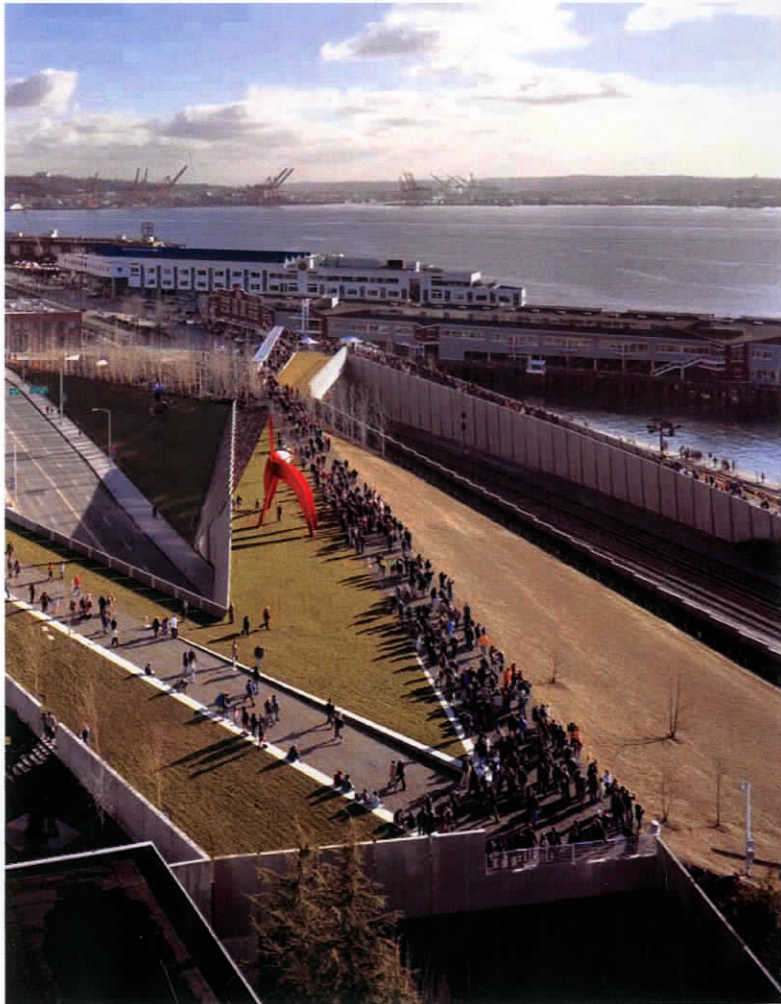
YOUNG WOODLAND
Agrostis
Buxus sempervirens
Cornus canadensis
Lonicera
Rhus typhina
Salix elaeagnus



Seattle's Olympic Sculpture Park

Introduction
Name: Seattle's Olympic Sculpture Park
Address: Seattle, Washington
Area: 36,000 m outdoor sculpture museum and beach
Weiss/Manfredi Architecture/Landscape/Urbanism

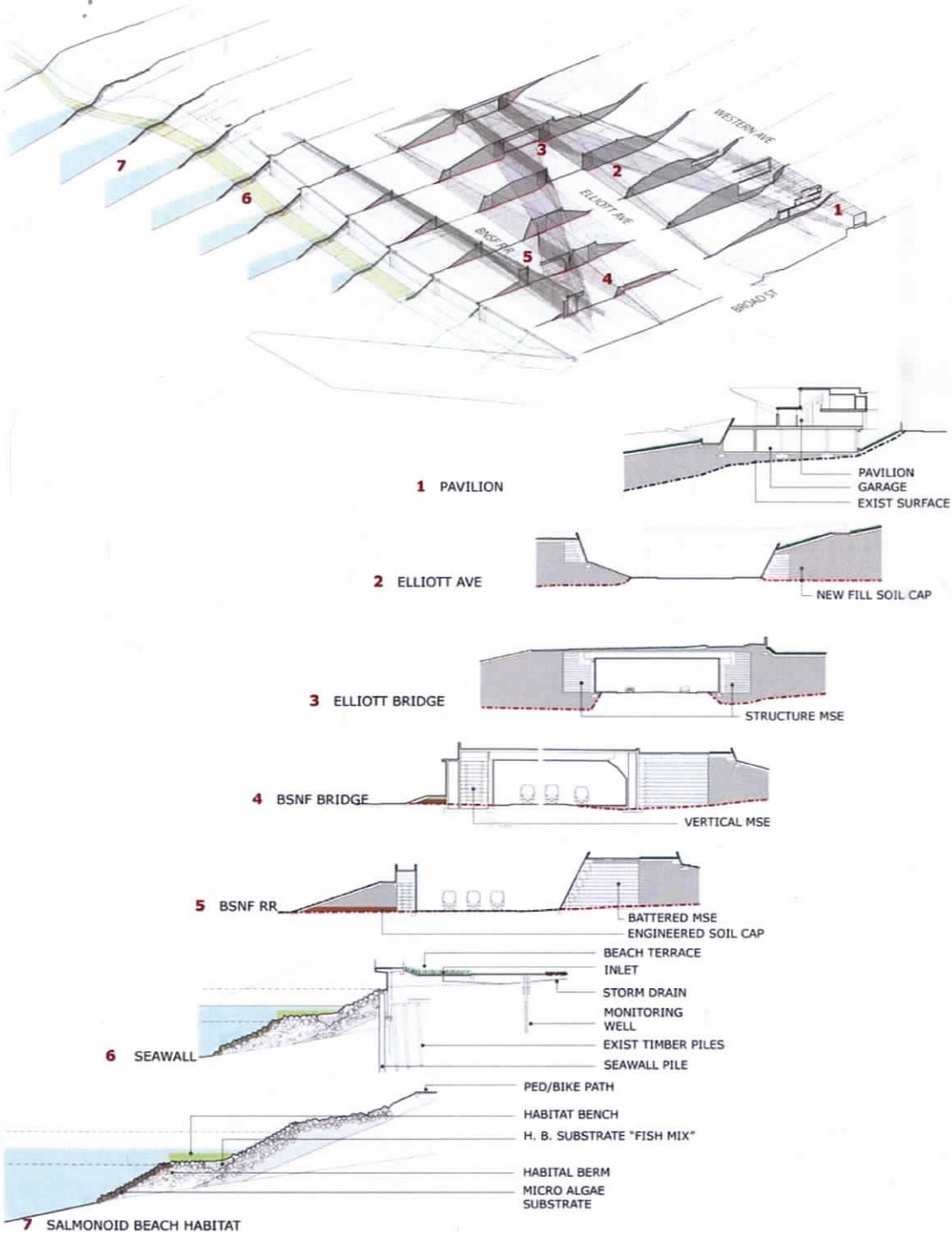
This project creates a flow exhibition public surface across expressway, railway to the waterfront. The surface strategies achieve the goal of flexible and dynamic movement of pedestrians. In addition, the urban space combines with the pavilion harmoniously.

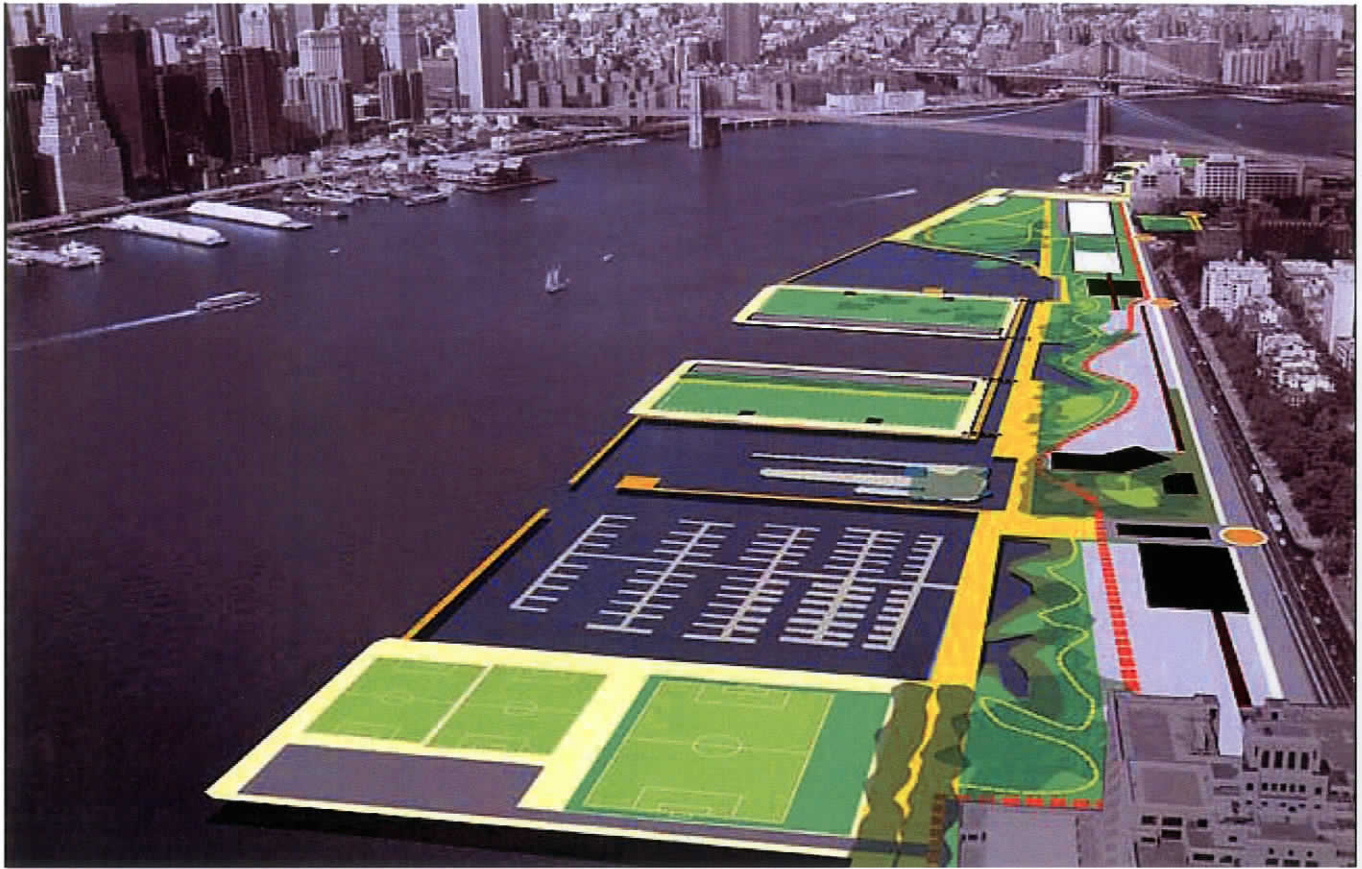


Photos from <http://www.worldchanging.com/local/seattle/archives/008741.html>

Re-establishing connection by making a dynamic urban surface

- Railway
- Expressway
- Main Road
- New Connection





Brooklyn Bridge Park

Introduction

Name: Brooklyn Bridge Park
 Address: Brooklyn in New York City
 Area: 85-acre
 Designer: Michael Van Valkenburgh Associates, Inc.

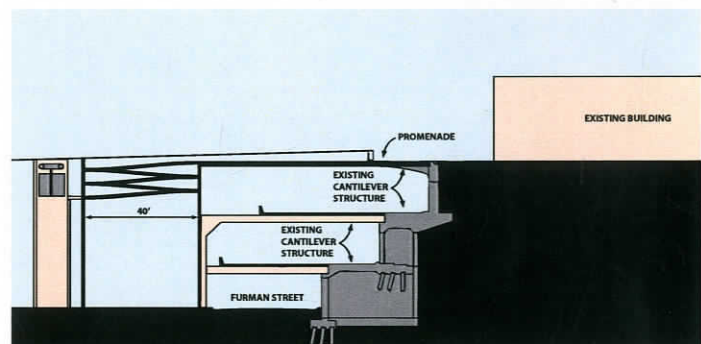
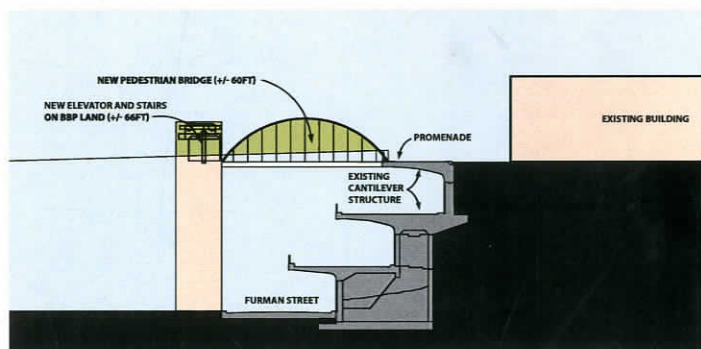
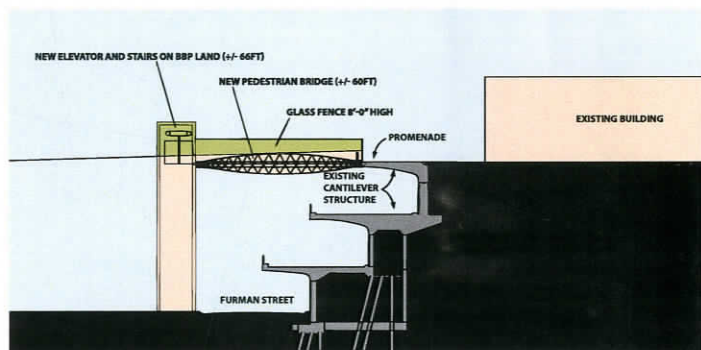
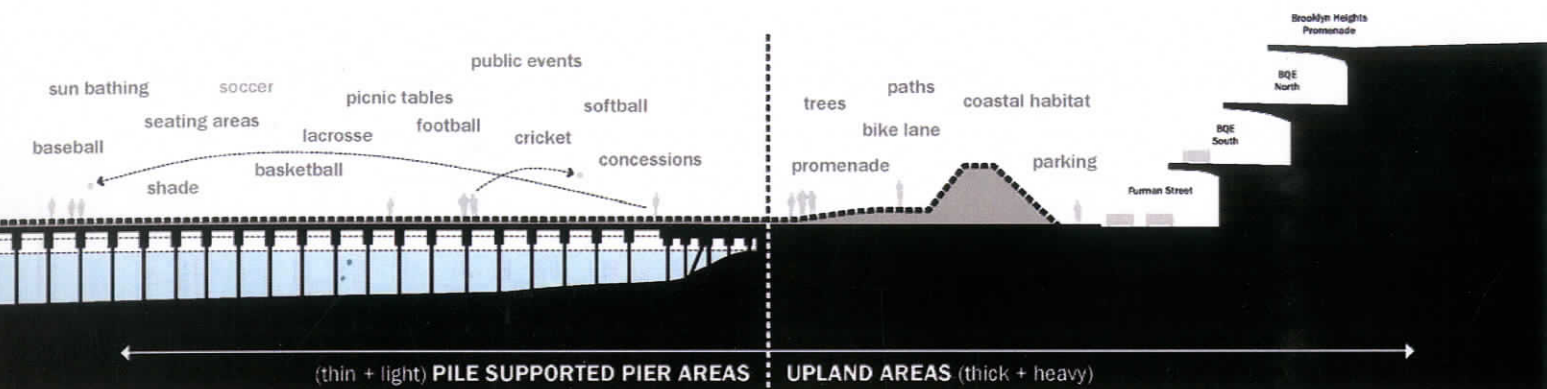
Program in this park is interesting. It lists most possible programs plug-in landscape, such as playgrounds, farmer market, parking, sun bathing and so on. Bike and pedestrian paths go through the park connecting all the entrances from urban streets together.

- E Pedestrian Entrances
- S Squibb Park Bridge
- B Bus Stops
- F Subway Stations
- P Parking
- B Bicycle Path (Greenway Initiative)

Photos from <http://www.brooklynbridgepark.org/>



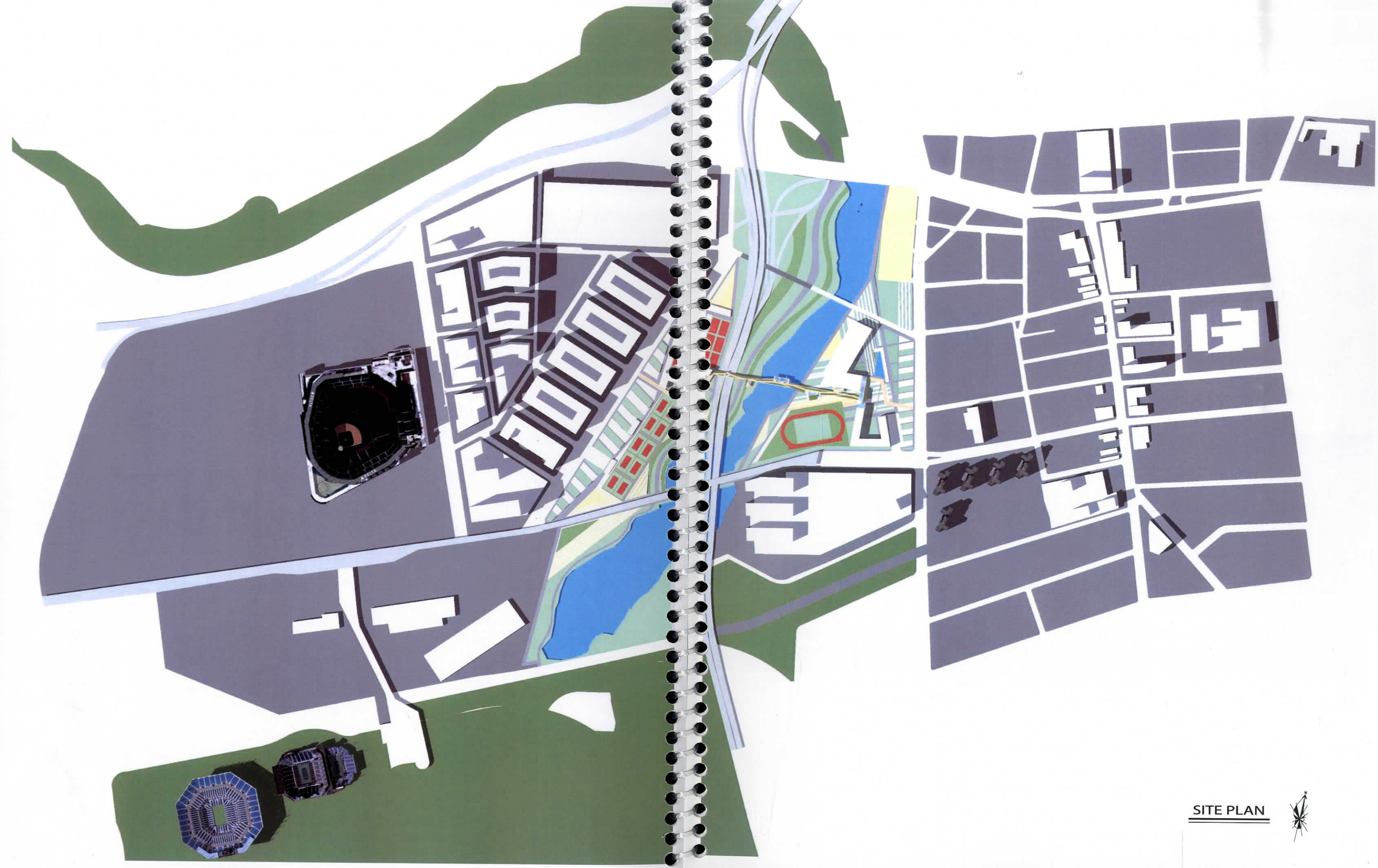
Park Programming



4. Project

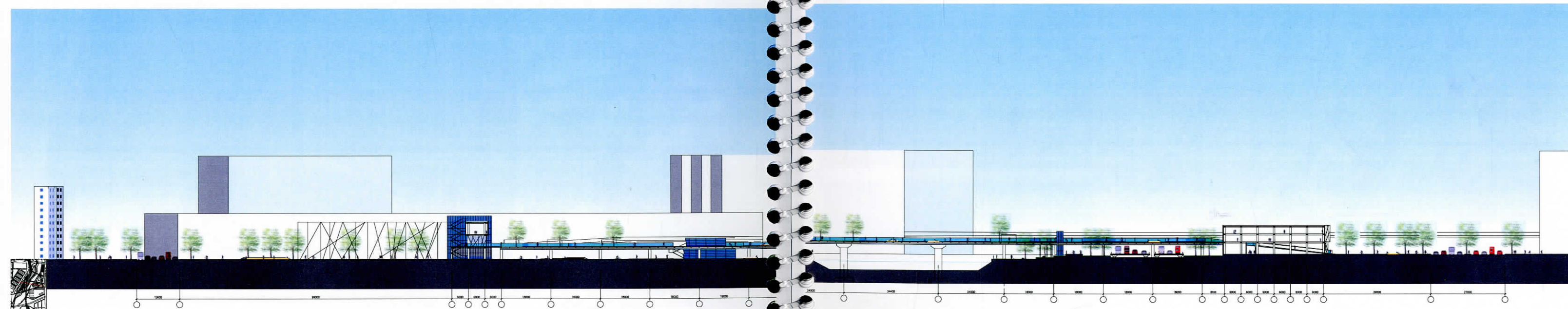
Reconnect the urban surface

by making landscape and infrastructure

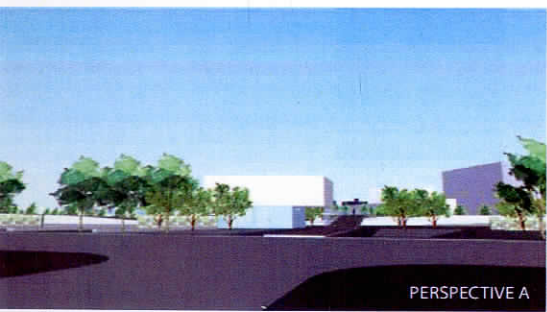
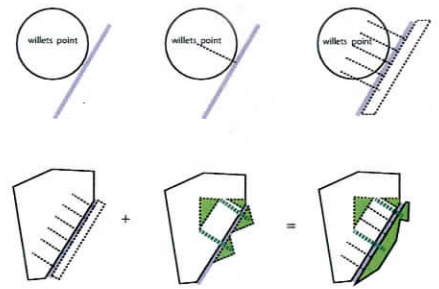
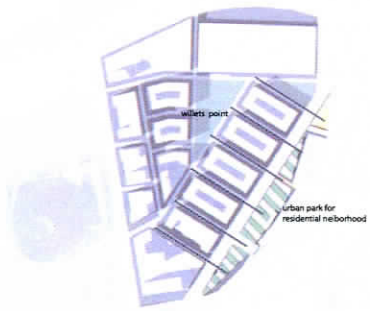


SITE PLAN





SITE SECTION

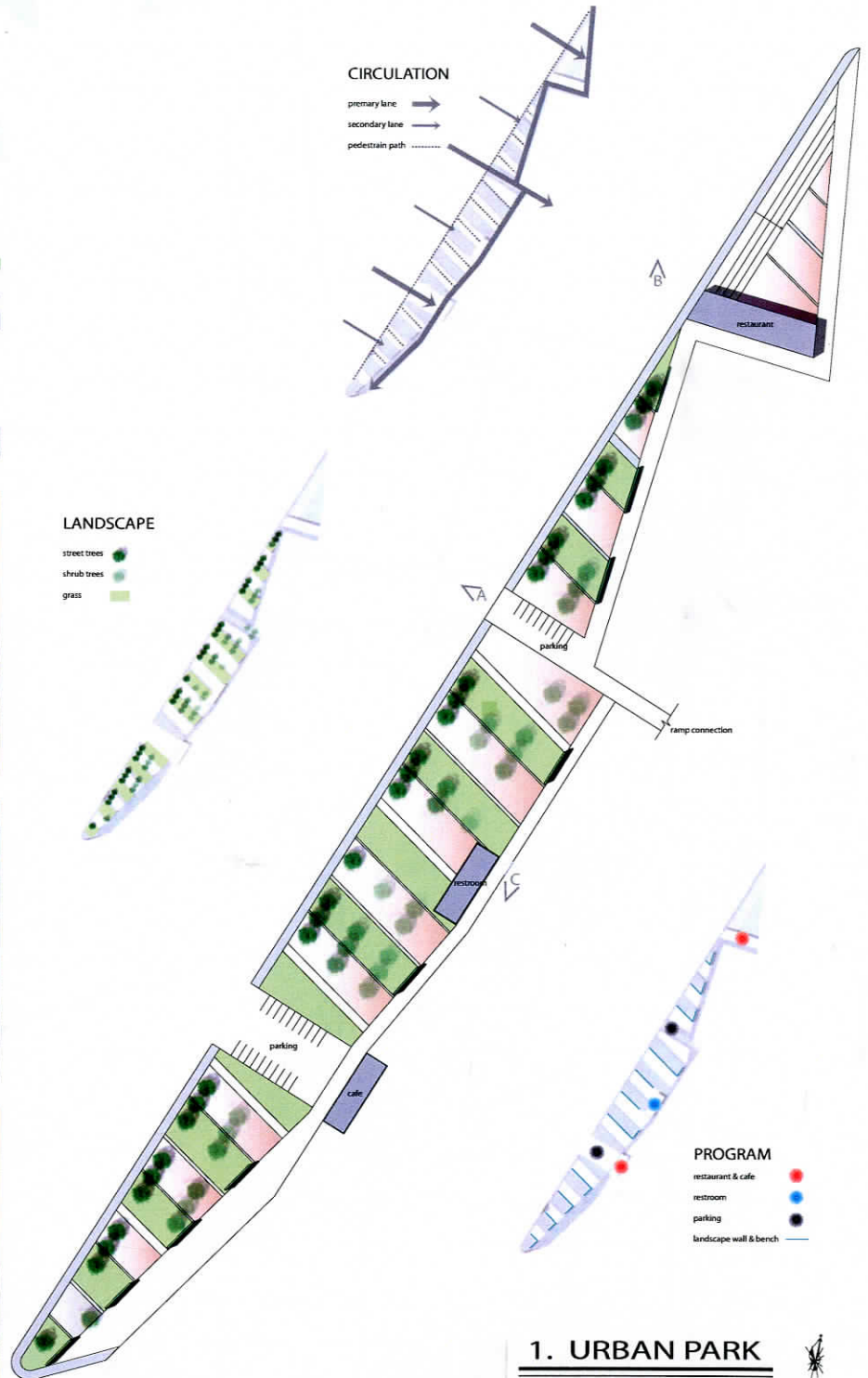


LANDSCAPE

- street trees
- shrub trees
- grass

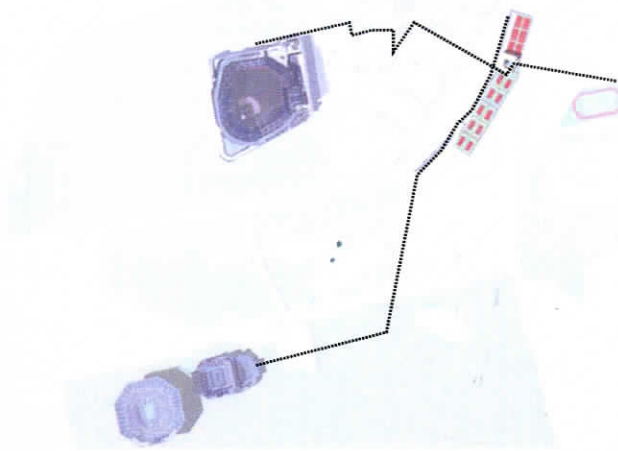
CIRCULATION

- primary lane
- secondary lane
- pedestrian path



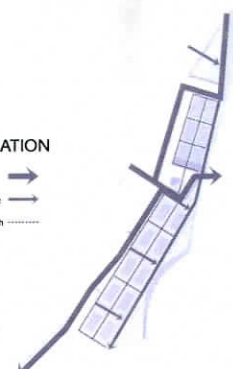
1. URBAN PARK





CIRCULATION

- primary lane →
- secondary lane →
- pedestrian path - - - - -



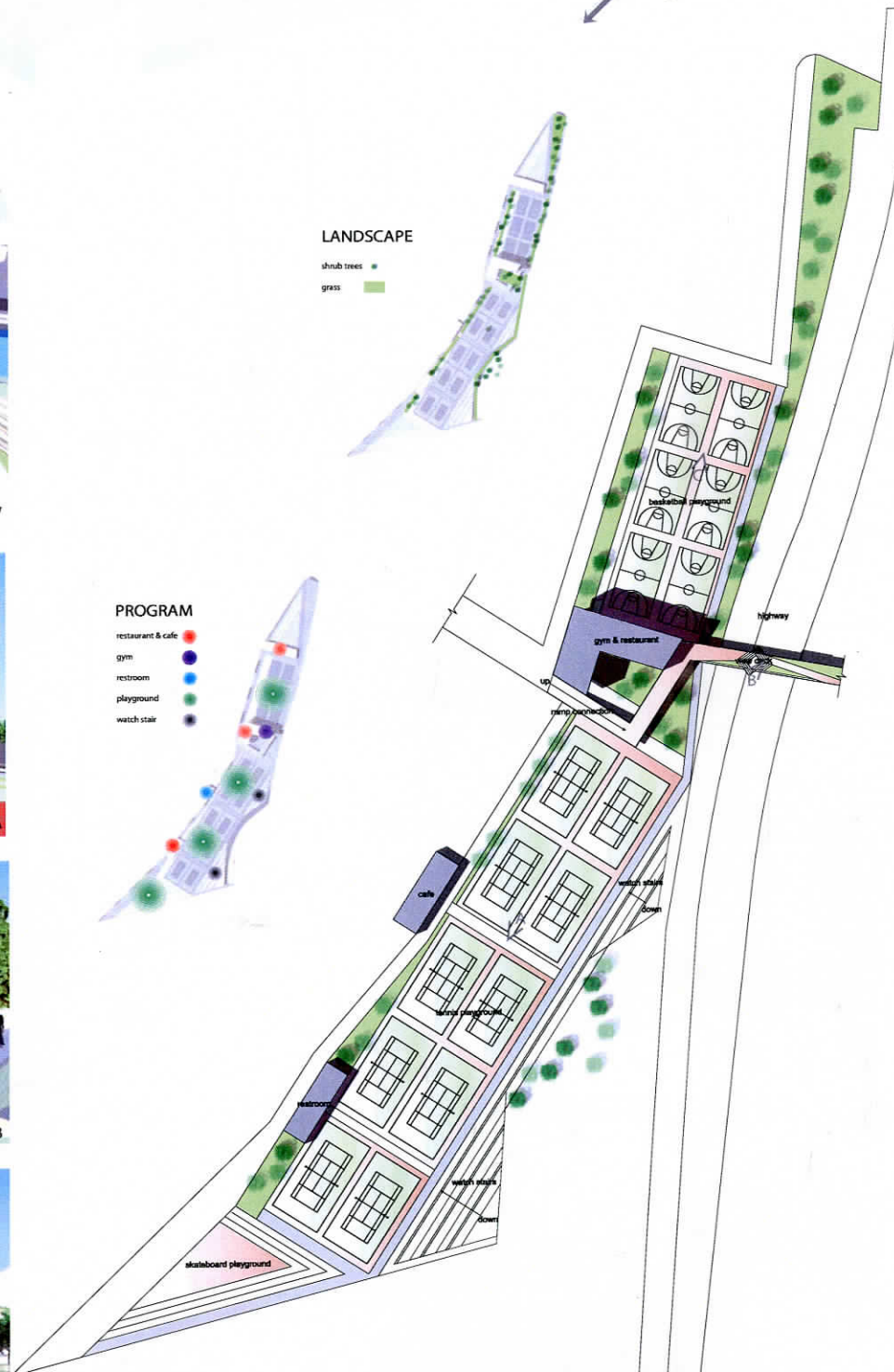
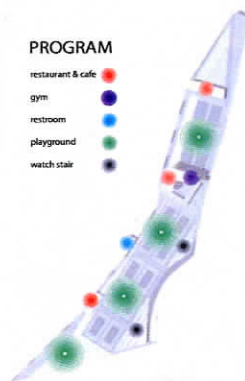
LANDSCAPE

- shrub trees ■
- grass ■



PROGRAM

- restaurant & cafe ●
- gym ●
- restroom ●
- playground ●
- watch stair ●



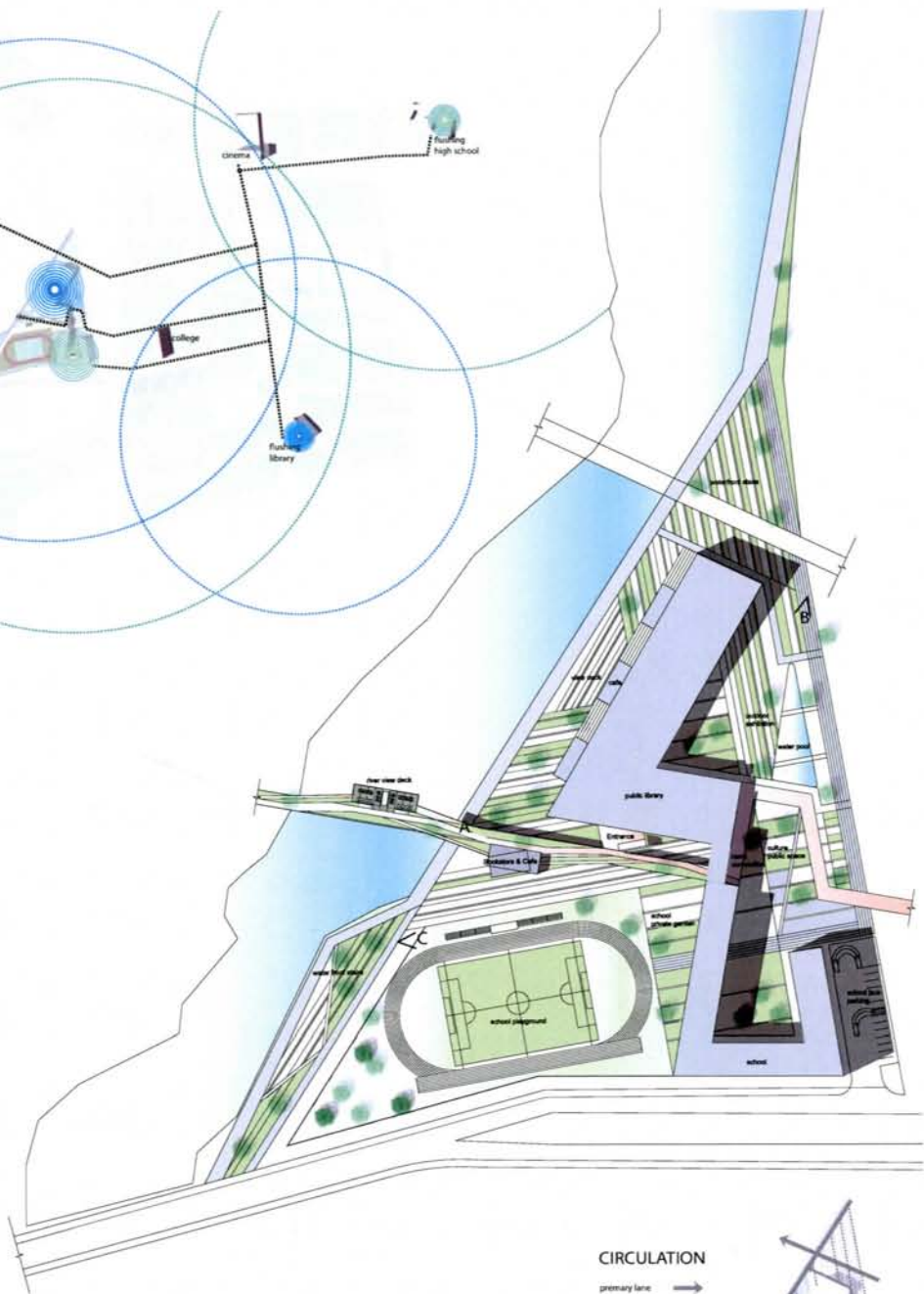
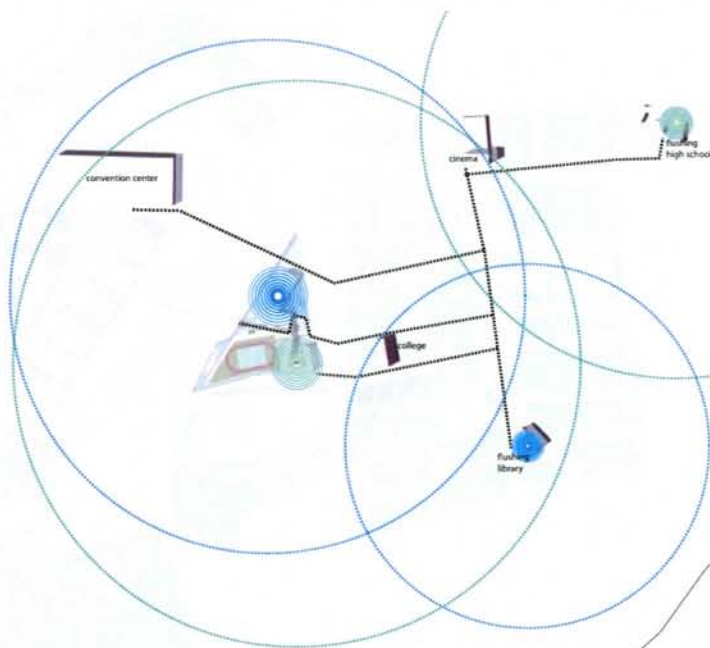
2. SPORTS PARK





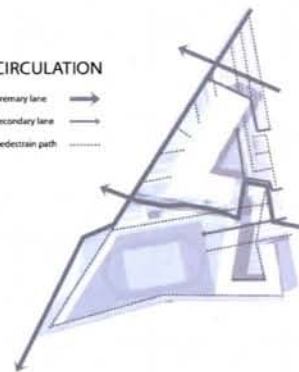
3. NATURE PARK





CIRCULATION

- primary lane
- secondary lane
- pedestrian path



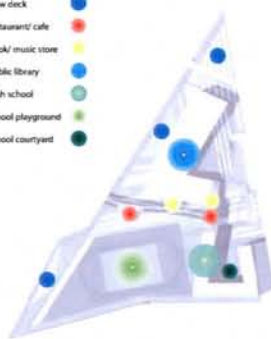
LANDSCAPE

- trees
- shrubs
- grass



PROGRAM

- view deck
- restaurant/ cafe
- book/ music store
- public library
- high school
- school playground
- school courtyard



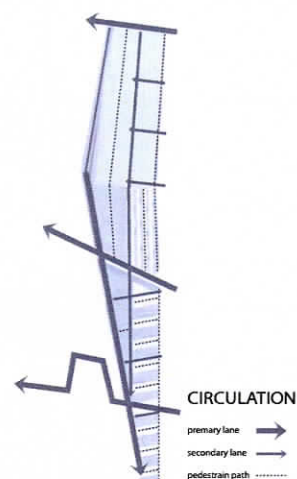
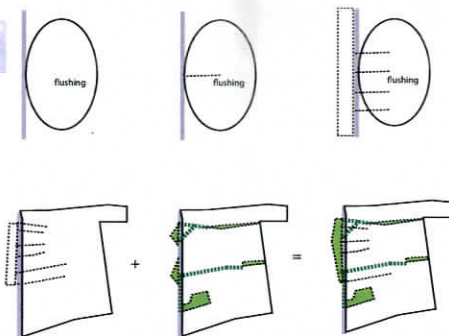
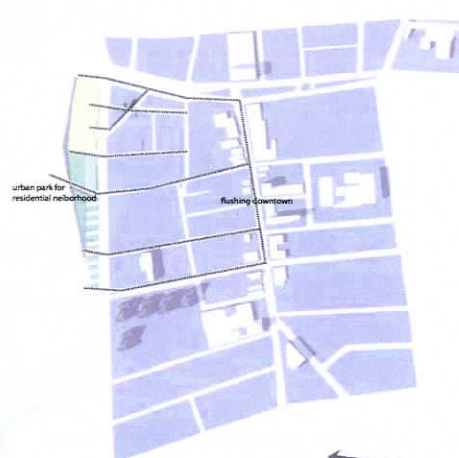
SOUTHWEST BIRDVIEW

PERSPECTIVE A

PERSPECTIVE B

PERSPECTIVE C





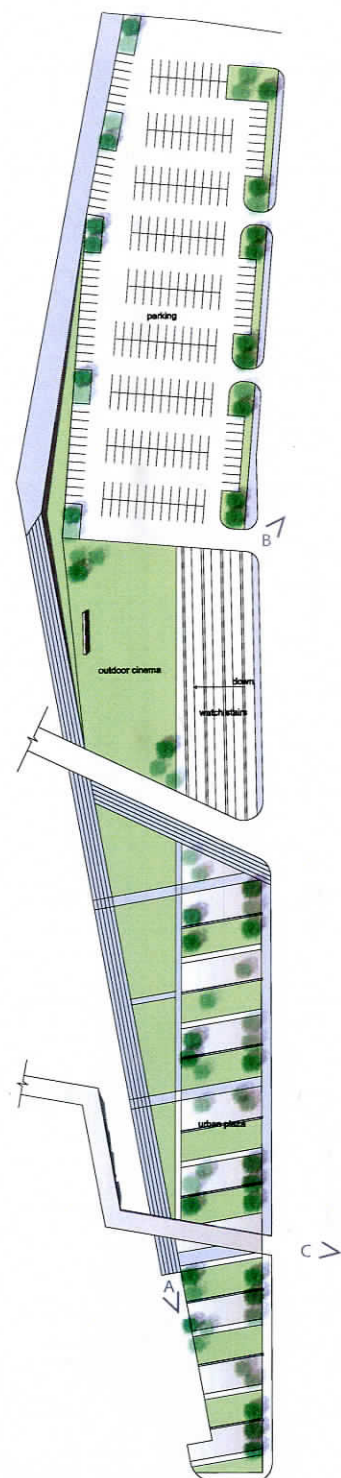
LANDSCAPE

- street trees
- shrub trees
- grass



PROGRAM

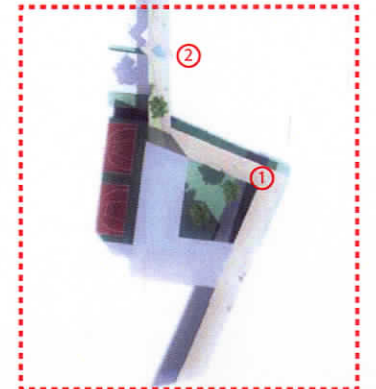
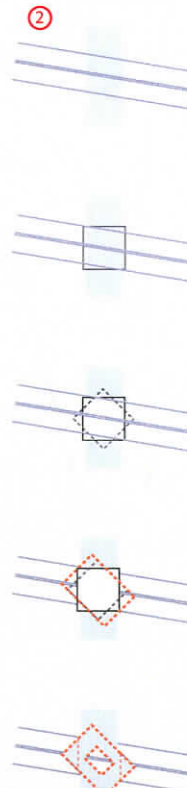
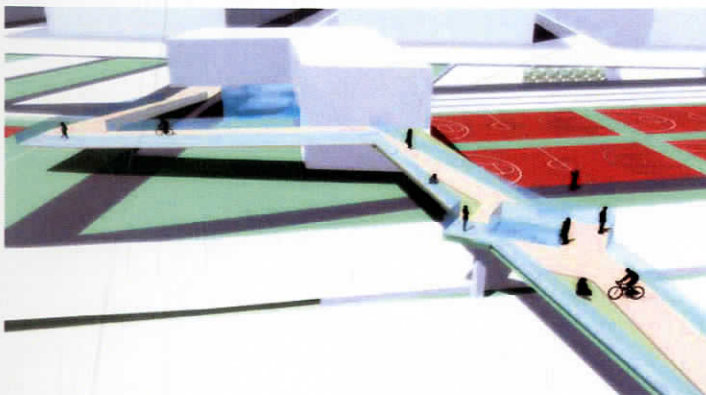
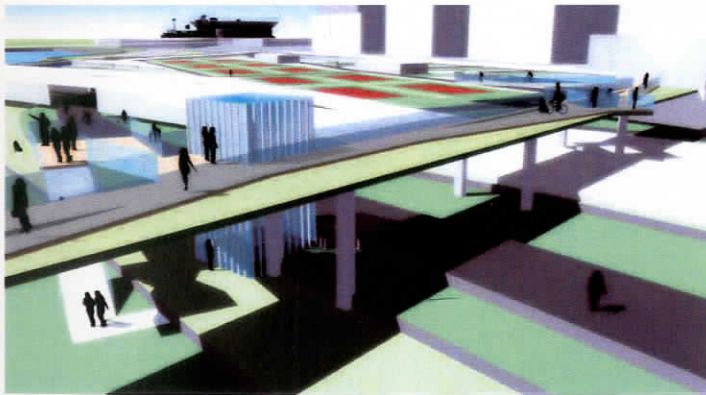
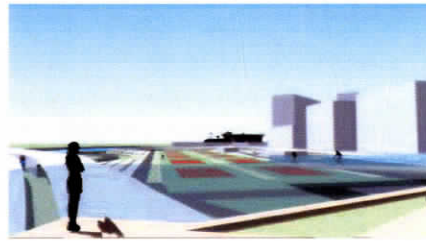
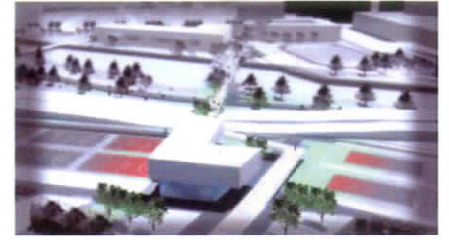
- outdoor cinema
- parking or farmer market
- bench



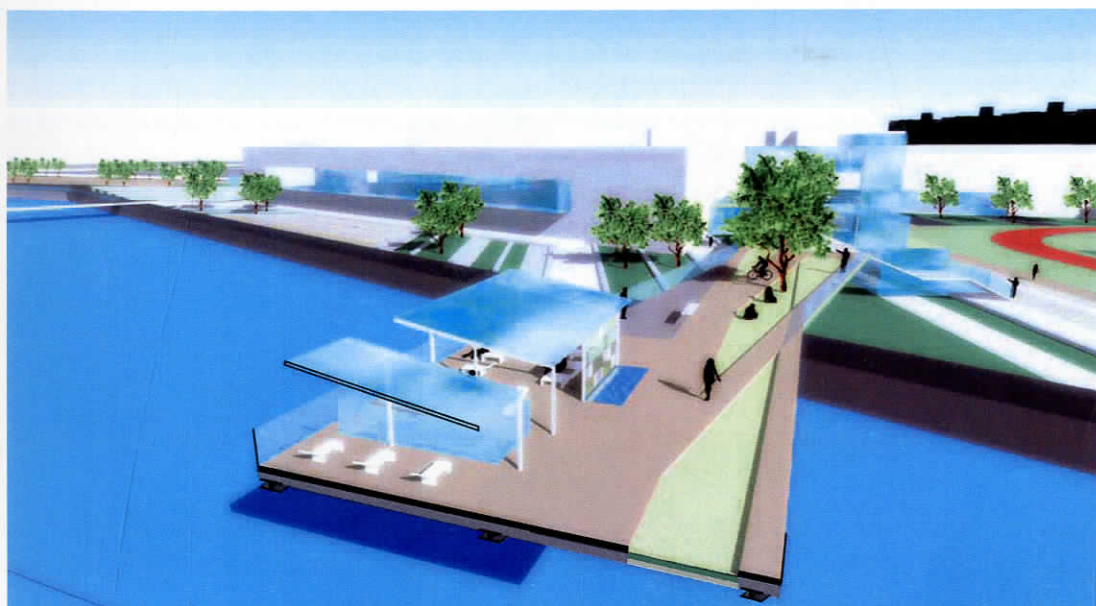
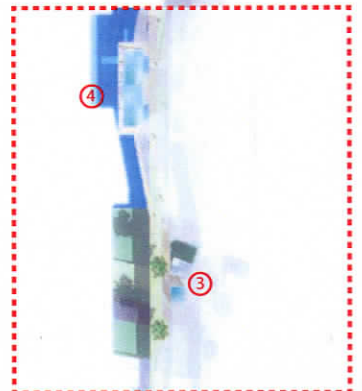
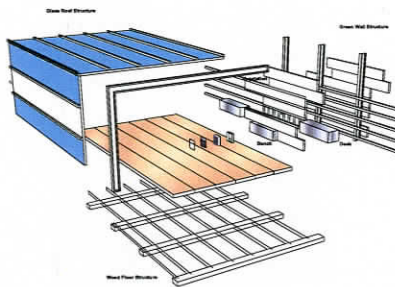
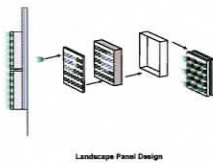
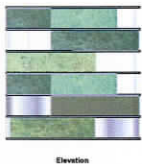
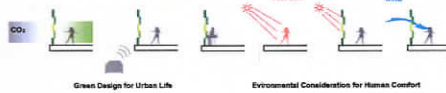
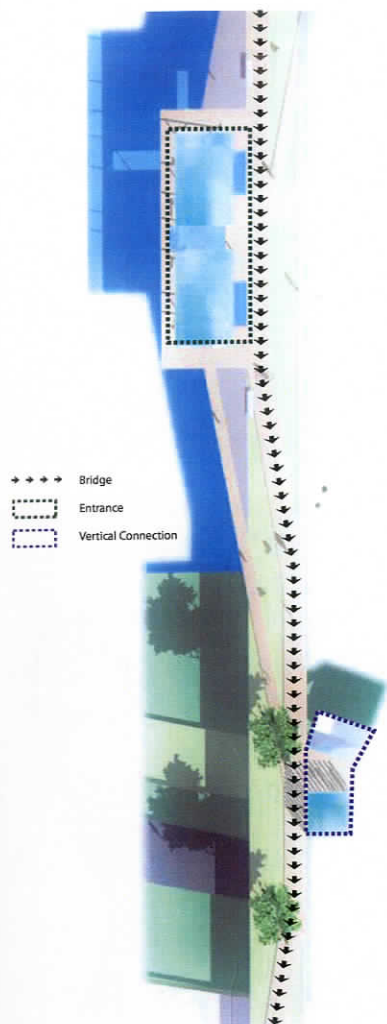
5. URBAN PARK



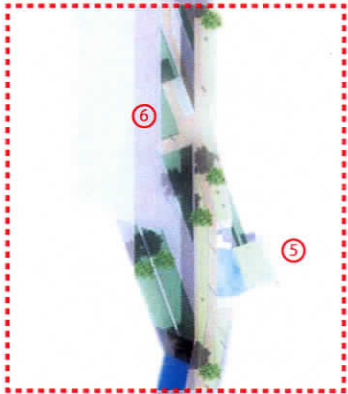
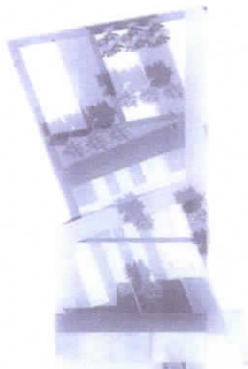
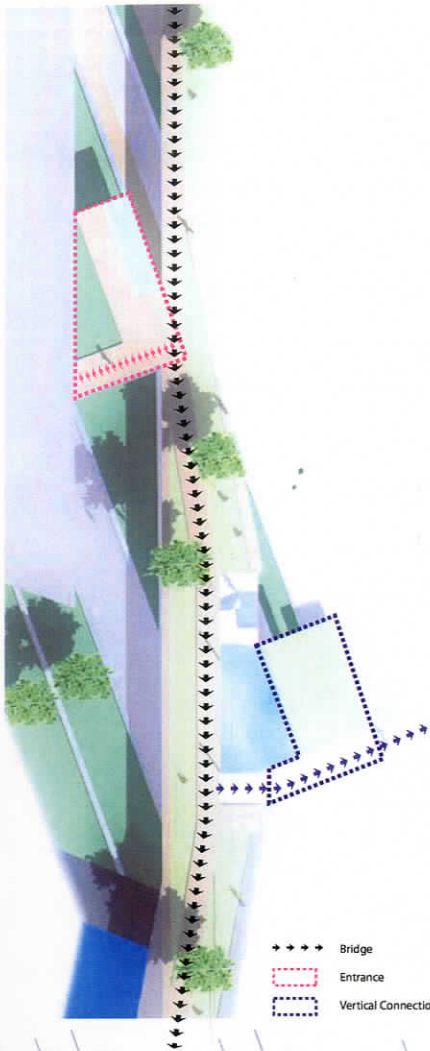
BRIDGE INTERSECTION 1-2



BRIDGE INTERSECTION 3-4

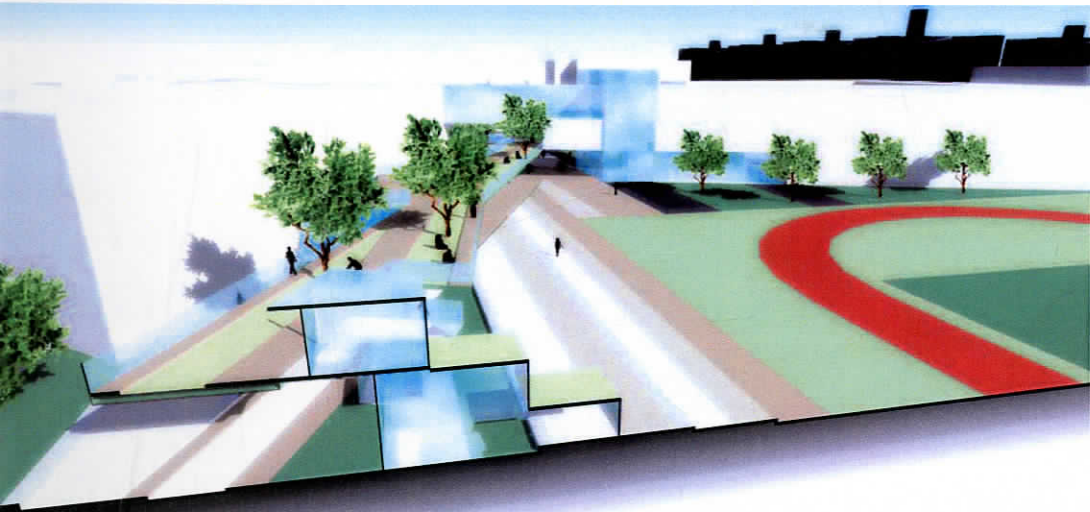


BRIDGE INTERSECTION 5-6



6

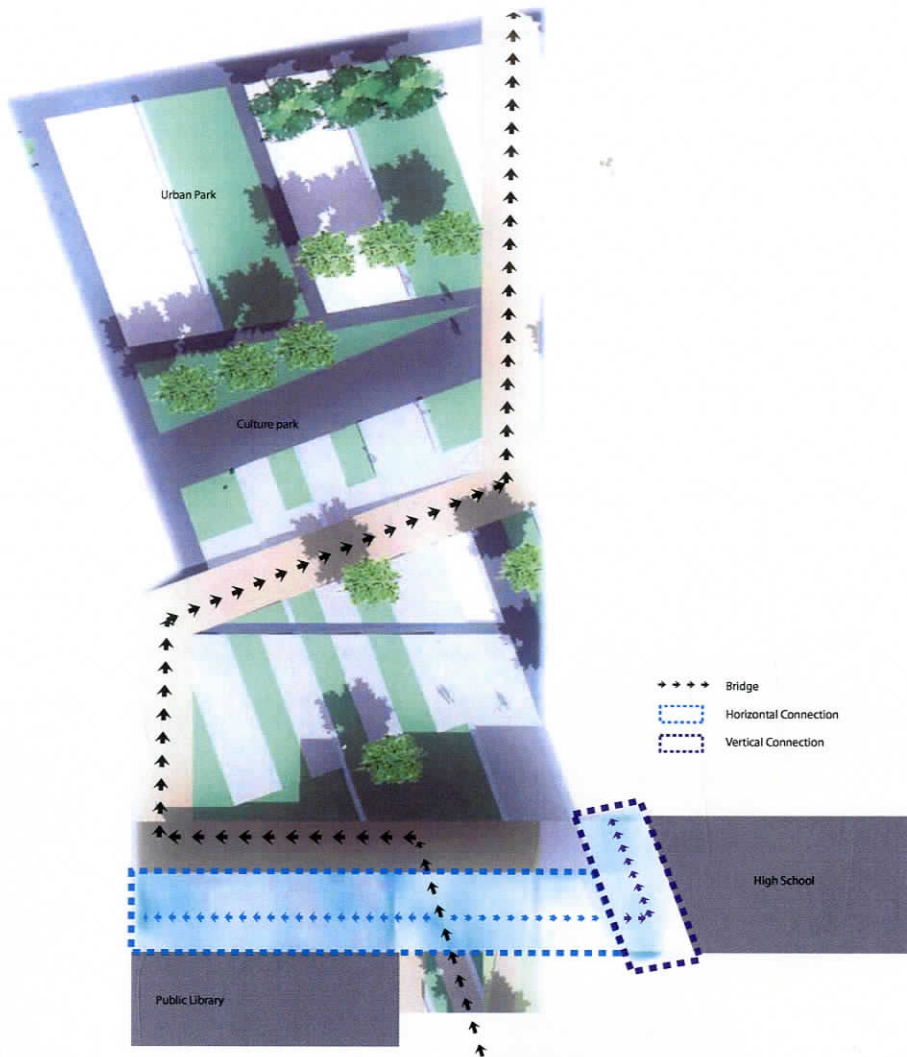
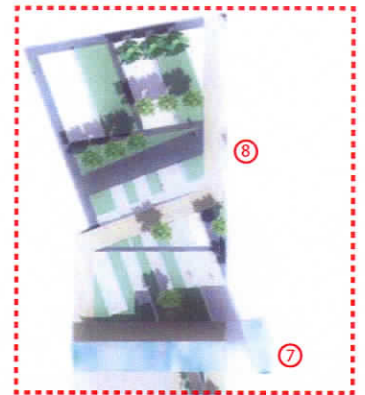
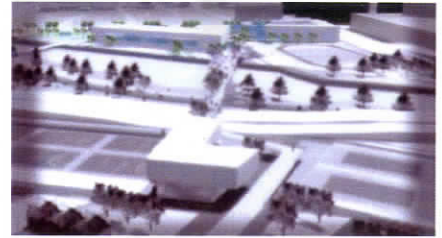
5



6

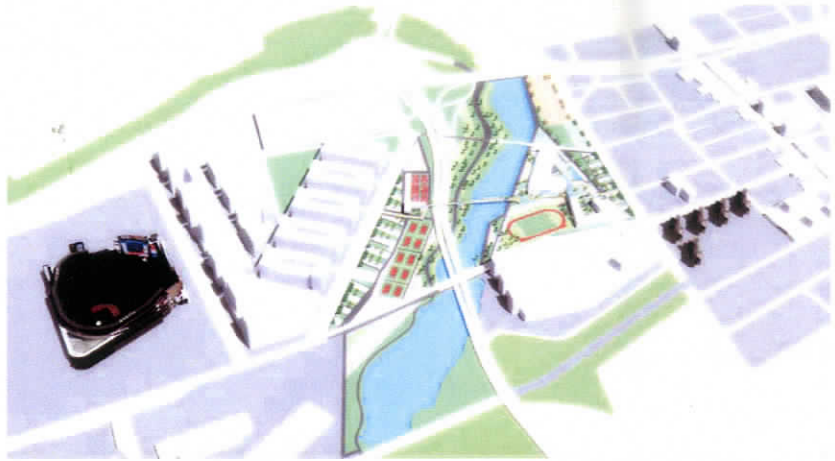
5

BRIDGE INTERSECTION 7-8



BEFORE AND AFTER

SOUTHEAST BIRD VIEW → PARK BIRD VIEW



EAST BIRDVIEW → INFRASTRUCTURE BIRD VIEW

