The Bridgeport Dam:
A South Branch Community

Elevator Statement

Case Statement

This project will explore the potential to change a deteriorating Chicago industrial neighborhood into a mixed-use residential, community center and open space focal point for the adjacent neighborhoods of Pilsen and Bridgeport. Emphasis will be given to inner city ecosystem services, environmental awareness, adaptive reuse and responsible new development.

The industrial corridor between Bridgeport and Pilsen, minutes from the Chicago loop, has been a blight on the neighborhoods almost since its development in the early 20th century. While the area was once a center for barge-powered industries in the area, that usage has become almost entirely defunct - barges currently account for less than 5% of shipped goods into the entire city, and a much more viable port exists further south at Lake Calumet. The remaining barge traffic at this site is focused entirely around a Clean Air Act breaking coal-fired power plant, one that belches smoke into the nearby residential neighborhoods and the adjacent public high school. This obdurate industrial zone is indicative of some of the larger scale ecological quandaries caused by Chicago's working-class industrial history, and is related to its worst: the reversal of the Chicago river to compensate for the barge-fueled dirty industries of the early 20th century. As a result of Chicago's inability to treat, store, or handle its stormwater and sewage, this 100 year old solution has left all our wastewater untreated and heading south to the Gulf of Mexico.

This project will attempt to address these issues at several scales. First, it will solve part of the overall watershed problem by reinventing the site as a place that will help to retain and clean stormwater and remediate currently contaminated sites. Secondly it will propose a masterplan to adapt and reuse the existing industrial site as mixed-use residential community and clean industrial space, giving the land back to the community to use, learn from, and enjoy. Thirdly it will develop a new system of housing within the typical Chicago block system that will help this new development bridge the gap between the Bridgeport and Pilsen neighborhoods created by the existing barren industrial landscape. This system will diminish resource use, increase energy efficiency and create a softer urban landscape that will allow more water infiltration and create more community space at a scale and price range accessible to the surrounding community.

Project Goals

Guiding Principles

1- Return life to a dying area in the South Loop.
2- Restore health to a part of the Great Lakes Watershed in Chicago's urban ecosystem.
3- Reestablish vitality in a blighted. leftover early 20th century industrial corridor.

1- Environmental Cleanup - This project will focus much attention on cleaning up the South Branch Chicago River water as well as adjacent brownfield sites near the South Fork Turning Basin. Emphasis on living systems and ecological solutions for cleanup.

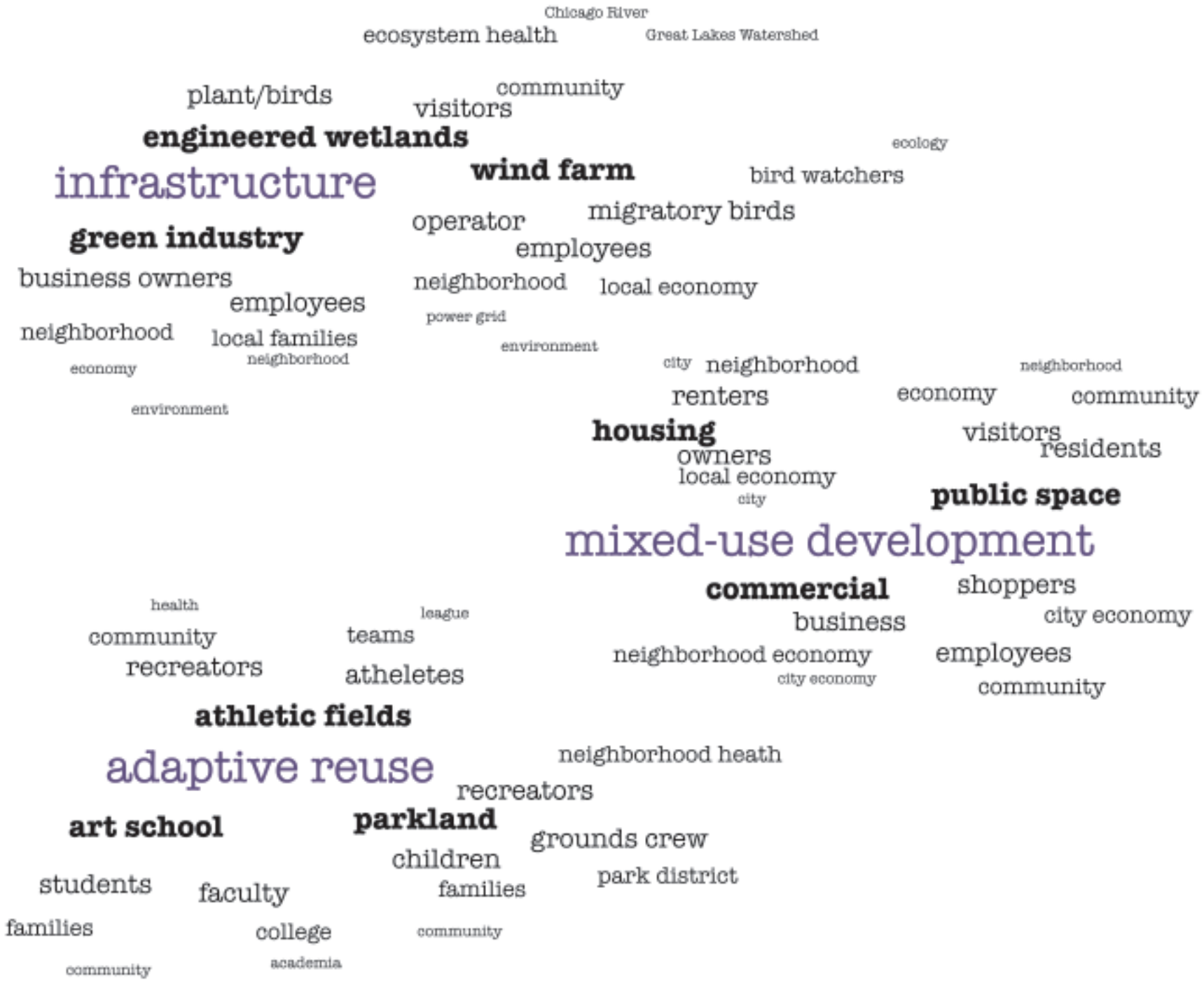
2- Social Connection - Project will serve as an attractor to both the Bridgeport and Pilsen communities. Emphasis will be placed on creating both a destination for visitors as well as a new part of the regular neighborhood fabric.

3- Environmental Education - Focus will be given to make environmental features of the project salient and inspire interest. Classrooms as well as tours and community programs will help educate Bridgeport and Pilsen residents about the value of the lake and its surrounding watershed, hopefully raising ecological consciousness in the area.

4- Green Jobs - Integration of some existing industry as well as development and encouragement of new ecological services. Creation of jobs rather than elimination of jobs will be a necessity to make this project beneficial to adjacent communities.

5- Responsible Development- The project will include the invention of a modular building system that is congruous with the existing neighborhood needs and context and is both resource efficient and economically feasible. This system will serve as building blocks for the mixed use residential section of the development area and help to insure high enough densities to support other project programs.

Stakeholder Chart

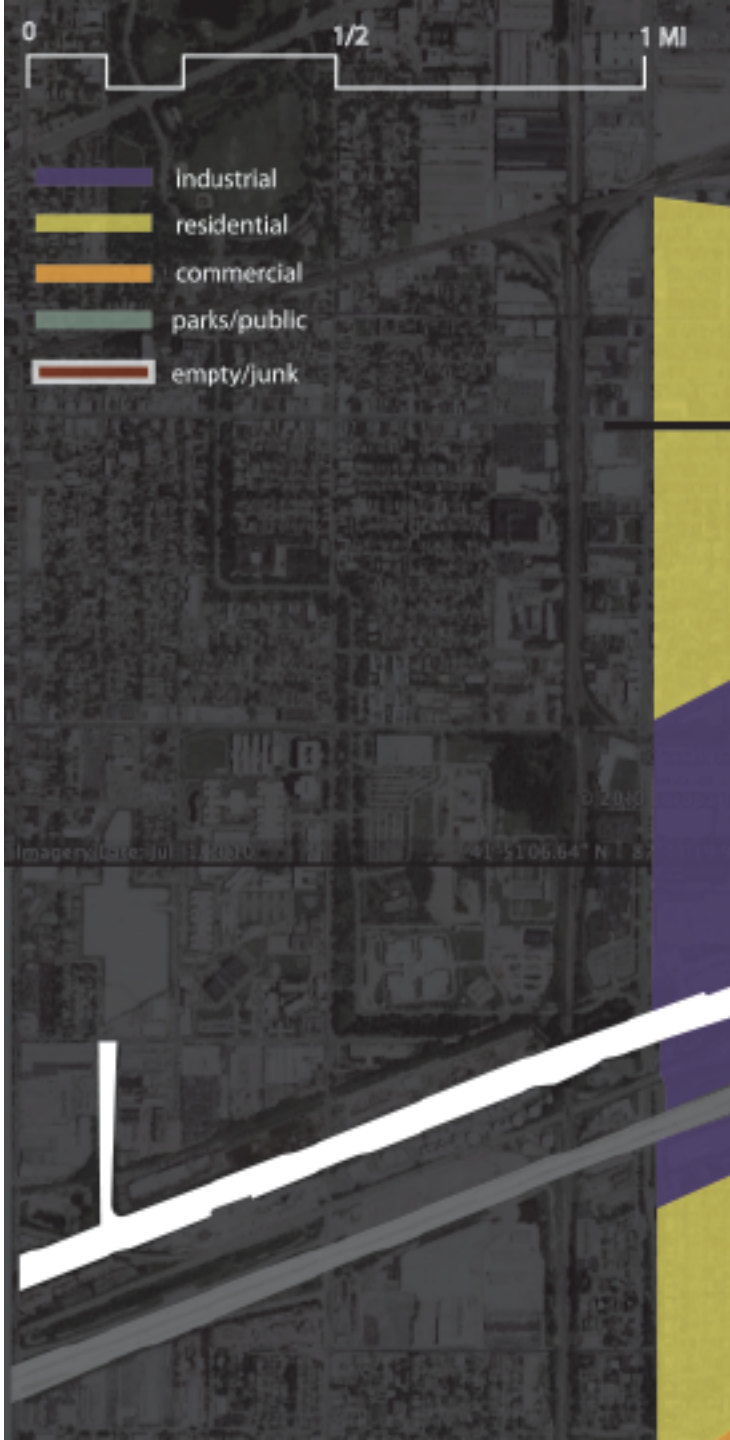

Chicago River
ecosystem health
Great Lakes Watershed
plant/birds
community
visitors
engineered wetlands
ecology
infrastructure
wind farm
bird watchers
migratory birds
operator
green industry
employees
business owners
neighborhood
local economy
employees
power grid
neighborhood
local families
environment
economy
neighborhood
city
neighborhood
neighborhood
renters
economy
community
environment
housing
visitors
residents
owners
local economy
city
public space
mixed-use development
commercial
shoppers
health
league
business
city economy
community
teams
neighborhood economy
employees
recreators
atheletes
city economy
community
athletic fields
adaptive reuse
neighborhood heath
recreators
art school
parkland
grounds crew
children
park district
students
faculty
families
families
college
community
community
academia

Urban Context

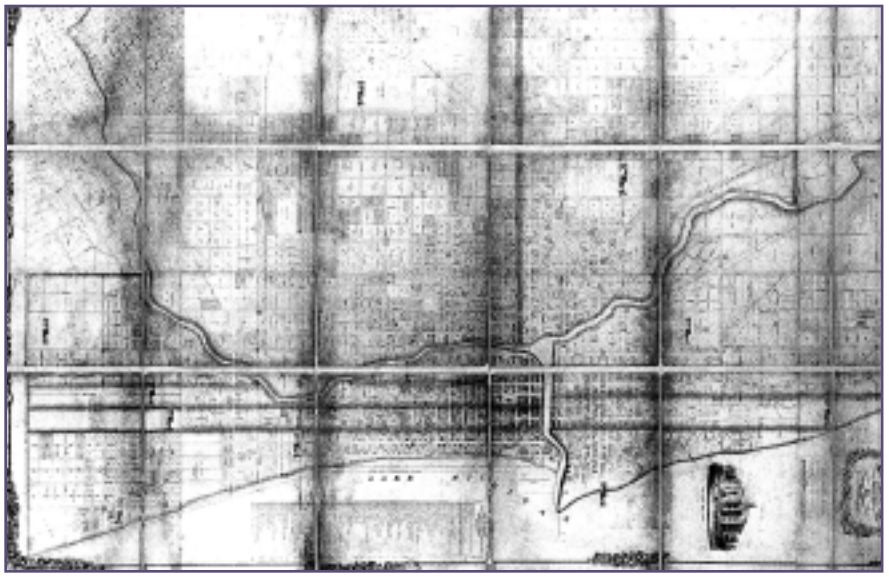
Local Context


Pilsen
Bridgeport

Context Analysis



Historical Maps

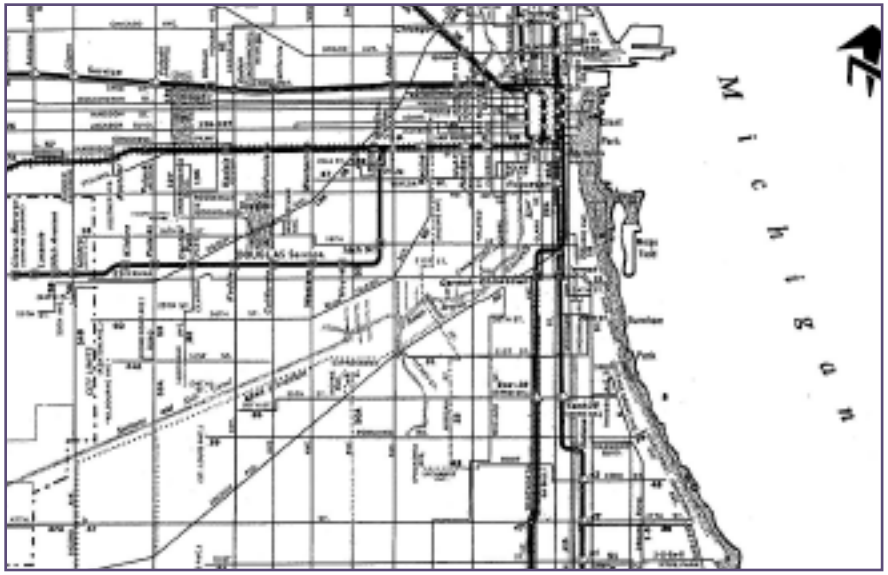


1833

1929

1858

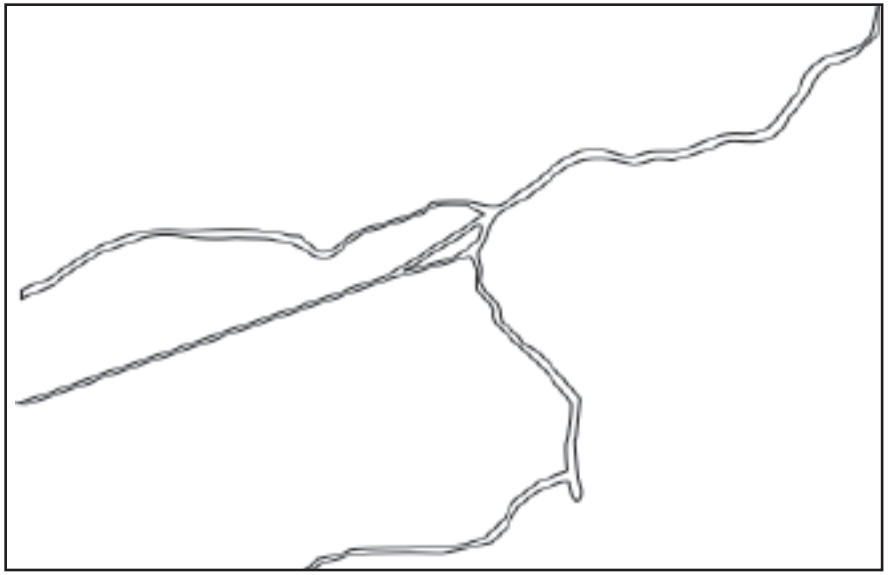
1883



1970

1986

River History Analysis



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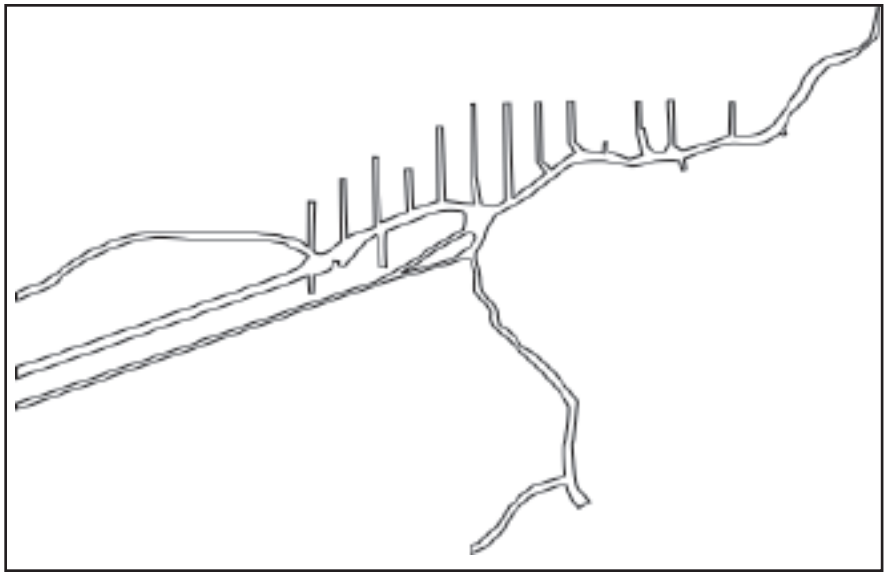
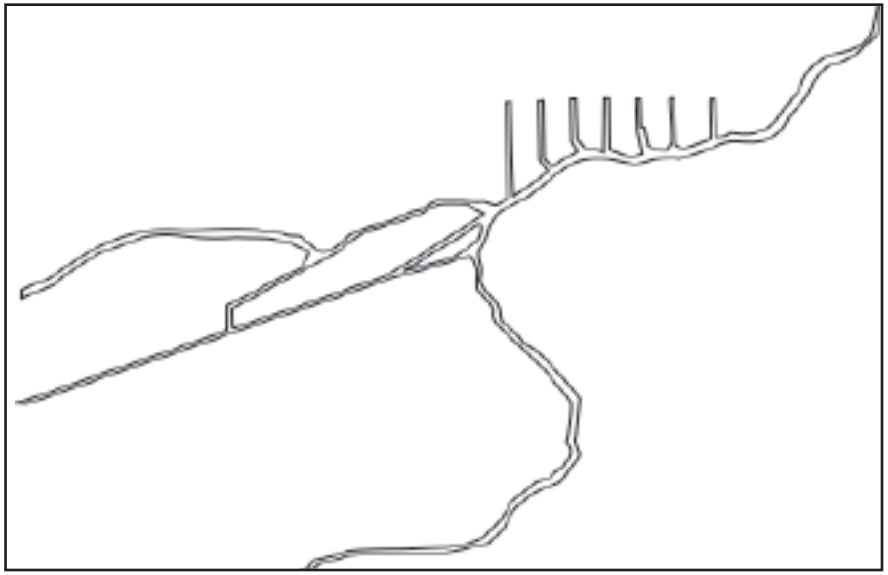


1929



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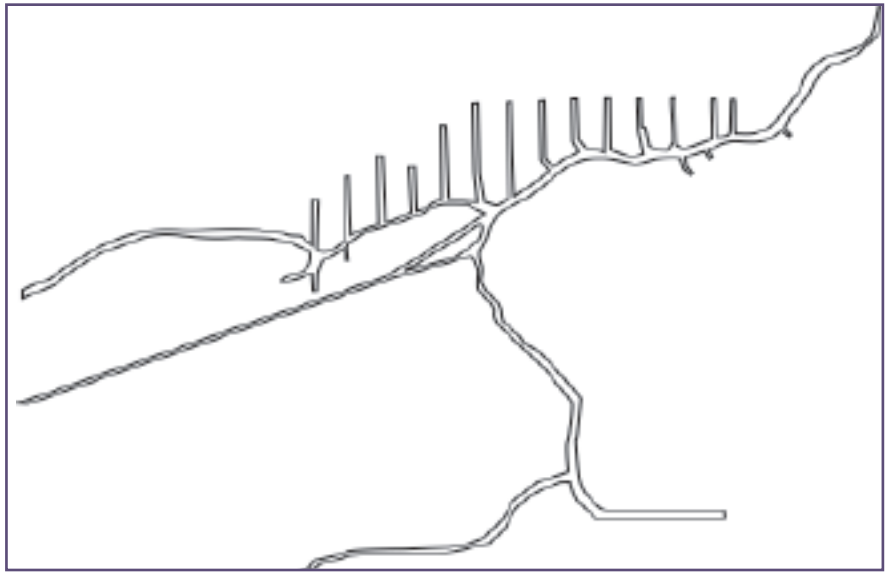
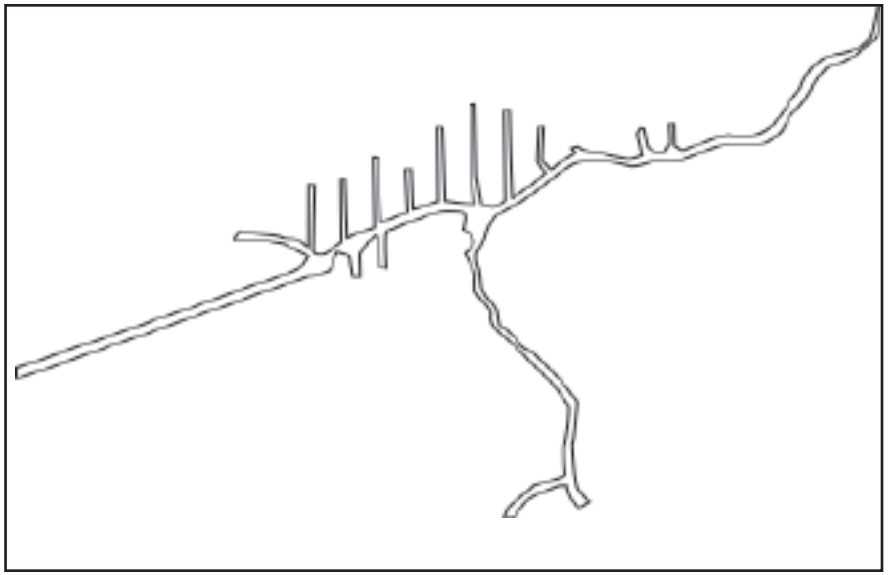
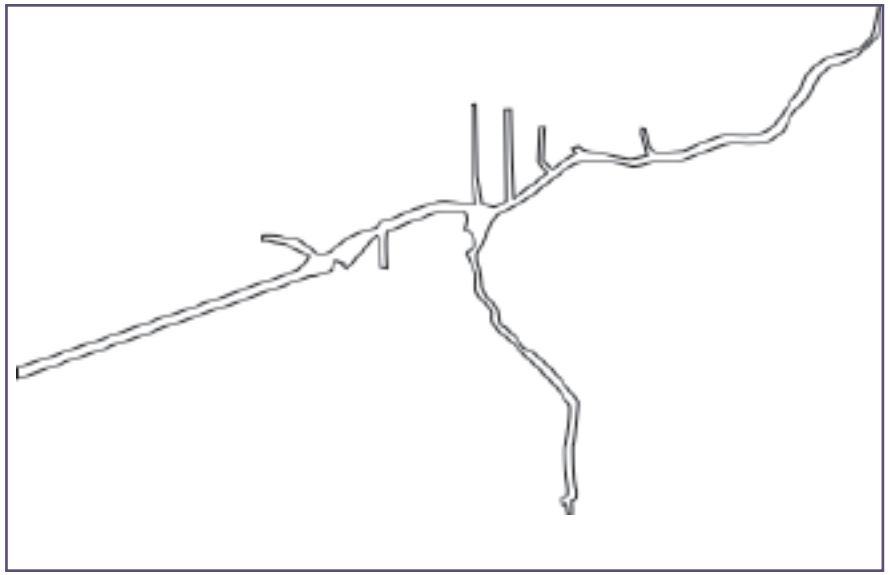


1883



1970



1986

Historical Density Comparison

1929 figure ground diagram

2009 figure ground diagram

overlay of 2009 figure ground over 1929 density showing reduction in industrial density

Space Program

infrastructure

mixed-use residential

adaptive reuse/ recreation

MIXED USE DEVELOPMENT
commercial @ ground floor ± 500,000 sq.ft
residential flats/condos ± 1.8 million sq.ft

GREEN INFRASTRUCTURE
wind farm/wetland/cycling park - 1.6 million sq.ft

INDUSTRIAL PARK REUSE
gallery/reception/exhibition hall - 71,000 sq. ft
Columbia College satellite art school - 42,500 sq.ft
adapted industrial infrastructure recreation area - 500,000 sq.ft
sports fields - 200,000 sq.ft

NEW CONSTRUCTION -DETACHED
marina -60,000 sq.ft
shopping area - 40,000 sq.ft
recycling/transfer station - 11,250 sq.ft
kayak center - 10,000 sq.ft
skate park - 8,000 sq.ft

EXISITING
indoor sports facility - 200, 000 sq.ft

Case Studies: Adaptive Reuse

Duisburg-Nord Landschaftspark, Duisburg, Germany

adapted smelting plant

mountain biking

rock climbing

creative lighting

public events

gardens

extensive programming on site: red numbers indicate art installations, small numbers indicate reprogrammed elements such as blast furnace, wilderness, sinter plant, train tracks, blower hall. graphic symbols indicate visitor amenities.

Case Studies: Adaptive Reuse

Gas Works Park, Seattle, WA

park overview

gas plant as sculptural element

cultural events at site

park overview

creative reuse

detail of reused oil platforms

elevational height

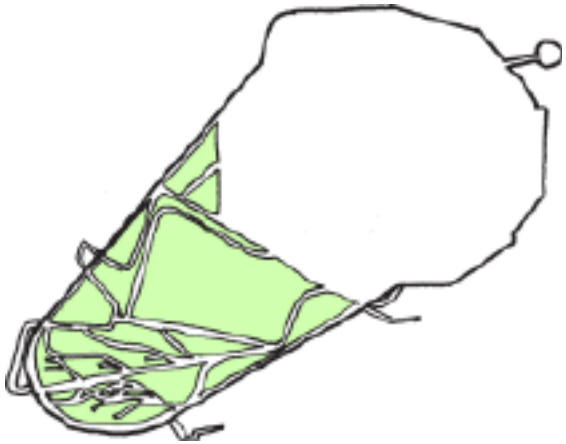
park map

site plantings

Case Studies: Redevel-opment

Governors Island Park Competition, New York City, NY

WRT proposal



Hargreaves proposal

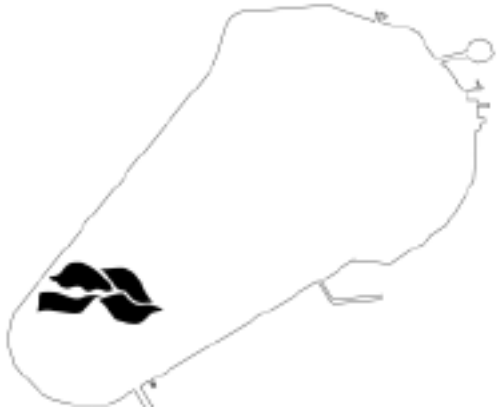
REX proposal

West 8 proposal

existing figure/ground

existing island condition

demolished buildings in
winning proposal (West 8)



proposed use of demolition
rubble to create landscape

Case Studies: Reuse/ Remedia-tion

Stearns Quarry Park, Bridgeport, Chicago

quarry pool and walkway

cascading wetlands

detail of wetland system

view of wetland from hill

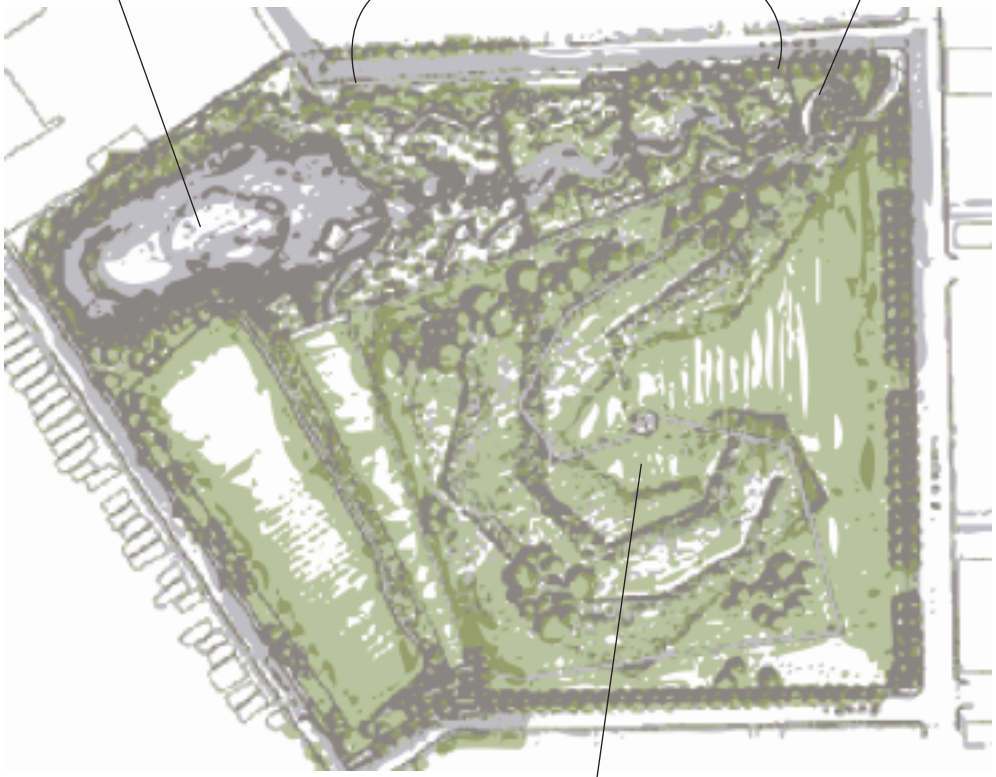
view from hilltop

reuse of landfill rubble

terraced wetland living machine
for water purification

water source -conveyed here
from rest of site

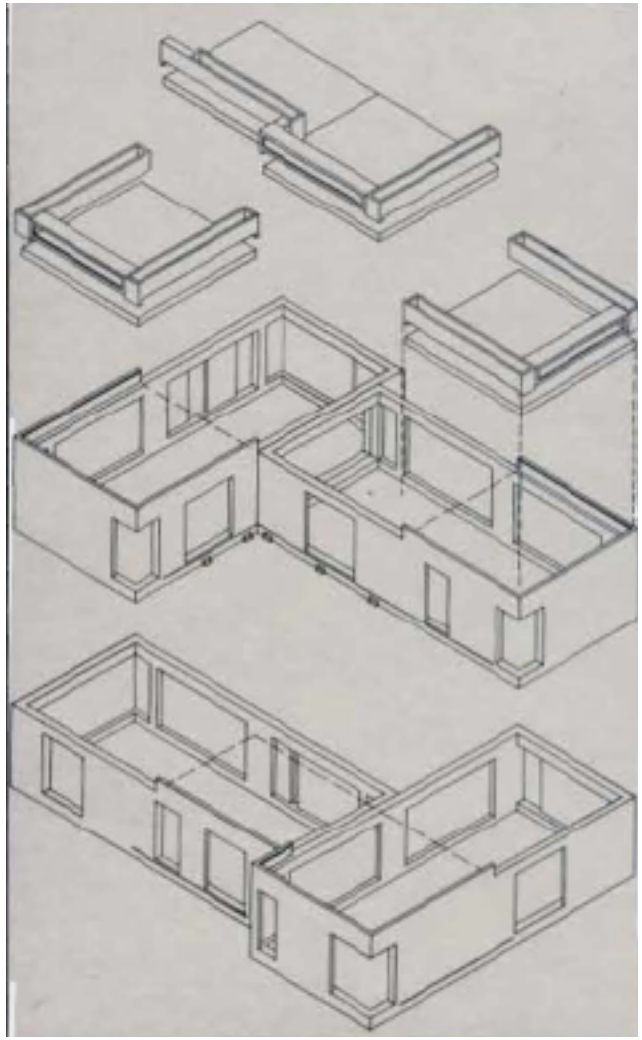
quarry pool (25’ depth)



manufactured hill from landfill rubble taken from
previously filled quarry pool (55’ height)

Case Studies: Prefab Housing

Habitat ‘67, Montreal, Quebec

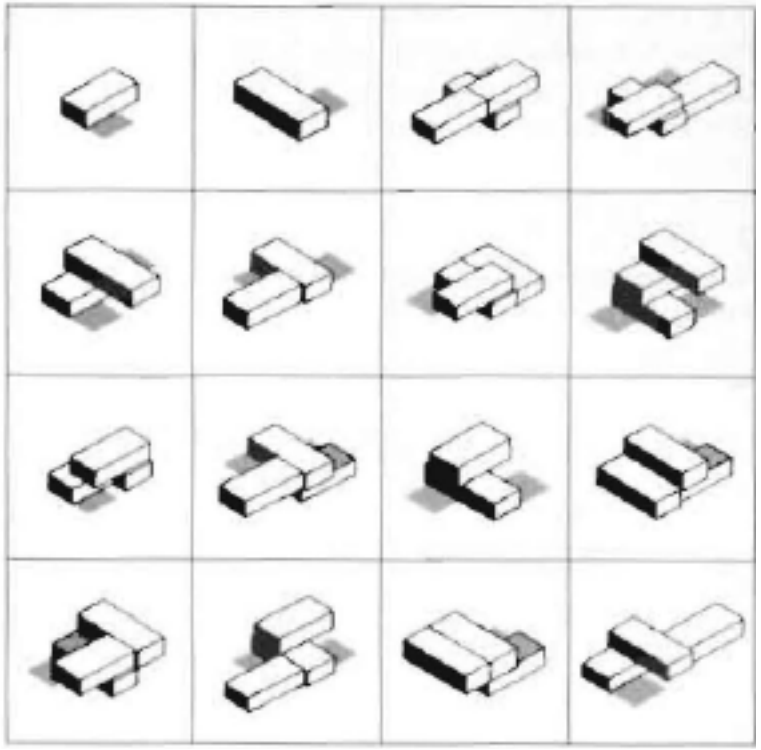


stacking diagram

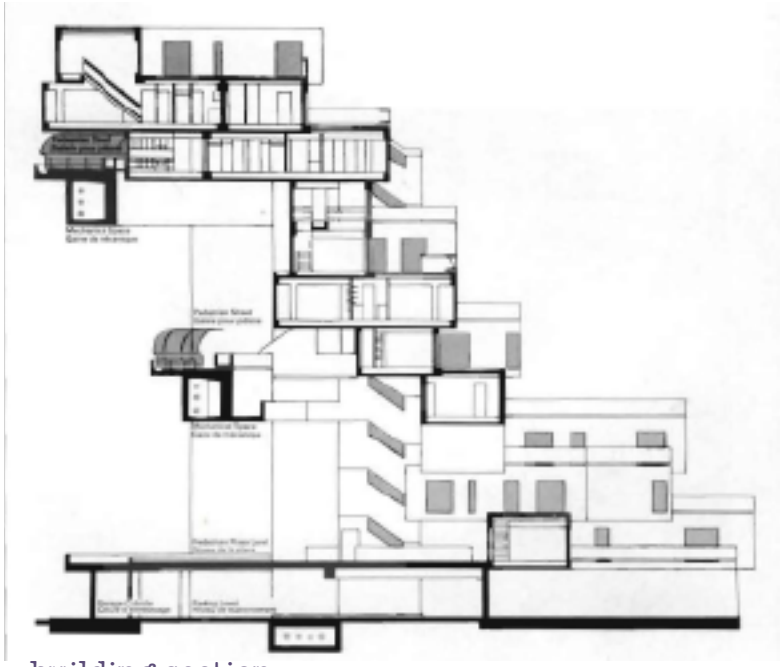
building massing

detail of assembly

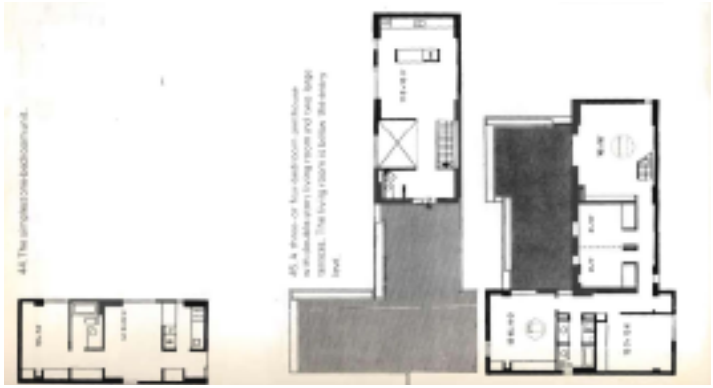
detail of assembly



unit assembly diagram



building section



sample unit plans

sample unit plans

Case Studies: Mixed Use

Borneo Sporenburg, Amsterdam, The Netherlands

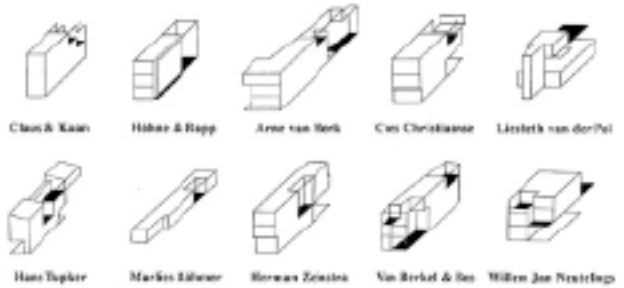
building typologies

canal bridges

the ‘high bridge’

view from ‘high bridge’

program diagram



typologies by designer

area map showing canal systems

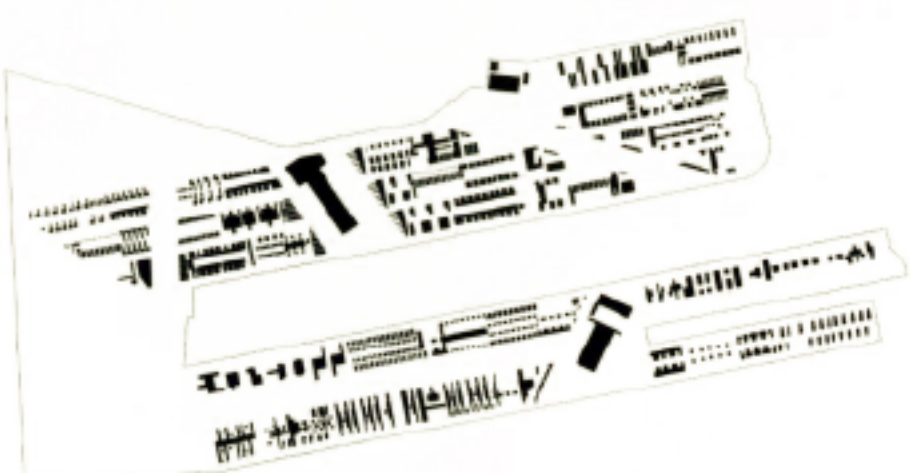


figure ground diagram

Case Studies: Mixed Use

Hafencity Hamburg, Hamburg, Germany

prefab buildings

varying typologies

marco polo terrace

iconic buildings

observation tower

unique structures

massing in context

development map

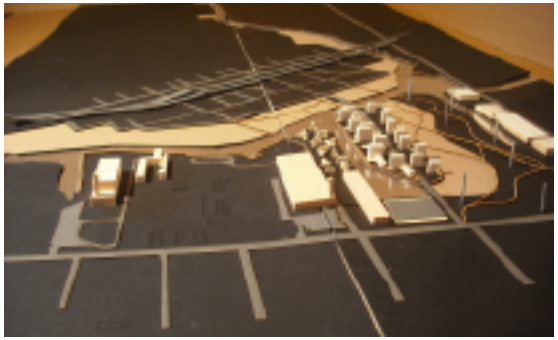
development model

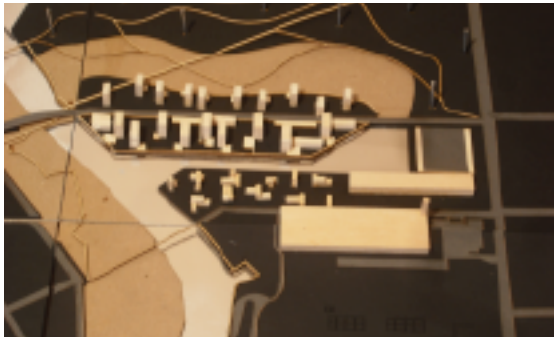
Schematic Design

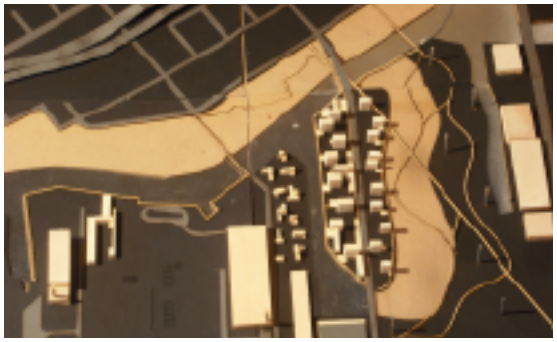
schematic section

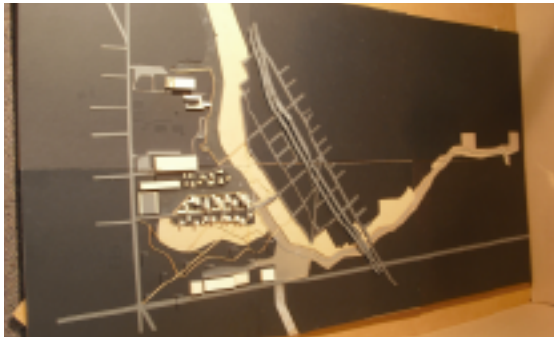
Schematic Design

midterm model









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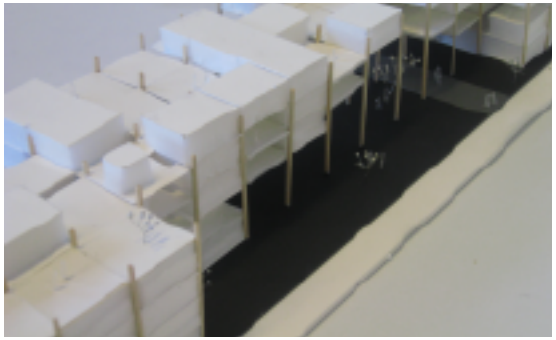
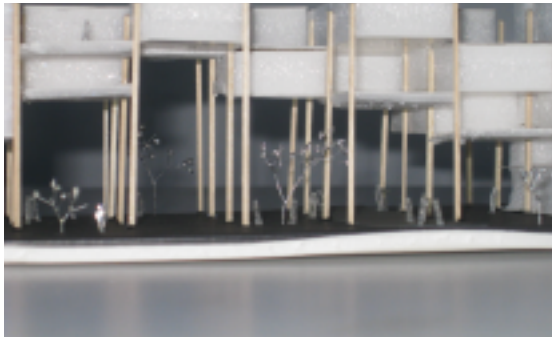
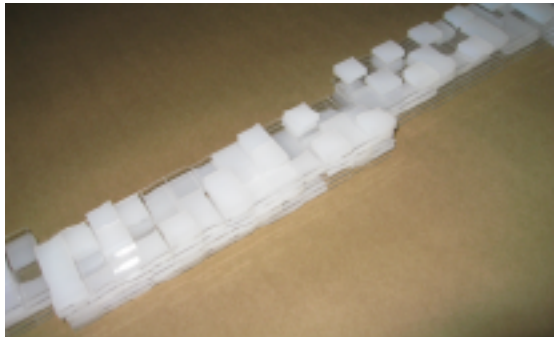
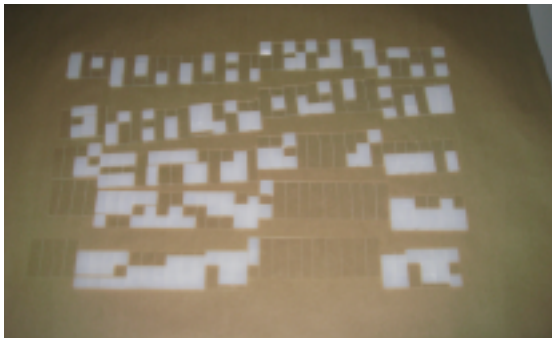
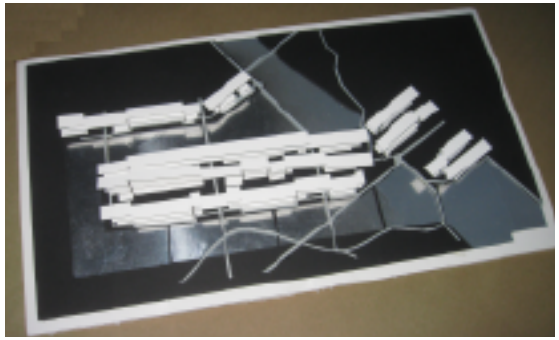
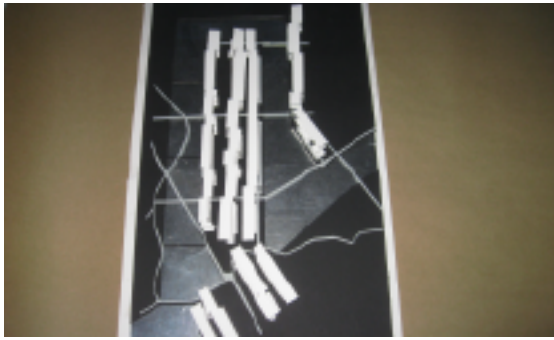
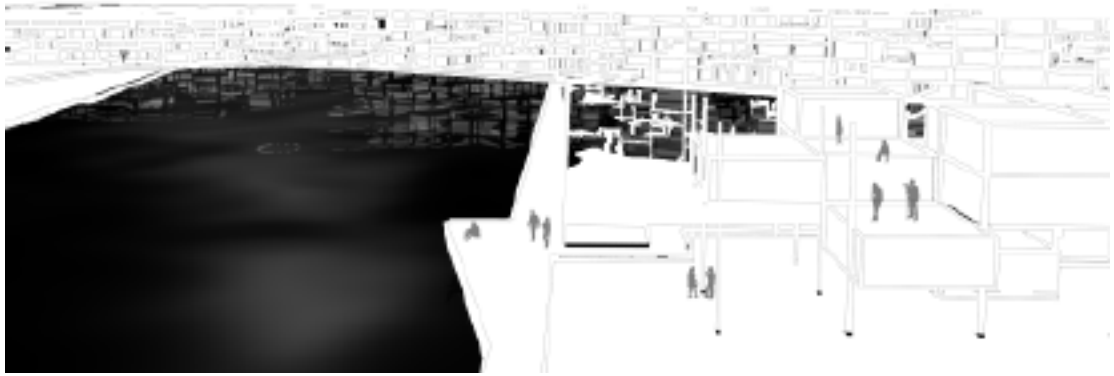






Schematic Design

renderings



Bibliography

xander, Christopher. The Nature of Order, Book One: The Phenomenon of Life. Berkeley: The Center for Environmental Structure

tley, Timothy. Green Urbanism: Learning from European Cities. Washington, DC: Island Press 2000

ndi, Ulrike and Geissmar, Christoph. Light for Cities: Lighting Design for Urban Spaces, A Handbook. Basel: Birkhauser 2007.

z, James. 'Ecotone Heirarchies.' Ecological Applications 3.3 (1993) 370-376

ris, Larry. The Fragmented Forest: Island Biogeography Theory and the Preservation of Biotic Diversity. Chicago: U of C Press 1984

nson, Steven. Emergence: The Connected Lives Of Ants, Brains, Cities, And Software. New York: Scribner 2001.

lan, Stephen and Rachel Kaplan. Cognition and Environment: Functioning in an Uncertain World. New York: Praeger 1982.

ert, S.R. et. al., eds. Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life. Hoboken: Wiley and Sons 2008.

ch, Kevin. The Image of the City. Cambridge: MIT Press 1960

chado, Rodolfo and Geuze, A., eds. Residential Waterfront Borneo Sporenberg, Amsterdam. Cambridge: Harvard University Graduate School of ign 2005.

rquez, Cecilia, Fernando Levene, Richard C., eds. SANAA: Kazuyo Sejima, Ryue Nishizawa, 1998-2004: Océano De Aire. Madrid: El Croquis orial, 2004.

e, Albert. Ladders: Architecture at Rice 34. Princeton Architectural Press: New York, NY 1996.

lie, Moshe. Beyond Habitat By 20 Years. Québec: Tundra Books 1987.

lie, Moshe. For Everyone A Garden. Cambridge: M.I.T. Press 1974.

ngaros, Nikos A. Principle of Urban Structure. Amsterdam: Techne Press 2005.

den Berg, Agnes E. et. al. 'Preference for Nature in Urbanized Societies: Stress, Restoration, and the Pursuit of Sustainability.' Journal of Social es 63.1 (2007): 79-96

ng, Ken. Ecomasterplanning. Hoboken: Wiley and Sons 2009.