

THE ARCHITECTURE OF WASTE

Designing New Avenues for Public Engagement with Trash

Jeannine Muller

This thesis aims to

investigate ways that *industry, waste, and urban ecologies* can work to reinforce one another.



This thesis aims to

repair the physical and mental separation of *waste and public activity* through the medium of architecture.



This thesis aims to

propose *new avenues for public engagement with waste* processes through the design of architecture and landscape.



Waste Processing in the United States

Landfill + Waste-to-Energy



Freshkills Landfill, Staten Island NY



Essex County Resource Recovery Facility, Newark NJ

Involving Designers in Waste Processing

Landfill to Natural + Public Amenity



Freshkills Park, Staten Island NY
James Corner Field Operations, 2008

Involving Designers in Waste Processing

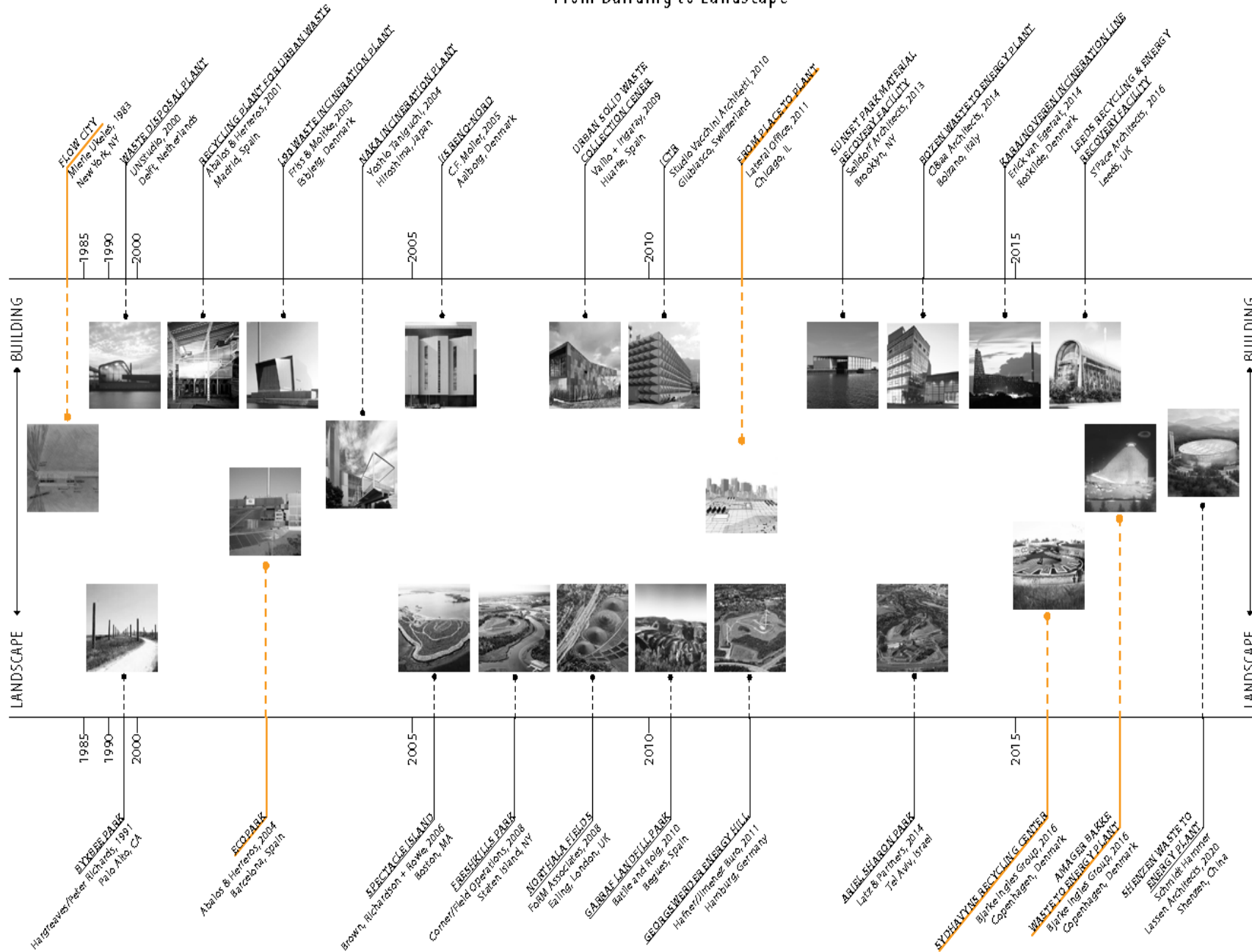
Waste-to-Energy Plant + Visitor Engagement



Shenzhen Waste to Energy Plant, China
Schmidt Hammer Lassen Architects, 2016

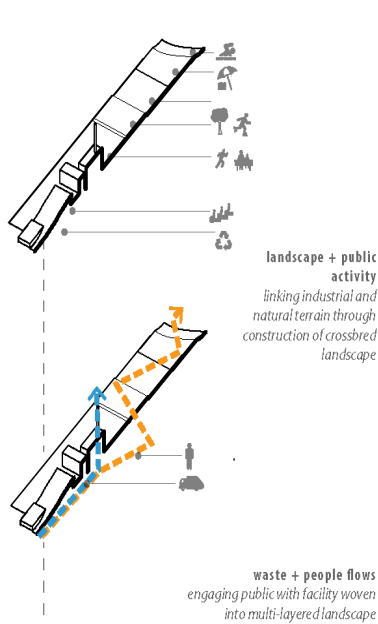
Cataloging Designers Involved in Waste Projects

From Building to Landscape

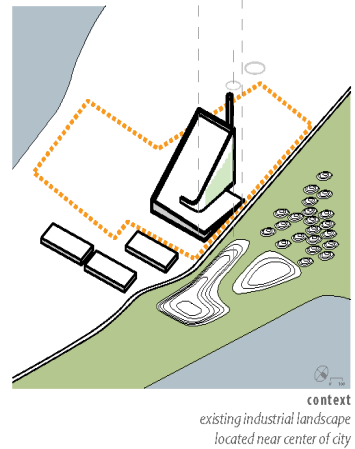
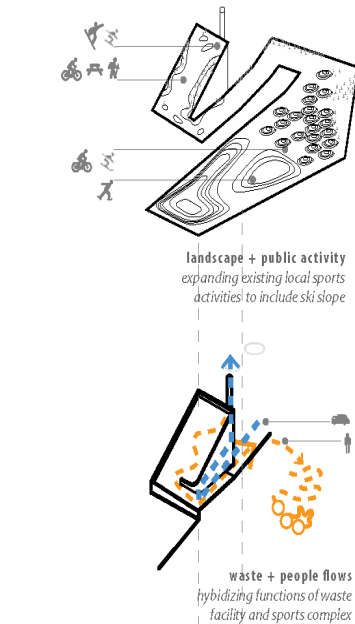


Analyzing Hybrid Precedents

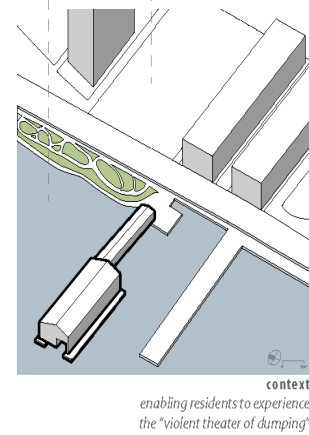
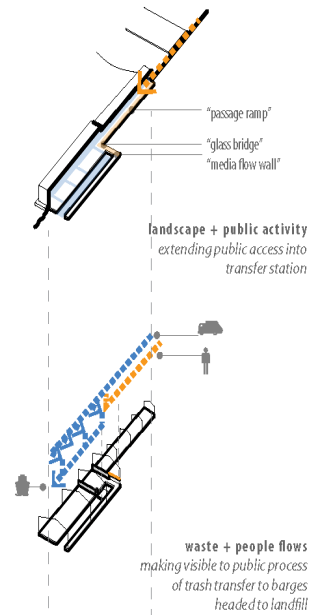
Flows of Waste + People, Landscape + Public Activity



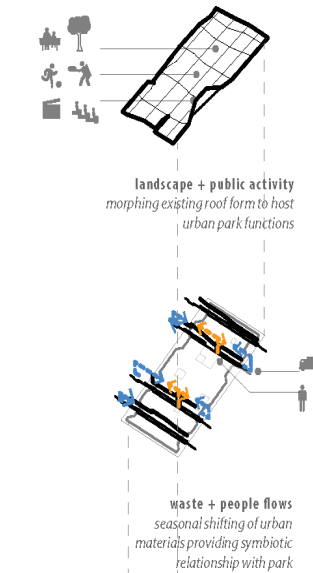
ECOPARK
ABALOS & HERREROS
BARCELONA, SPAIN



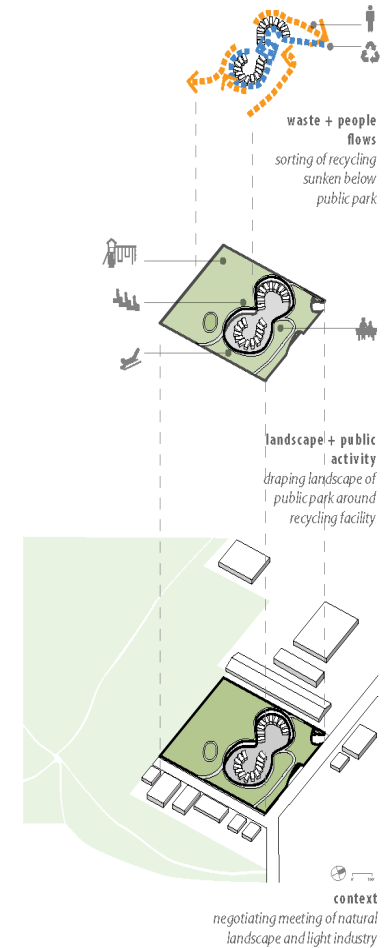
AMAGER BAKKE WASTE-TO-ENERGY PLANT
BJARKE INGLES GROUP
COPENHAGEN, DK



FLOW CITY
MIERLE UKELES
NEW YORK, NY



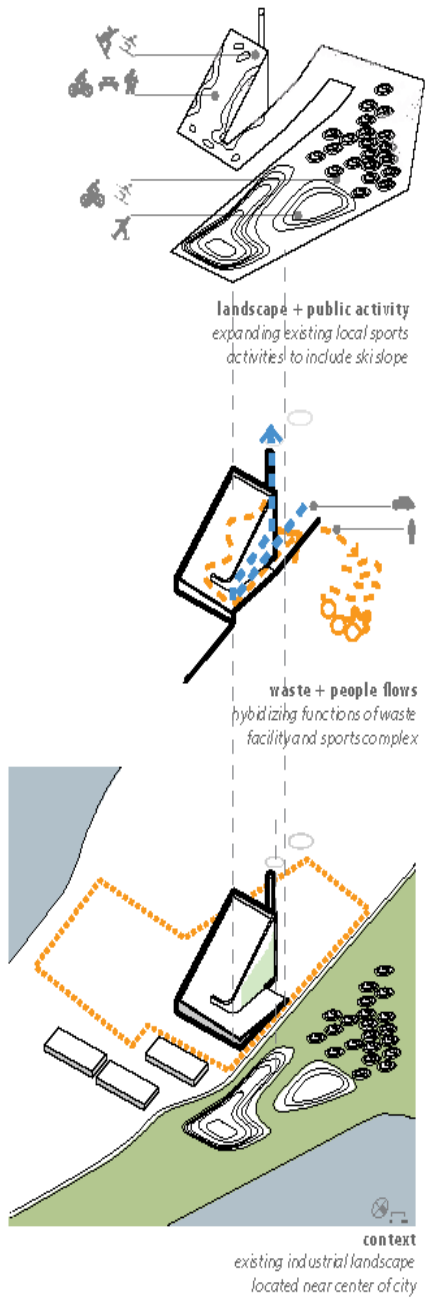
FROM PLACE TO PLANT
LATERAL OFFICE
CHICAGO, IL



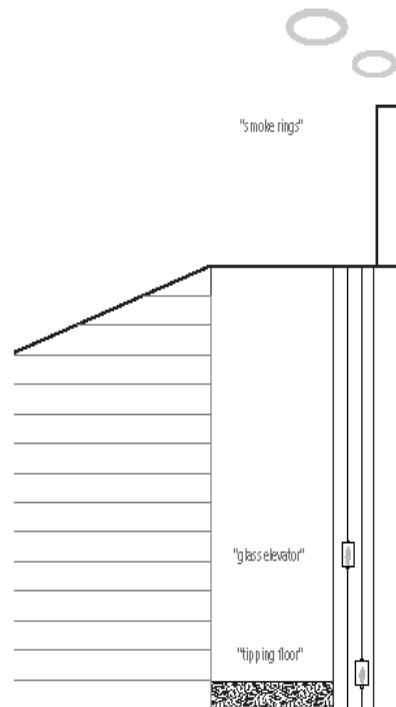
SYDHAVNYS RECYCLING CENTER
BJARKE INGLES GROUP
COPENHAGEN, DK

Analyzing Hybrid Precedents

Amager-Bakke Waste-to-Energy Plant, Bjarke Ingles Group Copenhagen, Denmark

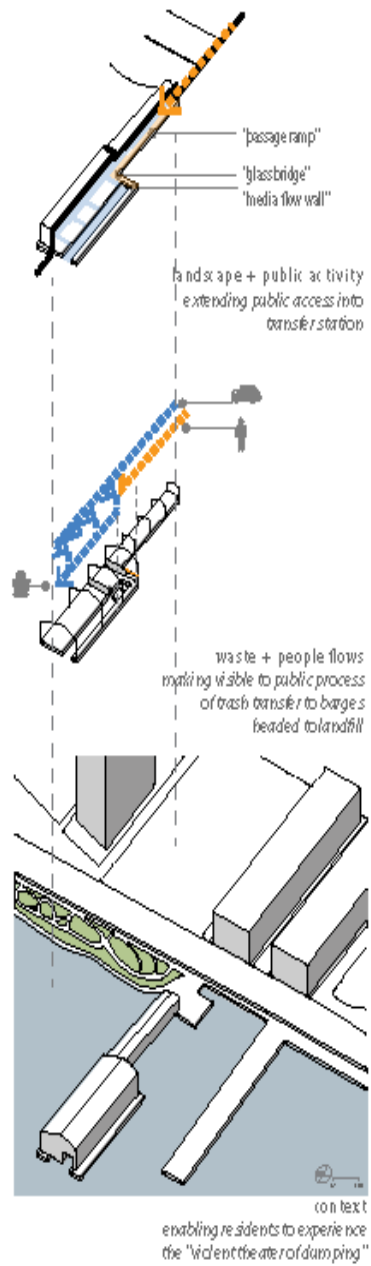


AMAGER BAKKE WASTE-TO-ENERGY PLANT
BJARKE INGLES GROUP
COPENHAGEN, DK

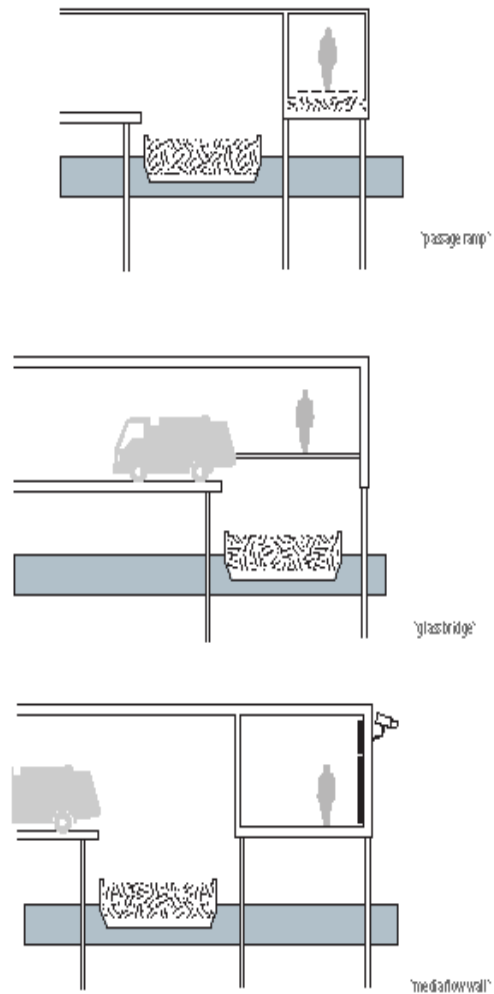


Analyzing Hybrid Precedents

Flow City, Mierle Ukeles, DSNY Artist-in-Residence
New York, NY



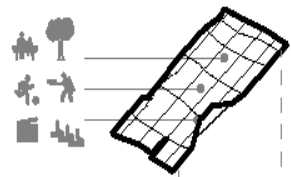
FLOW CITY
MIERLE UKELES
NEW YORK, NY



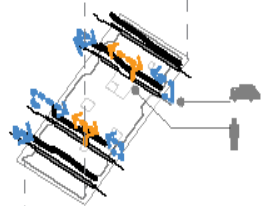
Analyzing Hybrid Precedents

From Place to Plant, Lateral Office

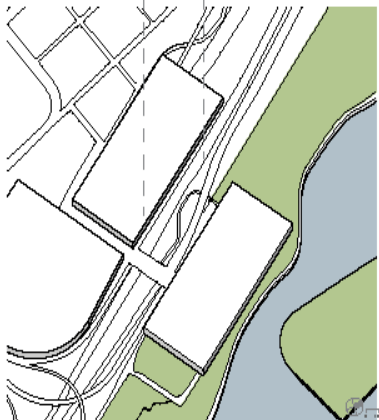
Chicago, IL



landscape + public activity
morphing existing roof form to host
urban park functions

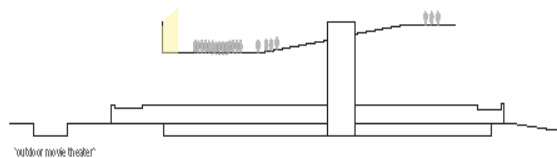
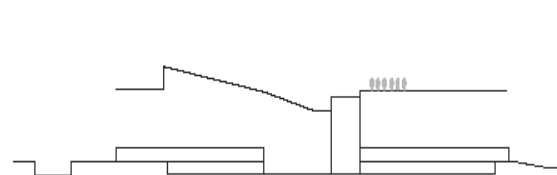
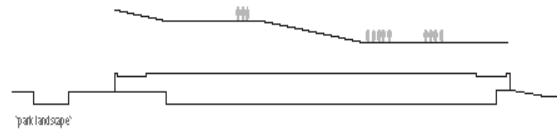


waste + people flows
seasonal shifting of urban
materials providing symbiotic
relationship with park

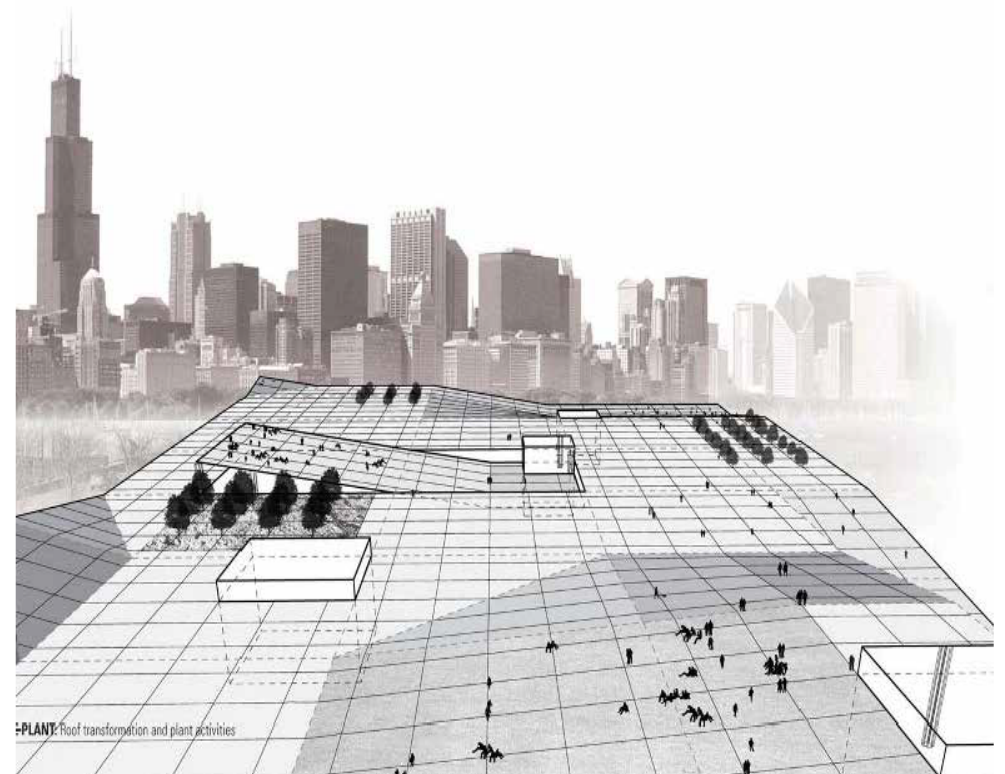


context

repurposing McCormick Place to serve city
needs of urban material storage



key moments

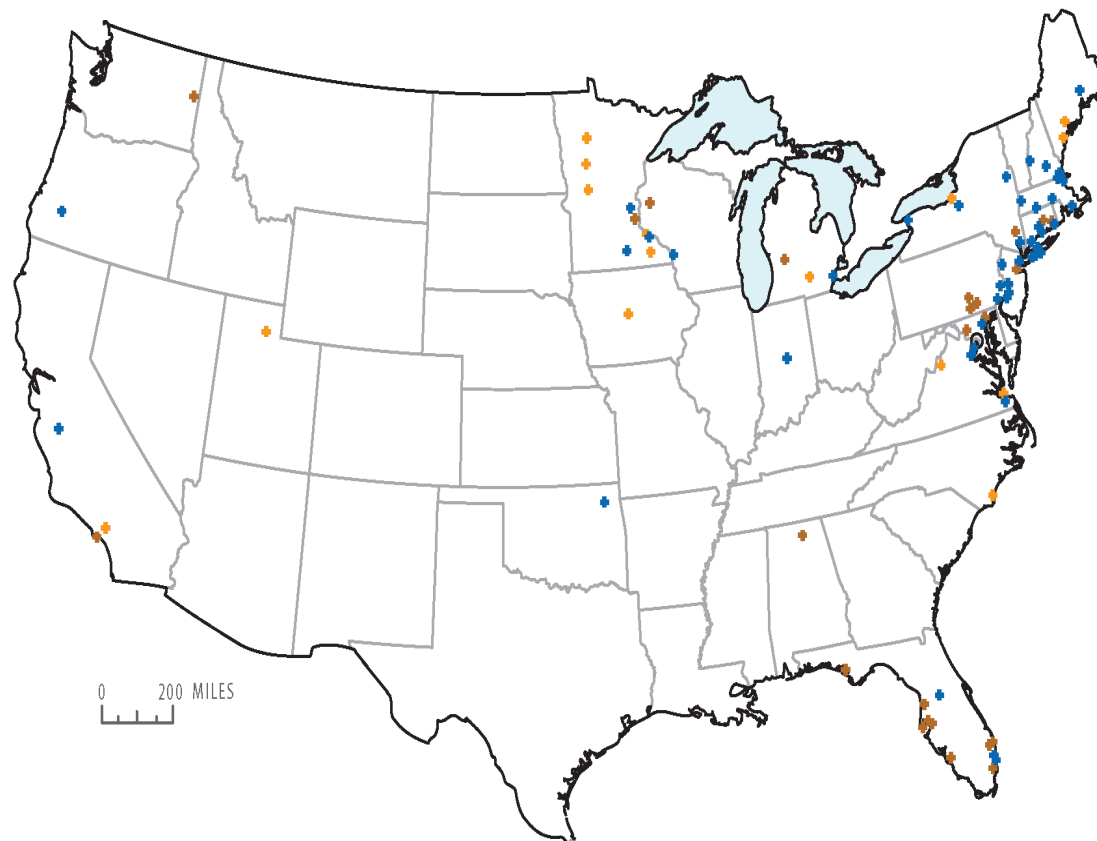


+PLANT: Roof transformation and plant activities

FROM PLACE TO PLANT
LATERAL OFFICE
CHICAGO, IL

Waste-to-Energy Facilities in the United States

Identifying Densities



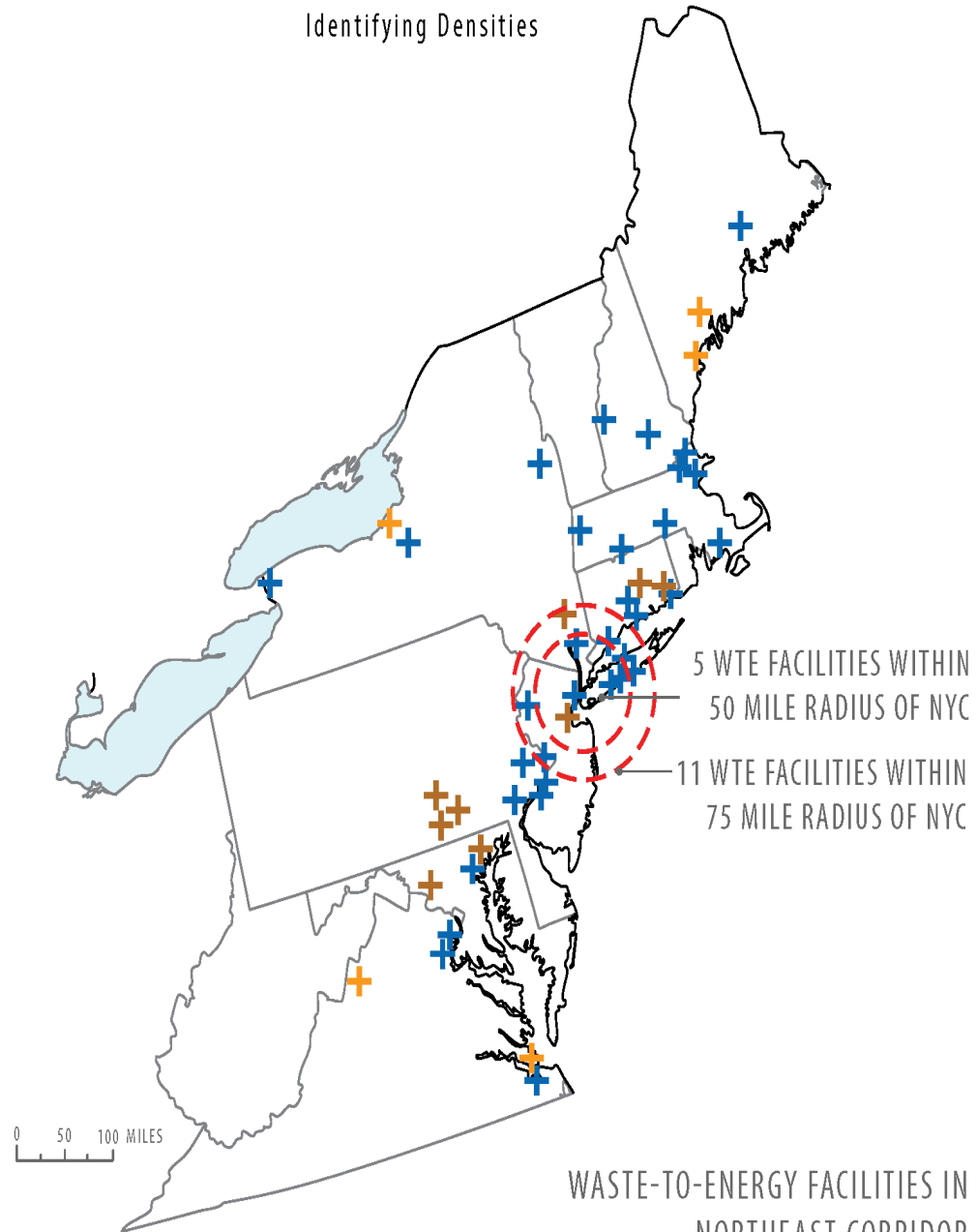
OWNER-OPERATOR STATUS

- + PUBLIC
- + PUBLIC-PRIVATE
- + PRIVATE

WASTE-TO-ENERGY FACILITIES IN
UNITED STATES
84 IN TOTAL

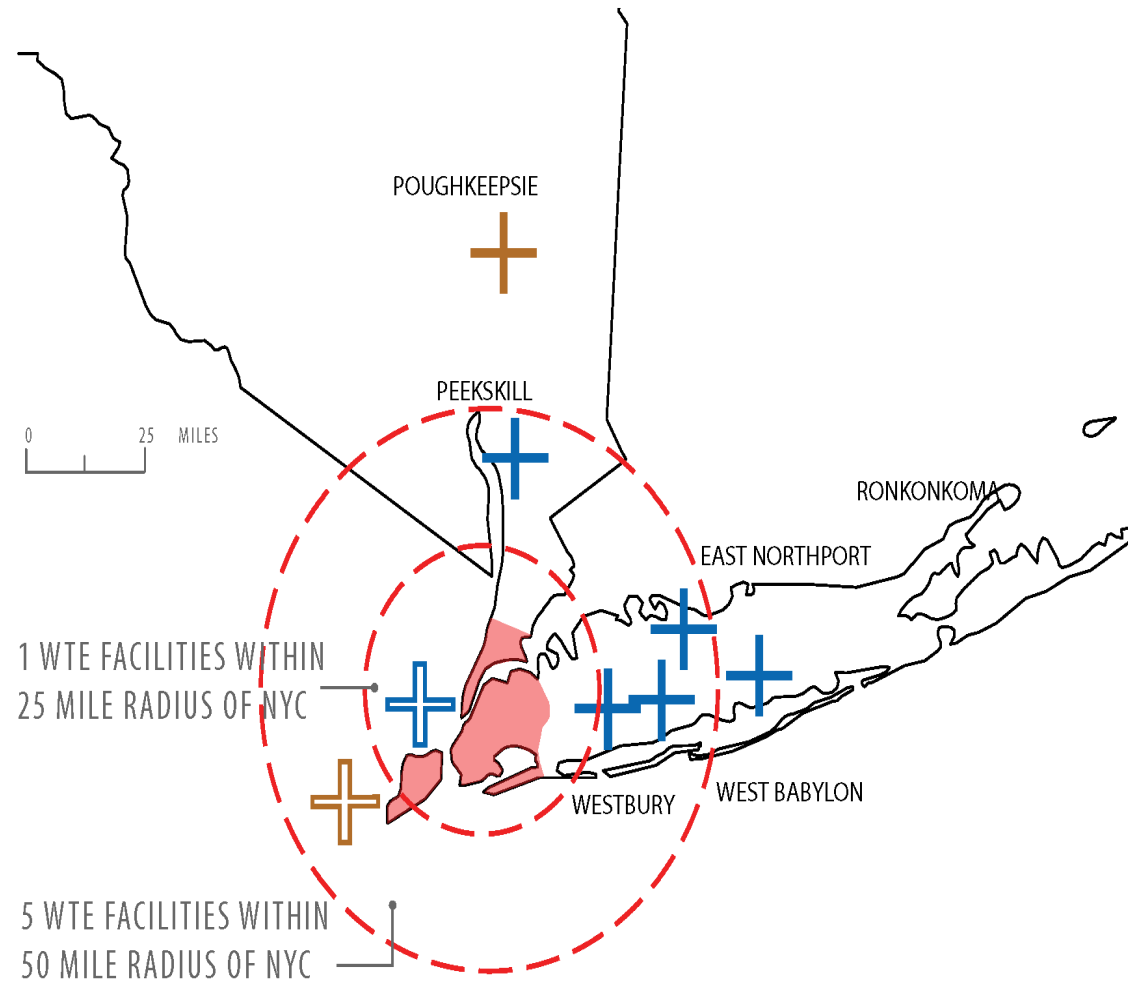
Waste-to-Energy Facilities in the United States

Identifying Densities



Waste-to-Energy Facilities in the United States

Identifying Densities

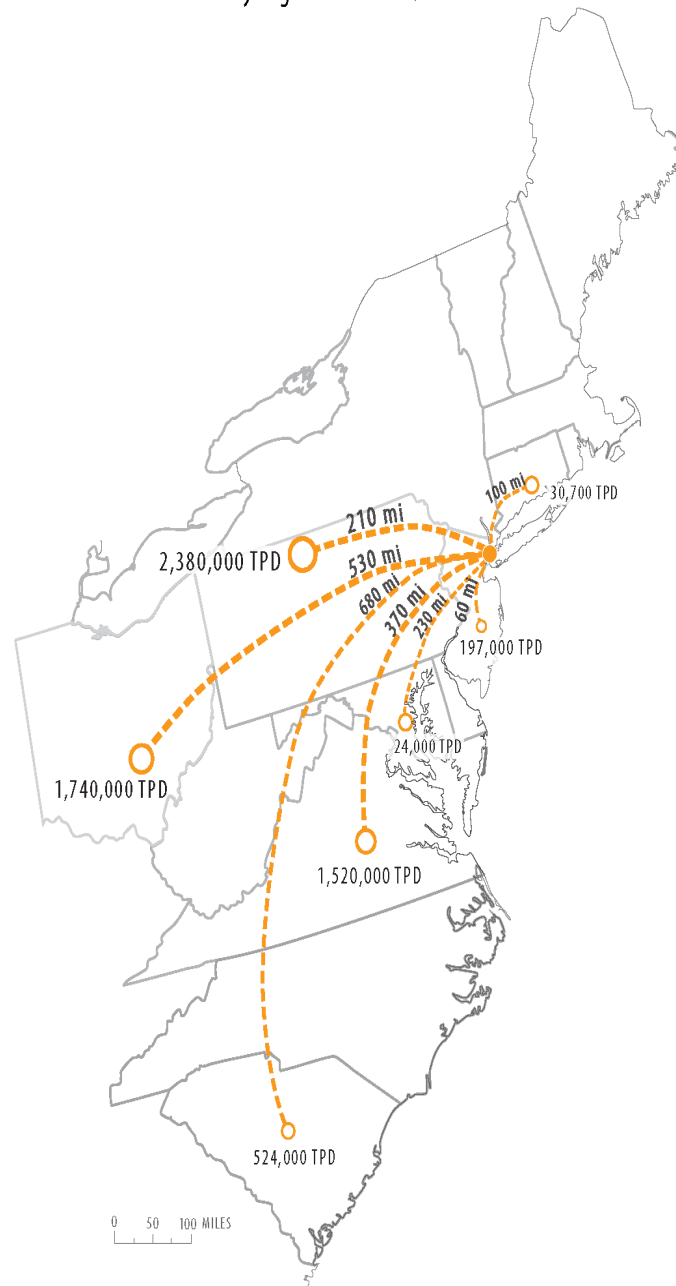


WASTE-TO-ENERGY FACILITIES IN NEW YORK STATE

10 OF 84 TOTAL

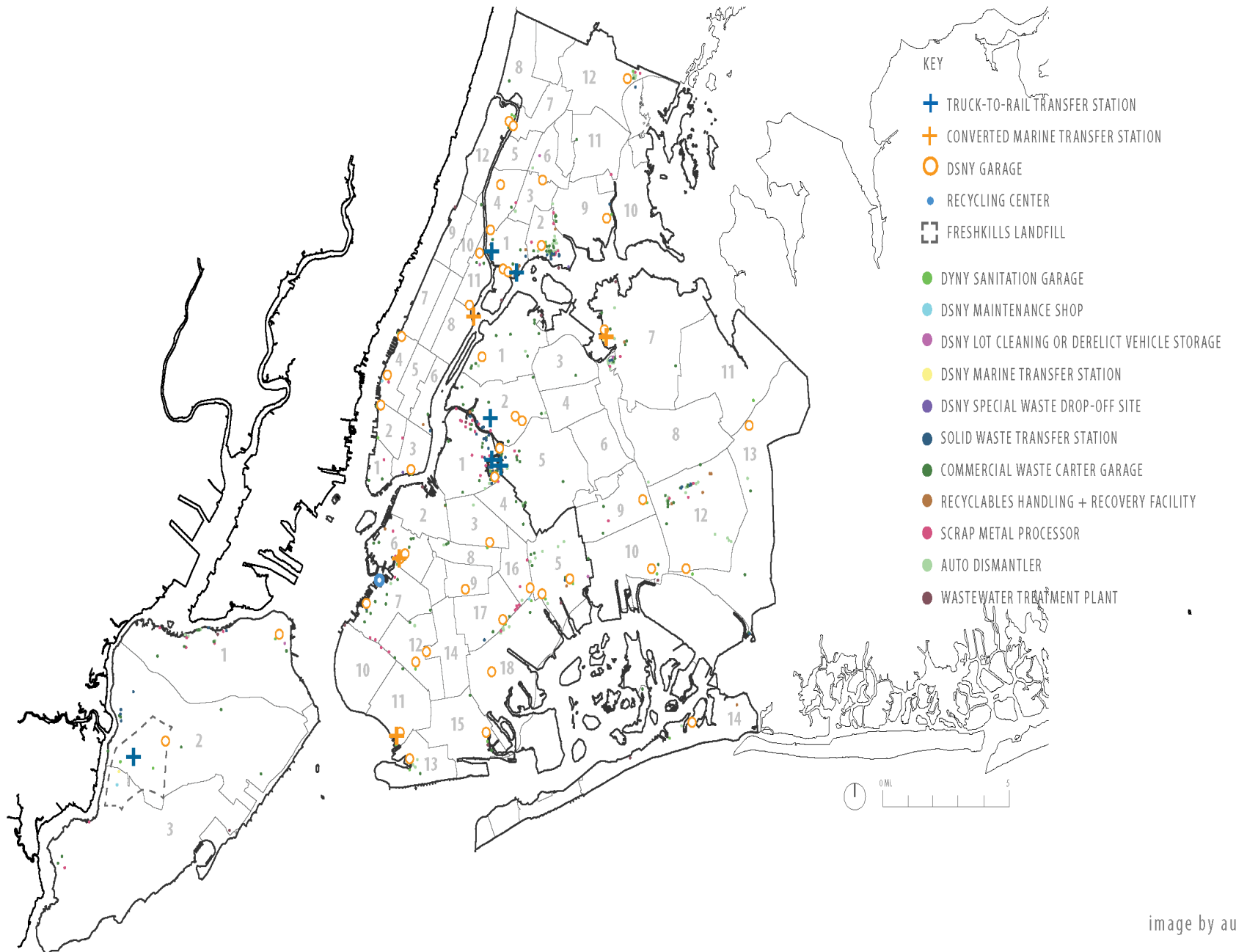
New York City's Export of Trash

Identifying Distance + Amount



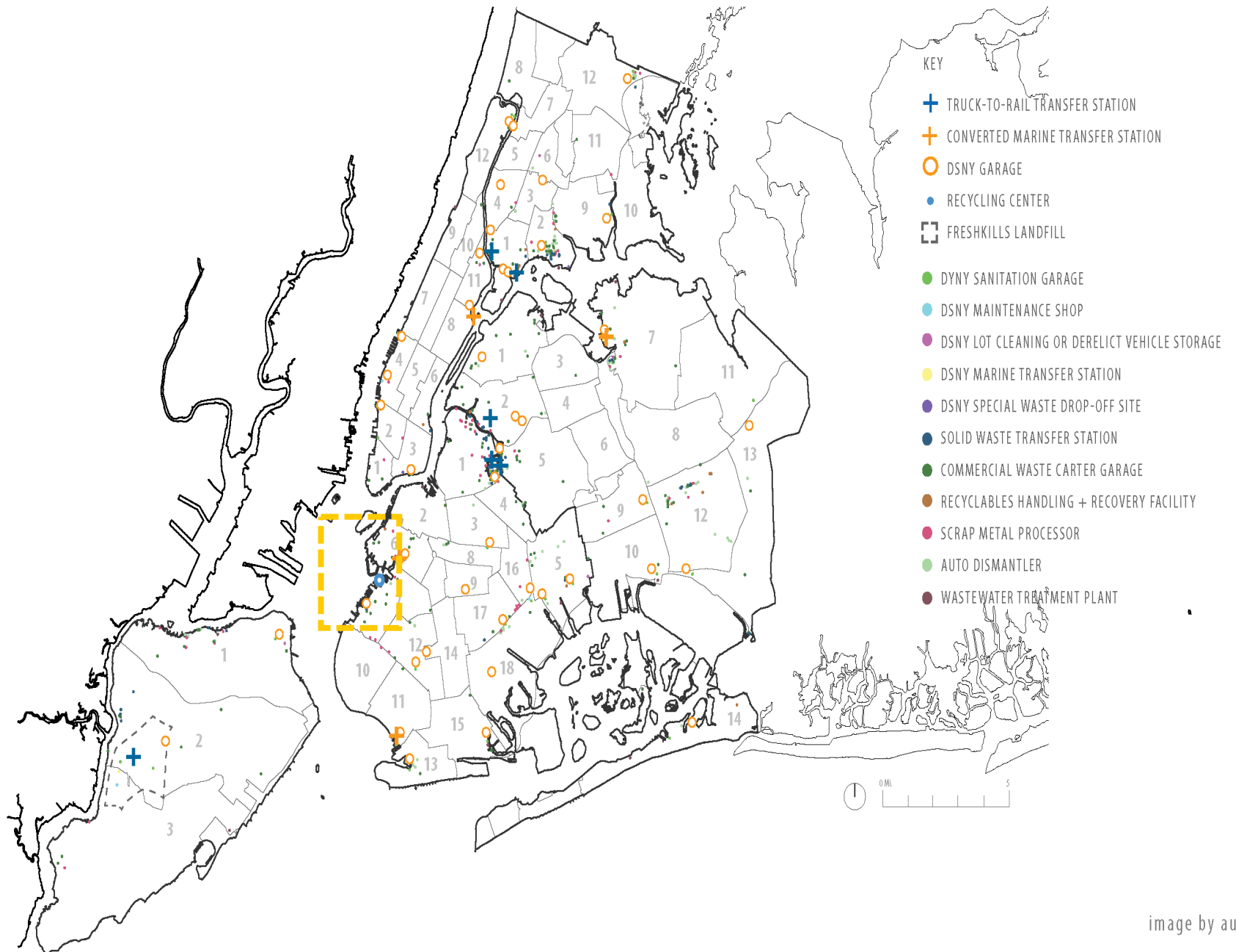
Waste Infrastructure Density of New York City

Determining Site of Intervention



Waste Infrastructure Density of New York City

Determining Site of Intervention



Sunset Park, Brooklyn



Site Context

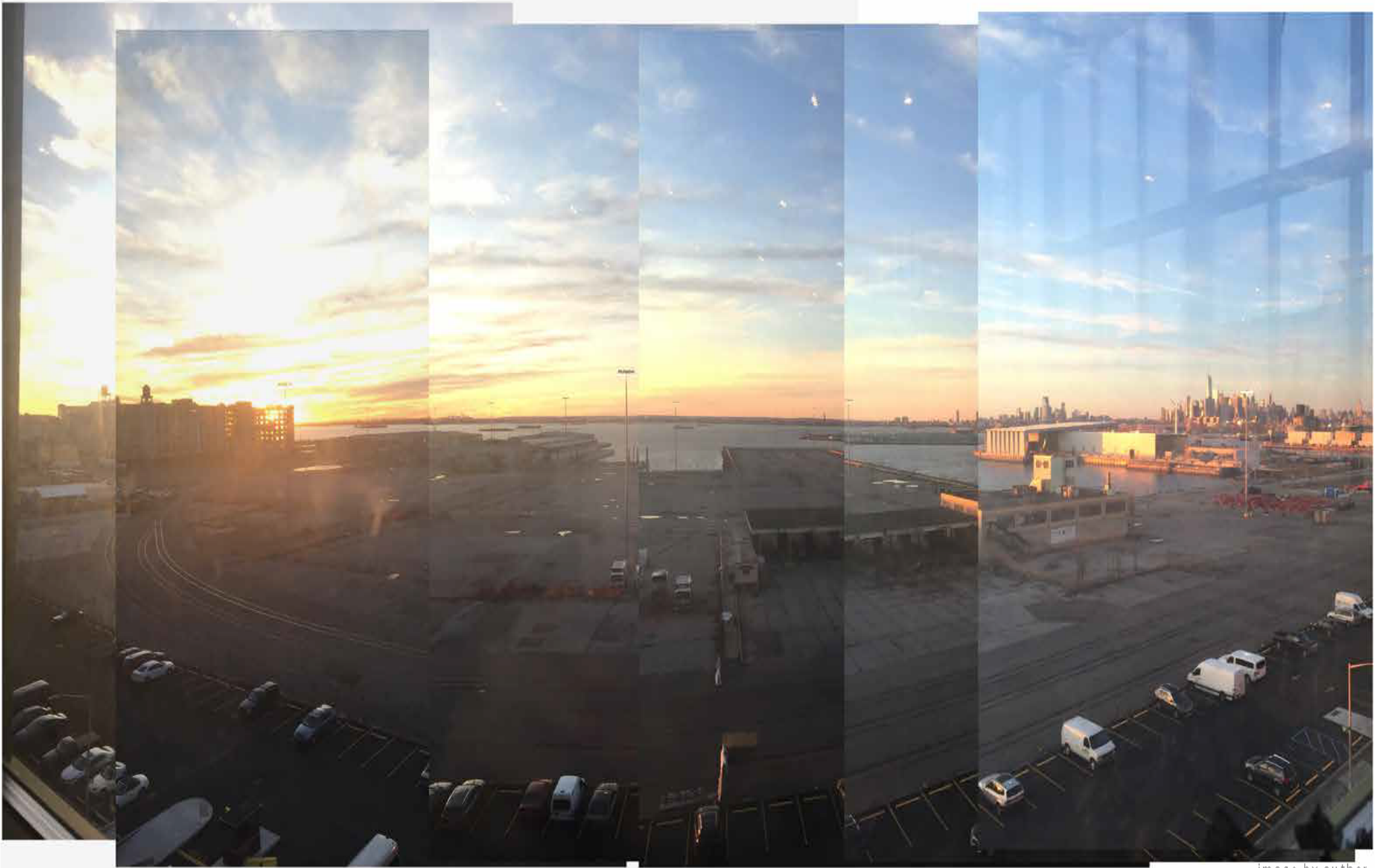
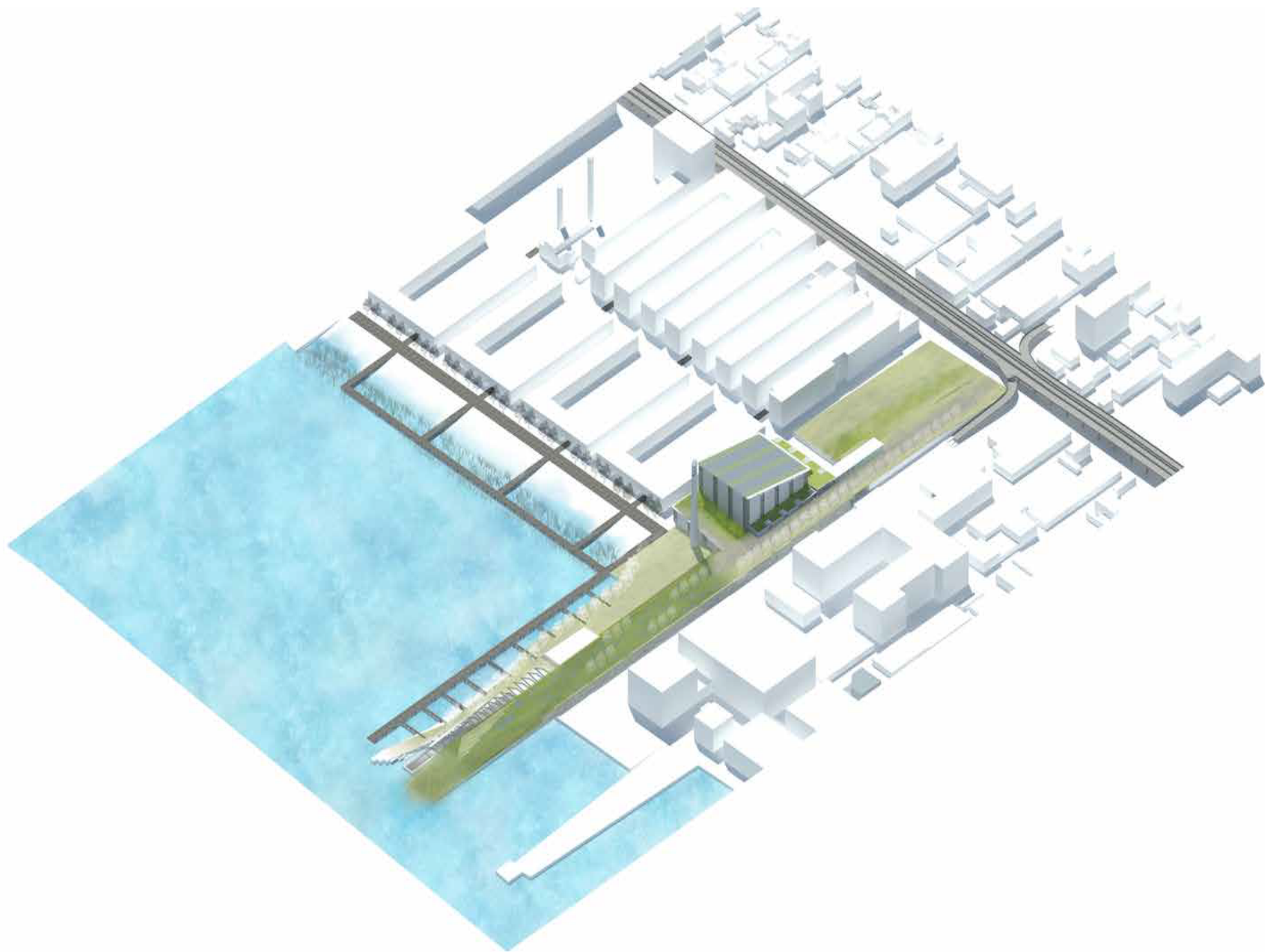
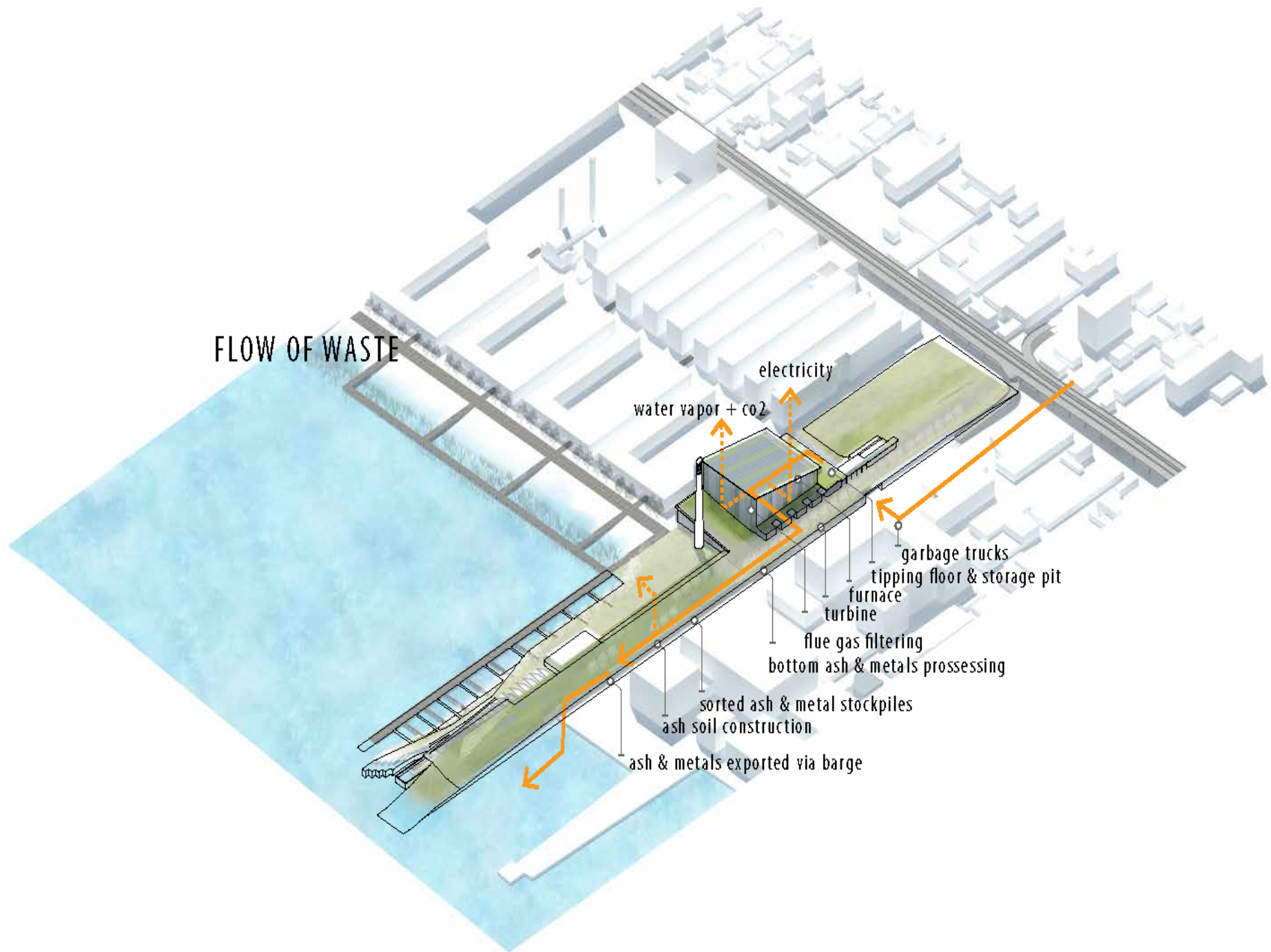


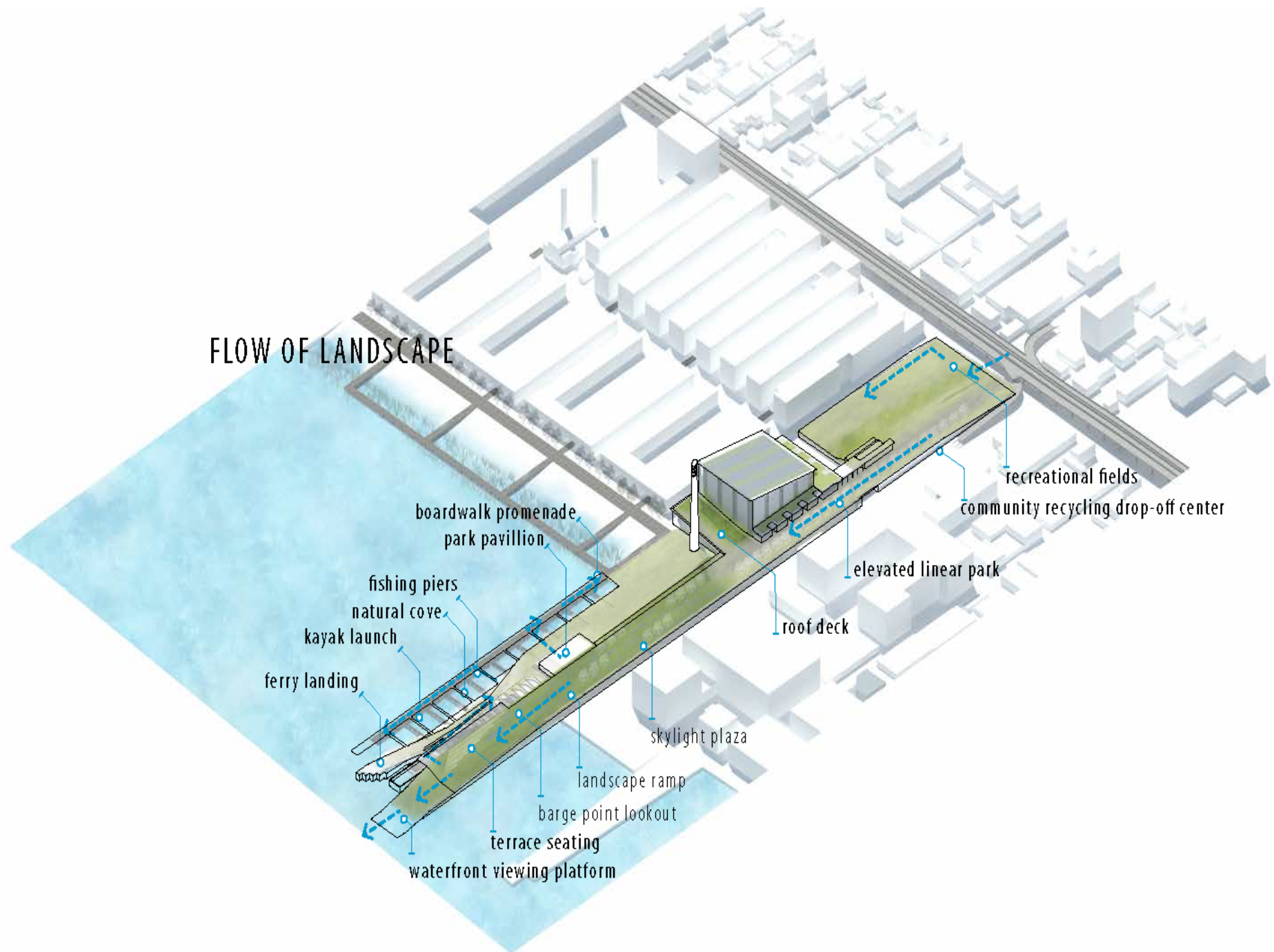
Image by author



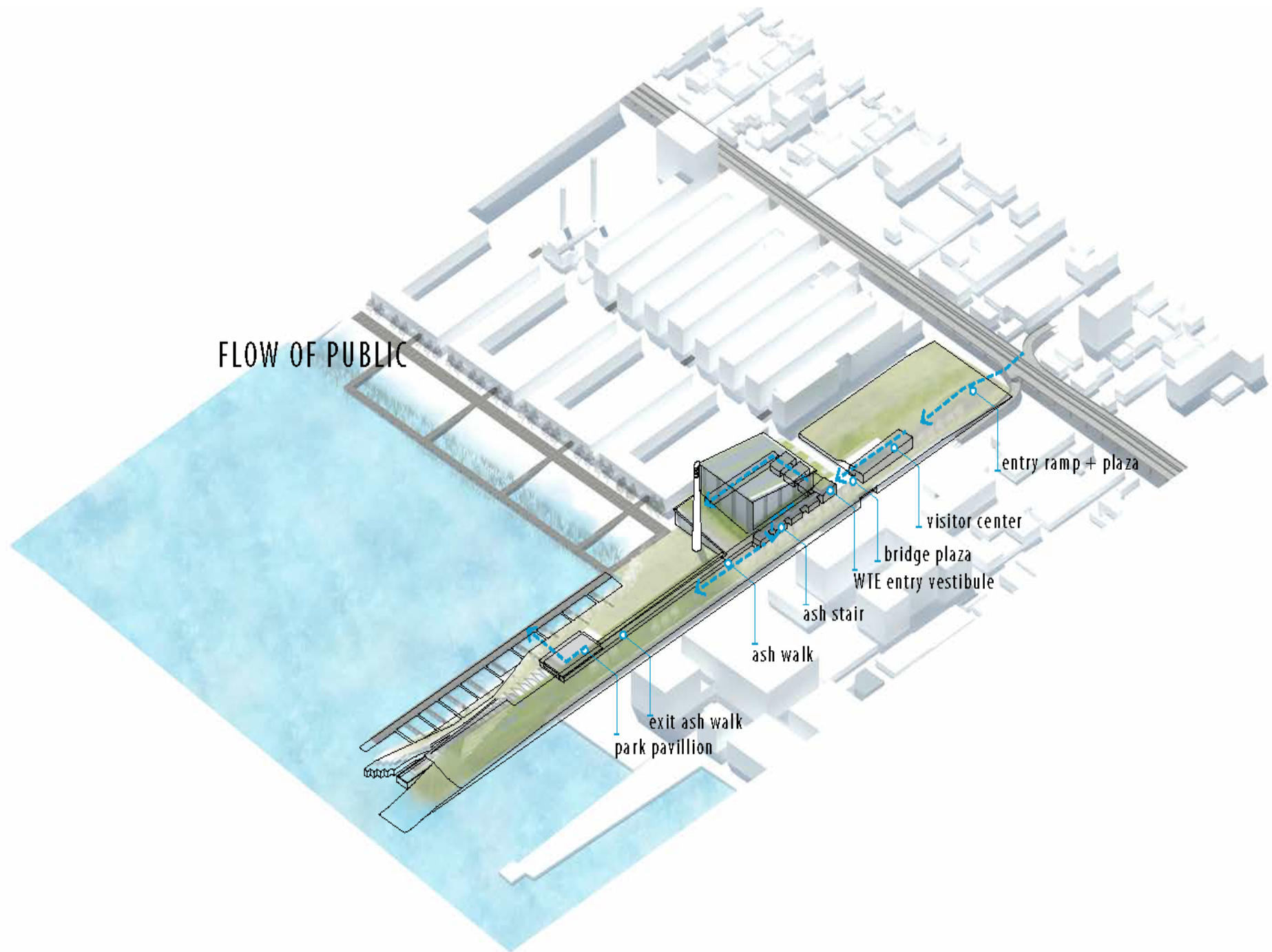
FLOW OF WASTE



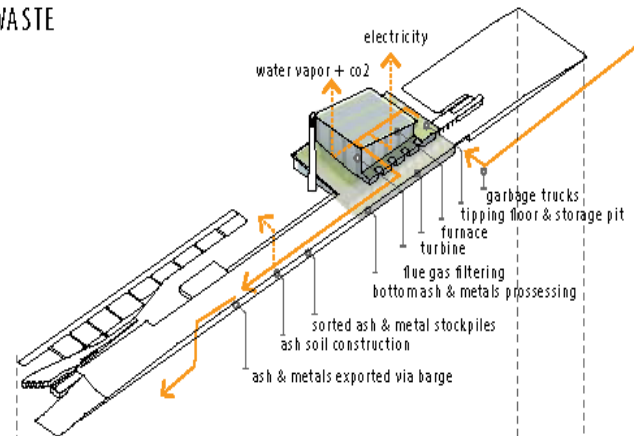
FLOW OF LANDSCAPE



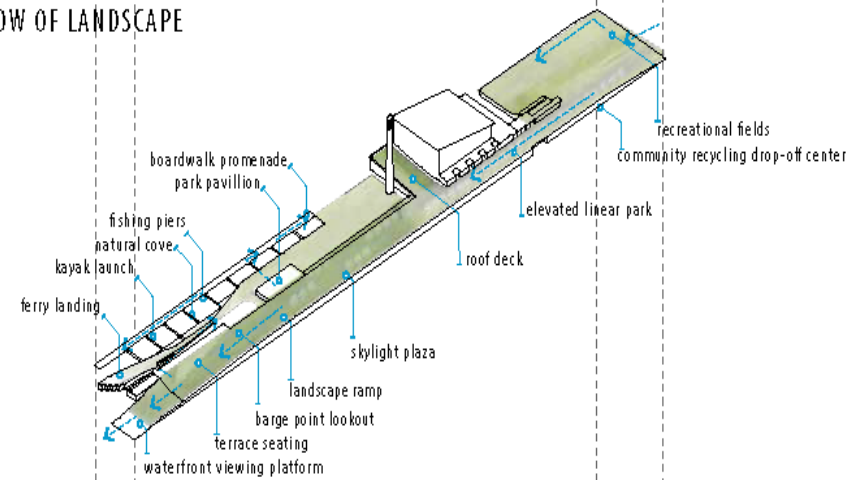
FLOW OF PUBLIC



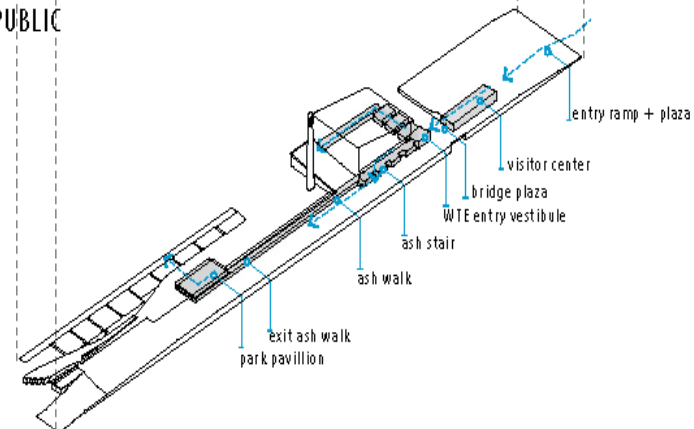
FLOW OF WASTE

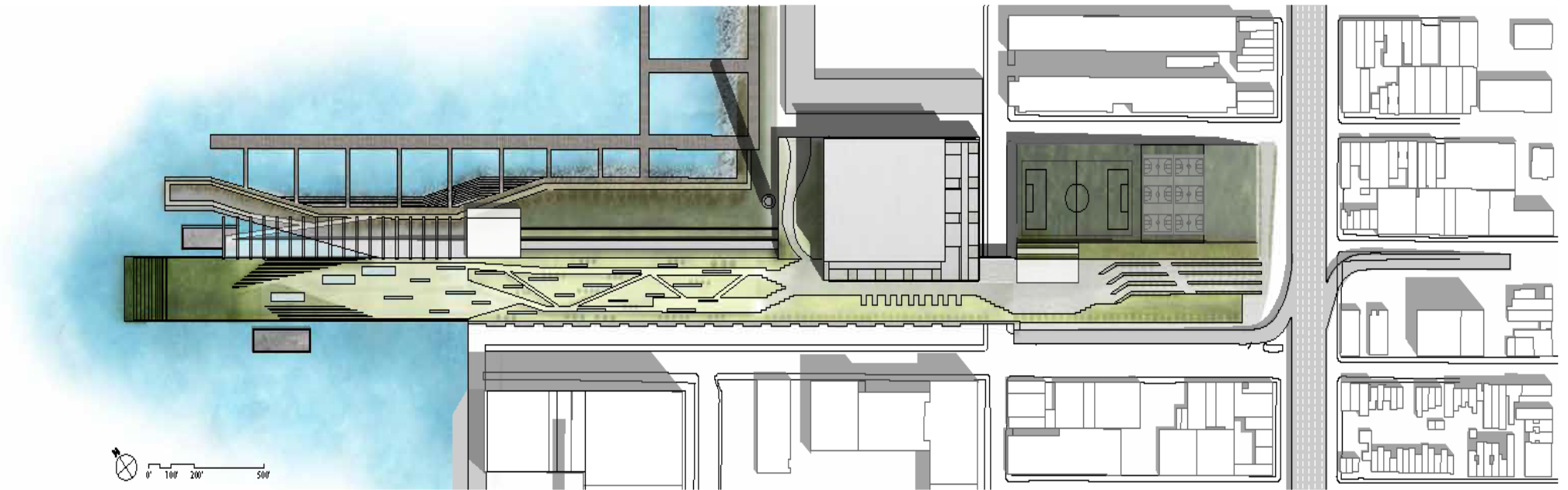


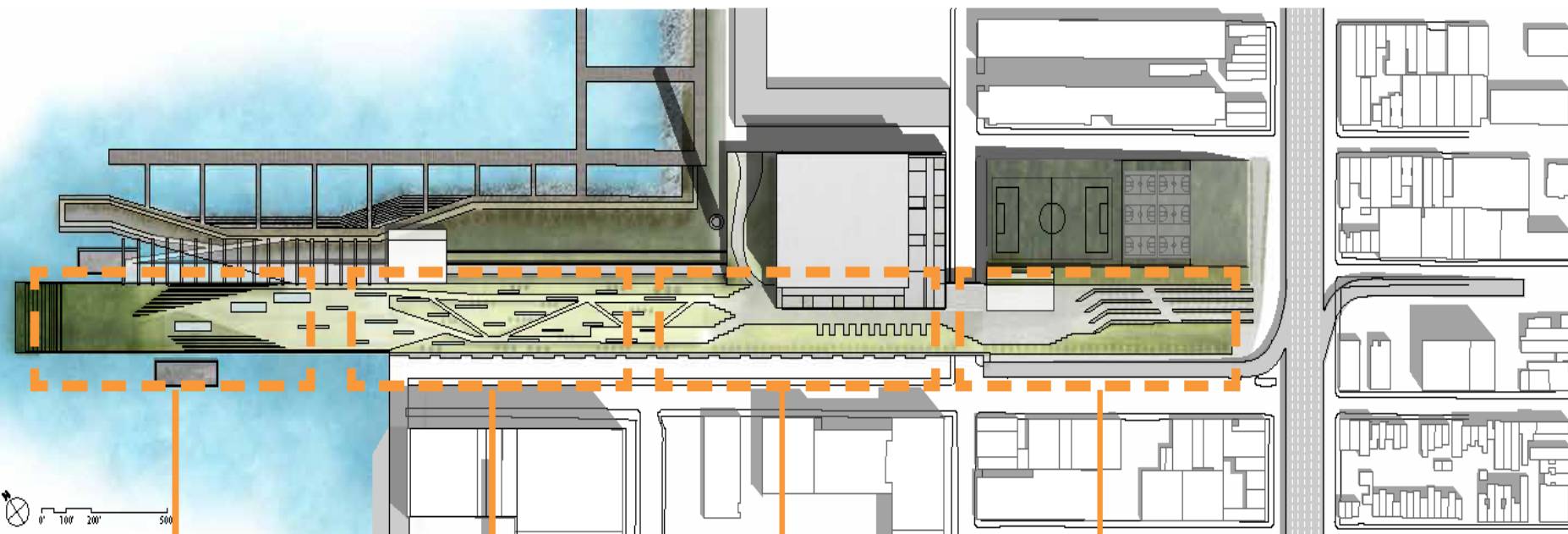
FLOW OF LANDSCAPE



FLOW OF PUBLIC





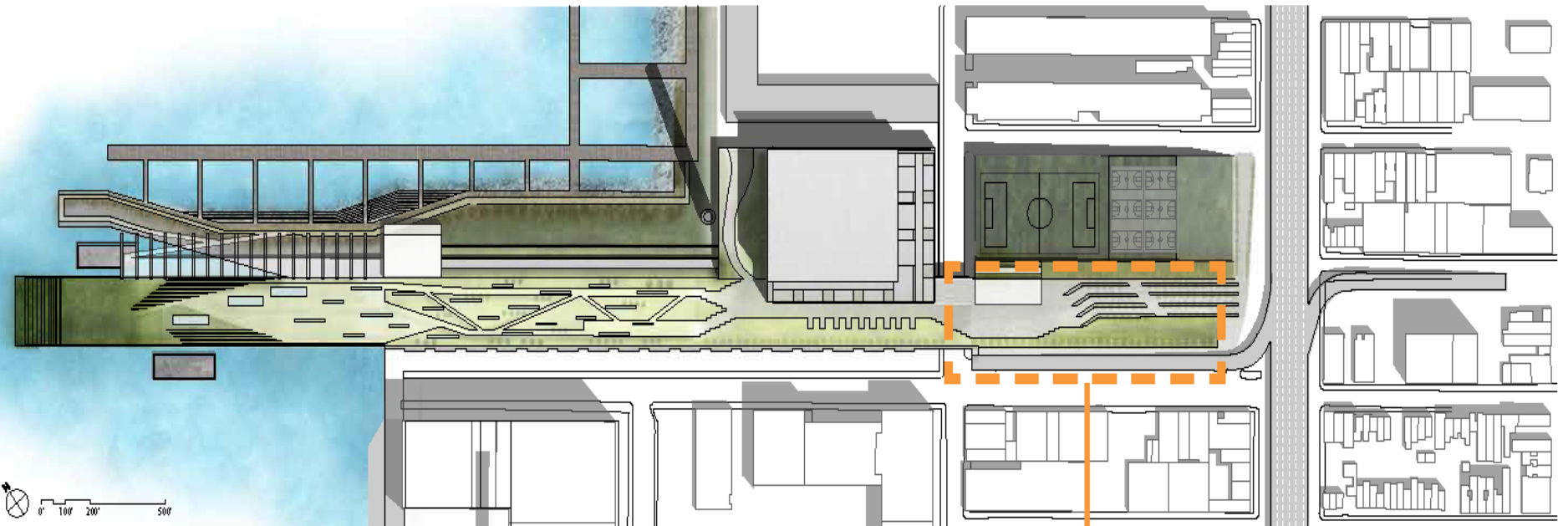


BARGE POINT

ASH WALK +
SKYLIGHT PLAZA

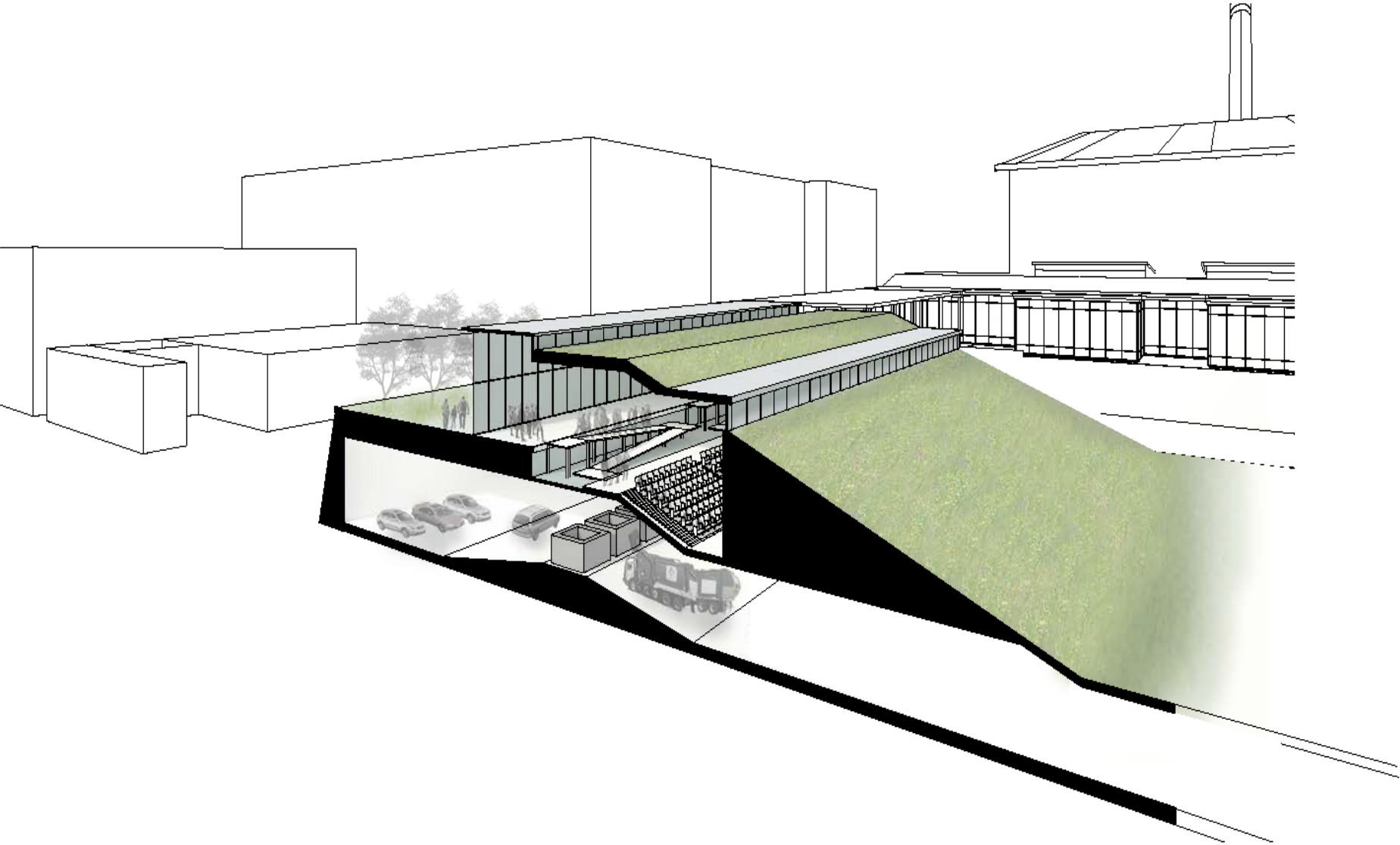
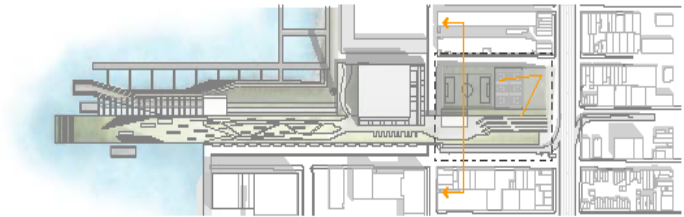
CRANE THEATER

VISITOR +
RECYCLING CENTER

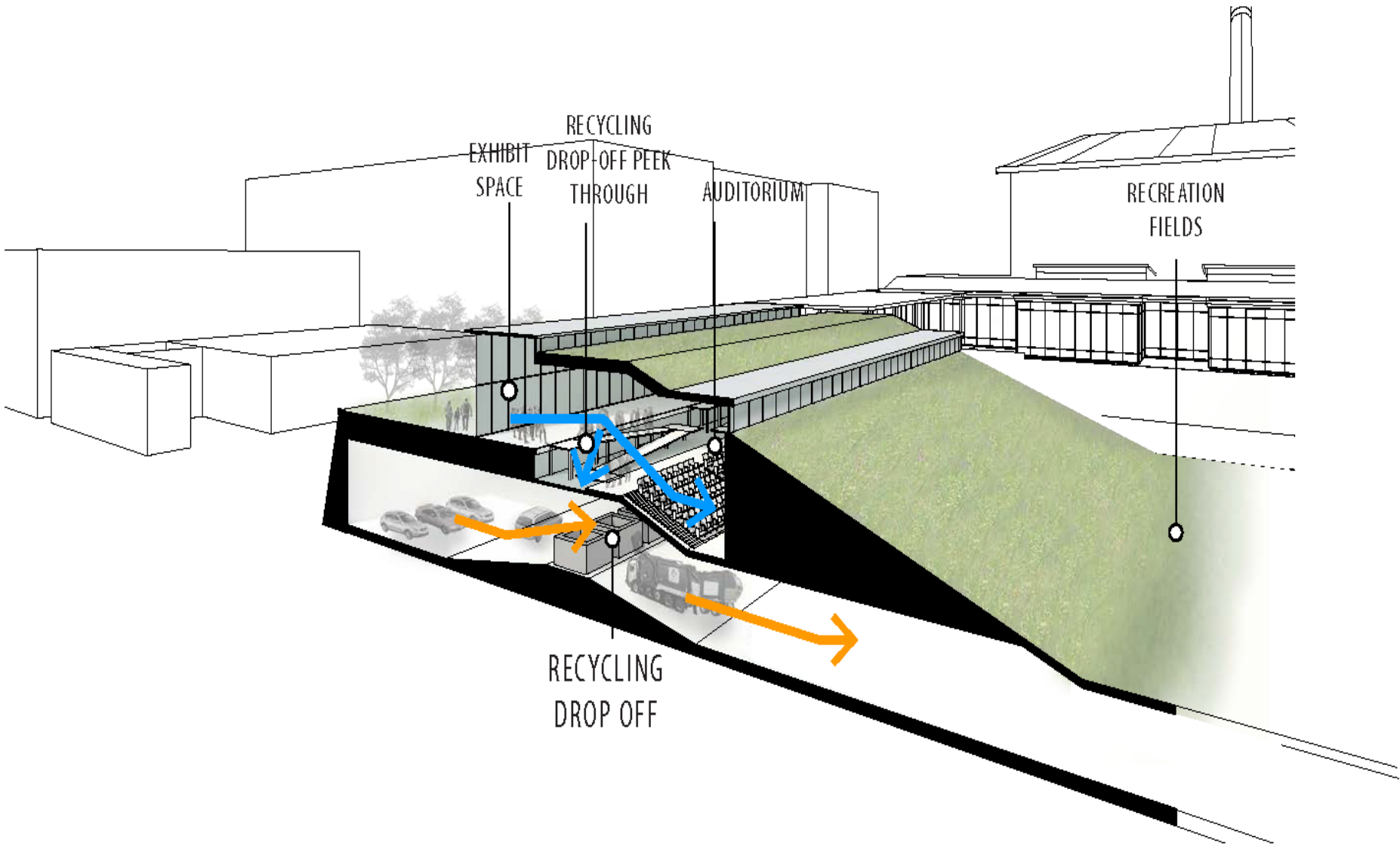
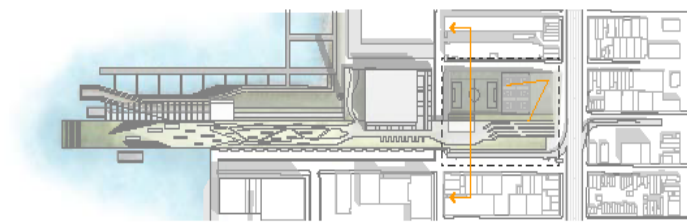


VISITOR +
RECYCLING CENTER

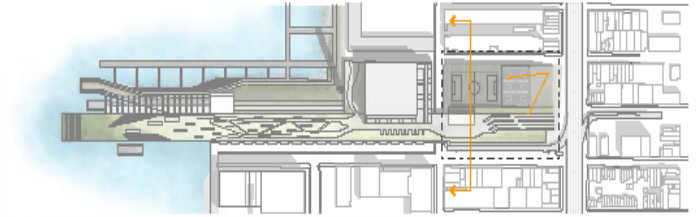
VISITOR + RECYCLING CENTER

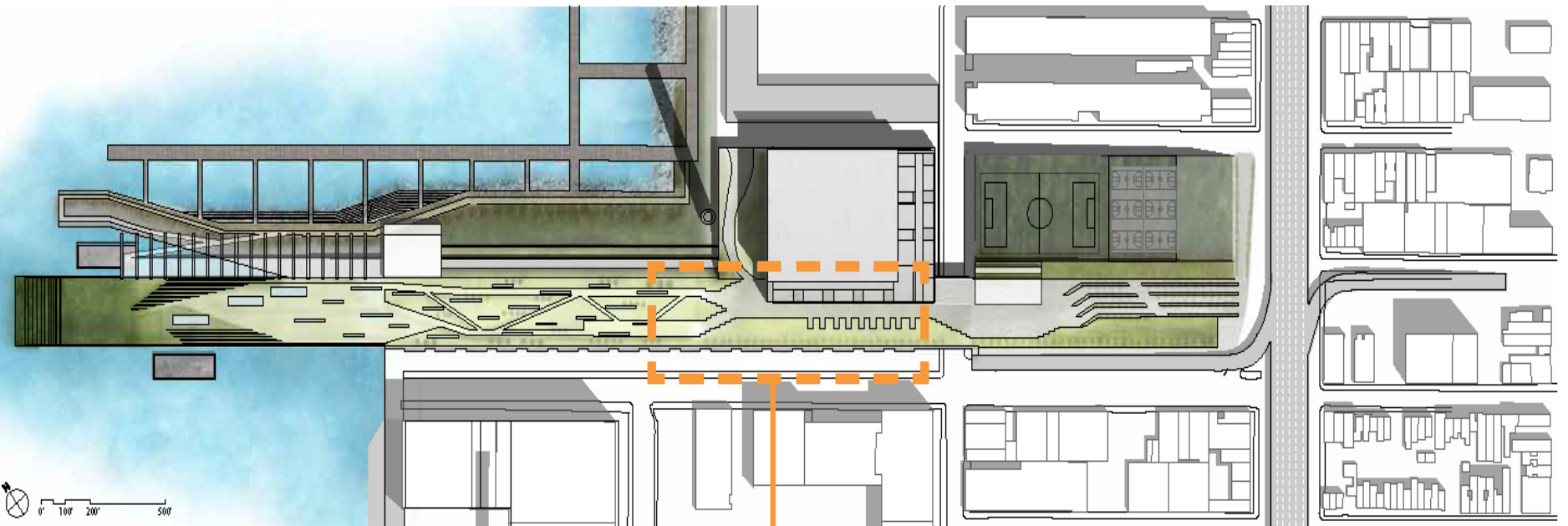


VISITOR + RECYCLING CENTER



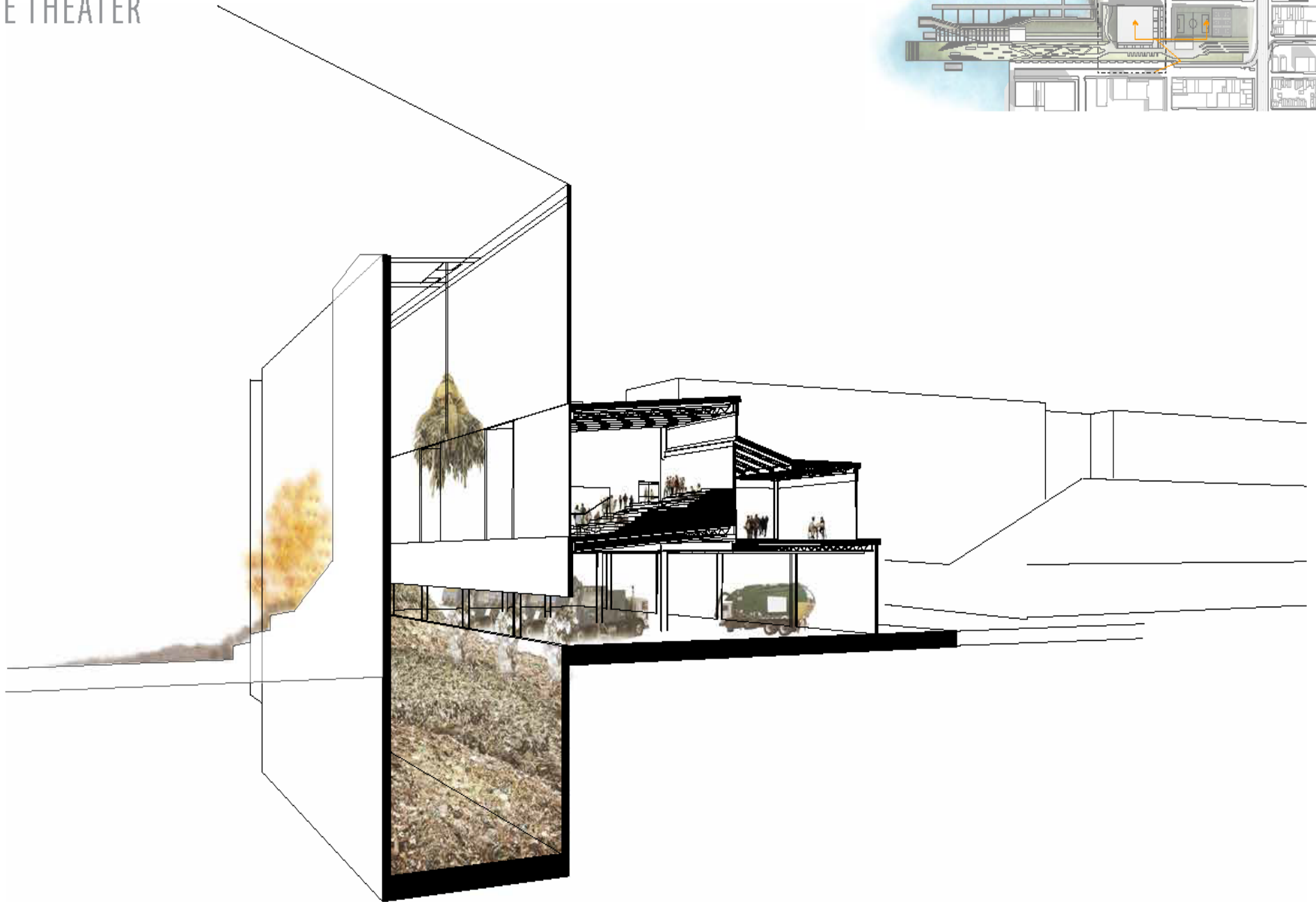
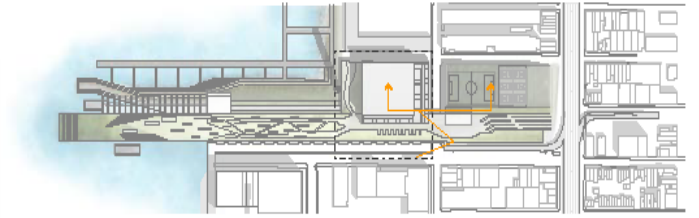
VISITOR + RECYCLING CENTER



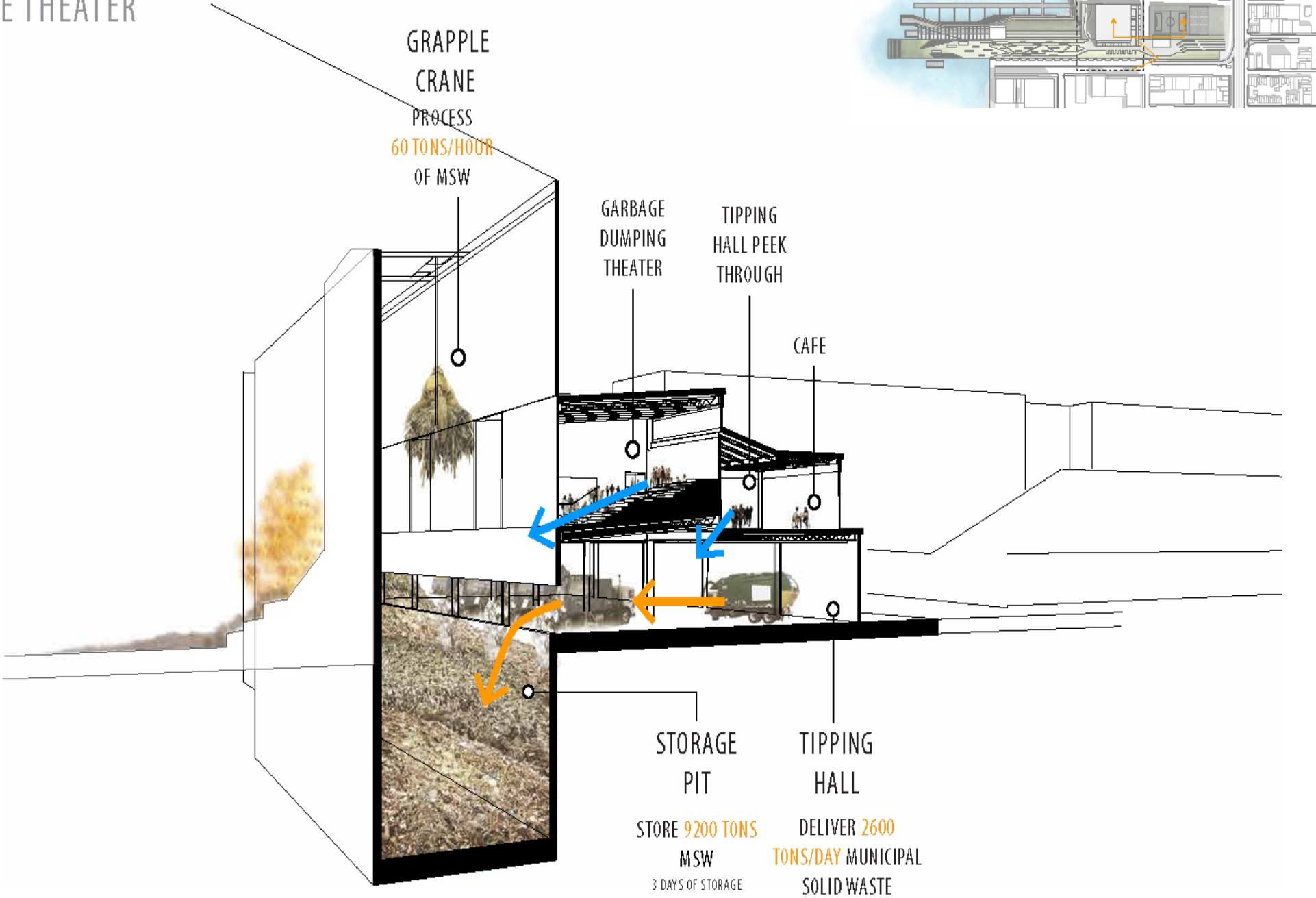


CRANE THEATER

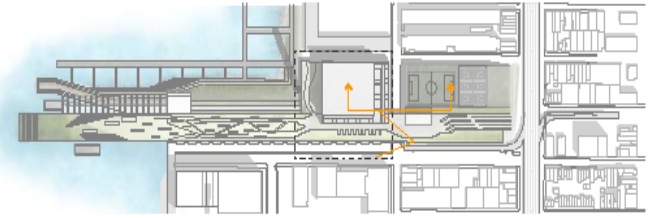
CRANE THEATER

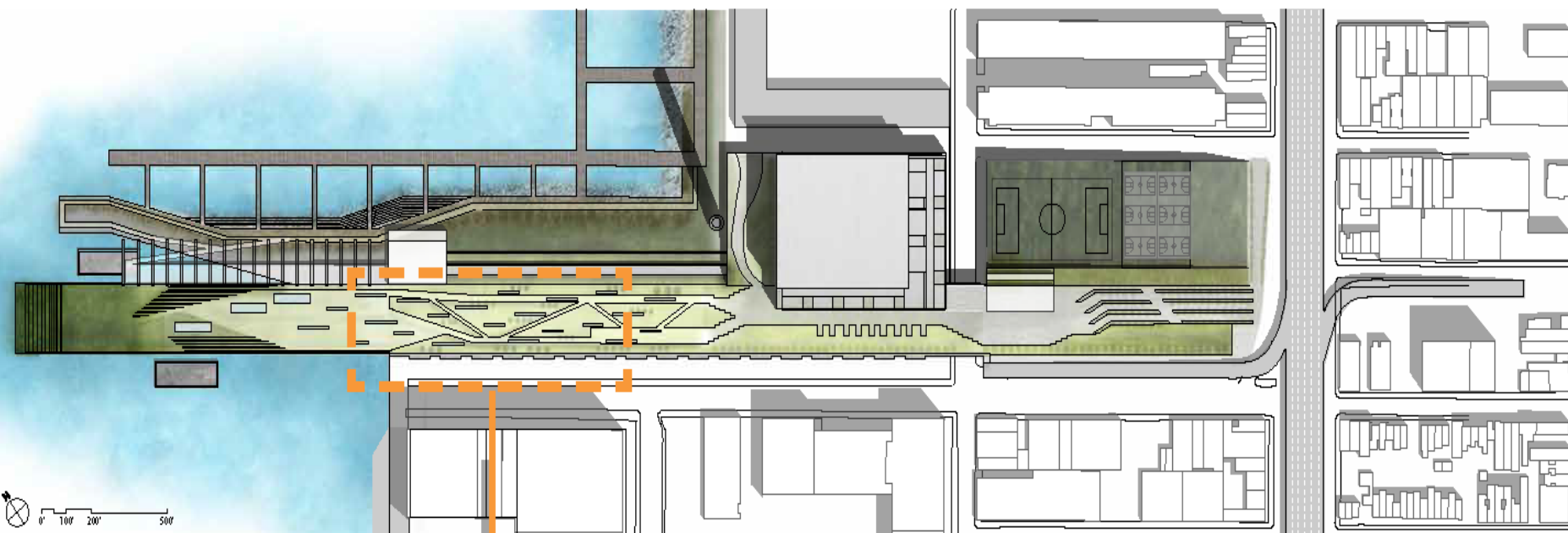


CRANE THEATER



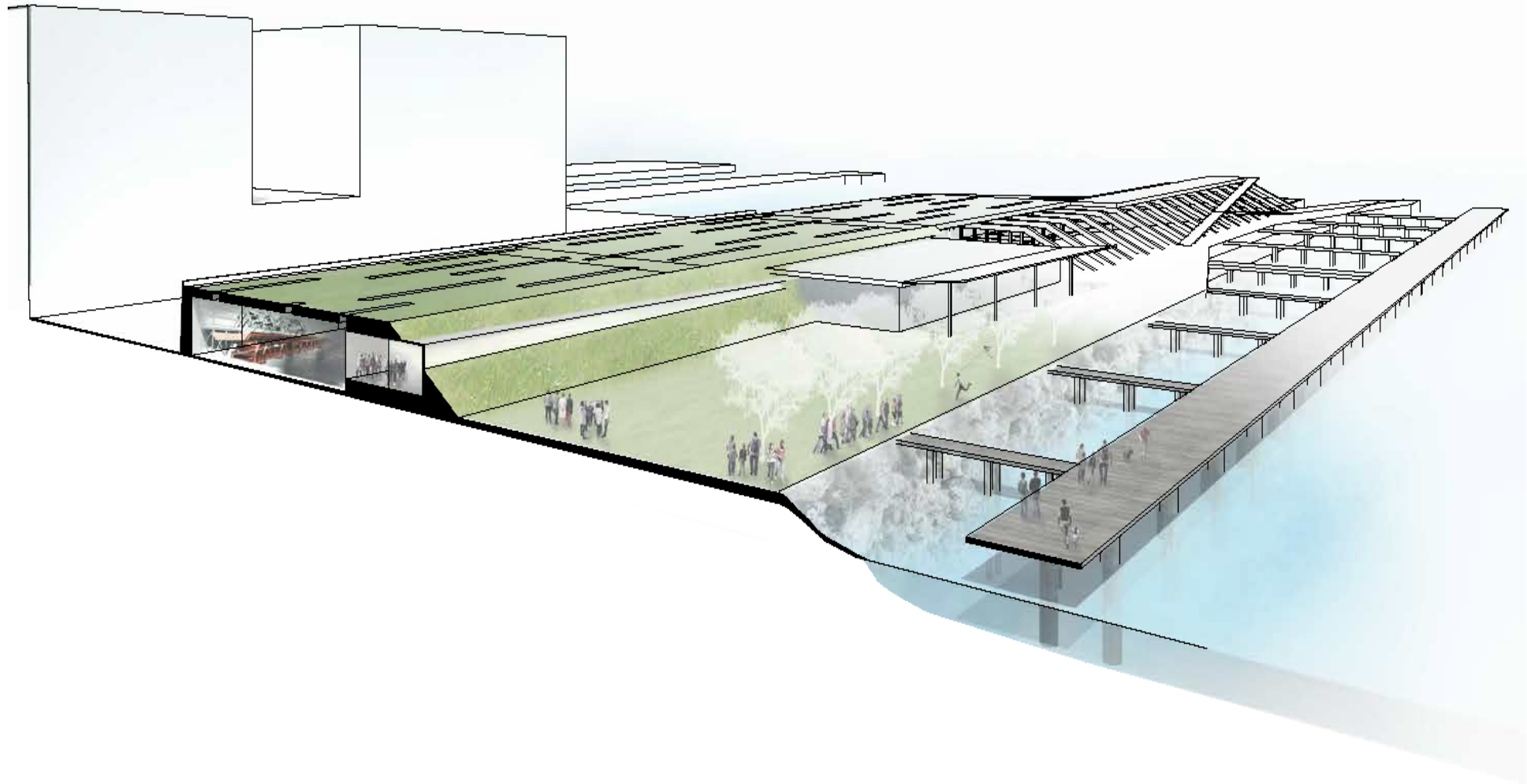
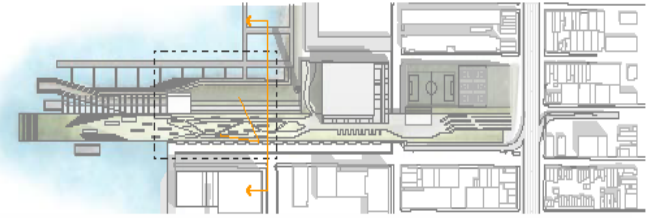
CRANE THEATER



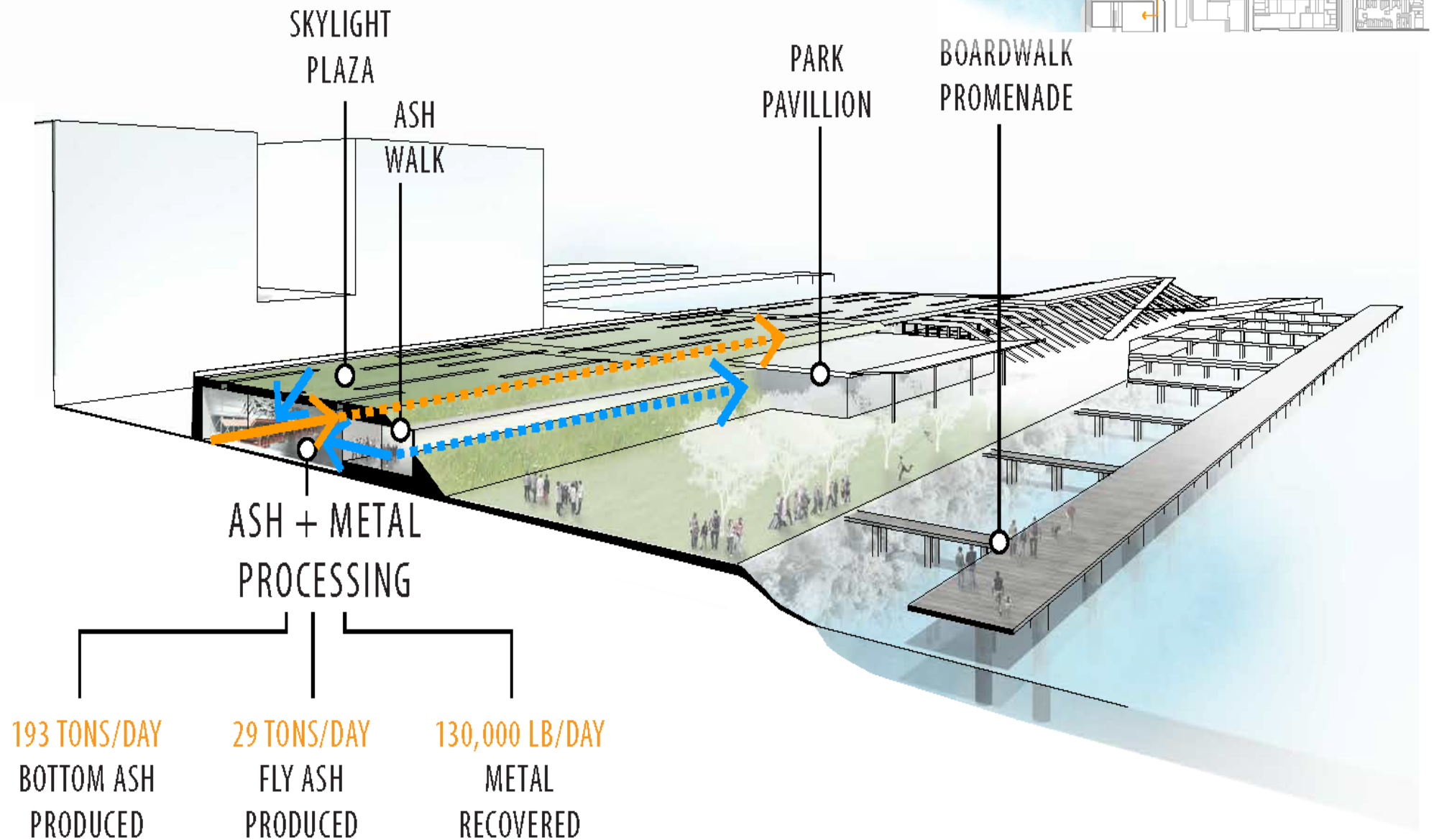


ASH WALK +
SKYLIGHT PLAZA

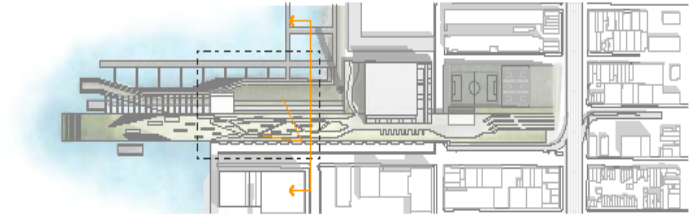
ASH WALK + SKYLIGHT PLAZA

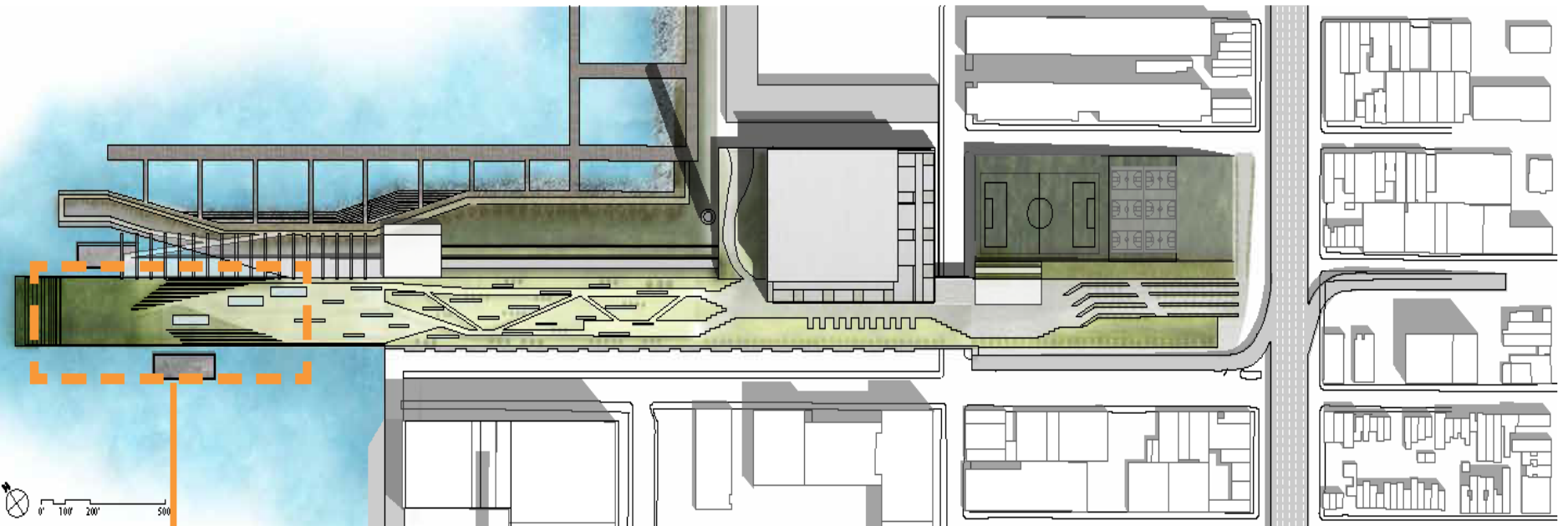


ASH WALK + SKYLIGHT PLAZA



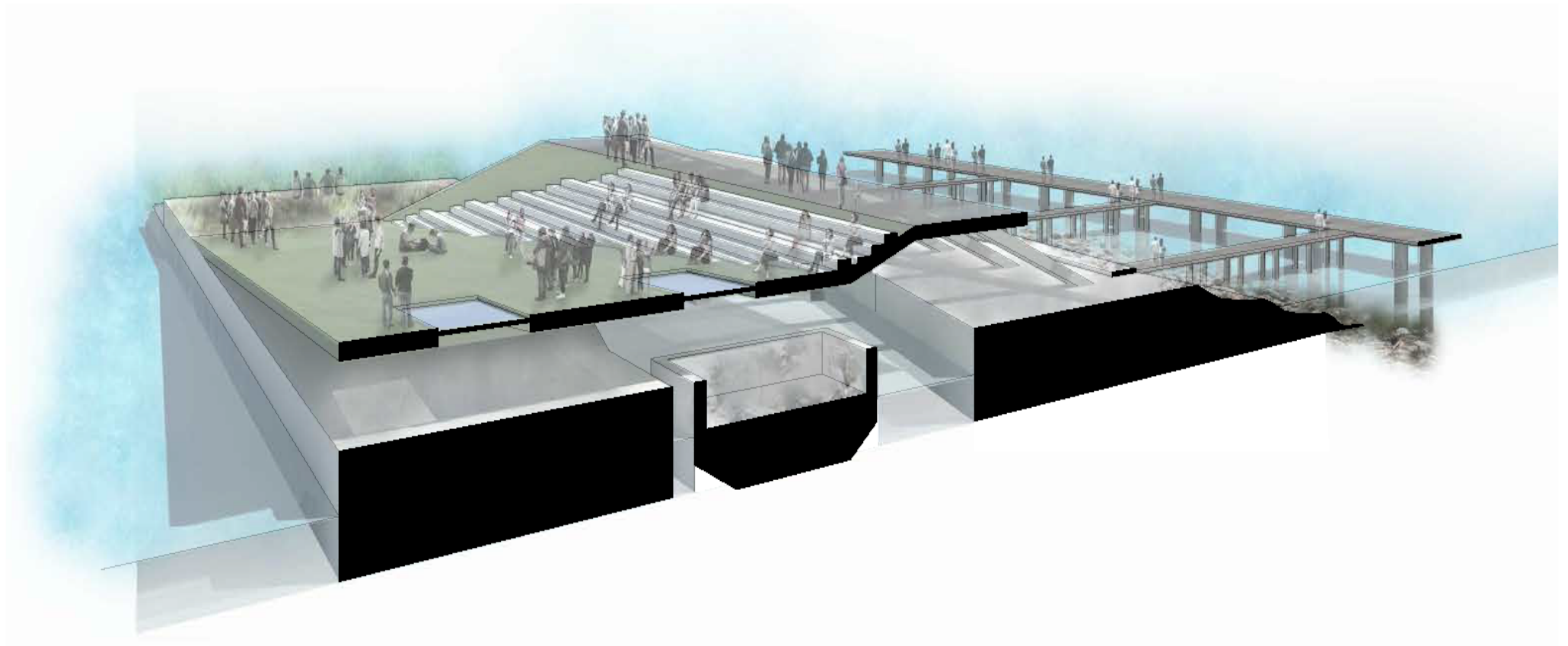
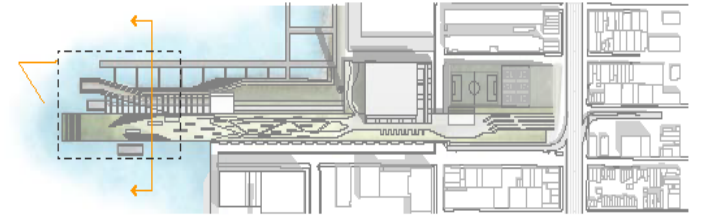
ASH WALK + SKYLIGHT PLAZA



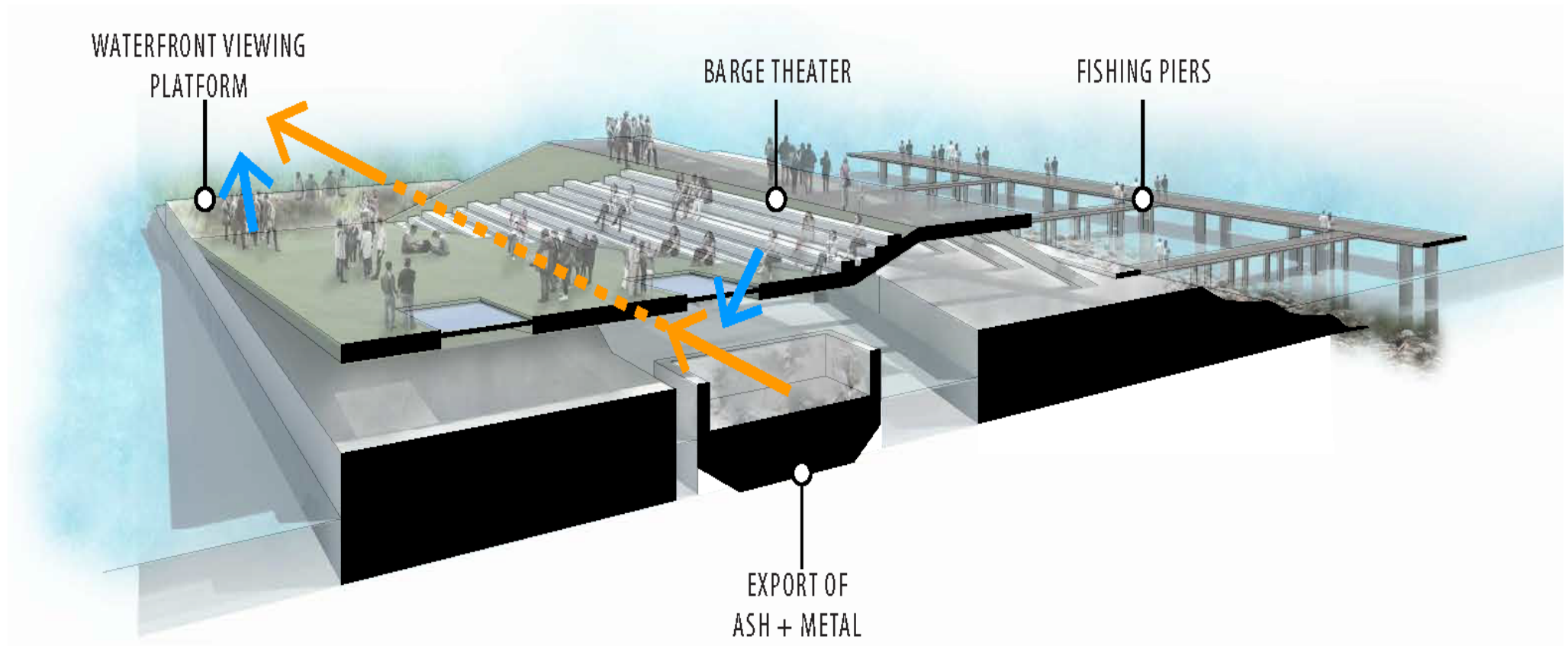
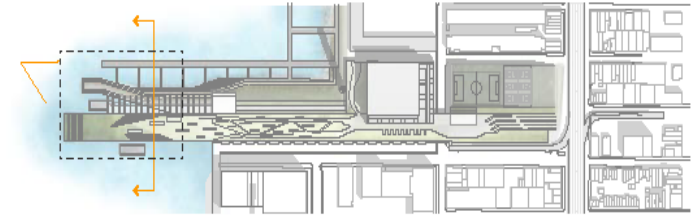


BARGE POINT

BARGE POINT



BARGE POINT



BARGE POINT

