Public Spaces | Public Life

BLUE URBAN PLAY INVITING URBAN PLAY ON SEATTLE'S NORTH WATERFRONT

2014 Scan | Design Interdisciplinary Master Studio University of Washington, College of Built Environments



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INSTRUCTORS

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Scan Design Foundation by Inger + Jens Bruun Gehl Architects Heidi Hughes Friends of Waterfront Seattle

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Jiaxi Guo + Jason Gover Emily Ritchie + Arisa Nakamura + Ivan Heitmann Abood Alamoudi + Yoonshin Kwak Doris McMahon + Seungwon Song + Karen Chen Hailey Mackay + Kate Haefele + TJ Bandrowski Christel Game + Katy Scherrer Arianna Allahyar

AFTERWORD

Grayson Morris Jason Garnham Sarah Giannobile + Kenna Patrick + Winnie Gu Roxanne Lee + Will Shrader + Jennie Li Stevie Koepp + Rebecca Christy + Rhys van Bemmel Jorge (Coco) Alarcon + Ying-Ting Chen Zhehao Huang + James Wohlers





FOREWORD

The focus of our 2014 ScanlDesign Interdisciplinary Master Studio has been to:

- Imagine and develop an active, vibrant and multi-dimensional public realm that invites a range of play
 activities on Seattle's Central Waterfront
- Propose design interventions that reclaim the waterfront as an ecological space
- Identify strategies and opportunities to connect the Central Waterfront with the rest of the city and bay.

These tri-partite goals align with the priorities developed by the guiding Central Waterfront Committee and approved by City Council, which emphasize an innovative sustainable shoreline design, connection of city to bay, improved access and mobility, honoring of past to future, and a waterfront that serves all. With imminent reconfiguration of Alaskan Way, the northern segment of Seattle's Central Waterfront offers rich opportunities for better public, pedestrian, bicycle and ecological space, to achieve these principles and goals.

In response, our group of 31 interdisciplinary design students have imagined compellingly playful, ecological, and multi-dimensional public spaces that meet these goals. We were guided by principles, examples and teachings from Gehl Architects and our experiences together in Denmark and Sweden, made possible through the generous sponsorship of the ScanlDesign Foundation. During our two-week September tour we experienced numerous exemplary waterfronts and many playful public spaces, in Malmo and Helsingborg, Sweden and in the Danish cities of Copenhagen, Helsingor and Aarhus, analyzing and documenting their successful design qualities. The group bicycled extensively throughout Copenhagen and Malmo, experiencing those cities' renewed neighborhoods, heralded waterfront architecture, and thriving public realm. The staff of Gehl Architects and Cititek, Copenhagen's bicycle and climate adaptation planners, practicing urban designers and architects from the firms of COBE, Schønherr, and Tredje Natur, Professor Tom Nielsen at Aarhus Architecture School, and professional tour guides provided insight into the cities' historical development and contemporary planning issues, elucidating design approaches to successful projects and sharing personal perspectives. Back in the studio in Seattle, students applied the lessons they learned to our North Waterfront project, benefitting from an additional two weeks of expert guidance from Bianca Hermansen of Cititek.

We have many people to thank for this remarkable opportunity in teaching and learning. Without the support of the ScanlDesign Foundation, we could not have been so inspired by our experiences in Scandinavia or so deeply integrated tangible learnings into our design work. We are sincerely appreciative of Bianca Hermansen's generous, clear and insightful teaching and critique, and of her and Gehl Architects' illuminating lectures and tours. Architect Paul Olson provided invaluable logistics support and led our graphic explorations, helping to expand and solidify our perceptions during the study tour. We owe thanks to the many people in Seattle who helped us understand the conditions, forces, and potentials for this northern waterfront segment, and provided feedback on our work. We are also sincerely appreciative of the Friends of Waterfront Seattle, who with Heidi Hughes's support and enthusiasm, hosted our month-long exhibition of work focusing on the students' temporary waterfront activation proposals at the City's new Waterfront Space. We are ever grateful to our capable teaching assistant VeraEve Giampietro for her invaluable role in the study-tour, studio and design of this document, and to Hailey Mackay for her key contributions to the document's final production. We thank you all, and hope that these ideas for establishing an innovative, ecological public realm will help transform Seattle's North Waterfront into an active, playful, healthy waterfront for all.

Nancy Rottle Associate Professor, Landscape Architecture, University of Washington Jim Nicholls Senior Lecturer, Architecture, University of Washington Leann Andrews Lecturer, Doctoral Candidate in the Built Environment, University of Washington



University of Washington I College of Built Environments

ITINERARY

FRIDAY AUGUST 29 Welcome to Århus Group meets in Århus. Session with Tom Nielsen of Aarhus Architecture School on the Aarhus Waterfront.

SATURDAY AUGUST 30 Exploring Århus Waterfront

Walking tour with Bianca: Århus public space network and waterfront, Århus Kunst Museum and the Århus Design Festival.

SUNDAY AUGUST 31 *Last Day in Århus* Individual Aarhus exploration, return to Copenhagen.

MONDAY SEPTEMBER 1

Copenhagen's History and Public Space Network

CPH spatial history, an introduction to Gehl Architects' research methods, walking tour of Stroget and Stradet and other inner city public spaces.

TUESDAY SEPTEMBER 2

Waterfront Play and Copenhagen's Inner Harbor

Bicycle tour exploring play on Copenhagen's Waterfront: the Wave, Cycle Snake, Sluseholmen, Islands Brygge Park, Christiania and others.

WEDNESDAY SEPTEMBER 3

Playing on the Coast

Exploring Copenhagen's relationship with the Øresund Sound including visits to Maritime Youth House, Amager Strand Park, Copenhagen Aquarium and a dip at the Winter Bathing Structure.

THURSDAY SEPTEMBER 4

Bicycle Urbanism in Copenhagen

Lecture at CPH Transport Planning, bicycle tour in Frederiksberg ending on Dronning Louise's Bridge.

FRIDAY SEPTEMBER 5

The Public Life of Streets, Playing in Norrebro

Analyzing street hierarchy; exploring Copenhagen's neighborhood urban parks, plazas and playgrounds.



Impromptu urban drum performance in Århus



View from Godsbanen, Århus



Huddling under cover, Iceberg, Århus waterfront



A little yoga after lunch



Rain garden in Århus



Travel routes: Copenhagen + Århus + Malmö

OVERVIEW: TRAVEL STUDY

Copenhagen + Aarhus + Malmo August 29 - September 14

Prior to the beginning of the Autumn 2014 quarter, twenty-five graduate students from Architecture, Landscape Architecture, Civil Engineering and Urban Planning participated in the 2014 ScanlDesign Foundation Travel Study Program. The trip focused on waterfront design for urban play. Through study of the built environment in Copenhagen, Århus, and Malmö, students were introduced to ideas and concepts that transcended and united their disciplines, and encouraged a broader, multidisciplinary approach to design.

The trip introduced the students to the public space ideas championed by Jan Gehl and Gehl Architects. The principle that design is an invitation, and in this case an invitation to play in urban waterfront environments was illustrated both in lecture and through site visits. During the trip, students were afforded the unique opportunity to study with Bianca Hermansen, a principal member of the internationally acclaimed Gehl Architects office.

Field studies, lectures, and workshops led by the staff of Gehl Architects were augmented by presentations from city officials, transportation planners, and local architects in both Copenhagen and Malmö. Guest lecturers included Tom Nielsen, Allison Dutoit, Birgitte Svarre, Lykke Leonardsen, Catarina Rolfsdotter-Jansson, Martin Kallesøe, Eric Scharnhorst and others. In Copenhagen, students visited the offices of COBE and Schønherr, toured the Royal Danish Playhouse and Tietgenkollegiet. In Malmö the trip included a tour of the sustainable developments at Bo01.

Students embraced Scandanavian culture during the trip, visiting a traditional sauna in Malmö, and experiencing "hygge" during authentic Scandanavian meals.

ITINERARY (cont'd)

SATURDAY SEPTEMBER 6 Louisiana Musuem Visit: Olafur Eliasson

Train to Lousiana Museum, Humlebæk. Explore museum grounds; countryside bicycling back to Copenhagen.

SUNDAY SEPTEMBER 7 *Beyond the City Gates*

Train to Helsingør, culture house and new Maritime Museum by BIG. Ferry to Helsingborg, Sweden.

MONDAY SEPTEMBER 8 Gehl Public Space Quality Assessment

Applying Gehl Architects' methods to public space in Ørsted; party at Bianca's.

TUESDAY SEPTEMBER 9

Copenhagen's Approach to Climate Adaptation

Overview of Copenhagen's Award-Winning Climate Adaptation Plan. Office visits: COBE and Schønherr.

WEDNESDAY SEPTEMBER 10 Malmö Open Space Systems

Biking tour of Malmo Open Spaces, BoO1 and a group meal at the hostel.

THURSDAY SEPTEMBER 11 Malmö Open Space Systems cont'd

Bicycle tour and sketching excursion to Malmö's East Cemetery. Return to Copenhagen.

FRIDAY SEPTEMBER 12

Active Play: Temporary to Permanent Visit to Carlsberg Campus and new Faelledparken, parkour training with Martin Kallesøe.

SATURDAY SEPTEMBER 13 Last Day in Copenhagen

Free day to explore the city, flea markets and historic district. Group dinner at Madklubben Bistro.

SUNDAY SEPTEMBER 14 *Checkout and Departure.*



The Cycle Snake, Copenhagen





Bicycle parking in Copenhagen



Hygge



Orestad stair climb

Contemplating Amager Strand



Business School, UC



Exploring Prismen



Taking the plunge at Superkilen in Norrebro



Public space diagram lesson with Bianca



Enjoying a public hammock



Olafur Eliason at Århus Kunst Museum



Amager Strandpark, Copenhagen

and site scales and responding to feedback from guests, peers, faculty, and Bianca Hermansen.

STUDIO OBJECTIVES

Design Seattle's North Waterfront so that it is:

- shaped by physical invitations for urban play
- demonstrates strategies of resilience, inclusiveness, and authenticity
- activates public space, streets, and sites within the district
- contributes to a high-functioning, socially responsive and environmentally regenerative city
- artful, walkable, bikable, and has a playful public realm

Employing & expanding on Gehl's Quality Criteria:

Creatively engage ecological considerations and such challenges and opportunities as urban intensification, affordability, habitat protection and climate change mitigation and adaptation.



Doris presents her model at the final review



Patty & Coco present their final design proposal

OVERVIEW: BLUE URBANISM STUDIO

Inviting Urban Play on Seattle's North Waterfront

Seattle's Central Waterfront is heralded as one of the most significant civic projects in the city's history. With imminent removal of the Alaskan Way Viaduct and current replacement of the aging Elliott Bay Seawall, Seattle has begun to envision and enact a great "waterfront for all." This project will create new and gualitatively different public space, while the seawall replacement will provide for a more ecologically functional edge for the waterfront. With a focus on the northern segment of the waterfront. The studio goals were to imagine and develop an active, vibrant and multidimensional public realm that invites a range of play activities; to propose design interventions that reclaim the waterfront as an ecological space, both aquatic and terrestrial; and to identify planning strategies and opportunities to connect the Central Waterfront with the rest of the city and bay. These tri-partite goals align with the priorities developed by the guiding Central Waterfront Committee, which emphasize Connections, Partnerships, Vibrancy and Diversity of Experiences and Identities.



Arianna presents her proposal for Alaskan Way



Final studio review in Gould Court



North Waterfront, Seattle, Washington

Terrace

DESIGN METHODOLOGY

During site analysis, students used Gehl Architects' Quality Criteria approach for observing and assessing sites for their pedestrian quality. This approach complemented the project area's quantitative pedestrian analysis, allowing students to understand how people might experience the neighborhood. The students also used these Quality Criteria to evaluate their finished design proposals.

We also applied the concept of creating proximity between urban events rather than simply focusing on density.



Concept of Proximity vs. Density

PROTECTION	 PROTECTION AGAINST VEHICULAR TRAFFIC Traffic accidents Pollution, fumes, noise Visibility 	 PROTECTION AGAINST CRIME & VIOLENCE Well lit Allow for passive surveillance Overlap functions in space and time 	PROTECTION AGAINST UNPLEASANT SENSORY EXPERIENCES • Wind / Draft • Rain / Snow • Cold / Heat • Pollution • Dust, Glare, Noise
INVITATION	INVITATIONS FOR WALKING • Room for walking • Accesibility to key areas • Interesting facades • No obstacles • Quality surfaces	 INVITATIONS FOR STANDING AND STAYING Attractive and functional edges Defined spots for staying Objects to lean against or stand next to 	INVITATIONS FOR SITTING • Defined zones for sitting • Maximize advantages • pleasant views, people watching • Good mix of public and café seating • Resting opportunities
	 INVITATIONS FOR VISUAL CONTACT Coherent way-finding Unhindered views Interesting views Lighting (when dark) Lighting (when dark) AUDIO & VERBAL CONTACT Low ambient noise level Public seating arrange- ments condusive to communicating 	 PLAY, RECREATION & INTERACTION Allow for physical activity, play, interaction and entertainment Temporary activities (markets, festivals, exhibitions etc.) Optional activities (resting, meeting, social interaction) Create opportunities for people to interact in the public realm 	 DAY / EVENING / NIGHT ACTIVITY 24 hour city Variety of functions throughout the day Light in the windows Mixed-use Lighting in human scale VARYING SEASONAL ACTIVITY seasonal activities. (skating, christmas markets,) extra protection from unpleasant climatic conditions Lighting
DELIGHT	DIMENSIONED AT HUMAN SCALE • Dimensions af buildings & spaces in observance of the important human dimensions in related to sences, movements, size & behavior	POSITIVE ASPECTS OF CLIMATE • Sun / shade • Warmth / coolness • Breeze / ventilation	AESTHETIC & SENSORY • Quality design, fine detailing, robust materials • Views / vistas • Rich sensory experi- ences

Gehl Architects' Quality Criteria

Gehl Architects Master Instructor

Students were first introduced to Gehl Architects' working methods while in Copenhagen, through lectures and exercises. Students benefitted from working with Bianca Hermansen in Seattle, during the middle point of the studio and near the end of the term. Bianca provided valuable feedback to guide the development of students' designs for inviting urban play.



Bianca Hermansen, Cititek & Gehl Architects

Life | Space | Buildings

In addition to using the 15 Quality Criteria, in one exercise called "LifelSpacelBuildings" students took on different roles: student, artist, business woman, retiree, child to establish the required program elements needed to create vital public space that is inviting to all.



Gehl Architects



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SITE ANALYSIS

Waterfronts are dynamic urban spaces comprised of layers of complex and interactive systems. These systems shape the way that species, including humans, interact with and thrive in their environment. As a first step in our process, we worked together to document the contextual systems in place in our study area along Seattle's North Waterfront. Through this process we all developed expertise in a certain system that enabled us to act as consultants to each other over the course of the term.

Keeping in mind that the theme of the studio is Inviting Urban Play On Seattle's Waterfront, we tried

not to simply compile factual data, but to imagine how a system enables a species to thrive to a level of wellbeing beyond mere survival. We considered what is existing, planned and possible and worked as a group to form a cohesive theoretical framework.

Our group topics of research were defined as: Shelter, Sensory, Mobility, Community & Culture, Temporal, Ecology and Sustenance.



Seattle's waste water system



Wastewater has a long history of infrastructure designs aimed to remove, separate, treat and discharge it. At present day, Seattle uses three main traditional wastewater management: the combined system, separated system and partially separated systems.

There are three outflows, where during large rain events, wastewater volumes increase to the point where the wastewater treatment facility cannot accommodate the increased water volumes and they overflow into Elliot Bay.

Two catchment basins collect

WATER

Rebecca Christy Wenying Gu Roxanne Lee Grayson Morris

How does water flow through our site? What structures have been created to contain, control and clean the water? How does water quality impact human and habitat health? These were a few questions that we kept in mind as we began researching water for our site.

Green stormwater infrastructure (GSI) is a method that attempts to replicate the ecological functions of a natural system by slowing, detaining and filtering stormwater. The City of Seattle has implemented GSI to reach their goal of reducing combined sewer overflow to one event per year as well as treating stormwater before it even meets the pipes. A successful GSI model on our site is Vine Street. The street was the collaboration of many: community members, designers, the city and more. It artfully crafts an urban stream down vine street, capturing and filtering urban runoff. We thought this was a model that we could multiply and instead of one street, it could be an entire network of GSI throughout our site.



Green stormwater infrastructure: Natural



Vine Street: A plan of the street's GSI



Functional Art: Beckoning Cistern, Buster Simpson

Elliott Bay Seawall - Then

The creation of the seawall began in 1916 with primary construction taking place between 1934 - 1936. The State Emergency Relief Fund granted \$396,000 to the seawall project, which was also assisted by the City of Seattle and nearby property owners. The total budget at the time was approximately \$1.4 million (\$23.6 million in 2011 dollars). Within a decade, the City also started to plan for the Alaskan Way Viaduct. It took 20,000 old growth trees and 250,000 cubic yards of dirt for initial construction. Due to decay, certain areas of the wall were rebuilt in 1964 and 1987. The southern end the of seawall was built as a concrete gravity wall, with the wall connected to timber-supported concrete sidewalk sections.



Elliott Bay Seawall under construction, 1934



Elliott Bay Seawall in decrepit condition, 1986

Surrounding Ecological Impact

During the last 150 years, the Elliot Bay nearshore ecosystem has been severely degraded. Most of the shallow vegetated area that once provided shelter for juvenile fish has been eliminated. U.S. Army Corps of Engineers, 2012

Elliott Bay Seawall - Now

The new face of the seawall project will be moved inland 10 - 15 feet to accommodate room for construction and create approximately 2 acres of restored space for new habitat features. The creation of a turbidity curtain (floating barrier) will prevent soil and sediment spreading out through the bay during construction .

U.S. Army Corps of Engineers, 2012



Examples of proposed sea wall textures

Primary inter-linked approaches of the Elliott Bay Seawall and ecosystem restoration:

- Provide substrate for kelp and microalgae attachment
- Improving lighting in the nearshore area . through light-penetrating surfaces (LPS) in overwater structures
- Provide an intertidal bench to serve as a protective migratory corridor for juvenile salmon
- Increase habitat diversity through the replacement of more complex textures that will include bumps, shelves and fins on the new sea wall facade



This "marine mattress", a geogrid bag filled with rocks, is an example of the ecological efforts the City is making to provide more shallow water habitat, especially for juvenile salmon. Geosynthetics Magazine, 2014

Morphology + Sea Level

Elliot Bay is bounded by the Seattle waterfront to the east, Bainbridge island to the west, Discovery Park in the north, and mouth of the Duwamish River to the south. The Puget Sound and thus Elliot Bay has been shaped by glacial activity, lahars from Mount Rainier, changes in sea level, tides, current, wave action, erosion, deposition, and human activity. The average depth of Puget Sound and Elliot Bay at mean low water is approximately 205 feet, but can reach depths of 930 feet (Kruckeberg, 1991). The tidal difference is on average 13.7 feet, with highest observed at 17.2 feet (NOAA 2008).

The University of Washington's Climate Impacts Group predict a low of 6 inches to a high of 50 inches of water surface elevation rise in Elliott Bay by the year 2100, depending on a number of factors such as the extent of global ice melt that occurs. (Mote et al. 2008)

Circulation, Salinity + Temperature

Both freshwater and marine sources contribute to the composition of Elliot Bay. The rate of freshwater flow into the Sound averages 140 billion cubic feet per year. The volume of saltwater makes daily gains and losses on a scale of 1.27 cubic miles per day (Kruckeberg, 1991). In general, currents in the bay move in a slow counter-clockwise pattern and exit through the U-shaped trough. During tidal shifts, the project area along the waterfront experiences changes in salinity as freshwater from the Duwamish interacts with the subsurface saline water from the Puget Sound.

Salinity data collected by Ecology indicates a surface layer approximately 30 feet deep with a salinity of 0 to 28 parts per thousand over a bottom layer with a salinity of 28 to 31 parts per thousand. Salinity distribution depends on river flows and tides. (Ecology 2011b)

Sea temperatures in Elliot Bay reach an average low of 8 degrees Celsius in March and an average high of 13 degrees Celsius in August. (NOAA)

Pollutants + Sources

Large vessels and natural currents redistribute contaminants deposited by past and present industrial activity, seepage, and city discharge. Low dissolved oxygen and high fecal coliform levels affect the project area, and the sediments elsewhere in Elliot Bay have been listed on the 303(d) list for mercury, silver, polychlorinated biphenyls, and more. While low, the dissolved oxygen levels are most likely a result of natural processes but cannot be allowed to reach a dangerous level.

The industrial operations that have shaped the structure of the bay have left a mark of historic use in the form of contaminated sediments and continue to affect marine life and human interaction with the water along the shoreline. Both the contaminants left behind as well as the present threat from storm and sewage outflows will be an obstacle encountered during the reconstruction of the waterfront.

Salinity, combined with water depth, chemical influence, temperature, sediment structure and health strongly influence biologic communities and human recreation along the waterfront.



Within the Elliott Bay Seawall Project corridor, seven species of salmonids are present, including Chinook, coho, chum, sockeye, and pink salmon. Additionally, cutthroat, steelhead, and bull trout have been observed.

Juvenile salmon migrate in the spring and summer, but different types of fish (perch and others) are present throughout the year. Adult salmon return in the fall and winter to the Green/Duwamish watershed.

Juvenile salmonids journey from the Green/ Duwamish River watershed along the central waterfront.





WHAT MAKES FOR HEALTHY SALMON HABITAT?

1. Light

it can take 20 to 40 minutes for a juvenile salmonid to adjust from dark to light, or vice versa. The greater the magnitude of contrast in light intensity, the longer it will take for juvenile salmon eyes to adapt to the new light environment.



2. Depth

Shallow water habitats are important refuges for small fish because large predatory fish cannot access these areas. Estuaries and the marine nearshore provide refuge areas for juvenile salmon to avoid fish or bird predators.



The depth of water & the size of fish

3. Substrate

There are predominantly three substrate types along the seawall:

- sand/silt/shell hash: 70%
- rock: 20%
- gravel/cobble: 3%

Substrates most suitable for the production of preyspecies for salmonids do not occur at appropriate depths or locations along the corridor.





Public and Commercial Edges

Much of Seattle's edge at the waterfront is occupied by commercial or private business which limits accessibility. In terms of protection from the elements, there is little physical shelter available to the public. A redesign of the Seattle's waterfront should present opportunities for more public access and shelter. Pier 62/63 is the current exception to the private edge and offers abundant opportunity for flexible public gathering and play.





Shelter

Ivan Heitmann TJ Bandrowski Jason Gover Katy Scherrer

For the purposes of this analysis, the concept of shelter is being considered in terms of elements, habitat and noise. Shelter from the elements refers to physical protection from wind, precipitation and sun. Shelter as habitat refers to conditions conducive to life for humans and wildlife. Considering shelter in terms of noise refers to an escape or retreat from the noise of the city. This can also include internal psychological noise.

שליקושיר וזות ונוחוי בערוראלים של רוחוים של ואויניוילון משור הומאינירווווזונים אוין בעשורויזווזונים עוודועיילא





Shelter can also be considered in terms of protection from noise. There is external noise which is created by human activity. The aggregate of which, in an urban setting, can be considerable. There is also internal noise which is a result of the stresses of daily life. Shelter should offer protection from noise. Public space and shelter should include opportunities for relaxation and play. Very few affordances for shelter from the elements are available to public use. The single shelter in Victor Steinbrueck park is so well used by 'undesirables' that it shifts the character of the space away from friendliness to families. The viaduct itself provides an enormous acreage of ceiling in the district, the removal of which threatens to displace informal settlements. The liminal nature of the waterfront offers opportunity to increase natural habitat and improve the health of native marine species. The new design of the seawall is focusing on improved marine habitat. The design focus on improving habitat subsequently has increased the amount of public space at the waterfront. The increase in public space creates opportunity for more tree canopy and biodiversity.





Drainage concept sketch

Topography

These GIS Maps provide topographical information from around the waterfront. The slope near the waterfront is very steep, which influences its soil and plant composition. The aspect map depicts the slope, which is usually southward facing. This higher amount of sunlight could counterbalance the area's cooler marine temperature.

In addition, the steep slope could be used to create a natural drainage system or waterway for urban sustainability, while the stormwater from downtown could be used for waterfront amenities as tourist attractions.

Example of waterfront attraction

IYoonshin Kwak

BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront

Geology / Soil

Puget Sound is a bay with numerous channels and branches, a large salt water estuary fjord system of flooded glacial valleys. It is a part of the larger Pacific Mountain System fed by highly seasonal freshwater from the Olympic and Cascade mountain watersheds

Geologically, continental ice sheets have repeatedly advanced and retreated from the Puget Sound region, leaving deposits of rock debris and sediment.



Ecology

When designing landscapes, we must begin by considering the ecological conditions of the site. From macro to micro scales, topography and climate to plants and animals, human settlement and culture are connected to and intertwined with the ecology of place. Seattle has a unique ecology, being nestled within mountain ranges and the Sound, that produce its temperate marine climate. The city's existing ecological conditions are a product of an accumulated natural history that must be examined and serve as a basis for design. As we strive to build our cities in balance with the natural world, the provided ecological information is meant to serve as a general foundation for scientific design that aims to restore and regenerate the ecology of the Seattle waterfront.

http://www.waterfrontseattle.org/pdfs/deis/23_AppendixN_Ge-

Soil Section

Climate & Vegetation

Regarding planting, there are many restrictions in Seattle because of its characteristic climate: damp temperature, high precipitation, little sunshine. When it comes to the waterfront, which lies close to a marine environment, we face more restriction in planting design. Waterfront trees should be tolerant of low sunlight and sea wind that contains salt.

According to the table of a street trees inventory, we see that Prunus Genera and Acer Genera abound in Seattle. Since this table is about trees across Seattle, we cannot get precise information about the waterfront site. However, considering the common attributes of Acer and Prunus, we can guess that Seattle's unique weather conditions and soil composition have heavily influenced its plant composition.

The map below also shows most of the street trees are comprised of Maple and most of the trees on the waterfront street side are Acer rubrum (Bowhall Maple). As a deciduous tree, Acer rubrum grows well in this climate because it can thrive in a wide range of soil types and tolerate variation between sunlight and shade.

The Olympic Sculpture Park is a good reference for understanding what plant palette can succeed in this marine climate.





Anir a Datasta Miles a Tita a Control

Top Genera & Species of the street trees



Acer rubrum (Bowhall Maple) on the



Trees composition near the waterfront



Bathymetry / Fauna

Outer part of Elliott Bay: Shallow water Suitable habitat condition for fauna Contains a salmon migration corridor

Juvenile salmon migrate in the spring and summer. Adult salmon return in the fall and winter to the Green/Duwamish watershed. Many different species of salmon: Chinook, Coho, Chum, Sockeye, Pink salmon, Cutthroat, Steelhead, and Bull trout

Different types of fish (perch and others) rather than salmon are present at all times of the year.

Estuaries and the marine nearshore provide abundant prey resources for fish to grow and refuge areas for protection.

Large predatory fish cannot access these areas, so shallow water habitats are important refuges for smaller fish.

Inner part of Elliott Bay: Steep drop off Deep water

• 18% • 12% • 11% • 10% • 10% • 10% • 16% • 6% **2%** • 5% **Other Fish Species:** Coho Salmon, Red Irish Lord Black Rockfish, Sailfin Striped Seaperch **Pile Perch** Tubesnout Lingcod Sculpin Speckled Sandab, **Unidentified Flatfish Kelp Perch Spotted Ratfish** Quillback Rockfish Shiner Perch Brown Rockfish

http://www.seattle.gov/transportation/docs/seawall/may11/Habitat%20

DEMOGRAPHICS





2012 DOWNTOWN Demographics Report

Household: 5,199

Waterfront Resident population: 7,945

Resident Population: 58,980

Daytime Population: 237,311



Residential Unit By Year

Analysis of 2000 and 2010 US Census data population remaining in 2010. Black indicates an increase in the 10-14 yr old population in 2010. Figure 10. % Change in Pop. Under Five



Neighborhood Demographic Changes of those Under Five Years Old



Population from 2005 to 2014



Abood Alamoudi **Coco Alarcon** Jiaxi Guo Arisa Nakamura

Before starting any design process, it is extremely important to know how people behave and understand their needs. Seattle has been growing dramatically and attracting young professional workers who can earn high-paying salaries and thus afford to live in downtown Seattle.

This part focuses on four aspects: Demographics, User Surveys, Public Preference and Art Plan.



Source: Analysis of US Census and Seattle School Distrct data population remaining in 2010. Black indicates an increase in the 10-14 yr old population in 2010. Figure 10. % Change in Pop. Under Five (2000) to 10-14 (2010)



Waterfront Park









Number Of Users: 80 Time: Saturday 2:00 pm

Public Preference: Seating, Leaning on, Gathering, Sunshine, Trees, Good view, Something interesting to see, Diverse Space (Private & Public)

Attractions: Seattle Aquarium, Fountain, Great Wheel, Pike Market



Public Preference: Seating, Leaning on, Exercise, Biking, Sunshine, Good view, interaction with birds











Time: Saturday 3:00 pm



Pier 62/63



Bell Harbor BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront









Time: Saturday 3:30 pm

Number Of Users: 45

Number Of Users: 65

Public Preference: Seating, Leaning on, Gathering, Sunshine, Good view, Long Benches to sleep

Attractions: Conference Center, Cruise Terminal, Pedestrian Bridge, Bars















Attractions: Sculpture park, Art instrument, Fountain

Time: Saturday 4:30 pm

Number Of Users: 20



Sculpture Park Entrance

This part shows the analysis of the existing users and public preference in our site area. Four major public spaces along the waterfront are selected to focus on. Time of the observation, the number of users, different kinds of activities

Users & Public Preference

and the distribution of people at the site are recorded. Public preference can be seen from the graphics showing where has gathering people. Different icons represent different kinds of activities happening at the site. Also, attractions are concluded for each space in terms of the location and site character.

Stakeholders: GroupPike Place Market, Washington State Ferries, Port of Seattle, Downtown Seattle Association, Seattle Convention and Visitors Bureau, Greater Seattle Chamber of Commerce, Public Facilities District, Waterfront property owners and tenants, Seattle Parks Foundation, Seattle Aquarium. Individuals representing the following interests: Freight, Environmental issues, Labor, Urban design, Parks and open space, Public art, Cycling, Pedestrian mobility. Historic preservationRepresentatives from following neighborhoods: Pioneer Square, Belltown,

Waterfront, West Edge, Queen Anne, West Seattle Ballard, Magnolia.

Waterfront Seattle, Framework Plan, July 2012, Book 2

What people want / What people don't want / What people like





1. Belltown Bluff

Garage Facades & Back of condominium buildings Projection & Ephemeral art

New buildings Artists' studios or place to live/work

Belltown public garden Potential art site

3. Overlook Walk

Link to Pier 62/63, aquarium, Pike Place Market Art could be related to....

> The Market, The Train Overlook The Play Course, The Amphitheatre steps, etc.



Overlook Walk²

5. Historic Piers

The end of piers: exhibition spaces Existing Kiosks and shops Expanded to include art events & installations The space between piers Small public plazas, Small scale performances & art events Part of the Tideline Promenade Integrate both horizontal & vertical





Belltown Bluff Area



Overlook Walk Area¹



Historic Piers Area¹

2. Pier 62/63

Concert, art programs/events Link to Overlook Walk and the Pike Place Market Grandstand, kayak launch, skating rink, furnishings.etc Skating rink² Pier 62/63 Area¹ 4. Aquarium Plaza For Family The Elliot Sea Wall Project create a more bio-positive environment Desire to promote and display the marine life Aquarium Plaza² Aquarium Plaza Area¹ Display Case² 6. Union Street Waterfront Good place to install art and conduct art projects that run over time Good place to provide context for development Water feature will be integrated (E.g. fog, water, etc)

Art Installation²

Union Street Waterfron Area¹

"A WORKING PLAN FOR ART ON THE CENTRAL SEATTLE WATERFRONT" was published in August 2012 by waterfront seattle, which covers the plan from 2012 to 2022. I used the plan as a resource to show what kind of art plan has already been made relating to our site.

resource

1."a working plan for art on the central seattle waterfront"

2."design summary concept design and framework plan for seattle central waterfront"


Recent Economic Flows

Between 2012 and 2013: Employment improved 3% moving from 487,264 to 501,959; while unemployment dropped 1.8%.

Between 2011 and 2012: There was a 4.0% increase in the number of new business licenses indicating that the market is supporting job growth.

"Transportation equipment, primarily aircraft and parts, accounted for about 52% of Washington exports in 2013." (www.seattle.gov)

Port of Seattle's Influence

Mission: "The Port of Seattle is a public agency that creates jobs by advancing trade anc commerce, promoting industrial growth, and stimulating economic development."

"Seattle's Seaport and Airport generate nearly 200,000 jobs throughout the region with payroll in excess of \$6.8 billion."

The Port has a goal to add 100,000 jobs to the region by 2036. (www.portseattle.org)

Visitors of Seattle- King Co in 2013

13% visited for business while 87% visited for leisure

"...18.6 million visitors spent \$6 billion in Seattle and King Country, contributing \$597 million in state and local tax revenues." (www.visitseattle.org)

Post completion the city hopes to see twice as many visitors to the Seattle Waterfront.





Civilan aircraft, engines and parts accounted for over \$42 billion in exports in 2013. (Office of Financial Management, www.ofm.wa.gov)

That's the equivalent of more than 74 Centurylink Stadiums.



In 2013 the Port saw 870,994 cruise passengers, generating more than \$381 million in annual business revenue & creating more than 4,000 jobs. (www.portseattle.org)



Note: The number of passengers visiting Seattle via cruises decreased between 2012 and 2013, but the city expects this number to climb steadily after the completion of the Waterfront Project.

Sustenance

Jennie Li Chih-Ping Chen Doris McMahon Kenna Patrick

Sustenance can be loosely defined as the maintaining of someone or something in life or existence. For this exploration we expanded this idea to be about what it takes for someone or something to thrive. What does it take for a city to thrive? What does it take for a community to thrive? The visual model that we thought represented this idea well was a pyramid- where everything at the base supports everything above it. For a city, the base of the pyramid might be a strong economy, which supports jobs, education, and food, which supports people. All together the pyramid creates the framework for a place in which people will have a good quality of life.

Finally, we used this model to dive deeper into a specific example about the economic flows involved with the sustenance of a local food system.



LOCAL SUSTENANCE: THE FOOD SYSTEM





The food system is interconnected by natural resources, such as salmon which nourish humans. Salmon is an important food resource and economic driver for the local food system. Salmon is consumed locally and globally in restaurants and homes. Technology is used to transport fish to restaurants and canneries nationally and globally. While there exists uses for fish waste products, such as conversion to fish meal for fertilizers, this is not an aspect of our food system that is well exposed. We can also look to local traditions and cultures for sustainable precedents, such as the Duwamish who have a developed history of fishing in the Seattle region. Our local salmon industry presents a unique opportunity to educate and inform the global community about the interconnected value of this natural resource.

THE FUTURE OF LOCAL FOOD

The transition from the existing food networks on site to meet the city's future vision for a more sustainable food system will unearth many possibilities for regional and local programming.



Challenges and opportunities will arise in retracting basic consumption to a regional scale and capitalizing our expanding global influence.





Sensory

Hailey Mackay Ying-Ting Chen Sarah Giannobile Zhehao Huang

The analysis of sensory experience on Seattle's Waterfront has been broken down into four main components, each involving one or more of the five senses. Climate, Views, Sound and Activities.

These sensorial aspects of the site, explored from large scale phenomena to small scale experiential impact, attempt to examine existing sensory experiences as well as planned and possible futures.



Climate



Seasonal Daylight Fluctuation

Views

Strolling along Seattle's waterfront, you can catch glints of sunlight on Elliott Bay and smell the briny air.

But for most of the length of Alaskan Way, the waterfront is a wind tunnel of roaring traffic noise and partial, peek-a-boo bay views. Only the seagulls cawing for French fries at Ivar's hint at the watery, marine world beyond the kitschy tourist shops and aging, creosote-soaked piers.

With the earthquake-vulnerable viaduct scheduled to be removed in 2016, city leaders are planning to redevelop the 26 blocks along the downtown waterfront to transform what's now parking lots and the backs of buildings into a pedestrian promenade of parks, plazas, lush landscaping and glorious sights of the Olympic Mountains jutting above Puget Sound.





Sound

Large scale Industrial Intense Broad range

Small scale Natural Frequent Localized



The Burlington Northern Sante Fe Railroad train tracks approach the waterfront at Bell Street (80-120 dBA).

Alaskan Way Viaduct traffic transitions away from the project area. Traffic noise levels are generally lower (60- 80 dBA). Piers 62/63, Pier 70 and Bell Harbor Marina provide areas for conversation (40-60 dBA). Tree plantings along Alaskan Way provide natural sounds (0-40 dBA).

Heavy construction equipment used to rebuild the seawall will be the most prevalent source of noise (80-120 dBA).

Pumps used for water treatment (located near Piers 62/63) may run 24/7 for the duration of construction (90 dBA).

Traffic due to construction would be small relative to existing levels (60-80 dBA). Light, natural noises will likely be limited by construction noise.

Concern from residents that the new road which connects to waterfront will increase traffic noise (80-120 dBA).

Activities occurring in new public spaces (Piers 62/63 and Pike Place lid project) could increase sound levels (80-120 dBA).

Restored roadway is not expected to be in a substantially different location than the current roadway (60-80 dBA).

More vegetation and habitat creation will increase small scale noise (0-40 dBA).

Activities



Active space





Active space activities



Passive space activities



Passive space



Transitional space



Existing condition



Existing condition

Mosquito Fleet

The Mosquito Fleet was once a major stakeholder of the Seattle waterfront. Private transportation companies ran the Fleet, which was made up of passenger and freight steam-powered boats. The Fleet ran throughout the early 20th century and stopped at every dock. The advent of the railroad in the mid 19th century made the Mosquito Fleet obsolete. It eventually shut down in the late 1920's. http://www.historylink.org/index. cfm?DisplayPage=output.cfm&file_id=869

Street Car

George Benson, a Metro City council member, brought the streetcar to Seattle's waterfront. Begun in 1982, it spanned 1.6 miles of and ran from broad street to the international district. That same year, two 1928 Australian streetcars started running along Elliott Bay between Pier 70 and Main Street. Construction of the Olympic State Park in 2005 partially forced the entire closure of the streetcar line. Soon thereafter, the 99 bus, replaced the streetcar and was wrapped to look like it as well. *http://metro.kingcounty.gov/am/vehicles/wfsc.html*



Movement corridors for all modes of transportation



Mosquito fleet steamboats at Coleman



George Benson Street Car in 1994



George Benson Street Car in 2011

Mobility

Arianna Allahyar Will Shrader Rhys van Bemmel James Wohlers

Movement brings energy and staying power to a place. Whether it's from the sounds of a roaring train engine or the footsteps of a pedestrian, the activity of people along Seattle's waterfront attracts business and trade. There are several ways to experience this strip and depending on the mode of transportation one chooses, the experience can change drastically. Basic aspects, like speed and weight, alter one's perspective on a place. Walking on foot, for example, elongates the strip as one's viewing distance is great and the path utterly linear. Input from the surroundings is few and far-between making the walk seem longer than it actually is. In contrast, driving in a car makes the strip fly by. One does not have time to absorb all which he or she passes, and stopping proves difficult as parallel parking often holds up traffic behind. Major change is planned for this site in the form of a tunnel and substantial reduction of car traffic.

10-15 mph - 200 lbs.

3 mph - 180 lbs.





30-40 mph - 15,000 lbs.

30-40 mph - 4,000 lbs.



20 mph - 200,000 lbs.

15-30 mph - 50,000 tons displacement









Pedestrian

Pedestrian traffic flows primarily against the waterfront edge of Alaskan Way. The types of pedestrians utilizing this corridor include residents walking with family, people walking dogs, joggers, and some tourists. It is important to distinguish between joggers and walkers as the pace at which they encounter things differs. Two north-south sidewalks along Alaskan Way are the paths most often traveled. Currently, pedestrians are also discouraged from crossing Alaskan Way as the wait times at crosswalks are noticeably long.



The majority of cyclists travel along Alaskan Way and Broad St. in traffic and along the Elliot Bay Trail, with few cyclists on the sidewalk. From the south, the trail runs parallel to eastern edge of Alaskan Way until Bell St., where cyclists re-enter traffic until it continues at the Olympic Sculpture Park heading north to Magnolia. Both commuters and recreational cyclists ride through the northern waterfront. A total of 1,357 bicyclists were counted on Alaskan Way and Broad Street in 2012, a 6% increase from 1,280 bicyclists in 2011 (SDOT Bicycle Data, 2012).



Automobile

Alaskan Way, the surface street, along the western edge of the waterfront, accommodates over 10,000 vehicles per day destined for the Central Business District and bypassing the CBD (SDOT, 2013). In addition, it is used by tourists visiting the waterfront and passenger drop-offs at the Bell Street Pier Cruise Terminal at Pier 66. Street parking is located along both sides of the street at various locations, along with waiting zones for buses and taxis. Several large parking garages can be accessed via east-west through streets (Broad, Clay, Vine, and Wall St.).













Truck

The primary north/south corridors for truck traffic are Alaskan Way, Elliott Ave., and Western Ave, with Broad St. connecting trucks east and west. Other large vehicles passing through the area include Ride the Duck vehicles and charter buses stopping in waiting zones. A large number of trucks access the cruise terminal at Pier 66 to stock the ships. The over-legal route for vehicles or loads exceeding the maximum height, width, and/or length as specified by State and City laws runs on Alaskan Way and continues on Broad St. The railroad runs parallel to the waterfront and acts as an access barrier to east-west connections between the waterfront and Seattle's CBD. Approximately 52 trains cross through Seattle's northern waterfront each day. This is comprised of 30 freight trains (including long-haul trains up to 1.6 miles long), 14 Amtrak trains traveling through Seattle, and 8 Sounder trains. The average gate down time for each crossing is 3.3 minutes, adding up to 2.8 hours each day that delays other modes of travel (Coal Train Traffic Impact Study, City of Seattle, October 2012). The Bell Street Pier 66 Cruise Terminal, operated by the Port of Seattle, serves as homeport to 30% of cruise lines departing from Seattle. The Victoria Clipper, a passenger-only ferry service with yearround departures to Victoria, B.C and seasonal trips to the San Juan Islands, departs from Pier 70. Surges in vehicle trips generated by passenger drop-off and cruise ship freight deliveries affect mobility of the corridor (Coal Train Traffic Impact Study, City of Seattle, October 2012).

Connections

Conflicts

Existing connections from the site to nearby neighborhoods are limited both by the steep topography immediatly to the east, as well as BNSF railroad and the existing Alaskan Way Viaduct. Some important existing connections do exist, however, including the Elliott Bay Trail (EBT) and the Bell Street Pedestrian Bridge (both below). Pedestrian and bicycle infrastracture is lacking overall along the northern portion of Alaskan Way. A limited number of crosswalks, gaps in bicycle infrastructure, frequent train traffic, and a busy intersection at Alaskan Way and Broad Street all contribute to a large number of conflicts throughout the site. Of particular concern are the lack of pedestrian crossings and the missing stretch of Elliott Bay Trail connecting downtown to the north stretch.



Section facing north at Vine Street



Bell Street Pedestrian Bridge



EBT entrance at Broad Street



Jaywalkers at Alaskan Way and Broad Street



Cyclists cross Alaskan Way to reach EBT



Conflicts at Alaskan Way and Broad Street



Multiple points of conflict



When the Alaskan Way Viaduct is down and the future SR 99 tunnel is complete, a new surface street, Elliott Way, will connect vehicles, pedestrians, and cyclists from Alaskan Way to Elliott and Western Avenue. In order to cross over BNSF rail lines, Elliott Way will be elevated north of Pine Street. Forecasts indicate up to a 30% reduction in PM peak vehicle traffic on Alaskan Way after the new connector is complete. Reduced vehicle volumes provide an opportunity to rethink the street.

AWV Replacement Project FEIS, August 2011

The 1.5 million dollar Lake to Bay Loop Trail, formerly the Potlach Trail created and used by the Native tribes, provides greater connections to Elliot Bay from South Lake Union. The southern most node of the trail at the intersection of Broad Street and Alaskan Way in front of the Olympic Sculpture Park may affect future traffic conditions. Given the goal to improve pedestrian and bike access in addition to the projected decrease in car traffic the intersection of Broad Street and Alaskan Way will be easier to navigate as well as safer to cross.

http://www.seattle.gov/parks/projects/lake-tobay/), (http://laketobayloop.com/

Waterfront Seattle Concept Plan



Seattle department of Transportation, 2013



Plan of Seattle, 1855-6 (Thomas Phelps) the shoreline

The history of human activity on what is now Seattle's Central Waterfront predates the settlement that became the

had a village of approximately Seattle's waterfront became

Seattle's waterfront was a bluff now Post Street. The present location of the railroad station

186(

added commercial activity to between 1907 and 1910 slashed 85 the waterfront as means of feet (25.9 m) from the hill providing he City Council passed an Dearborn Street Regrade made an

ordinance for the construction even deeper cut through the ridge.

The entire business district and At the time of the fire, the two mile waterfront was a succession of docks, warehouses, saw mills and

8 longhouses roughly at the the point of embarkation for the intersection of First Avenue Alaskan gold fields. It was directed identification system was instituted.

The Central Waterfront: Portal to the Pacific (Central Waterfront Citizend Advisory Committee, 1994

> Article: What's blocking Bertha - Geologywriter.com

> > Central Waterfront

The seawall from Washington The facilities of the Central Waterfront became Street north to Madison Street obsolete, and the limiting factors of urban The development of coal mining was built. The Jackson Regrade development made it impractical to update.

1950's 🌢

overland transport was devised. fill for the tide flats below Beacon The waterfront was under military control with the Hill that stretched south from King WWI. After the war, the waterfront never really Street, filling in today's SoDo. regained the vitality of old.

of Railroad Avenue, (now In one place, the level of the land The Maritime Activas passed, which set standards for Alaskan way), 120 feet wide on was lowered by 108 feet (32:9 m); vessel used for passenger service. Several passenger pilings over the water beyond 1,600,000 cubic yards (1,223,288 lines ceased operation. Railroad Avenue became a



Seattle Waterfront 1917

Temporal

Christel Game Kate Haefele Stevie Koepp

The relationships that exist between site elements in time are as important as those relationships which exist in space. We have created a framework that includes three different ways of analyzing site conditions as they relate to time: events that occur in linear patterns (historical events as they progress in a linear fashion), cyclical patterns, and events as we are able to project them into the future.



Evolution of the waterfront through the years

Linear

A progression of past, present, and future. The importance of historical origin and developed through history.

Historical Timeline

Original conditions

Historic Maps from http://www.usgs.gov/



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront

Railroad crossing



Cyclical

occurring in cycles; recurrent.

	Seasons
	Migrations
Spe	cial events





Pier 66

Worst case scenarios predict a 5 ft. sea level rise in Seattle, inundating much of the central waterfront area.¹ Olympic Sculpture Park area Current Shoreline



Although changing, Seattle's climate will remain stable and hospitable compared to much of the country. The city may become a "climate refuge" for migrants leaving harsh conditions elsewhere, who will add to the already growing population.²

gentletude.com



Image Source: Wikimedia



PRECEDENT STUDIES

57 AKER BRYGGE

- **59 AMAGER STRANDPARK**
- **61 MALECON**
- 63 MALMO
- 65 MARINA BAY
- **67 MARITIME**
- 69 NAVY PIER
- 71 SANKT KJELDS
- 73 SILO PARK
- 75 THE WHARF
- 77 THREE RIVERS
- **79 TORONTO**

Good design is often informed and inspired by precedent studies of previously designed projects. To find our own inspiration for this project we worked in pairs and trios to select relevant precedents to research and present to the rest of the group. These sites are ones that we visited on our study tour or that pertained specifically to urban waterfront design. These projects range from Scandinavia to America and beyond. Instead of being finite, these precedents studies were a jumping off point for our design concepts and were continually renewed and expanded as our projects progressed.



Connection between city and waterfront

As one of the most popular urban public spots in Oslo,

Aker Brygge bustles with life along the ocean shoreline. It is a car-free area with quays, bus stations and metro stations that allow for a 5 minute commute both to and from anywhere within the city.

Following are some principles and concepts we took from our study of this fantastic space:

- 1. Public engagement
- 2. Mixed use of land
- 3. Human-scale waterfront
- 4. Accessibility
- 5. Respect history and culture
- 6. Creative furniture design







Aker Brygge

Ying-Ting Chen Zhehao Huang

Aker Brygge is a reinvigorated waterfront in Oslo, Norway built on the grounds of an old shipyard. It is now a popular meeting place for shopping, dining and entertainment, boasting 70 shops and 50 restaurants. 12 million visitors journey here annually.

Location:	Oslo, Norway
Designer:	Space Group
Client:	City of Oslo
Constructed:	1985/Current
Area:	24 ha
Cost:	2.3 million Norway Krone



AKER DHYQGE Pipervika FJUVHDENTEN Kershus Slott • Google Maps 2014

Oslo Konserthus

PRECEDENTS: Aker Brygge 57

Benches are thoughtfully nestled into the landscape, where the height of the dune grass provides a sense of privacy and ownership while

The variation in water depth and micro-climate between the shallow lagoon and the Oresund offers swimming access to people of all ages and abilities. Three bridges span the lagoon, connecting pathways through the park to the main urban thoroughfare. Four re-purposed World War II bunkers dot the path, providing room and changing space, food vendors, and beach overlooks

Due to its open and informal programming, people use the park for a number of activities, from kayaking to skateboarding, fitness training, food trucks, and mini-golf, with much in between. This flexibility is especially apparent in the south end of the park, where the beach shifts from a loose, informal landscape to traditional, geometric lawns. Here spaces have been left intentionally "unfinished", allowing users to shape the space to their needs over time.

Composed of a northern naturalistic beach area and southern urban beach promenade, Amager Strandpark is an open design with rich public

The Strandpark is a linear man-made island in the Oresund that forms a sheltered lagoon on its west side. In the north end of the park, the main path weaves between undulating dunes covered in scrubby beach grass, hiding then revealing views

Re-purposed miliary bunkers with beach views

BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront













Amager Strandpark

Copenhagen, Denmark
Hasløv & Kjærsgaard
Arkitektfirma I/S
NIRAS A/S
DHI
Amager Strandpark I/S
City of Copenhagen
Frederiksberg Municipality
Copenhagen County
1934/2005
Total: 600,000 sqm (60 ha)
Beach: 4.5 km
Island: 2 km
Lagoon width: 400 m
Swim course: 1000 m
\$34 million USD

Hailey Mackay



South end promenade

North end



The port of Guayaquil was the main gateway to Ecuador during the colonial period. After the nation became a republic, the port served as the major export terminal for cacao, banana, and oil. When oil traffic grew beyond the port's capacity, business moved away. From the 1950's to the 1990's the waterfront remained undeveloped, a postindustrial urban space.

Plans to convert the port into a recreational space began in the 1990's and was realized in 2001. Today, both the local families and tourists enjoy the culturally rich area for shopping, strolling, and enjoying the outdoor.



The Simon Bolivar port in the early 20th



The boardwalk after completion, early



Aerial imagery of the entire length of the project



Crystal Palace, once a market, now event space.

Malecón 2000 pavilion and founta

Beloved donor plaques known as 'the Matrix'



Bird's eye of the waterfront with its vibrant paving pattern and central pavilion



Fundacion Malecon 2000

Section showing one of the shopping areas with two levels of mall below the public

Fundacion Malecon 200

Malecón 2000 gardens



Malecón 2000 promenade

Malecón 2000

Christel Game Coco Alarcon Ivan Heitmann

The word for boardwalk in Spanish is malecón. Malecón 2000 was a major urban renewal project at the once working waterfront of Guayaquil, Ecuador.

The project was catalyzed by top bankers in the nation who speculatively built the city's tallest building on the waterfront in 1991. While prior real estate investment veered away from the dilapidated area, the bank's political influence prompted the government to create a state owned enterprise called the Waterfront 2000 Foundation. This body was tasked with managing the riverfront renewal pre- and post-realization. The foundation hired a team from Oxford Brookes University to design the revitalization.

Construction began in 1998 and proceeded in phases through 2002 when the Crystal Palace was completed. The total cost of the project was \$75 million USD.







Materials

Bo01 is a housing project situated at the Western Harbour of Malmo, Sweden. The name uses the Swedish verb "bo", which means "to dwell", and the year 2001 to mark the year when it opened.

Bo01 was realized on a former industrial port where the ground was highly polluted. The district of 600 homes, offices, shops, and other service trade premises is fueled by 100% renewable energy. The sustainability plan has focused on three aspects in particular; use of resources; planimetric, emotional and aesthetic appeal. The adjacent 2.5km long Sundspromenaden (waterfront promenade) is a major attraction for locals and tourists. Public accessibility for all to the wide expanse of Swedish coastline is a priority of the design.

The promenade design showcases a terraced wood deck constructed of FSC azobe wood imported from Africa. Adjacent asphalt and granite paved surfaces are inlaid with azobe planks and recessed lighting in tempered glass. The promenade edge transitions into the ocean across large natural boulders interspersed with gleaming boulders.

The promenade is a popular venue for cultural events and social gatherings. Public accessibility to the promenade has successfully facilitated use by people from different ethnic groups and economic classes. The design supports passive and active engagements: the terraced decks are used for sitting, watching and exercising; adventurous promenade users run on the large boulders; and several cantilevered jetties along the promenade are used by swimmers to explore the Danish coastline. The waterfront provides opportunities for discovering nature's seasonal changes, as well as being a place used for musical happenings, games, sunbathing, and picnics.

An important feature of the Green City District at Bo01 is the open storm water run-off system. Rain is delayed on green roofs, in ponds in the courtyards and public spaces then transported in open channels to the sea. The ideas implemented in the district show how you can minimize the consequences of urban sprawl and make a local environment greener.

Resources:

Sundspormenaden I Malmo." DK Arkitektur (2002): 15-19. Print. Ross, Steve. "Swede Dreams." The Guardian. 29 Aug. 2005. Web. 2 Oct. 2014. < http://www.theguardian.com/artanddesign/2005/aug/29/architecture>. Pantelidou, Natalia. "Use of SUD - Elements at Western Harbour in Malmo, Sweden I ArchiTravel: ArchiTravel. 3 Nov. 2012. Web. 2 Oct. 2014.

Site plan

Aagaard Andersen









Jeppe Aagaard Andersen

Water access

TOS NOS











Malmö Västra Hamn Sundspromenaden

Location:	Mälmo, Sweden
Architect:	Jeppe Aagaard Anderson
	(Sundspromenaden)
	Thorbjörn Andersson
	(Daniapark)
Engineer:	Jens Abilgaard
Client:	City of Mälmo
Constructed:	2001
Cost:	\$46 million CAD
	+ unknown private
	developer contribution

Section

SITE: Western Harbor, Malmö, Sweden



Mist is used to cool people









Water biking on the waterfront



Overview of the waterfront promenade





Marina Bay Promenade

James Wohlers Abood Alamoudi

The Marina Bay Promenade is a waterfront route connecting a series of attractions from the Marina Centre, Collyer Quay and Bayfront areas.

Locals and tourists alike come to relax and experience a close relationship to the water here. Panoramic views of the downtown and bay can be seen from any spot on the promenade. The promenade also acts as a viewing platform for events in and around Marina Bay. A key connection has also been formed to link new construction at Clifford Pier and the Marina Bay Sands.

_ocation:	Singapore City, Singapore
_ength:	3.5 km
Cost:	\$35 million USD
Constructed:	2004-2010



Using the skyline to attract users





archdaily



archdaily.com

Site context with neighboring marina

Maritime Youth Center





BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



Decking form echoes the ocean waves

Maritime Youth House

Kenna Patrick Rhys Van Bemmel Rebecca Christy

The Maritime Youth House is located in the neighborhood of Amager Øst at the Port of Sundby on the edge of the Oresund Sound. The house was designed by the architecture firm PLOT and was completed in 2004. At just 2,000 sqm, the house was finished for under \$1.95 million US.

Two main clients use the space. The first, a youth center, uses the house as an outdoor recreation area; the second, a sailing club, uses the house to store their boats. The house is well loved by both of these user groups as well as other visitors to the marina.

As the soil on site was polluted by heavy metals, the architects elected to save money by building the house entirely of wooden decking above ground. The unique form of the house echoes an ocean wave and integrates well into the surrounding landscape, helping to engage users with the water beyond.



Connection to the Øresund Sound




History

- 1909 Daniel Burnham creates the "Master Plan of Chicago" which originally envisioned five piers.
- Construction started May 1914 and in 1916 it was opened to the public. At the time it was the world's largest pier, 292 ft
 wide and 3000ft long (89m x 914m). The pier was built in 1916 at a cost of \$4.5 million.
- 1927 The pier was renamed Navy Pier in honor of World War I veterans.
- 1976 The first step in the redevelopment of the Navy Pier was the 1976 restoration by Jerome R. Butler, Jr. of the Auditorium building at the eastern end of the pier.
- 1977 City Hall designated Navy Pier as a Chicago Landmark.
- 1989 The Metropolitan Pier and Exposition Authority (MPEA) took control over the Pier.
- 1992 The renovation by Benjamin Thompson & associates started in 1992 and was completed in 1994 at a cost of US\$200 million. The result is a very successful recreational center next to Chicago's downtown area.
- 1999 Navy Pier opens its newest attraction, Chicago Shakespeare Theater.
- 2011 MPEA enters into a long-term lease with Navy Pier, Inc. (NPI), the not-for-profit established to maintain Navy Pier as a historic public landmark and oversee its redevelopment.
- 2012 In March of 2012, Navy Pier, Inc. announced that James Corner Field Operations (JCFO) was chosen as the design team with which it will work to reimagine the future of Navy Pier's public spaces



Inspiration for Seattle?

More connections may be built... More attractions may be created...



Connect to the City

Amity and Reduce the Scale

Navy Pier 2012 vision

Navy Pier

Jiaxi Guo

Navy Pier is a 3,300 foot long (1,010 m) pier on the Chicago shoreline of Lake Michigan, close to Chicago's downtown core.

Designers:	Jerome R. Butler, 1976
	Benjamin Thompson &
	Associates, 1992
	James Corner, 2012
Client:	Metropolitan Pier and
	Exposition Authority (MPEA)
Cost:	\$200 million (1992)
Visitors:	65% live in the Chicago area
	55% female, 45% male
	82% are ages 21 – 54
	\$84K avg. household income
	80% stay for 3+ hours



Concept

James Corner Field Operations

Room connections and sequence of activities

Social rooms created for each







Elements



Currently Available space for pedestrians without car or bike traffic: 2.560 m2

Proposal Available space for pedestrians without car or bike traffic: 5.050 m2



Rainfall The square is shaped by rain water which is collected, retained and led away.



Hilly urban landscape The hills are betwen 0,5 and 4 meter high. The highest point is located far from sourranding buildings.



Natural value The city and nature together creates climate, social and economic value.



Five times more trees 22 out of the 35 existing trees are kept. Potentially 175 new trees wil be planted. Tredje Natur











Flooding in Copenhagen



Sank Kjelds Plads existing conditions



Tredje Natur



206%

Neighborhood master plan



TJ Bandrowski Sarah Giannobile

Sankt Kjelds Plads

Roxanne Lee

Location:	Copenhagen, Denmark
Designers:	Tredje Natur
Owner/Advocate:	The City of Copenhagen
Project Period:	2011-16 (construction not started)
Size:	8000 sqm
Cost:	\$50 million US, 5-year investment

Sank Kjelds Plads is part of Denmark's first climate adapted neighborhood design. The vision for the square merges natural phenomena with public life by managing storm water on the surface in a natural, flexible and informative way. This provides opportunities for greening the streets and creating vibrant urban spaces by integrating technical and social methods.

This projects aspires to be a green model for climate adaptation in cities when it is unveiled in 2016. The main design component doubles the surface area of the square by creating a series of depressions and hills. More surface area will retain and slow storm water runoff, reducing pressure on the sewer system during large rain events. The hilly terrain also provides micro-climate, urban green space and recreational areas. Excess water will be channeled along new cycle lanes that double as storm drains leading to the harbor.





Reminiscent of Gasworks Park in Seattle,

Silo Park is an industrial reappropriation of a former cement depot in the newly developed Wynyard Quarter of Auckland's waterfront (New Zealand).

The cement silos were retained in recognition of the area's industrial heritage. Today, the silos serve as a blank canvas surrounded by multifunctional open spaces for public programming. Summer nights are filled with free concerts and outdoor movies, utilizing the walls of the silos as an imaginative use of surface for film. Markets activate the space offering a variety of food stalls, vintage clothing stands, contemporary artists, street performers and more alongside stunning harbor views. Silo Park encourages positive social interaction while promoting environmental education and awareness.

The park is designed with diverse textures, angles, colors, and active paths. It is decorated with art and installations responsive to ecological design. The bioretention rain gardens on Jellicoe Street and the Silo Park 'polishing ponds' capture, treat, and reuse stormwater. Original materials, such as concrete blocks from the Golden Bay Cement works site, have been re-purposed and incorporated into the park's design.

The trusses of the stainless steel Wind Tree sculpture swing with the wind and the reflection pond beneath it double as a wading pool during warmer months. Silo Park provides an artistic, inspirational environment along Auckland's waterfront, balancing the neighborhood's industrial heritage with environmental responsibility and urban play.

Exploring the connection between art in landscape and the atmosphere it creates for users is important, whether it is through experimentation, relaxed rules, or pure enjoyment. Understanding the components that encourage an attitude of play informs the structural and spatial foundation for a playful experience. If landscape seems pliable, does this foster more creative ways of being and acting? Does a playful landscape create playful behavior?

Components of play include the unusual or unexpected, both in shape, color, and function, movability/inter-activity, and legibility. Might a bean bag seduce more than a metal bench? How can we re-imagine the use of surfaces such as the cement silos? Responsible design can be integrated into a creative space while remaining







Silo Park also asks us to reflect on how to honor and include indigenous people who have been connected to the spaces we contemporarily design as sites. Just as the Maori were reached out to during the design process for Silo Park, so too should we meaningfully include the Duwamish as we embark on Seattle's waterfront design if we aim to create a true cultural narrative.



Silo Park

Arianna Allahyar Grayson Morris Emilv Ritchie

Project:	Silo Park + North Wharf
	Promenade
Location:	Wynyard Quarter, Auckland,
	New Zealand
Designers:	Taylor Cullity Lethlean &
	Wraight + Associates
Client:	Waterfront Auckland
Completed:	2011
Construction:	\$28 million USD

"Silo Park is a layered public space that facilitates a range of hybrid uses; passive recreation, event space, youth precinct, industry and folly. Each program is new to the site, yet built from the pattern language, infrastructure and the mythology of place."

- Taylor Cullity Lethlean





ecology urbanism

HISTORY

Post Civil War:

The space was a neighborhood for poorer residents in Washington

In the 20th Century:

The area continued to grow, with its population peaking at 35,000 in 1905

By the 1920's:

Conditions began to decline - it was seen as a "problem area" by District and Federal officials in the 1950's due to substandard housing and overcrowding.

1950s:

A dramatic plan to demolish and redevelop the SW was implemented

2006:

A request for the redevelopment of 23 acres of publicly owned land and adjacent riparian areas along the southwest waterfront was issued

COMMITMENT TO LEED

The Wharf's buildings will be designed to meet or exceed LEED-Silver certification. These standards not only embrace the concepts utilized in LEED for Neighborhood Development, but bring them to life for the building users, allowing for a healthier environment to live, work and play.

CERTIFIED		GOLD	PLATINUM
40-49 Points	50-59 Points	50-79 Points	80+ Points



REDEVELOPMENT FOR COMMUNITY BENEFITS

1. Affordable housing

30% of the units are designated for affordable housing

- Local, Small, and Disadvantaged Business Enterprises (LSBDE) participation
 20% LSDBE beneficial ownership of the Master Development entity
- 3. First source hiring / workforce development
 1,000 new permanent service jobs
 650-1,000 construction jobs in sustainable construction
- First LEED-Silver mixed-use project in the District in a LEED-Gold Neighborhood Development of pilot projects A national model for waterfront development best practices

5. Tax revenue

\$40 million annually in taxes generated for the District, including the first DC neighborhood on the waterfront



The Wharf

Arisa Nakamura Wenying Gu

Location:	Washington, DC
Year:	2012-2020
Investment:	\$2 billion USD
Master Planner:	Ehrenkrantz Eckstut & Kuhn
	Architects
Marine Design:	Moffatt & Nichol Engineers
Landscape:	Mathews Nielsen
Civil Engineer:	AMT Engineering
Parking:	Walker Parking, Colonial
	Parking
Geotechnical:	Haley & Aldrich, PSI, Inc
Transportation:	Gorove/Slade Associates,
	Inc.



The Wharf Farmers



National Cherry Blossom Festival





PROJECT FACTS

Residents: Hotel: Office Space Retail Space Culture:

Parking:

Public Space: Green Roofs: 560 units 600 keys 840,000 sqf 335,000 sqf Music Hall/ Museum/ Maritime Education 2,500 cars underground 1,750 bike spaces 400-500 marina slips 60% of total area 50% of all buildings



Google Maps 2014

SITE: Washington, DC



View from West End Bridge on the Ohio River: the parkway in its entirety extends to the Hot Metal Bridge on the Monongahela River, and to the 31st Street Bridge on the Allegheny River





Originally built to transport molten steel from one plant to another via railcar -



Formerly a deteriorated five-acre parking lot on the historic northern



Popular historic park, owned and operated by the Pennsylvania

Point State Park Renovation



Pittsburgh's historic bridges are important to the city's identity, and are a good place to experience the 16th & 31st Bridges



"Green breathing room" features

Northshore Riverfront Park & Trail

steps to the water and a great lawn,

Riverlife Taskforce Principles for Riverfront Development

- Feature the riverfront as the front door
- Showcase the river's history
- Activate the riverfront
- Limit obstacles and connect to the river
- Engage with the water
- Connect seamlessly along the riverfront
 and into neighborhoods
- Repair and enhance the environment
- Employ high quality architectural materials and sustainable engineering practices

Planning began in **2001** by the Riverlife Taskforce, a public-private partnership launched by former mayor Tom Murphy

Located at the intersection of **3 rivers**: the Allegheny, Monongahela, and Ohio

As of 2014, it is **80%** complete

Features **13 miles** of public recreational trails & connected public space



IN DEVELOPMENT: Point State Park Connection



IN DEVELOPMENT: Mon Wharf Switchback



FUTURE: Riverfront lighting plan

Three Rivers Parkway

Stevie Koepp Will Shrader

This parkway system was developed in an effort to redirect Pittsburgh towards the three rivers that put the city on the map-- the Ohio, the Monongahela, and the Allegheny.

Prior to 1990, community perspectives on the waterfront were generally negative; the waterfront was seen as a dirty, dangerous, post-industrial wasteland.

The city established a taskforce in 1999 with the following mission to "[r]eclaim, restore and promote Pittsburgh's riverfronts. Make them the environmental, recreational, cultural and economic hub for the people of this region and our visitors." The parkway that exists today is the product of this ongoing effort.







in we apply the concept of Landscape or banish to the waterfront, then its main priority is to connect water and city.

Our team thus suggests a concept as a solution: let us consider a linear or edge-shaped waterfront as multiple surfaces. The water surface is concerned with ecological functions such as biodiversity, water quality, and other traditional aspects of the waterfront as an ecotone. Our perception of urban surfaces places the waterfront as a node or hub of urban space that influences urban activities such as transportation or leisure. The last surface should be cultural, actively engaging people in their daily life. In sum, these three surfaces must interconnect and blend to inform basic landscape infrastructure.

Toronto Waterfront : main view



Master plan





Peter Footbridge

Queens Quay Boulevard (main street)



Simcoe Wavedeck Google Maps 2014

744 SITE: 176 Cherry St., Toronto, ON



83 PROMENADE FOR PEOPLE ARIANNA ALLAHYAR

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SITE DESIGNS

Instructed by our experiences in Copenhagen, we maintain that in order to create an equitable, exciting waterfront within a thriving public realm, there should be ample opportunities for many types of play for people of all ages and needs. Therefore, we selected sites, developed site programs, and created designs for urban play that range from waterfront parks and plazas to habitat sanctuaries and marine farms. New street designs which promote safe pedestrian and bicycle use as well as stormwater solutions, accompany the proposed public space destinations.



Overview of existing opportunities and challenges for future design con-

Present

Our dependency on carbon is evident in our infrastructure. The majority of right-of-way on Alaskan Way is currently dedicated to vehicles.







Proposed

Active transportation is gaining momentum with attention to both public and environmental health. The future Alaskan Way will prioritize people.







PROMENADE FOR PEOPLE

Arianna Allahyar

When the Alaskan Way Viaduct comes down and the future State Route 99 tunnel is complete, forecasts indicate up to a 50 percent reduction in vehicle traffic on Alaskan Way. Reduced vehicle volumes provide an instrumental opportunity on Alaskan Way to rethink the street. Rather than prioritizing cars, the purpose of this program is to reconfigure Alaskan Way to prioritize pedestrians and bicyclists while maintaining the needs of vehicle and train traffic.

The main design concept is to shift the street to the east, utilizing the available right-of-way from the historic George Benson Streetcar, and create a pedestrian promenade and two-way cycle track along the waterfront's edge that seamlessly integrates with surrounding connections. Not only will the newly designed street strengthen connections through the corridor, it will also provide opportunities to stay and play along Seattle's northern waterfront.



Google Maps 2014



Detailed plan view of the intersection between pedestrians, bicyclists, and vehicles

Points of Interest







Stepped seating provides places to rest, captures views, and also serves as a table in back for people to eat on or lean against





Planting strips serve as a mechanism to filter stormwater as well as provide a buffer between vehicles and cyclists



Site plan of the reconfigured Alaskan Way



Large-scale seating



Small-scale seating



Playful pavement

Flexible space for food trucks



Bicycle parking



Colored pavement







Appropriate signage

California Bay Laurel



Representative section of Alaskan Way; available right-of-way varies

Sound Bites

Temporary Intervention

Temporary interventions are a way to transform public spaces to introduce new uses and activities. Sound Bites is a program that combines music with food to invite people to play and stay on the waterfront as it continues to evolve as a waterfront for all. Savor some of Seattle's favorite street eats and listen to performances by local musicians in front of the glimmering backdrop of the city's picturesque waterfront. Implementation requires coordination among local food vendors, musicians, and city permit staff.



View of Seattle's new favorite Saturday night spot at Sound Bites





15,000-13,000 years ago -15,000-13,000 years ago-The Vashon Glacier, a sheet of ice once 3,000 Seattle's waterfront was a bluff which extended feet deep ait is blickets, retraists northward, it leaves a deep canyon, now known as Puget Sound in its wake. I blickets and the railroad station was a tidal marsh. 1862-1802-

3,000 years ago-1700 AD -Large villages occupied areas along the Seattle 1853-Waterfront and Duxamish River. The Duwamish Town's principal economic support more than 272,000 pounds people hunted, gathered wild plant materials, was Henry Yesler's lumber mill at of salmon, and fished for abundant salmon and other the foot of Mill Street (now Yesler Way).

1866 - transcontinenta The first fish cannery was I...

1883 - i conservation Jahaning. The Northern Pacific Railway Company announced that its transcontinental railroad would connect with Seattle. annery was i 1910-Northwest Fisheries was one of the main tenets of pier 62 who canned and distributed Alaskan red Salmon

Decline of natural resources and depression of the 1940's -2305 led to conservation measures and The waterfront was virtually under military conservation planning. control with all activities concerned for the efforts of WWII. After the war, the waterfront never really regained the vitality of old.

The changing technology made the facilities of the Central Waterfront obsolete, and the limiting factors of urban development on the east and severe water depth to the west made it impractical to rebuild and update.



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront







1989 -For many years after the city acquired these two piers (in trade with a private company for pier 57), they were the venue for the popular **Summer Nights at the Pier** concert series.

2014 -Temporary design installations installed on Pier 62/63 include a forest of origami animals constructed out of paper that decomposed overtime. Play furniture including swings, seesaws and a wood mountain are made out of original pier decking. The temporary installations helped to introduce the new design and folding concept to the local community. The pier 62/63 Folds design helps to reveal the original bluff ecology and celebrates the spirit of the place. The design highlights the regions waterfront culture and ecosystem while enhancing the quality of life for the residents, wildlife, and for the visitors.

2020 – The local community has noted a significant increase in wildlife on Pier 62/63. The pier is now a year-round destination of the community to gather, fish, kayak, and play.



FOLDS: REVEALING HISTORY, CULTURE AND ECOLOGY

Christel Game Katy Scherrer

The edge between the urban and the natural reflects its inhabitants, their behavior, and the resources on which the culture was established. We are proposing to deconstruct Pier 62/63 through cutting, folding and stitching together a landscape that reveals the original bluff ecology and celebrates the spirit of the place. The design highlights the edges between the region's waterfront culture and ecosystems and enhances the quality of life for residents, wildlife, and visitors.

The main goal for our design is for users to have an emotional or ethical revelation about their own environment. We divided the site into three main areas. The first area seeks to reveal the past bluff and wetland ecology. The middle area helps to link and provide transition between the two other areas. The third area, at the end, on the west side of the pier is a contemplative area where there are platforms to look out, up and down at the water and surrounding landscape.















THE WEAVINGFRONT

Yoonshin Kwak Abood Alamoudi

The site located in the north area of the waterfront has been isolated when compared with the southern area, due to lack of attractions and the barrier created by intersecting railways. We perceive this separation as an opportunity which can be transformed into a main theme. We suggest a 'connecting plate' to increase accessibility of the site to a new waterfront to allow users to access Elliott Bay more easily. Users can enjoy a newly created range of activities, the seascape, green communities and even the train itself.

phase3_mingle & vary

Using the old railway site as a symbol, users move through area but are allowed spaces to linger.





connectivity1_ users+spaces

access and details

6-----

(-----)

access by ramp

access by wheel



street park (connecting plate)

In order to provide more public space, make the site more attractive, and achieve connectivity, we suggest a 20 ft. high 'Connecting Plate.' Users can enjoy a variety of activities and events, on this over 120 ft. wide street park, which represents the train or directly relates to the waterfront.







cafe & retail shops

connectivity2_water+users



salmon + human

The existing space will be expanded to provide more activities. But regarding fish, shading sunlight should be considered; penetrated and transparent parts would provide sunlight for fish and also will give new marine experience to users.





key map

A new waterfront will act as a main attraction of the site. The created new space gives users more activities to enjoy and also allows salmon and users to coexist in the same space.



stormwater + activities







connectivity3_ green + economy



With economical circulation for sustainability, locals can grow their own vegetables at the community garden or urban farm. They can use storages in the green house and also can grow other kinds of crops and flowers. The owners of food trucks and cafes are able to buy them more cheaply. This will make the site more green as well as economically sustainable.



site anchors_ transportation museum + new hotel

The new buildings, hotel and transportation history museum will act as anchors of the site. As well as the new waterfront, these new works of architecture will be powerful reasons for people to visit this site.









MASTER PLAN

aerial bike way

ansportation history museum

4

3

ALC: NO.

GREEN COMMUNITY ZONE

1. tidal marsh 2. greenhouse + vegetarian cafe

- 3. tree canopy + flower wall
- 4. urban farm + flower garden
- 5. rail community garden

CONNECTING PLATE

1. media kiosks 2. transparent slits 3. rail community garden 4. movable benches 5. linear garden

BLUE ACTIVITIES ZONE

retail & cafe

1. sunshine pergola 2. kidspond + waterwall 3. kids railway 4. community garden 5. ramp + flowerwall

6. railway community garden 11. movable benches 7. stormwater swale 8. penetrated water garden 9. ramp + kiosk 10. observatory deck

12. waterfront plaza 13. edged swimming pool 14. shower, dress room

100ft

temporary programs










Entire Plan, 3 Design Areas: Expanding Edges, Reconfiguring Pier 62/63 and Eelgrass Restoration Learning Space.



A circulation study maps intersections between transit types and species, seeking to harness synergy from overlaps and mitigate risk to all occupants of the space.

NEGOTIATING SPACE FOR HUMAN AND ANIMAL EXPERIENCE



Elliott the Octopus Sculpture-Initial Concept Sketch

Existing salmon migration corridor



Our context analysis of the site identified potential influences and partners to connect our design with. Existing cultural beacons and popular tourist destinations provide opportunities to harness human circulation flows and partnerships for ecological education and restoration.

HABITAT INTERSECTIONS

Emily Ritchie Arisa Nakamura Ivan Heitmann

We began our design process exploring what spatial interventions could be used to connect the Sound with the city, both culturally and ecologically. Our initial concept, Elliott the Octopus, transformed over the guarter into different spatial configurations. The essence of this octopus-a powerful gesture to inspire visitors to reconnect with the Sound-remained our guiding principle for overall design. The need for ecological restoration in the Sound, coupled with outdated and lackluster infrastructure on the pier, propelled our group to negotiate the spatial mechanisms for creating a shared habitat. We strove to create space concerned with the intersection between robust human and animal experience. Our final design reflects this commitment to reinvigorating the waterfront through design tactics that enhance human experience while prioritizing the needs of the Sound's ecological community.



SITE DESIGNS: Habitat Intersections 105



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



Riding the Duwamish boat through the eel grass habitat

Food truck and concert at the large deck





BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront

With Pier 62/63's future uncertain, the cultural memory at this site provides the momentum for enlivening a reconstructed pier as a civic focal point and an appropriate landing for the overlook walk from Pike Place Market.

A. Artificial beach with steel bandsB. Spiral stair case and service entranceC. Delivery entry and public restroomsD. Integrated furniture in emblematic formE. Boardwalk built with reclaimed 62/63lumber

2

CULTURAL SUCCESSION:

what's next for 62/63?

design by Ivan Heitmann

F. Light penetrating surface



Sand is shaped by the elements and resisted by steel.



Reused and new wood textures contrast with glass rails.



Boardwalk connects pedestrians to water

HABITAT RESTORATION: EELGRASS SUBMERGED MEADOWS

design by Emily Ritchie



These constructed floating eelgrass beds are a response to the degraded state of the sound. They provide habitat and bioremediation while reconnecting people to the ecology of this place.

Eelgrass is a type of ecology that provides robust habitat for a multitude of creatures, including juvenile salmon. Historically present in southern Puget Sound, large areas of eelgrass have been lost.

Puget Sound: A Fractured Ecology

While the sound appears healthy, it is in a serious state of decline from pollution and habitat loss.



A network of paths guides visitors through the constructed habitat, providing moments for intimacy and reconnection. A central outdoor classroom dome is a focal point for gathering and learning.

Zostera Marina: our native eelgrass

144

BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



A partnership between structure, function and culture

These constructed floating eelgrass meadows provide habitat for migrating salmon and other creatures, aiding in creating a foundation for a healthy sound ecology.

Humans can coexist with these creatures' needs and enjoy this habitat, becoming reconnected to the sound through education and ethnobotanical practices.



Science Based Design

Primary considerations for floating eelgrass frames:

1. Access to Light

- 2. Retainable substrate
- 3. Low turbidity
- 4. Permeability to water and creatures
- **5.** Easily transplanted trays
- 6. Flexibility in water
- 7. Floating or walkable edges

An interdisciplinary process between science and design

Her was wandering POST CARD down on the Seattle waterfront piers of came STAMP across this mysterious, glowing * claren science of box. I had no idea what it was, restoration efforts but when I approached it I got the sensation I was experiencing in the DNW you'll have to come the underwater realm that had been transported on typ of the pier! visit of see UT. Are whoever made this thing also they doing citizen initalled a periscope to look science projects where under the subface of observe you are) something called "eelgrass" It seems they've constructed this eelgrass to provide habitat for 2 diversin 1 of creatures of asked me to track what species I saw swimming by on o citizen science app. feit so unspired by this submerged love emily, expendice im going to get Periscope Ilabitat Ilouse (nvolved in? Seattle, Washington, USA



Photo of Pier 62 and 63 (October 2014)



SEATURE PERISCOPE HABITAT HOUSE



PERISCOPE HABITAT HOUSE

A Temporary Installation

A glowing cube perched on the dock, visitors are transported to the underwater world. A temporary exploration into how the fabrication of otherwordly experiences can inspire participants and shift behavior.

Lighting, projection and sound flesh out this immersive installation, replicating the feel of a submerged plane. This transporting experience shakes visitors from their indifference and disconnection from the underwater world, inspiring them to learn about the ecology of the sound and participate in its stewardship. Visitors are invited to record what they view through the periscope in a citizen science data collection app through their smart phones, assisting scientists in tracking species diversity and the overall health of the ecosystem.



Surrounding Area: Context Map

٠ barge . ٠ spaces • space

BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront

Barges and shipping containers create dynamic,

flexible spaces intended for:

- Creative expression •
- Learning and sharing .
- Performing and entertaining •

"Starter Kits" for different

barge and container configurations including tables, chairs, other equipment, and spatial needs are developed for the following program ideas:

- Performance and activity
- Outdoor classroom/ workshop space
- Public art gallery & work
- Big 'n Free Library space
- Creativity & reflection nook
- Games, picnics, and shelter
- Active & creative play area
- Festive "pop-up" party area



Science Barge, NYC



The Port of Seattle was created in 1911 for the purpose of establishing public ownership and control of Seattle's waterfront, one of the city's most vital resources. The Pier 69 Art Walk & Theater concept reflects and reinforces the Port's public service mission by inviting a public embrace of the area adjacent to the historic but imposing Port headquarters building.







???



Performance/ Activity

PIER 69 ART WALK & PEOPLE'S THEATER

Jason Garnham

The Pier 69 Art Walk & Seattle People's Theater is where the people of Seattle lay claim to their waterfront through their own creative expression. it is a waterfront park space that literally grows with public involvement. Barges and shipping containers create a flexible programming framework while reinforcing the hard-working history and context of the waterfront and the Port.



Barge Plan



Olympic Sculpture Park, Denny Way Park and Belltown Regrade Park are within proximity. Creating a network of parks will be beneficial as the area continues to grow.

Belltown bars and nightlife are a strong feature of the neighborhood. This creates an inviting presence for both locals and tourists.

One existing P-Patch in Belltown that has 39 plots and is 4,400 square feet. There is a 3-year wait list to join; operated by Seattle Parks.

Belltown neighborhood has approximately over 12,000 residents. Over 75% of residences are single individuals.

The art community within the neighborhood is strong. Both public and private galleries are common.

Music venues are another popular feature of the neighborhood and will continue to grow along with the population.



Facing east on Battery Street from



Facing south west on the Viaduct



Facing east to Battery Street tunnel



BELLTOWN TRAVERSE

Rebecca Christy Stevie Koepp Rhys van Bemmel

The Belltown Traverse is a connected neighborhood greenway, iocated in the 'Belltown Quad' at the intersection of First Avenue and Battery Street, this project focuses on the Seattle waterfront as a vital component of greater downtown. Located at the site of the soon to be decommissioned Battery street tunnel, the Quad utilizes the existing infrastructure of the tunnel, and capitalizes on the removal of the Alaskan Way Viaduct to create a human oriented neighborhood in the heart of Belltown. By limiting automobile traffic in the neighborhood, capping Elliott Avenue with a land bridge, incorporating green storm water infrastructure, and providing dense urban forest canopy, the Belltown Traverse creates a vital community oriented neighborhood in the heart of the city that also provides a contiguous pedestrian route to the water, improves urban wildlife habitat and promotes community liveability in the heart of the city.



Google Maps 2014 SITE: Battery Street Tunnel and 1st Ave

temporary intervention: belltown self-guided tour



Fun facts about the octopus of the Puget Sound



"Flood the Streets" temporary installation where passersby get to play with water



Clam bake and clam dig down by the

3

Great times ahead for the Belltown neighborhood!

Our fun self-guided tour is both a lively and informative adventure for all ages. At each stop playful and educational facts about life in Elliott bay await you. Whether a local or a visitor, experience play on our streets and seamless connections by going on your tour while making your way down to our waterfront.

 \diamond



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



rainwater conveyance Malmo, Sweden



<image><image>

battery sub-street



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



third places Belitown residential terraces create a better transition pedestrian-friendly areas and create "eyes on the street".

Soft Urban edge Creating better edges between neighborhood parks and screet-scapes is a priority for this project. The Belltown Quad prioritizes pedestrian and other human-scale activities on the streets to allow for more engaged urban spaces.

Marsh Walk This experiential feature of the park encourages users to walk along the periphery of the site and enjoy the water collection process and view part of its natural journey down the hill.

garden terraces The corten steel community urban agriculture plots are functional and aesthetic. They are terraced in order to take advantage of the natural topography of the site and create a promenade walk down to Western Avenue.

art walk



Circating an artistically accessible "art walk" through the line of trees up through the site provides users an authentic experience. The art space is complemented by the surrounding institutions within the neighborhood and provides them an exhibition space.







D

belltown traverse land bridge

vital neighborhood connection

the belltown neighborhood is disconnected from elliott bay by a number of barriers including the alaskan way viaduct, busy surface streets, and missing street connections. The belltown traverse land bridge connects the neighborhood to the bay, offering seattle's waterfront back to Seattleites. Urban wildlife habitat and green storm water infrastructure are also incorporated throughout the design through a system of bioretention swales, and a varied, dense urban forest canopy. Playing off the opportunities created by the closure of the alaskan way viaduct, the design addresses a hole in the urban fabric, seeking to support community in the heart of the city.

reconnecting the neighborhood

A land bridge across elliott bay and the burlington northern santa fe railroad connects the belltown quad back the bay.



engaging urban wildlife habitat

A community design detail, these adaptable bird boxes can be placed in trees and on light poles to provide cavity nesting bird species habitat.



growing urban forest

Human habitat on the ground, avian habitat in the canopy. By providing ample nesting and feeding opportunities, cultivating vibrant urban forest by varying tree species, encouraging dense forest canopy with close plantings, the Belltown Traverse promotes urban wildlife species.

SUFFACE HITOUGH HAR

ormwater





elliott avenue cap

With the redirection of the alaskan way viaduct a large amount of surface traffic will be redirected through the beltown neighborhood. Rather than allowing this to choke out large swaths of the neighborhood, calmer two-way traffic is directed onto elliott ave and buried under a land bridge that patches the damaged urban fabric.

green stormwater infrastructure

green storm water infrastructure is incorporated throughout the Belltown quad. Tracing the switchback to the bay, the swales cleanse urban runoff before it reaches puget sound.



belltown switchback

The steep grade change at the historic bluff is a natural barrier between the belltown neighborhood and elliott bay. A gentle grade is possible by using a switchback path connecting the bluff to bay.



urban forest

Cultivating dense and varied canopy supports urban wildlife species, increases air quality and reduces urban heat island effect.

park

swale

green storm water infrastructure: supporting aquatic health

The biggest impact to the health of Elliott Bay and the greater Puget Sound is the pollution from contaminated urban storm runoff. Green storm water infrastructure is incorporated throughout the Belltown Quad.





Proposed Site Plan



Multi-Functional Programming

We identified site constraints and opportunities which informed the design of our site components.

Road + cars dominate the







A LIVING WATERFRONT AT WORK

Roxanne Lee Jennie Li William Shrader

We thought about what a living waterfront meant in different ways: 1) culture 2) economy 3) ecology

We focused on how our site could facilitate, connect and overlap these living processes to create a rich urban public space along Seattle's waterfront. Our vision is presented in three phases: quick wins and new uses, connecting land and water, and establishing structures for adaptive management.

Gehl's 12 Quality Criteria For Our Site

We appropriated Gehl's quality criteria for assessing, envisioning and designing each site component.





Comfort See Play Stay Exercise Sit

Enjoyment

Sensory experiences Enjoy the climate Designed to scale



Google Maps 2014



Interdependent Cultures

We chose the endangered Olympia oyster as our keystone species. We used its life-cycle as a map to spatially program our site, interweaving oyster and human interactions.



Adaptive Management



Species Over Time

Using adaptive management principles of experimental phasing and monitoring, we focused on how our site could encourage a diversity of species to thrive over time.

PHASE 1 Quick Wins and Programming New Uses

Generating excitement and collective energy for our living waterfront through temporary installations and small interventions.









Encourage Diverse Upland Ecologies 😡 🤷

PEOPLE WATCHERS

Sit, stay and observe with a view of Elliott Bay and the Olympic mountain range



Hop on the bike track connecting the Elliott Bay Bike trail to downtown

RESEARCHER

Educate the public about local environmental research

COMMUNITY GARDENERS

Bring your shovel! Get sweaty with other avid plant lovers. Learn about the lifecycle and maintenance of native plants

CITIZEN SCIENTISTS

Help collect and analyze field data

Encourage Diverse Subtidal Ecologies 🚫 🗠 😭



PHASE 2 Connecting Land and Water





PHASE 3 Establishing Structures for Adaptive Development







CONTEXT







Seattle, WA

INTELLIGENCES





visual-spatial





musical-rhythmic

verbal-linguistic

CONCEPT

The many water bodies surrounding Seattle is one of its greatest assets. Although Elliott Bay meets the city on the west, infrastructural development has become part of an ever-growing buffer between the city and the bay. With the construction of the car-centric Alaskan Way Viaduct, Seattle was physically and visually cut off from the water. The city's current plans to demolish the viaduct provides a golden opportunity to reclaim the waterfront.

Our concept, thus, is the blending of sea and land. By drawing the bay up and in and pulling city life down, we envision a space that celebrates the waterfront. We drew on the theory of multiple intelligences to consider possible users of the site, examining the different ways that people engage with their surroundings using the lens of intelligence domains (bodily senses and traditional intelligence measures). We selected five intelligences to ensure our design promotes human interaction, involvement and experience across a broad spectrum of user groups.



DESIGN GOALS



CURRENT SITE CONDITIONS



Clay Street





South side of Pier 70



Alaskan Way

LAND + SEA THE NORTH ENTRANCE

Sarah Giannobile Wenying Gu **Kenna Patrick**

Water covers 71% of the earth's surface. In an urban environment, the edge where water meets land provides a challenging design opportunity to reconnect to this basic element. Our proposal for the Seattle Waterfront works to pull Elliott Bay back into the urban fabric of the city and to push life back down to Elliott Bay.

Our major goals are to improve the flows to and through our site, to create eddies of activity, and to build active and engaging play that bring happiness to visitors and residents alike. We have called upon Mihaly Csikszentmihalyi's theory of flow and Howard Gardner's framework for multiple intelligences to guide our design thinking.

By considering our users through the lens of intelligences, we hope to create a range of spaces that engage many different types of people.



OPPORTUNITIES



Olympic Sculpture Park Elliott Bay



Waterfront



BROAD STREET CONNECTION TO THE WATERFRONT

From uptown, views direct to Elliott Bay, Broad Street and the new Broad Street Lookout provide a unique land to sea experience





The "Green Loop" (pictured left) is a district framework concept that proposes better pedestrian connections from uptown Seattle to the waterfront. Nearby Bell Street models increased pedestrian and bicycle priority in a downtown street. We envision a similar design strategy applied to Broad Street could help complete the Loop.

The diagram on the right shows the direct walkable connection between Seattle Center and our site via Broad Street. With the recent addition of a bike share program, another non-vehicular mode of transport bolsters this connection.


GATEWAY TO THE WATERFRONT

At the northernmost section of the waterfront, Broad Street transitions into Alaskan Way in front of Pier 70. Our design enlivens this space and celebrates this entrance as the gateway to the waterfront.





UNDERWATER SCULPTURE AND HABITAT

On the north side of the pier we imagine an underwater sculpture park highlighting tidal change, providing habitat for forage fish and opportunities for underwater play and exploration.



 deposit eggs on marine vegetation, (native eelgrass is the primary spawning substrate)
 (wdfwwagov)

1 PIER BECOMES 3

The division of pier 70 creates three distinct spaces, each programmed for different user experiences. Visitors may choose whether to relax and enjoy the spectacular views, play on the fun net forts or socialize in the sun.



- waterfront in Helsingborg, Sweden 1.
- 2. Annabau Landscape Architects in Wiesbaden, Germany (www.annabau.com)
- З. green train tracks in Barcelona, Spain (applied to the Clay Street Park)

pier modifications: increase sunlight for humans and aquatic species

PLAY AT CLAY

A local crowd will enjoy a newly imagined backyard park at Clay Street promoting challenging physical engagement.



BENEFITS

- 1. a prime location for much needed green space
- 2. off the beaten tourist path, community focused neighborhood hangout
- 3. breaks the traditional park mold by incorporating access to challenging activities
- 4. promotes exercise and play for all ages
- 5. provides ecological benefits
 - builds canopy cover
 - increases permeable surfaces
 - treats storm water runoff: slow, spread, sink strategies
 - climbing wall helps educate about underwater habitat



climbing wall design mimics new sea wall textures



within 1,000' of Clay Street



This temporary intervention introduces sculptural play to the site while offering the chance to close Clay St. to vehicles for traffic flow studies.





Original Site Condition



WATERFRONT STORIES

James Wohlers Zhehao Huang

We initially viewed Pier 62/63 and its surrounding area as a lifeless place, lacking variation and a fun atmosphere. Open space was abundant, but little of it was activated. Food and green space also made almost no impact. We sought to alleviate these conditions by designing a set of varied spaces that allow for different experiences.

The new design gifts visitors with a series of choices, engaging them from the outset with embracing slopes that mark the entrance. The canopy shelters people who dine in the food court, while both enclosing and revealing views for those who meander on its roof. A trek to the far edge of the canopy rewards users with clear sightlines of the amazing waterfront view. Our design caters to many users through basic necessities and an encounter with Nature.



Greater Context

Design Strategies



Circulation as play is realized with a sinuous mixed-user path

Bringing diverse communities together via a food court sheltered underneath a canopy

Existing condition - bare and grim



Earth mounds create points of vista and intimacy, adding a spirit of place to the site



Isolated floating habitats provide shelter for birds



Master Plan

- 1. Food Court
- 2. Amphitheater
- 3. Mixed User Path
- 4. Wooden Ramp
- 5. Stairs

- 6. Sitting Boxes7. Walking Paths
- 8. Gravel Path
- 9. Dunes
- 10. Canopy

- Floating Wetland
 Circle Swing Bridge
 Wave Bridge
 Pier
 Fountains
- 16. Grass Slope
- 17. Canopy Void
- 18. Pier Void
- 19. Alcove
- 20. Skateboard Slope

A Personal Story







Paths circle around the water



Choice of paths



Interactive bridge

connection



A connection with Nature



Commotion and the warm morning sun greet me at the entrance to Pier 62/63









Chowing down on a buttery, gooey sandwich from the food court











Dark clouds roll overhead and a cool breeze rustles the tall grasses as I stroll through grassy mounds



Temporary Installation



Rope Bridges

Swinging rope bridges placed in the marina alter the linear, rigid circulation of the waterfront. Because they bob up and down, and are strung back and forth, these bridges invite people to experience the water in a different, more playful manner.



Activation at Night

Flickering lights on the bridges and lanterns floating in the water illuminate the marina at night, revealing the dark surface below the piers.





The form of the site calls to the sculptural nature of a piece of driftwood. This theme is carried to the roof where rings of "grain" facilitate intended movement, soften up a hardscape, allow for light entry below.

To the far right is the site plan for DRIFT, which correlates to the section cut pn the next page.







Upper & Lower Terrace

Site Plan, Not To Scale - Section on following page

The Wood "Grain"



Concrete pavers form inner ring of grain



A shallow glass gutter reflects the skyline and allows for light entry below



A steppable green roof softens the hardscape



Concrete pavers provide a solid viewing platform around the perimeter



Grayson Durant Morris

DRIFT is a sculptural fusion of landscape, architecture and valuable marine habitat. conquerable at the human scale. Located at the terminus of Bell Street, this important civic space is redesigned with spontaneous user access in mind: direct access to the water, beautiful views along the edges of the rooftop, and access to a free art supply - driftwood. The role of this civic space is re-envisioned to facilitate the playful and accessible act of driftwood sculpture. Those that visit for views, sculpture, a cruise, meetings, weddings, play, etc. drift in and out of the site with a sense of ownership, pride, access, and participation.



SITE: Bell Street Pier





Site Influence Analysis and User Collage







А

A'



The sculpture is intended to be an icon along the waterfront, a beacon for visitors and residents alike. DRIFT civic center will come alive both day and night, able to absorb the confluence of activity that characterizes Bell Street and Alaskan Way, and at night glow within the wood and steel facade. A sight-line through the building is a big move toward architectural porosity and access to the waterfront. Currently, the civic center is standoffish in regards to public access and views of the bay along Alaskan Way. DRIFT establishes the necessary sight lines and access points, then builds important event space around those.

Light entry from the transparent rain gutter above projects playful, rippling light into the buildings and outdoor public space below - connecting visitors, in a subtle way, to the activity above them. These connections are important on such a large site. Driftwood is the art material that delightfully litters the site. As new pieces float in, they are pulled up into the pebble beach outdoor public art gallery a presentation space for both commissioned works of art and casual masterpieces laid out by visitors. The shape of the building and warmth of materials allows the facade to feel public and encourages leaning, stretching, and laying as this area of play attracts participants.







ECO SPOTS

CONNECTIONS

Create new access to water, reduce building area, and increase natural lighting



Patty Chen Jorge Alarcon

DIVERSITY OF ACTIVITIES spaces that recreate

Create flexible modular spaces that recreate waterfront situations



Eco spot: a group of strategies that integrates green infrastructure, human activities and physical characteristics.

To achieve the goals of ecological animation (see *left*), "eco spots" are created for adaptive architecture and landscape. These eco spots are a part of all elements in the landscape and architectural proposal, from site scale to micro scale.

NATURAL LIGHTING

creating openings in the building or design optic fiber lighting for areas under the building and pier

Provide natural lighting



INCREASE GREEN SURFACE Increase green infrastructure and public space on the waterfront



REDEFINING PUBLIC AND PRIVATE SPACE

Create a new public area, integrating public and private space



INCREASING BIOMASS IN WATER

Improve habitat for juvenile salmon by providing food and shelter in the form of leaves, insects and floating wetlands.







Access plaza

Main plaza and wetlands

Cafe and access to the water

Access to the Convention Center





View from access plaza

- 1. Access plaza
- 2. Cafes and restaurants
- 3. Main plaza and floating wetland
- 4. Educational gardens and wetlands
- 5. Access to water
- 6. Cruise terminal plaza (dock access)
- 7. Service access for cruise terminal
- 8. Cruise terminal access (street access)
- 9. Tide pool
- 10. Gathering areas
- 11. Convention center plaza (flexible plaza)



Ecological garden

Shade structure

Plaza

Walking with salmon



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



View from the upper park

Access to the upper park
 Cafes and restaurants
 Ecological garden
 Multi-purpose plaza

5. Maze6. Sitting area7. Shade structure and solar panels8. Hanging gardens



A. Hanging plants and adjacent vegetation from the upper park drop leaves and insects into the water, improving habitat for fish in the site.

B. The double skin in the building landscape provides shelter for birds.



C. Shade structures with solar panels provide shelter and electricity to the building and landscape.



D. In order to engage the community with the project and reflect on the site's habitat, a platform allows visitors to get close to the wetland and appreciate the technology involved in the project. E. Parabolic mirrors integrated in furniture capture natural light and reflect natural lighting under the building and pier. This condition is fundamental for improving salmon habitat.

F. The centerpiece of the learning space is the wetland. It improves habitat for salmon and other fish, insect, and bird species. The structure is composed of a group of bamboo hexagons that frame layers of mesh with soil. Plants such as Douglas aster, salt weed, Pacific water fern, and sea-milkwort are able to bear the salty conditions of the water.

BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront





A Temporary Installation

- Reflects the existing habitat on waterfront.
- Has a playful aesthetic which invites children to engage.
- New experiences are created by walking beneath.
- Gives definition to spaces, plazas, and paths and draws attention to the waterfront both day and night.
- Is a light, portable, and simple structure made with natural and recycled materials.
- Salmon as a theme can be extended into many other programmatic opportunities, such as habitat restoration, travel souvenirs, citizen science and public participation, as well as awareness events.











"Edges come in two sorts: boundaries and borders. A boundary is a relatively inert edge; population thins out at this sort of edge and there's little exchange among creatures...



Boundary: Pier 62/63 and Elliott Bay



Spaces of the new Pier 62/6

Outfall releases polluted stormwater into Elliott Bay Constructed wetland cleans stormwater

Shading from pier harms salmon habitat Light penetrating materials improve salmon habitat

> Hard edges create inhospitable environments Porous edges enhance habitat for all species



Existing: boundary

"A border is more of an active edge, as at the shoreline dividing

ocean and land; this is a zone of intense biological activity, a feeding ground for animals, a nutrient zone for plants." - Richard Sennett

Border: Ecological design

CELEBRATING **RELATIONSHIPS**

TJ Bandrowski Kate Haefele Hailey Mackay

Pier 62/63 is currently dull and lifeless. The seawall and pier's edge create a hard boundary between city and bay. Habitat for juvenile salmon is degraded by polluted stormwater runoff and overwater shading. The wide, empty expanse of pier offers little to no urban life.

Our proposal celebrates relationships between urban and marine, social and ecological by weaving quality public space with stormwater cleansing wetlands and habitat enhancement. This integrated design creates a border, a porous and activated edge for Seattle's waterfront - a new way for city to meet bay.



Proposed: border Google Maps 2014



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Waterfront Wetland and Elliott Bay Cafe (looking northwest)



Terraced wetland (section) atop offshore aggregate fill



Roadside rain gardens drain to waterfront wetland



A lush wetland where street meets pier cleanses stormwater received from upland streets, revealing relationships between bluff and bay, water and people. The wetland is built atop aggregate fill stepped down to meet high tide. A cozy cafe allows visitors to witness the seasonal beauty of the wetland.

REVEALING RELATIONSHIPS WATERFRONT WETLAND




Tidepools create opportunities to discover Elliott Bay marine life, bringing urban residents closer to local ecology







Relationships between materials and circulation

Materials, plants and lighting palette



Urban tidepools are constructed into the surface of the pier, creating habitat and allowing visitors to discover marine life at the city's edge. Open water spaces and light penetrating materials offer an unshaded migration pathway for juvenile salmon.

DISCOVERING RELATIONSHIPS URBAN TIDEPOOL





Sunset at the bluff looking west





Transition between habitat terrace at the cove, open water in the plaza and aggregate fill at Waterfront Wetland (section looking north)



The west end offers many unique experiences. The sloping deck of the cove, ending in a habitat terrace, provides water access and gathering space. The elevated bluff provides spectacular views of Elliott Bay, while the promenade allows for strolling and reflection.

REFLECTING RELATIONSHIPS THE WEST END





Distribution of visitors at seasonal events

"This intermingling of ecological and social temporal cycles - seasonal floods and human activities such as holiday festivals or sports - links the activities of everyday life and the unique events of a particular city to the experience of the dynamic bio-physical aspects of the environment. Nature is not out there but in here, interwoven in the human urban condition."

-Elizabeth Meyer



The new Pier 62/63 could serve as a precedent for ecological design in Seattle

Experiences at the new Pier 62/63 create memories that endure, becoming traditions. Ecological enhancements improve the lives of Seattle residents - of all species.

ENDURING RELATIONSHIPS THE NEW PIER 62/63







Light the Deep Postcard by Kate Haefele

Explore interactive education, play and lighting for an unforgettable waterfront experience!



Child touching sunflower seastar at Pier Peer Photo: Dean J. Koepfler



Light the Deep Postcard by Hailey Mackay

Dear Bianca,

I had so much fun tonight! I was walking on the waterfront and saw all these lights floating in the water, so I followed them to Pier 62/63. It was also lit up with these amazing kelp sculptures. There were grad students from UW on the pier, putting lights in the water to attract sea creatures, and talking about them. I got to learn all about salmon and squid, and it turns out they are super cool! They are planning to build a park on the pier that will have tidepools, which sounds awesome. Plus, it will have a cafe, just a few blocks from work! -Kate



Bianca Hermanson

The Little House of Cats and Shoes

Copenhagen, Denmark



Postcard Text by Kate Haefele

LIGHTING THE DEEP

A Temporary Installation

Lighting the Deep is a temporary installation that facilitates playing and learning on the Seattle Waterfront by illuminating the depths of Elliott Bay. Artful light installations on Pier 62/63 and the surrounding water, attract visitors to the waterfront at night, a time when it is scarcely used. The lights in the water attract marine wildlife and create opportunities to explore local ecology. Pier Peer, a much loved community event held along the Puget Sound unites city residents with underwater creatures and lends itself to enrich the experience of the temporary light display.

Proposed Enhancement Strategies Site Potential Landing and Connection Master Plan Pleasant biking experience on new Narrative of regional history bike path



Breathtaking views of Puget Sound

Scenic, seamless connections to the Olympic Sculpture Park

Existing Site Conditions



VIBRANT WATERFRONT: CONNECTIONS AND LANDINGS

Chih-Ping Chen Doris McMahon Seungwon Song

The proposed Blue Urbanism project encompasses the area located at the north end of Alaskan Way. The site is bordered by the Olympic Sculpture Park and Broad Street on the north and Clay Street on the south. The site on Elliott Bay lies adjacent to downtown Seattle and is within close proximity to popular attractions such as Pike Place Market, Seattle Aquarium and cruise ship ports. There are currently no activities or attractions for the public by the site.

The location offers a myriad of opportunities for providing public accessibility, improving spatial connections and activating the space. Traffic away from the pedestrian areas enhances safety. A promenade with good design and detailing will include spaces for food trucks, a variety of outdoor cafes, play and exercise areas to attract users. Artful lighting will be utilized to provide safety for users at night. A lookout at Pier 70 will provide panoramic views of the Puget Sound and the tidal area will offer opportunities to view salt marsh habitat.



Google Maps 2014

Connections





Currently, there is congestion between automobile, bike, and pedestrian traffic. We propose to improve connections by eliminating two car lanes, increasing the promenade size, providing commuter and recreational bike lanes, and making an axial connection to the waterfront from Broad Street.

Connecting to the City









Connections

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Automobiles

Pedestrians

Bicyclists

Promenade



Returning old streetcars to use as a linear museum to narrate local history and native ecological habitats.

The interplay of the skylight with the reflections on the mirrored axis walls create an enjoyable experience for pedestrians to connect directly to the water.



Landings



The promenade, wave deck, and end point are the three main landings. Various urban play features such as water features and playgrounds animate the promenade. The wave deck and end point change levels as the tides change, facilitating an enjoyable experience for visitors.





Ecological Infrastructure

Native plants, insects, birds and plants are an important aspect of the design - a blue roof on pier 70 provides a natural environment for many of these species, and a wide range of native plants on the promenade urban setting offers ecological learning opportunities to visitors.



Waterfront species



Human Infrastructure: Satisfying Gehl's 12 Quality Criteria for Public Space





Protection against crime and violence

-Lively public realm -Eyes on the street -Overlapping functions day and night -Good lighting

Opportunities to sit

-Clustered seating -Take advantage of the view, sun, and people -Good places to sit -Benches for resting



Opportunities to walk

-Room for walking -No obstacles -Good surfaces -Accessibility for everyone -Interesting facades



Protection against traffic accidents

-Protect for pedestrians -Eliminate the fear of traffic

Opportunities to enjoy positive aspects of clim

-Sun/shade -Heat/coolness -Breeze



Opportunities to see

-Closer views -Unhindered sight lines -Interesting views -Lighting (when dark) Cities for People by Jan Gehl

Diurnal and Annual Changes



The Elliott Bay waterfront promenade offers visitors many options for enjoyment and relaxation. Visitors enjoy positive sensory experiences here - cafes and food trucks offer a variety of ethnic foods; a below deck bicycle path brings riders close to the water; and a terraced tide area allows patrons to wade and explore the salt marsh. Karaoke, street concerts, fireworks shows and burlesque create a lively nightlife on the waterfront. Artful lighting increases safety for visitors. Spring brightens up the waterfront with the Blossom Festival showcasing rows of dogwood trees, tulips, and daffodils. Visitors have opportunities to enjoy the warm weather by sitting on various outdoor seating furniture, standing on lookout point, and strolling through various moments on the promenade. Fall at the waterfront is activated by Oktoberfest, the taste of Elliott Bay, and a Halloween pumpkin carving contest.

Temporary Activation Events



Music Festival

Design Moves







The existing condition is heavily car and transportation oriented. The densely populated neighborhood presents a need for increased pedestrian amenities and opportunities for urban play. The ecologically sensitive waterfront presents a need for green stormwater infrastructure.

Expand Cottage Park to include the adjacent existing parking lot. Transform the BNSF freight train corridor into a greenbelt. Ground cover along the tracks will bio-filtrate pollutants from the train. Removing part of the Edgewater pier will increase daylighting for the salmon and decrease parking (and pollutants) at the waterfront.

Decreasing automobile capacity on Alaskan Way leaves space for a 2-way bike lane and a bioswale. There is more available space for a pedestrian promenade and a new waterfront park. Green stormwater infrastructure is implemented on Vine St. which drains to Puget Sound.

Bio-filtrating the stormwater that drains to Elliott Bay improves habitat for many species, including humans. A new water front park, playground and swim pier highlight the relationships between all species that inhabit the waterfront.





Elliott Ave



Street level parking is under-utilized space in this neighborhood. Development of this space could include a community center, a farmers market and a playground



Elliott Ave presents an opportunity for increasing pedestrian and bicycling pathways

The blank street facade of the storage building could be used for temporary art installations or other neighborhood events



Jason Gover Jiaxi Guo

This project investigates Alaskan Way and Vine St. in the North Downtown Waterfront area of Seattle, Washington. The existing conditions heavily favor automobile traffic, freight and commuter rail, and commercial transportation. The study area hosts one of the densest residential neighborhoods of Seattle, but the residential buildings are separated from the waterfront by the heavy transit corridor. The delicate native ecology along the waterfront has been adversely affected by over a century of development and heavy industrial use. The changing nature of Seattle's waterfront is demanding space that prioritizes pedestrianism, cycling, urban play, connection to Elliott Bay and support of native ecologies and non-human species. This project offers socially resonant urban space solutions that support play and habitat for humans and other species.



Rail Corridor Alaskan Way



Alaskan Way sidewalk



Intersection of Vine St., Alaskan Way and the rail corridor. Unsafe



Google Maps 2014

Precedents, Interventions, Motivation and Inspiration



Golden Gate Park Slide, San Francisco



SEA Street, Seattle



Kastrup Sea Bath, Denmark, White Arkitekter AB



BLUE URBANISM: Inviting Urban Play on Seattle's North Waterfront



Elliott Ave Intervention



Inspiration and Motivation

Preschoolers in the neighborhood with unintentional street art



Alaskan Way Intervention













Section A-A Cottage Park



Section B-B Vine Street

A Waterfront For All

This proposal creates spaces facilitating the cohabitation of the species that use the Seattle waterfront. Implementing green stormwater infrastructure along Vine St, the rail corridor, and Alaskan Way is key to its success. The plants used for bio-filtration of urban stormwater will support the coexistence of many urban species. Mitigating stormwater runoff on site reduces the need for the combined sewer system. The bio-filtered stormwater will be clean enough to return to the local ecosystem, eventually leaving Elliott Bay clean enough to support human activity.











Late Fall Sunset at the Waterfront Park and Swim Pier





Students sketch in Helsingborg, Sweden



Learning about traffic signs at a children's park



Playing around at the Children's Theater



Exploring a small urban park in Copenhagen



Amphitheater in Malmo, Sweden



Students enjoy the sun at Louisiana Museum



Vera and Doris during a firm visit



Riding towards home at sunset in Copenhagen



Students and instructors playing outside the mirrored building at the new playground in Faelledparken

AFTERWORD

"A playful city is a city where you are invited to explore and play - not just on specific playgrounds for children, but for everybody."

- Lars Gemzøe, Gehl Architects



