Public Spaces | Public Life
for Seattle's Central Waterfront

2010 Scan | Design Interdisciplinary Master Studio
University of Washington : College of Built Environments
Introduction

Analysis + Framework

Design

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Sharon E. Sutton, Professor of Architecture, Urban Design and Planning
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Bianca Hermansen and Louise Grassov, Master Teachers, Gehl Architects

Acknowledgements
Scan I Design by Inger & Jens Bruun Foundation
Gehl Architects
Seattle Department of Transportation
Seattle Department of Planning and Development
Mithun
J.A. Brennan Associates, PLLC
Dedicated to our friend, Aaron Vandenberg

Cover image designed by Merritt Ertel
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 replacement of the aging Elliott Bay Seawall, Seattle has the opportunity to reconnect the city to Elliott Bay, set an ecological example for urban Puget Sound shorelines, and create a new city living room, a “waterfront for all.” With these goals in mind, our studio focus was to envision an active, vibrant and multi-dimensional public realm that serves a multicultural, intergenerational population and reclaims the waterfront as an ecological space, both aquatic and terrestrial. We also addressed the need to establish a new structural framework for the Central Waterfront, identifying districts and strategies to connect the reclaimed edge back to its adjacent neighborhoods and the city. This planning work included proposing a flexible road alignment for the revised Alaskan Way, a new seawall configuration that accounts for both aquatic habitat needs and public interaction, and strategies to collect, clean and re-use stormwater from streets that currently discharge polluted runoff directly into Elliott Bay.

Through the generous sponsorship of the ScanlDesign Foundation, our interdisciplinary graduate planning, architecture and landscape architecture students were able to experience contemporary waterfronts and sustainable urban design in Denmark and Sweden, and then apply lessons and inspiration to their Central Waterfront design work in Seattle. As part of our September tour, students had the opportunity to study with the internationally renowned Danish firm of Gehl Architects, and practice their methods for assessing and creating quality public space. As a class we walked Copenhagen’s and Malmo’s pedestrian networks, sketched and analyzed their public spaces and traveled on the cities’ separated bicycle tracks to experience their renewed neighborhoods, innovative architecture, and repurposed waterfronts. The staff of Gehl Architects, Copenhagen’s bicycle planners, Malmo’s Western Harbor designers, COBE Architects and others were our guides, providing 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, we applied the lessons learned to our framework planning and designs for the Central Waterfront, aided by the expert guidance of Bianca Hermansen and Louise Grassov of Gehl Architects and the munificent engagement of Seattle planners, designers and civic advocates throughout the term.

We have many people to thank for this remarkable opportunity. Without the support of the ScanlDesign Foundation we could not have applied the rich set of images and experiences from Scandinavia or so deeply integrated Gehl’s approach in our design work. We are sincerely grateful for Bianca Hermansen’s and Louise Grassov’s clear teaching and helpful critique, and to Helle, Lars, Camilla and Rasmus at Gehl Architects for the fantastic lectures and tours in Copenhagen. Marshall Foster, Steve Pearce, and Dave Goldberg from Seattle DPD and SDOT, Lee Copeland from Mithun and JA Brennan’s office were especially helpful in Seattle, in addition to over forty reviewers and technical advisors who assisted and engaged with the studio over the term. Finally, we couldn’t have done it without our able and talented teaching assistant, Merritt Ertel, who has kept us organized for the last many months, in Copenhagen and in Seattle, and who has worked closely with the students to design and compile this document.

We thank you all, and hope that this work will make a difference not only in the education of our students, but also will suggest exciting, equitable designs for our city’s new public waterfront while promoting enhanced health of Elliott Bay’s and Puget Sound’s blue spaces.

Nancy Rottle, Associate Professor, Landscape Architecture
Sharon E. Sutton, Professor of Architecture
In September 2010, 17 graduate students from the University of Washington’s College of Built Environments studied exemplary urban and regional planning strategies in Copenhagen, Denmark. Students were immersed for two weeks in the famous Danish networks of public space and the culture’s emphasis on bicycle and pedestrian planning.

Students came from many disciplines including: Architecture, Landscape Architecture, Urban Planning & Design, Real Estate, and Civil Engineering. In Copenhagen, these students were led by the renowned urban planning consultants Gehl Architects, who introduced the group to their working methods. Other highlights included tours of redeveloped neighborhoods, the waterfront, plazas, and parks. The trip to Copenhagen was generously supported by the Scan|Design Foundation.

After returning from the trip, the group continued working in our Scan|Design Master Studio course to study and design public spaces in Seattle’s Central Waterfront, with the goal of creating a socially vibrant, ecologically healthy public realm.
Lessons from the Scan|Design Travel Study

CONNECTIVITY:
Surface treatments and delineated linkages improve place to place connectivity. Small carved out spaces with interesting edges and active spaces provide person to person connectivity. Direct access to waterfront initiates a connection between person and place.

ELEMENTS OF DELIGHT:
Mundane elements of daily life can be transformed into fine grain details of comfort and delight using color, warmth, and humor.

TEXTURE:
Bold use of color, pattern and dimension create more interesting and memorable streetscapes.

MEANDERING PATHS:
Subtle curves into hidden destinations inscribe a human scale and encourage human powered modes of transportation.

UNEXPECTED VIEWS:
Framed views create a sense of protection and element of surprise for site users.
In the studio, we began by collecting and sharing the significant amount of research and previous planning conducted for the waterfront. We also invited expertise from local planners, designers, and stakeholders, who gave us a detailed waterfront tour, presented significant issues in an expert panel, and provided as-needed advising and information. We augmented our knowledge of global waterfront designs by investigating over a dozen precedents of significant contemporary projects, for which students developed and presented case studies. Our initial planning exercise was then to quickly establish essential “framework” parameters, including defining cohesive waterfront districts and their adjacent neighborhoods, and identifying important regional, city-wide and neighborhood connective threads.

This planning provided the structure and background for four teams to approach district planning and urban design work. Three teams tackled the northern (Aquarium/Pike Place Market), central (Historic Piers) and southern (Colman Dock/ Pier 48) districts, suggesting strategies for strengthening each district and integrating interconnections between them. A fourth interdisciplinary team provided leadership for overall studio tasks such as model fabrication, and developed solutions for waterfront-wide connective tissue including new road and seawall alignment, stormwater integration, design guidelines, and unifying design elements. These were no small tasks.

Design students worked individually or in pairs to develop detailed proposals for specific sites according to their particular interests. They developed and re-examined their work through several cycles over the course of ten weeks, interacting with Bianca Hermansen and Louise Grassov of Gehl Architects, studio professors Rottle and Sutton, and outside professional and faculty reviewers as well as through peer review. Our aim has been to integrate Gehl Architects’ theory and methodology for successful public space, Seattle’s aspirations for a “waterfront for all,” and our region’s ecological knowledge, goals and ethics. Our working process is outlined in the following Analysis and Framework section, and the students’ more detailed district and design proposals are represented in the final Design sections of this document.
Scan|Design Travel Study + Studio

**Summer Travel Study to Denmark + Sweden**

**Precedent Studies**
- Allegheny Riverfront Park
- Brooklyn Bridge Park
- Coal Harbour
- Embarcadero Boulevard
- SE False Creek Waterfront
- HafenCity, Hamburg
- Helsingborg Waterfront
- Houtan Expo Park
- Hudson River Park
- Minato Mirai 21
- Olympic Sculpture Park
- Slussen Masterplan
- Zhongshan Shipyard Park

**Site + Context Analysis**
- History + Site Use
- Land Use + Built Environment
- Circulation + Pedestrian Environment
- Ecological Environmental
- Economical Environment
- Lessons from the Travel Study

**Gehl Architects:**
Theory + Methodology

**Framework Connections Plan**
- Rewater the Front
- Team Puzzle
- Waterfront as Exhibit
- Distinctive Voices

**District Concepts**
- The Irregular Edge
- Streams, Eddies + Tidal Pools
- Vital Traces + Performative Futures
- Water I Born

**Individual Projects**
### 12 Quality Criteria

During site analysis, students used Gehl Architects’ 12 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 12 Quality Criteria to evaluate their finished design proposals.

### Life | Space | Buildings

In addition to using the 12 Quality Criteria, in one exercise called “Life|Space|Buildings” students took on different roles: student, artist, business woman, clubber, etc. to establish the required program elements needed to create vital public space that is inviting to all.

#### Design Methodology

<table>
<thead>
<tr>
<th>Dimensioned at Human Scale</th>
<th>Positive Aspects of Climate</th>
<th>Protection Against Vehicular Traffic</th>
<th>Protection Against Crime &amp; Violence</th>
<th>Protection Against Unpleasant Sensory Experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions of buildings &amp; spaces in observance of the important human dimensions in related to senses, movements, size &amp; behavior</td>
<td>Sun / shade</td>
<td>Traffic accidents</td>
<td>Well lit</td>
<td>Wind / Draft</td>
</tr>
<tr>
<td></td>
<td>Warmth / coolness</td>
<td>Pollution, fumes, noise</td>
<td>Allow for passive surveillance</td>
<td>Rain / Snow</td>
</tr>
<tr>
<td></td>
<td>Breeze / ventilation</td>
<td>Overlap functions in space and time</td>
<td>Overlap functions in space and time</td>
<td>Cold / Heat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dust, Glare, Noise</td>
</tr>
</tbody>
</table>

#### INVITATIONS FOR WALKING

- Room for walking
- Accessibility to key areas
- Interesting facades
- No obstacles
- Quality surfaces

#### INVITATIONS FOR VISUAL CONTACT

- Coherent way-finding
- Unhindered views
- Interesting views
- Lighting (when dark)

#### AUDIO & VERBAL CONTACT

- Low ambient noise level
- Public seating arrangements conducive to communicating

#### 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

#### 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

#### 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

#### PROTECTION AGAINST VEHICULAR TRAFFIC

- Traffic accidents
- Pollution, fumes, noise
- Visibility

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*Source: Gehl Architects*
Studio Team and Group Work

Throughout the quarter the students had the chance to work in various groups to take advantage of the interdisciplinary studio format. The students were divided into pairs for precedent studies and small groups for site analysis. For the final design project, the studio was divided into four teams that focused on a district within the entire central waterfront site. As a district, each team developed a masterplan design in which their individual or team project was located. Over the course of the term, students continually refined their design proposals, working between districts and site scales and responding to feedback from guests, peers, faculty, and Bianca Hermansen and Louise Grassov of Gehl Architects.

Gehl Architects Master Instructors

Students were first introduced to Gehl Architects’ working methods while in Copenhagen, through lectures and exercises. Students benefitted from an additional two weeks working with Bianca Hermansen in Seattle, during the middle point of the studio, as well as from a studio visit by Louise Grassov at the end of the term. Both provided valuable feedback to guide the development of students’ designs for the pedestrian realm.
Precedent Studies

During the initial stage of site analysis, students researched relevant precedents from around the world with a focus on waterfronts. The full case studies can be found on the Master Studio course website (http://courses.washington.edu/gehlstud).
INTRODUCTION
1895: Klondike Gold Rush

1893: Great Northern Railroad is completed, ending in Seattle
1873: Seattle loses bid for Northern Pacific Railroad (N-S) terminus

1852: Henry Yesler develops Yesler steam mill

1911: Port of Seattle formed

1905: transportation industry dictates development
1889: Great fire destroys much of downtown

1939-1945: World War II

1935: Railroad Avenue is rebuilt as Alaskan Way/Sewall
1940s: World War II & the Great Depression retards growth

1900s: implementation of ongoing planning

1962: waterfront structure links waterfront activity
1970s: concerted effort for recreational development
1950s: Viaduct built

Sources:

www.seattle.gov/dpd/Planning/Central_Waterfront/Archive/Background/default.asp
“East-West and Physical Connections” graphic

www.seattle.gov/dpd/Planning/Central_Waterfront/PartnershipsCommittee/BriefingBook/index.htm
“Council Legislation Related to the Central Waterfront”
“Center City Public Realm Guide”
“County Legislation Related to the Central Waterfront”
“2006 Central Waterfront Concept Plan Summary”

“Seattle Central Waterfront Tour, Part 1: Overview” (information and photos)

www.HistoryLink.org/DisplayPage/qf_output.cfm&file_id=7056
“Port of Seattle Central Waterfront Cybertour” (photos)
Land Use + Built Environment

Land Use

Waterfront Uses

Seawall Replacement Proposals

source: City of Seattle

source: City of Seattle

source: City of Seattle
Circulation + Pedestrian Environment

Views:

- Bell Street Hill Climb Elevator
- Pier 66
- Pier 62/63
- Waterfront Park
- Coleman Dock
- Washington St. Landing

source: City of Seattle

View Corridors:

- Pike Street / Market Sign
- Union St. Hill climb
- Harbor Steps (Potential)

source: City of Seattle

Transit Hubs:

source: City of Seattle

Pedestrian Activity:

source: GFL Waterfront Analysis 2010

Facade Quality:

Facade Contact

The research team evaluated building facades for their potential for pedestrian contact. The map reflects the range of potential opportunities for pedestrian contact, from very low to very high opportunities for contact.

source: GFL Waterfront Analysis 2010

Timed Walks:

Timed Walks

This map reflects data on the average amount of time it takes to walk at a typical speed from a location in downtown Seattle to a downtown location in a 2 mile radius. Data are based upon test walks taken on weekdays.

source: GFL Waterfront Analysis 2010
Temporal Environment

Temporal Uses

Seasonal use

- spring
- summer
- fall
- winter

- tourists (out of town)
- tourists (local)
- educational groups
- ferry commuters
- bike commuters
- white collar workers
- blue collar workers
- delivery drivers
- jobless and/or homeless exercisers

Daily use at high season

- morning
- mid-day
- early eve
- night

- tourists (out of town)
- tourists (local)
- educational groups
- ferry commuters
- bike commuters
- white collar workers
- blue collar workers
- delivery drivers
- jobless and/or homeless exercisers
Ecological Environment: stormwater

Visualize Climate Change:

Several separated stormwater "pipesheds" (lavender) discharge polluted water directly into Elliott Bay. Pink areas are drained into combined sewers.

Stormwater Basins:

Combined Stormwater System:

Typical Waterfront Habitat Conditions:

- Preference Zone (Smolt & Adult phases)
- Juvenile Salmon Nearshore Preference Zone (Parr & Smolt phases)

Toxins leached via ground seepage, stormwater runoff, and submerged debris.
Ecological Environment: habitat

Wildlife: Life Over Water

Birds: Birds are among the species most adaptable to living in the highly urbanized environment of downtown Seattle. For further information, a complete bird species list can be found in the DEIS (wsdot.wa.gov).

Terrestrial wildlife: Terrestrial animal species range from domestic dogs, cats and rabbits to bats, ermine and mink. The highly urbanized environment only allows for species that are highly adaptable to the intense urban setting.

Vegetation: The only notable vegetation along the waterfront are mature street trees planted along the length of the project area.


Puget Sound/Outer Elliott Bay - Pelagic Waters: Orcas, gray whales, and Dall’s porpoise occasionally pass through this area. Seals and sea lions are more frequently seen here.

Salmon: Life Under Water

Nearshore Marine Environment

While shady areas are critical for salmon spawning habitat, it is believed to be a less desirable condition during the juvenile and adult life stages.

“Like the habitat use patterns observed in Lake Washington, juvenile Chinook salmon in the marine nearshore and estuary areas of central Puget Sound tend to be closely associated with shallow habitats located close to shore (KCDNR 2001).”

“Because Puget Sound Chinook out migrate as younger and smaller juveniles, they are more dependent on forage in the estuaries and near-shore systems to increase their body weight and condition before moving into more pelagic environments (i.e., deeper Puget Sound waters or the Pacific Ocean) (Levy and Northcote, 1982; Pearce et al., 1982).”

“Marine nearshore areas and estuaries may be particularly important for juvenile Chinook salmon for migration, feeding, and rearing within the central Puget Sound (KCDNR 2001). Moreover, some of these areas are used by juveniles for the physiological transition from freshwater to saltwater (especially mouths of creeks and Duwamish River).”

Essential Fish Habitat

Essential Fish Habitat (EFH) is “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. 1802(10).
Economic Environment

Waterfront boardwalk
Tourist-centric restaurants, retail + water-dependent businesses

Under the Viaduct
Surface parking

Western Ave.
Large antiques, furniture stores, storage

Pioneer Square
Cafes, bars, clubs & eclectic retail

Solution: Diversity of Business Uses
- Connection to downtown Seattle
- Pedestrian crossings at every corner
- Multiple types of uses and users
- Water- and nonwater-dependent mix on the pier
- Year-round activities (office workers)
- Day and night activities

Questions Raised:
1. How can tourism better integrate with local economic activity?
2. How can business along the waterfront reflect culture and history?
3. Are there opportunities for green jobs to locate on the waterfront?
Previous Documents

The Blue Ring Plan (2002)
Seattle’s Central Waterfront Plan Charrette (2004)
The Green Futures Charrette (2006)
Seattle’s Central Waterfront Concept Plan (2006)
Central Waterfront Master Parks Plan (2007)
Public Spaces Public Life- Gehl Architects (2009)
Center City Public Realm Guide (2009)
City of Seattle Request for Statements of Qualifications (2010)
Public Space Public Life Seattle Central Waterfront
Produced by the UW Green Futures Lab (2010)
Waterfront Framework Connections

Ecological Networks
The North Pacific to Central Waterfront

The Central Waterfront belongs to a larger geographical and ecological region, one that can be defined by the range of salmon spawning habitats across the North Pacific.
Regional Networks

*Open Space Systems*

Seattle’s Blue Ring project proposes an addition to the historic Green Ring plan developed by the Olmsteds in 1903. The Blue Ring strategy aims to implement a similar network of open spaces within the city center. The Elliott Bay Bicycle Trail system is one thread that connects the Blue Ring with the Green Ring. Central Waterfront Park is a crucial element in all of these networks.

*Existing and potential boat connections to Puget Sound*

_data source: WAGDA, accessed Dec. 2010_
Waterfront Framework

Spatial Constraints
City Edge - Roadway - Seawall - Pier Edges
The Central Waterfront Park site is characterized by four typological elements: the city’s edge, the proposed Alaskan Way road, the Seawall and the Pier Edges.

Overlays
Inter-district Typologies & Park
While each district is defined by its topographical specificity, there are major programmatic elements that are shared between the different districts and the Water Front. Each fragment of urban fabric corresponds to one or more of the following categories: cultural, drosscape, ecological, historical, and transit. Mapping these onto the Central Waterfront Park begins to address the complexity of the site, its simultaneous programs and the plurality of user-group identities.

Circulation
East-West Connections
Pedestrian access is crucial to connecting the City to the Waterfront. East-west connections knit the urban fabric to the Waterfront at the pedestrian scale.

Overlay Legend
- Cultural
- Drosscape
- Ecological
- Historical
- Transit
**Districts**

*Topographical Zoning*

The Waterfront is divided into 4 districts based on topographical characteristics and the type of east-west connections particular to each condition. The **Bluffs** are characterized by the Union Street section, the **Hills** by Spring Street, and the **Flats** by Yesler Street. The fourth district is the waterfront park.

**Studio Districts**

Teams of five to six students worked on each of the four districts along the Central Waterfront.

- **Aquarium/Pike Place Market Team**
- **Waterfront Team**
- **Historic Piers District Team**
- **Colman Dock/Pier 48 Team**

*Connections back to city*
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Central Waterfront Composite

Central Waterfront: The Irregular Edge

Aquarium/Pike Place Market: Streams, Eddies, and Tidal Pools

Historic Piers: Vital Traces + Performative Futures

Colman Dock/Pier 48: WaterIBorn: Life on the Southern Waterfront

All Students
central waterfront composite
Composite Design Proposals

This composite diagram for the Seattle Central Waterfront indicates the various design interventions developed and designed by all four district teams. A narrowed Alaskan Way is flanked by a park-like promenade, which merges with the seawall, which is dramatically redesigned to allow a new level of human interaction with Puget Sound.
Unifying Elements

**Identity**
The Waterfront logo could be used on fixtures, signage such as banners and posted signs to improve ease of wayfinding.

**Promenade Paving**
Continuing to celebrate the damp climate of the Pacific Northwest and the waterfront’s very nature, a specialized concrete that reveals a pattern upon being wetted will be used strategically along the waterfront. Possible patterns could include artistic designs, facts about the natural history of Puget Sound, quotes and dedications.

**Seating**
Benches emulating the form of the water molecule have been designed to seat varying numbers and arrangements of people: singles and pairs to parties wanting to face each other for a chat, or face outwards in any direction.

**Bicycle Parking**
Bicycle access has been a constant consideration throughout the waterfront design process, so a bicycle rack has been designed that makes use of a stylized outline of the piers and Waterfront Park’s distinct cove.

**Lighting**
Light fixtures have been designed to reflect the character of the waterfront, and will be installed over the length of the site. The lights consist of a water-filled Plexiglass chamber, LED light sources and brushed nickel hardware.

Similarly designed light fixtures embedded in the ground plane help with nighttime safety and navigation. Floating light systems extending into Puget Sound at the waters edge tie the two spaces together, further knitting the city back to its waterfront.
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Central Waterfront Composite

Central Waterfront: The Irregular Edge

Aquarium/Pike Place Market: Streams, Eddies, and Tidal Pools

Historic Piers: Vital Traces + Performative Futures

Colman Dock/Pier 48: WaterIBorn: Life on the Southern Waterfront

Julia Levitt MSRE
David Tomlinson MLA
Dan Shaw MLA
Andi Slusser MLA
Cecelia Guess MSCE

with Mary Roderick UDP, PhD
the irregular edge
The Central Waterfront Team has developed a basic framework concept intended to provide a common language that will knit the three individual districts together as a whole. The concept is titled “The Irregular Edge,” referencing the ecological reality that biodiversity thrives along non-uniform edges.

The framework identifies four spatial and programmatic edges that must become “irregular” in order to encourage urban biodiversity. Our team has worked closely with members of each district team to design and program these edges, and to produce a set of unifying details and materials including light fixtures, outdoor furniture and paving.

These solutions reflect our intentions to reconnect the city to the water via active, year-round public spaces appealing to a diversity of human users and a consideration of ecological needs. Environmental stewardship was a main guiding factor, as we examined how best to have the seawall respond to the needs of migrating juvenile salmon, and how to capture and treat stormwater in order to prevent polluted runoff and combined sewer overflow into the Sound.

As a team, we identified three sets of criteria to guide the production of successful public space: Legibility; Visual Interest at the Pedestrian Scale; and Convenience, Safety and Cleanliness. We also chose to emphasize Seattle’s unique relationship with water, including both the water in Puget Sound and the water that falls so abundantly from the sky during most of the year. Our intention is to create a place where it is fun and exciting to be caught in the rain.
Interventions
*Depicted before and after redesign*

**Roadway**
Reduce roadway footprint by designing an innovative, flexible boulevard that has the ability to adapt to varied traffic demands. Roadway detailing creates a soft edge between vehicles and people.

**Pier Edges**
Open up a continuous path of public access linking the land to the western edges of the piers. Use programming to invite visitors to linger at the western edges of the piers.

**Water’s Edge**
Move the seawall east, responding to the original shoreline and existing bathymetry. Allow light and air to reach underwater habitat and blur the lines between water and land.

**City Edge**
Create an active urban sidewalk along the eastern edge of Alaskan Way. Remedy inactive building fronts and back-end uses with pedestrian-friendly, human scale details.
Alaskan Way Boulevard

**DESIGN GOALS & OBJECTIVES**

**✔️ Lively & Engaging**
- Design the new boulevard as an integral part of the Seattle waterfront, rather than a barrier between the cityscape and Elliott Bay.
- Provide amenities to encourage active use of the waterfront 24-hours a day.
- Design the waterfront as both a commuter route and recreational haven.

**✔️ Healthy**
- Improve the waterfront air quality by eliminating excessive automobile use.
- Implement the “Green Roads” construction methodology.

**✔️ Attractive and Safe**
- Provide safe pedestrian crossings and vehicular routing through the corridor which promotes positive vehicle-pedestrian interactions.
- Provide streetscape amenities that facilitate safe and efficient travel of pedestrians in all seasons of the year.

**✔️ Sustainable**
- Develop an innovative stormwater treatment plan that supports a self-sustaining waterfront ecosystem.
- Promote rainwater harvesting and stormwater reuse.

**Doing MORE with LESS: Flexible Roadway Design**

Based upon best available data, we propose an integrated corridor management system using intelligent transportation systems to replace the N-S vehicular corridor along Seattle’s waterfront (this includes both Highway 99 and the Alaskan Way South surface street). It is in the best interest of a “People’s Waterfront”, that Seattle be innovative in its approach when rebuilding the surface boulevard. We recognize that maintaining North-South vehicular flows along the corridor is crucial to our region’s economic vitality. However, we believe that the answer to our rapidly increasing traffic woe’s must be creative, in order to minimize traffic and reduce paving.

Traffic demands along Seattle’s waterfront vary according to time of day, ferry scheduling, season of year, and especially during special events hosted in, or nearby, the downtown central business district. Instead of the city’s proposed 6-7 lane boulevard, we propose a flexible roadway design composed of reversible lanes, HOT lanes, public transportation facilities, and parallel parking. Our proposed design is not only versatile, but it will effectively tackle traffic demands while significantly reducing the roadway footprint at the waterfront’s edge.
Flexible Roadway Design Features:
- 5 reversible lanes south and 4 reversible lanes north of Madison Street
- Transit Improvements- Bus Priority Lanes (BRT)
- 3 NB and 2 SB bus stops
- Parallel parking
- Bus parking near Seattle Aquarium

**Basic Configuration:**

<table>
<thead>
<tr>
<th></th>
<th>2 NB Lanes, 2 SB Lanes</th>
<th>3 NB Lanes, 1 SB Lane</th>
<th>1 NB Lane, 3 SB Lanes</th>
<th>1 NB Lane, 1 SB Lane</th>
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</thead>
<tbody>
<tr>
<td>Standard</td>
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<tr>
<td>Morning Rush Hour</td>
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<td>Evening Rush Hour</td>
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<tr>
<td>Special Events*</td>
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*The 2 western lanes could be separated from traffic with a movable barrier to provide a safe space for pedestrian activity to occur. Examples of such activities range from outdoor markets to cycling and running events.

**Intersection Improvements:** 🟢 √

Most intersections should be slightly raised with ergonomic all-way crosswalks. To improve way-finding, paving at intersections is different than paving found on roadway.
Alaskan Way Boulevard

Recreational Trail

Alaskan Way South is one of the most active bicycle commuting corridors in Seattle. Directly north of the waterfront is the Elliott Bay Trail. The Elliott Bay Trail runs from the Olympic Sculpture Park to east Magnolia providing a great connection from the Downtown Seattle Waterfront to N/NW Seattle. Just to the south of the waterfront a 14-foot-wide bicycle and pedestrian path will be added to the west side of Alaskan Way South. The Seattle waterfront is a crucial link in the Mountains to Sound Greenway Regional Trail, therefore we propose a 16-foot-wide trail along the west side of Alaskan Way Boulevard. The trail will accommodate both commuters and recreational users, and will provide ample bicycle storage facilities.

Quick Wins: Interactive Art

What might an active experience of art look like? Participatory.
Before the viaduct is removed, sections of parking under the viaduct can be closed off to automobile usage and replaced with interactive art exhibits. A significant amount of parking will be removed when the viaduct is demolished. Removing small sections of parking at a time will help ease the transition and offer unique opportunities for the city to study how people react. The interactive art exhibits will draw people to the waterfront while engaging their senses, intellect, and bodies. With the Olympic Sculpture Park as a passive art experience, we can think of the waterfront as a progression from passive art to interactive, or “active”, art.

Stormwater Treatment

Alaskan Way is designed with a 2% cross-slope, sloping down in the eastwardly direction. All road surface water is treated in swales located on the park side between the roadway and the recreational trail. The lowest point of each swale is located in between each intersection. The clean water can then be piped under the trail and further treated, and then re-used in the waterfront park or directly discharged into Elliott Bay.

Green Road Design

Using the Greenroads checklist shown in Figure 2 as design guidance, the new boulevard will be designed as an integral part of stormwater treatment solutions and sustainability practices along the waterfront. The Greenroads Foundation is a non-profit organization developed by the University of Washington and CH2M Hill in the summer of 2010. The Greenroads rating system has four different certification levels depending upon total score. (www.greenroads.org)

Public Restrooms

We have proposed at minimum three public restrooms along the waterfront. Due to Seattle’s history of public restroom facilities, we recommend that the restroom facilities are supervised by a “keeper” at all times. Visitors would then only have to pay a small user fee in order to use the facilities. Eco-friendly restroom facilities to include:

- Rainwater Harvesting for Flushing and Faucets
- Low energy fixtures - solar energy
- Recycled material - natural interiors
- Non-heated air-dryers
- Energy saving exteriors

Source: Mountains to Sound Greenway Organization; http://mtsgreenway.org/about/regional-trails

Source: www.zimbo.com

Source: www.fastcompany.com

Source: www.dopefulhopefind.com

Source: www.falloutminneapolis.com

Source: www.travel.webshots.com

Source: Nivah Samuel Hastrup

Source: www.falloutminneapolis.com

Source: Iviv Samuel Hastrup

Source: Scan | Design Master Studio 2010
Exchange Zone Rediscovered: Elliott Bay Seawall

**Setting**
Seattle’s Elliott Bay seawall marks the boundary between city ecology and aquatic ecology. The stretch of wall in front of Piers 54, 55, 56, and 57 sits below a concentration of human culture and commerce along the waterfront, a potentially vibrant eco-cultural exchange zone.

**Disconnect**
The seawall, due to be replaced, is a vertical edge that limits human engagement with water, while offering inhospitable conditions for migrating salmon and other species.

**Concept**
A new seawall that’s an irregular edge. Increasing and creating the surface area of exchange zone. Drawing water inland while making piers “islands”. Reimagining the seawall as a border rather than a boundary. Wildlife habitat as armature for public space. Seawall-as-promenade. Seawall-as-habitat corridor. An intimate waterfront edge, a walk along a rediscovered tidal zone. A chain of human-scaled nodes.

A straight edge says “move on”, while an irregular edge says “stay, explore, exchange, find your niche”

Vertical edges and deep water limit habitat at the Duwamish/Elliott Bay estuary

Imagine an urban water’s edge that supports life

Juvenile chinook salmon seek refuge and food in shallow water

Layers of waterfront

Seawall as public space: the intimate edge

Piers as promontories: the expansive edge

Rooted life

Transient life

Promenade

Seawall / Intertidal

Light Permeable Surface

Pier

Multi-Purpose Trail
Shape
The new seawall is a stepped, sloping, and terraced intertidal zone and promenade, irregular and engaging in both its horizontal and vertical dimensionality. It is a three-dimensional shape that effectively houses ecology and public space.

Continuity
Unfragmented networks of public space, intertidal habitat, sunlight exposure, and view corridors are all interwoven, linking the waterfront to the region.

Flux
The fluctuating physical surface is adaptive to the flux of the site’s phenomenological processes through time. The seawall’s shape changes hourly with the tides. Unprogrammed spaces can welcome any user group. And while exposed water references the piers’ history, terraced public spaces stepping towards the water will send a powerful message the day that high tide finally overtakes them; an experiential gauge of rising waters.
Stormwater Strategies: Reveal, Reduce, Reclaim

**REVEAL**
In undeveloped conditions stormwater is absorbed, filtered and used to replenish aquifers and nourish plant and aquatic systems. In urban environments these processes are severely disrupted. Stormwater is collected and conveyed from roofs and streets into either a separated storm or combined sewer system.

**Strategy: Eco-Revelatory Design**
Exposure ecological processes and functions to improve their performance in the built environment and to educate people of the larger implications of their decisions and actions.


**REDUCE**
Surface runoff is the major source of toxic chemicals in Puget Sound according to the WA Department of Ecology. Stormwater discharge from one square mile of roads and parking lots can yield approximately **20,000 gallons** of residual oil per year, in addition to toxic concentrations of a wide range of other pollutants. Currently, stormwater flows untreated directly into Elliott Bay. Much of downtown is also a combined sewer system, with an average of **43.7 million gallons** of overflow per year in the study area during heavy rainfalls. Roofs, the largest surface area in the dense urban fabric have the cleanest discharge, yet are usually connected to the combined system. - Source: SPU Combined Sewer System Modelling Report

**Strategy: Treat Streets Retain Roofs**
Divert street runoff into treatment swales before releasing into separated system, use green roofs and cisterns (vertical/underground) to delay discharge into combined system.

**RECLAIM**
Freshwater is an increasingly limited resource with many competing users. Global climate change is already affecting precipitation patterns and the future of water is fragile. Much of the world already experiences water shortages and these are projected to increase along with water-driven conflicts much like those over oil today. Water management is a key aspect of just sustainability.

**Strategy: Runoff as Resource Not Refuse**
Water sheds from the urban environment in the millions of gallons during heavy rainfall. Finding the right source for the right use has become a trend in ‘Total Water Management’. Treated runoff can be used for irrigation, habitat, and water features which delight in the hardened urbanscape. Clean roof runoff can be used to supplement infrastructure services such as energy and sanitation.
Water Balance

Combined vs. Separated Storm Volume Ratio

- Separated Treatment Potential
  - 81%
- Combined Treatment Potential
  - 79%
  - 21%

Different Strategies for Different Typologies

Combined or separated systems
Steep or flat topography
Upland or end-of-pipe

Diverse Design Opportunities: REVEAL, REDUCE, RECLAIM

Storm Volumes & District Potentials

<table>
<thead>
<tr>
<th></th>
<th>Combined</th>
<th>Separated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm Volumes</td>
<td>4.3 Million Gallons</td>
<td>1.1 Million Gallons</td>
</tr>
<tr>
<td>Potential Storage</td>
<td>3 Million Gallons</td>
<td>945,000 Gallons</td>
</tr>
<tr>
<td>Potential Treatment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Volumes based on drainage basin areas (see map opposite page) multiplied by runoff depth.

Runoff Depths

- Combined: 1.28" rainfall (flow control design storm, 2 Year/24 Hour)
- Separated: 1.08" rainfall (water quality design storm, 6 Month/24 Hour)

Potentials based on specific site area calculations and design interventions.

See district strategies and individual designs for detailed approaches.
Guidelines for Design + Programming

Overarching Goals

These design and programming recommendations outline a route for achieving six overarching goals for Seattle’s Central Waterfront. The six goals were identified by the studio Design Committee, a subcommittee of the LARC504 studio including representatives from each of the studio’s four district teams. The following goals will be addressed with specific design and programming strategy recommendations throughout this document:

I. Civic Waterfront

Provide an urban public space where Seattle residents, workers and visitors can engage in social activity, recreation, observation, conversation and public gathering that promote social vitality.

II. Local Economic Development

Support an economy that prioritizes diverse, resilient and distinctive water-dependent businesses and industry, including local and small, locally owned enterprises.

III. Multi-Modal Mobility

Facilitate comfortable, safe and convenient universally-designed multi-modal transportation to, from and through the central waterfront, prioritizing the needs of pedestrians, cyclists and public transit users.

IV. Cultural and Social Diversity

Support a diverse cultural context though universally accessible features and use of color, material, shape and form that reflect the Puget Sound region’s social and cultural diversity.

V. Ecological Design

Support the health of native aquatic and terrestrial ecology through the prioritization of ecological design strategies.

Influences

Near Term and Local
As major interventions such as the demolition of the Viaduct and opening of the Deep Bore Tunnel take place, the demographics, economic climate and private investment interest in the waterfront will respond. In addition, the cyclical nature of the built environment will influence the pace and nature of both public and private development at the waterfront itself, in the downtown area and in surrounding neighborhoods.

Long Term and Global
New information on the implications of carbon emissions, climate change and sea level rise will effect global political and economic decisions as well as local political and social responses.
Examples of Strategies

**Piers: Public Access**
All public and private property owners must provide their respective portions of a continuous, legible path enabling public access along the waterfront edges of all piers.

**Water’s Edge: Water Contact**
Where bathymetry and habitat conditions allow, incorporate built and landscape features that allow visitors to come in direct contact with the water.

**Roadway: Parking**
Pave surface parking lots with sturdy, permeable, light-colored materials to filter dirty runoff from beneath cars and reflect sunlight.

**City Edge: Existing Structures**
Adapt functional structures such as loading docks to active pedestrian uses whenever possible.

Application of Goals

- **Piers**
  - Civic Waterfront
  - Local Economic Development
  - Multi-Modal Mobility
  - Cultural and Social Diversity
  - Ecological Design

- **Water’s Edge**
  - Public Art
  - Paving
  - Color Palette

- **Roadway**
  - Water Contact
  - Lighting
  - Cyclist Services
  - Public Restrooms

Unifying Elements

The following will have consistent and legible design language throughout the Central Waterfront:
1 INTRODUCTION

10 ANALYSIS + FRAMEWORK

22 DESIGN

Central Waterfront Composite

Central Waterfront: *The Irregular Edge*

Aquarium/Pike Place Market: *Streams, Eddies, and Tidal Pools*

Historic Piers: *Vital Traces + Performative Futures*

Colman Dock/Pier 48: *WaterIBorn: Life on the Southern Waterfront*

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with Andi Slusser MLA
streams, eddies, + tidal pools
Streams, Eddies, and Tidal Pools

**Design Challenges**
- Overcome topographical variation
- Address monotonous, disconnected and underused spaces
- Ease the transition of hard “edges” on-site, including the Alaska Way Viaduct removal
- Create a visible, small, and indiscrete pathway to the Waterfront and through dark underutilized spaces

**Proposed Design**
- Visually and physically connect Pike Place Market area to the waterfront
- Offer variety of activities and circulation options along the water

**Programming Objectives**
- Increase access and refine legibility from Pike Market to the Central Waterfront
- Extending Pike Place Market to the Waterfront through mixed-use development
- Create pluralistic, active, and restorative spaces that invite a diverse population of users
- Enhance terrestrial and aquatic habitat where possible
- Treat and mitigate stormwater runoff on-site

**Connectivity**

**Proposed Pedestrian Circulation**

**Proposed Car Circulation**

**Proposed Bike Circulation**
Quick-Wins
These “quick-wins” are fast and/or temporary interventions to strengthen the connection between downtown and the Waterfront and include opportunities for people to engage with the Sound and bring the Pike Place Market down to the water.

Extend Pedestrian Paving
Use pedestrian-designated paving to connect the Waterfront to the Pike Place Hill Climb, and Pier 62/63 to the Waterfront residences.

Small Boat Launch on Pier 62/63
An opportunity to engage the public and connect visitors to the water.

Boat Parking in Waterfront Park
Provide opportunities for visitors to arrive at the Waterfront via the water.

Farmers Market Boat
To bring Pike Place Market down to the Waterfront, hold a weekly Farmers Market on a boat docked in Waterfront Park.

Reactivate Pier 62/63
Hold temporary activities on Pier 62/63 to engage the public.

Swings and Hammocks in Waterfront Park
A fun and carefree activity for adults and children to engage with the water and Waterfront Park.

Art Walk in Pike Place Hill Climb
Invite artists to share their work and brighten the hill climb with murals celebrating the history of Pike Place Market.

Extend Pedestrian Paving
Use pedestrian-designated paving to connect the Waterfront to the Pike Place Hill Climb, and Pier 62/63 to the Waterfront residences.
Legibility
Regible and difficult stairway connections descend from an existing parking lot to the waterfront. Visitors pass under the AK Viaduct, and cross two other parking lots.

Up and Down
The Waterfront is Seattle’s waterfront. Therefore, democratic, easy and clear access points are necessary to convey people from the bluffs of the city to their new city frontage.

Solo Connection
Only one major pedestrian pathway is legible from Pikes Place to the waterfront. Creating a better connection between Pikes Place (top tourist destination in Seattle) with the waterfront is very important.

Standing on the Steps of Giants
BNSF Railroad right-of-way requires a 54’ clearance from the roadway over the Great Northern Tunnel. The proposed roadway will need to pass over with a similar structure of the current Viaduct.

Barrier
The Alaska Way Viaduct hangs overhead and blocks visual connections from Pikes Place to the waterfront. This dominant form plays an important role in where structures are facing and how the proposed road will continue some of the issues that the viaduct affects.

Site Lines Towards Waterfront

Design Goals
- Connect Pike Place Market to the new Waterfront Park.
- This design connects Pikes Place to the Waterfront over 80 feet of existing topography, and moves pedestrian over and around a proposed four-lane, 30 mph, 9% grade surface street road.
- Provides a vibrant extension of the market and increases the opportunity for tremendous vistas that stretch out over Elliott Bay.
- Clean stormwater with terraced fountains within fountains on the upper terraces.

Connections
Retail Movement
Quick Movement
No-Pedestrian Areas

Spatial Design Opportunities
- Retail Movement
- Quick Movement
- No-Pedestrian Areas

Project Assets
- Mixed Use
- Restaurant and Outdoor Seating
- Retail Space
- Public Outdoor Seating
- Site Lines
- Parking
- Residential
- Retail | Restaurant
- Office

Programming
- Mixed Use
- Restaurant and Outdoor Seating
- Retail Space
- Public Outdoor Seating
- Site Lines

Noise Buffer
Green infrastructure helps soften hard edges and blocks road noise.

Green Park
Parking lot mitigates 300 lost parking spaces from waterfront development.

Character Styles
Extend mixed use housing down through the terraces.

Water Treatment
Conveyance swales clean water from road and terraces and provide a soft edge transition.

Site Analysis

Scan | Design Master Studio 2010
“Quick Wins” Designs

- Signs and Paving Legibility
  Increase signs legibility to draw people to existing stair connections.

- Flexible Parking Floor Retail
  Integrate temporary shops on ground floor of Pikes Place Parking Garage.

- A Seat with a View
  Installing comfortable seating along the existing parking lots will help connect visitors with the vistas of Elliott Bay.

Looking Out | Looking In

Cafes, restaurants and housing looks out over the beautiful views of the bay 24/7. Each terrace provides limitless opportunities to connect with the larger waterfront.

Installing comfortable seating along the existing parking lots will help connect visitors with the vistas of Elliott Bay.

Victor Steinbruk Park

Section A
This project seeks to bring vitality to a critical site on the waterfront by drawing upon the mutual attraction between performers and spectators. Recognizing that one group’s awareness of the other can result in a collective energy greater than the sum of the individuals’, the building serves as both a stage for various activities and an open theater for passersby. A pedestrian landscape acts as a link between the Market and the Waterfront, allowing pedestrians to overcome a great elevation change while observing activity below. The activities, which include skateboarding, basketball, rock climbing and parkour, are supported by an attached community center. This center anchors the developing neighborhood in the area and includes multiuse spaces, meeting rooms, and offices, as well as facilities that serve the general public, such as rest rooms, a cafe, retail and tourist information.
The Waterfront Neighborhood School

The Seattle Waterfront serves as a destination for both tourists and locals, yet it lacks the feeling of a neighborhood. There is a disconnection between the residences, the waterfront, and the city. Dead-end alleys and dark spaces do not offer personal safety or comfort. By introducing retail shops, open spaces, and a school, a waterfront neighborhood is possible. A school for K-12 does not currently exist in downtown Seattle. A K-12 magnet school in this location will help transition youth from daycares and preschools and provide opportunities for older students to learn in an urban setting.

Existing Schools and Commute Times in Downtown

Section Perspective of the Waterfront School and Adjoining Public Space

Classroom

The classrooms serve as the “homebase” for each grade. Each 15’ x 15’ classroom accommodates up to 12 students (a total of 24 students per grade). Students shift from the school community to their classrooms through a shared common space that can become additional classrooms.

School

Just as the classrooms are the homebase for each grade, the school acts as the homebase for the students in the city. The atrium serves as an assembly space, and students must pass through this large common space into successive shared spaces to reach their private classrooms. Similarly, the entrance to the school is from a public plaza.
Streams, Eddies, and Tidal Pools

The Waterfront Neighborhood School

**Neighborhood**

What is a neighborhood?

A place to LIVE

A place to SHOP

A place to ENJOY

A place to LEARN

NEIGHBORHOOD

**The Urban Classroom**

Adjunct facilities in the waterfront and downtown within walking distance of the school that expands the education of the students.

**SCHOOL CURRICULUM**

- Commerce (5th-8th, HS)
- Culture (1st-8th, HS)
- Ecology (All Grades)
- Active Experiences (All Grades)
- Other Educational Opportunities (HS)

**4th Floor Plan**

A public-private enterprise that serves as a cafeteria during school hours, functions as a restaurant (using ingredients from the outdoor terrace) during off-school hours, and offers adult cooking classes in the evenings. Access to this level is controlled using fire exit doors and timed doorways. During evenings, weekends, and summer months, this level is open to the public to hold special events, to enjoy the waterfront views, to dine at the restaurant, and to stroll through the gardens.
Site Analysis

Context / Location

North Pike/Aquarium/ Pier 62 District

Design Concept:
Overlapping Boundaries

Seawall curves in and out to allow better human and nature interaction. Gradual filling of seabed slope means more space will be share by marine and terrestrial life. Aquarium turns into rich outdoor learning area surrounded by shallow water.

Conclusion

Existing conditions of Seattle Waterfront can be characterized as ‘hard’ and ‘fixed’. This condition prevents the interface between human and nature and also decreases its ability to adapt to future changes.

Mitigating Hard Edges

Edge Structure

Seawall

Shallow water

Stormwater

Pipe drain

Natural drainage

Education

Indoor tank

Outdoor experience

Source:

Design Objectives

- Interface human and nature by softening boundaries
- Create a new marine educational facility where 18’ tidal change becomes an asset
- Exhibit changes of unique marine environments
- Reduce the stormwater flows into the Elliot Bay
- Accomodate an important circulation node at the intersection of Alaskan and Pike
- Create opportunity for human interaction
- Prepare for long-term adaptation

The New Aquarium: Restoration for Education

Tidal habitat is restored for education. Human and ecological space co-exist within the territorial and marine boundaries.
**Site Specific Details**

**Rocky Shore Playground**

Designed to serve the proposed K-12 School adjunct to the site, Rocky Shore Playground is a little more casual place where younger students can begin to engage with nature. Unlike traditional playground, there are no play equipments installed in here. Textured concrete and rounded rock provides a safe place to explore the carefully restored near shore tidal habitat which stretches over 200 feet.

**Elliott Bay Square**

Downtown Seattle lacks public square where people can gather, interact and form a community. Placed near the circulation node of Pike and Alaskan, Elliott Bay Square celebrate Seattle’s marine heritage as well as its local culture. Along with the new public school proposed nearby, the Elliott Bay Square will be the social and cultural center of future downtown resident populations.
Pier 59  
**Informing the Edge**

**Goal: Gaining Access**
Currently, public access to the west end of Pier 59 is prohibited, enforced by a tall chain link fence, which secures the aquarium’s research equipment. The regional views from the end of the pier can be spectacular so it is especially disappointing that the public is being denied these views in favor of equipment storage. My design goal is to create an open area, accessible to all waterfront visitors, while respecting the needs of the aquarium.

**Program: Science, Art and Recreation**
The space is designed to bring together education, art and recreation in a place and form accessible to everyone. The setting, adjacent to the Seattle Aquarium, inspires a space for learning and sightseeing during the day, and the fee-free, lit aspect provides a safe place for people to be at nighttime.

**Concept: Information Flow**
We’re constantly learning more and more about the world we live in, but rarely bother to tell the natural world about ourselves.

---

**Design Plan**

- **promontory:** a translucent pad gives the mezzanine a focal point, drawing visitors to the outermost point of the pier and can also serve as a central activity area for social gatherings.
- **lighting system:** LED lights are bright and energy efficient, and the plexiglass lens-shaped covers provide some shelter from the weather, as well as creating an artful piece reminiscent of Waterfront Park’s circle pad theme.
- **fishlight installation:** about a dozen lights scattered around the Pier 59 and Waterfront Park area, with additional lights installed north and south along the waterfront.

**Nighttime Vignette**
At night, the mezzanine could be livened up for a party or dressed down for a quiet space to enjoy a peaceful Puget Sound evening. The catenary lighting system provides a sense of mood and safety, and the fishlights are especially whimsical.

**Daytime Vignette**
During the day, the mezzanine serves as a classic viewpoint for the waterfront. Scenic views, wildlife watching and passive play as well as aquarium activities and social events could be scheduled here.

**Site View (facing north)**
A mezzanine, accessible by ADA-compliant ramps coming from Waterfront Park and the aquarium expansion to the north of the building, provides desired views from the end of Pier 59. Aquarium equipment storage is retained in it’s original location on the existing pier end. A kayak haul-out and public storage structure allow paddlers to park and store their craft on a daily basis. Art meets information flow in the fishlights installation – a quick win potential that could run the length of the waterfront. Large domed lighting fixtures also provide shelter, while allowing visitors to remain outside. The visual gem of the site is a wall-mounted external fish tank on the aquarium facade, which would also be a lighting source at night and an educational space during the day.

**Precedents**
The famous Monterey Bay Aquarium, in Monterey, California, has an exemplary outdoor exploration and seating area for tidepool observation, presentations and scenery and wildlife viewing. Though quite lovely, the outdoor space is only accessible if the entrance fee has been paid, denying many people access.

An enormous fish tank comprises a large portion of a retail building facade in Waikiki, Hawaii. Even in a city renowned for its seafire, the tank attracts tourists by the hundreds, further activating an already bustling retail district.

Translucent paving cells will be used along the waterfront in varying locations, as a salmon habitat enhancement measure. This effect will also be emulated on the Pier 59 mezzanine for aesthetics and as a programming cue.

Dr Natalie Jeremijenko, a scientist and artist, developed and temporarily installed a project entitled “Fish ‘n’ microChips” in New Yorks East River in 2009. Passive sonar fish detectors are placed in long clear tubes fixed with colored LED lights and anchored in a grid arrangement. When a fish is detected, the light comes on, informing people on shore that the fish are present.
Waterfront Park Living Edge

CHALLENGES
Waterfront park is located in Seattle’s central downtown waterfront. The park neighbors with the Seattle Aquarium and Historic Pier 57 on Elliot Bay in the Puget Sound. Presently, the park’s design features react more to the Alaskan Way viaduct to the east, than the shoreline that holds the west edge of the site. Barriers bisect the site and create an unnatural flow of movement and interaction.

Tide Pools
require gradual slope and species richness to thrive

OPPORTUNITIES
A partnership with the Aquarium could improve aquatic habitat and create opportunities for environmental education. Site activation begins with small boat access and develops over time into a series of circular overlapping platforms connected by ADA paths that wind toward the waters edge. The edge leads up to salt marsh piers down to a series of constructed tidal pools. Recycled concrete from viaduct demolition and glass will evolve into a rich mix of intertidal life, coastal marsh grasses, pacific willows and red twig dogwood.

Section A

Floating dock can provide flexible high and low tide access to water for boats and tide poolers

A habitat ledge interface to the seawall, positioned on pilings, can improve nearshore habitat for migratory salmon

The gates are opened when sea water rises and close with tidal ebb to ensure clean habitat for constructed salt marsh platforms

source: www.dfo-mpo.gc.ca
source: www.seattlepi.com
source: www.seattle.gov/transportation/seawall_glossary.htm

source: adapted from earthguide.ucsd.edu

SPLASH AND SPRAY ZONE
LOW LOW TIDE LINE
HIGH HIGH TIDE
PLASH AND SPRAY ZONE
0 200

SITE ACTIVATION

MOVEMENT DIAGRAM

PHASE 1
PHASE 2
PHASE 3

Paths of Logic
Exploring Paths
Ideal places to sit and relax

A partnership with the Aquarium could improve aquatic habitat and create opportunities for environmental education. Site activation begins with small boat access and develops over time into a series of circular overlapping platforms connected by ADA paths that wind toward the waters edge. The edge leads up to salt marsh piers down to a series of constructed tidal pools. Recycled concrete from viaduct demolition and glass will evolve into a rich mix of intertidal life, coastal marsh grasses, pacific willows and red twig dogwood.

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source: www.seattle.gov/transportation/seawall_glossary.htm

source: adapted from earthguide.ucsd.edu
Pike to Waterfront

HUB CONCEPT

PROGRAM
Pedestrian access and circulation
Bike access and circulation
Provide framed views and gathering spaces
Activate the area with year-round retail and restaurants
Conveyance and biofiltration of limited surface water

SITE ANALYSIS

Pedestrian Crossing
Pedestrian/Bike Flow
Water Flow
Views Blocked

EXISTING CONDITIONS

Source: Marian Hanson
At the foot of the Pike Hill Climb to the Aquarium, currently parking and the Alaskan Way viaduct cover it.
PLANTS to buffer, frame, filter, add green space and color

Activate the Site with restaurants, retail and gathering space with cafe seating

SEASONAL CHANGES

Spring          Summer          Autumn          Winter

Bike Parking

PRECEDENTS

Red Ribbon Park in Qinhuangda
source: China at www.turenscape.com

Mill Creek Town Center
source: Marian Hanson

Alderwood Mall, Lynnwood, WA
source: Marian Hanson
INTRODUCTION

ANALYSIS + FRAMEWORK

DESIGN

Central Waterfront Composite

Central Waterfront: The Irregular Edge

Aquarium/Pike Place Market: Streams, Eddies, and Tidal Pools

Historic Piers: Vital Traces + Performative Futures

Colman Dock/Pier 48: WaterIBorn: Life on the Southern Waterfront

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Pam Emerson  MLA
Ginger Daniel  MLA
Tera Hatfield  MLA
Jordan Bell  MLA
vital traces + performative futures

spontaneous commons
Seattle Steam: The Making of an Eco-District
Post Alley: Urban Sustenance Corridor
Seneca Thread [thickening the strand]
vital traces + performative futures

context

Protection - Comfort - Delight: Gehl’s 12 quality criteria district highlights

Protection against traffic and accidents
The new district plan creates 4 pedestrian prioritized streets, providing safe and inviting access throughout the urban grid.

Opportunities to see
A new viewing platform built on the relics of the viaduct, cafe seating on former loading docks, a new urban canal space, and performative lighting at night throughout the district provide a diversity of experiences.

Opportunities for play + exercise
A biotic skate park, a community center filled with rec. options and a new public steam sauna provide unique recreational options.

Positive sensory experiences
Only criteria that mentions nature. The district is filled with vegetation, performative bioswales, steam-inspired sculpture, and an urban food corridor.

In addition to these pedestrian-focused criteria, the Vital Traces | Performative Futures design addresses habitat and ecological function in these ways:

- multi-storied vegetation
- native species (plant + animal)
- green roofs + vertical walls
- habitat corridors
- vegetated bio-filtration
- food cultivation
- pedagogic design
- ecological education

existing conditions

unplugged disconnected energy sources

locked out pedestrian barriers to/from Seattle’s front porch

unlocked edges edges of activation to enliven community and waterfront spaces

interventions

plugged in proposed connections pedestrian focus

historic pier district

Protection against traffic and accidents
The new district plan creates 4 pedestrian prioritized streets, providing safe and inviting access throughout the urban grid.

Opportunities to see
A new viewing platform built on the relics of the viaduct, cafe seating on former loading docks, a new urban canal space, and performative lighting at night throughout the district provide a diversity of experiences.

Opportunities for play + exercise
A biotic skate park, a community center filled with rec. options and a new public steam sauna provide unique recreational options.

Positive sensory experiences
Only criteria that mentions nature. The district is filled with vegetation, performative bioswales, steam-inspired sculpture, and an urban food corridor.

In addition to these pedestrian-focused criteria, the Vital Traces | Performative Futures design addresses habitat and ecological function in these ways:

- multi-storied vegetation
- native species (plant + animal)
- green roofs + vertical walls
- habitat corridors
- vegetated bio-filtration
- food cultivation
- pedagogic design
- ecological education
**existing**

- stormwater runoff over taxed CSOs dump polluted water directly into human and salmon habitat on the waterfront!
- combined system (too much volume)
- separated system (too dirty)
- outfalls
- polluted habitat

**proposed**

- water treatment: collect + treat stormwater to foster healthy juvenile salmon and to reuse on-site.
- healthy habitat
- all welcome! proposed habitat connections invite birds, bees + fish.

**design goals**

- legible connection between the city center and the central waterfront
- on-site stormwater capture, storage and treatment (district-scale)
- functional juvenile salmon habitat at the waterfront edge
- rich and satisfying pedestrian and bicycle experiences
- legible connection between the waterfront edge and the pier skirts/ends
- cohesive and unique neighborhood identity
- universally accessible, all-season opportunity for recreation and civic life
- public/private partnership development for financial viability and enrichment of public life

**quick wins**

**Night Light Show**
Illuminates the energy matrix at work beneath the city [seen from the parking lot adjacent to Seneca + Spring]

**Roll Out The Red Carpet on Union Street**
[seen from first avenue staircase leading down to the waterfront]
vital traces + performative futures

unique district opportunities

- post alley
- vital east/west streets
- undeveloped lots
- Seattle Steam
- relics of viaduct
- historical piers

Elliot Bay
connective energies:
- pedestrian through transit
- pedestrian staying activities
- water collection, treatment, movement
- plant and wildlife habitat

proposed stormwater scheme:

existing system
Current district system receives approximately 85,000 cubic ft. of rain water in a one inch storm event. Roughly a third of this volume is directed into a separated storm water system and discharged into Elliot Bay, untreated. The remaining volume is combined with sewage water and directed to the regional waste water facility for treatment. During peak storm events, 1-3 times per year, the combined system is overwhelmed and stormwater mixed with sewer water is discharged directly into Elliot Bay via CSO outfalls.

proposed system

ROOF CATCHMENT
Rain water from roofs in the district generates approximately 30,000 cubic ft. of stormwater in a one inch storm. All other impermeable surfaces generate roughly 55,000 cubic ft. of run-off. The proposed system separates roof from road water to prevent further contamination of roof water.

STORAGE
Proposal adds 135,000 cubic ft. of water storage capacity under the Seattle Steam mixed-use development and an additional 165,000 cubic ft. of storage capacity under the Seneca/Spring mixed-use development.

TREATMENT
Polluted runoff is treated in vegetated swales adjacent to roadways and in a reed bed canal adjacent to Seattle Steam. The total capacity of the district treatment system is 25,000 cubic ft.

REUSE
Seattle Steam, a district heat utility, currently purchases and uses 2 million cubic ft. of potable water annually to generate heat for 200 commercial customers in the downtown business district and beyond. The proposed district scheme provides for roughly 15% of the annual water needs of Seattle Steam.
private life/public space//spontaneous commons

This project responds to the lack of community that typifies the existing Seattle waterfront.

Both the Seattle downtown and the waterfront along Elliot Bay lack identity; there is no sense of belonging when a pedestrian wanders through the dead-ends, narrow sidewalks, and out of scale high-rise buildings that typify this part of the city. Seattle residents will tell you they might venture downtown to take a visiting friend to Pikes Place Market; the waterfront itself is simply the place to find parking under the oppressive frame of the viaduct.

The re-design of the central waterfront is an unprecedented opportunity for the city of Seattle to unite the core of the city with its spectacular edge. It is also an opportunity to create public and private spaces in the heart of the city that are both tourist destinations and home to local residents. The only undeveloped lot on the central waterfront, this site is nestled between Spring and Seneca St. It is re-visioned from its existing condition as a sprawling parking lot, both as a neighborhood scale residential development, and the site for a much needed downtown community center.

The city of Seattle encourages 45% of citywide residential growth to occur in urban centers.

Downtown Seattle is 1 of 5 urban centers that will need to accommodate this growth.

Future downtown Seattle population and growth targets:

Growth projection between 1994-2014 = 72,000 people

The project aims to renew life on the waterfront:

- Who are the users and how might that change after the viaduct comes down?
- Who do we want the users to be?
- What might these users need in order to make a life for themselves?
- How can we harness current strengths surrounding the site?
- What opportunities are there for ecologically responsible site design?
design intentions:

_integrated public/private spaces at ground level
_east-west connectivity for cyclists on spring st
_cohesive, defined pedestrian edges along adjacent streets
_activated building facades for all adjacent streets
_enjoyable plaza space set back from bustling alaskan way
_neighborhood-scaled public space augments but never competes with waterfront

quick win

Night activation of current parking lot uses art and light to highlight the unseen matrix of utilities, water, infrastructure, and organic material beneath the silent asphalt of streets and parking lots

Legend:
The labels (a-b-c) shown in the site plan highlight specific spaces in the design that are illustrated as perspective collages on the following spread.
Rain water is captured and held to water vegetation in the greenhouse located on the top of the community center, to flush toilets in the community center and to send to Seattle Steam where it will plug into the current system of district heating with steam.

Rain water is captured and held to water vegetation in the greenhouse located on the top of the community center, to flush toilets in the community center and to send to Seattle Steam where it will plug into the current system of district heating with steam.

The inclusive nature of the development and the presence of the three-story community center ensures public access to all the ground level areas of the plazas, through-ways and alleys.

The first three stories of the residential units are also commercial/retail or office/studio spaces; residents have private terraces with a view over the public life below and to the waterfront; although private residences are elevated to ensure privacy, the building is only seven stories to maintain appropriate neighborhood scale.

Wet/dry (a)
The Cistern Plaza, located just outside the community center, is a dynamic part of this site. Inspired by the Rotterdam Watersquares, this spaces serves a function year-round.
Spring Street section: activated ground floor from Alaskan way to 1st Avenue

Vital Traces + Performative Futures

(b) Entrance from the corner of Alaskan Way and Spring st, looking towards waterfront

(c) View from the plaza looking through community center to Seneca Street
Seattle Steam: The Making of an Eco-District

**History + Customers**
Seattle Steam is a century-old private district heat utility serving over 190 commercial customers in Seattle’s Downtown and First Hill neighborhoods.

**Water Source**
Roughly 15 million gallons of potable water are used annually. This water is purchased from Seattle Public Utilities and originates in the Cedar River watershed of the Cascade Mountains.

**Fuel Source**
Seattle Steam uses natural gas boilers and, as of 2009, a biomass boiler. The latter burns construction wood waste and woody debris procured from Cedar Grove. Over 250 tons are used daily.

**Condensate Reuse**
Customers can repurpose steam condensate for non-potable uses such as laundry, irrigation and source water for building cooling systems. Unused condensate is piped & treated as waste water.

The “Calliope” Eco-Hotel is a showcase development for carbon neutrality, net zero water use, urban habitat & soil regeneration utilizing: Seattle City Light electricity, Seattle Steam heat and hot water, cleansed urban stormwater for non-potable uses, green roofs, & composting toilets in public restrooms.

The hotel presents Seattle as a leader in ecological development to visiting tourists and business people.

The site offers an ideal location with stunning views and easy walks to: Seattle Art Museum, Pike Place Market, the Cruise Terminal & Bell Harbor Center.

**public sauna**

The public sauna provides an all-season & evening attraction on the waterfront as well as a unique event venue with striking views of Seattle Steam and Waterfront Park.

The amenity holds broad appeal for locals and visitors alike and is also an invitation to diverse users, celebrating rich public bathhouse traditions of several of Seattle’s immigrant communities.

Unconventional uses for reclaimed stormwater demonstrate and reveal the closed-loop water and energy systems of the eco-district.

**eco-hotel + canalfront**

The adjacent canal reveals and cleanses stormwater collected from the Harbor Steps and adjacent building roofs before directing it to a 1M gallon underground cistern for storage and reuse as source water.

The strategy is replicable on dead end streets to the north & south (Union St. and Seneca St., respectively)

Bringing water into the grid holds potential to raise property values, activate the streetscape, extend the “waterfront” inland, provide new bird habitat, and highlight seasonal ebbs and flows.
Rainwater falling on roofs in the district is directed to a 10000 cubic foot treatment canal where it is pushed through a series of biofiltration filters. The cleansed water is then directed to a 140000 cubic foot underground storage vault & is used as alternative source water for Seattle Steam.

Seattle Steam requires approximately 2 million cubic feet of water annually to supply heat energy reliably to its customers. The demand for heat is greatest during the winter months, coinciding with the rainiest period of the year. This presents a unique opportunity for managing urban stormwater in a manner that transforms a regulatory headache & ecological challenge into an elegant waste-water-energy system. The scheme also offers potential long-term cost savings for Seattle Steam customers and all SPU rate-payers.

Stormwater Canal Study

The stormwater treatment canal fills gradually from east to west through a series of biofilters. When the water level reaches the central isthmus, it is released via a culvert into the western portion of the canal. In summer (dry) months, the canal reads as a series of carex beds with a sloping groundplane. In winter, the central path disappears. The lowpoint is 2 feet below grade.
Underused, visually disconnected, and lacking the attractions of the north end connection to Pike Place Market, Post Alley has the opportunity to be a model for day and night activation, urban stormwater treatment and habitat, and performative food production.

Put on the map by the world-famous gum wall and bookended by teeming Pike Place Market and gallery-laden Pioneer Square, Post Alley is well positioned to provide a rich and entertaining pedestrian connection for tourists and locals alike.

But in light of climate change, peak oil and water, and the densification of urban areas, Post Alley’s proximity to Pike Place Market and its alley topology also provide a strategic testing ground for urban food production. Already on the public stage, Post Alley and the city of the Seattle are ripe for taking leadership by creating the first urban sustenance corridor.

A FOOD SYSTEM IN AN ALLEY?

While alleys are finally getting their due around the world as vital urban public spaces and critical stormwater corridors, their design also provides a strategic infrastructure for building a hyper-local, scalable urban food system.

Typically used as a conduit for deliveries, these are ideal spaces to process and distribute food produced on adjacent rooftops. Underused loading docks provide necessary storage space for harvesting/vertical hauling equipment. Traditionally the site for trash dumpsters, compost collection is easily accessible and used on-site. Corner retail/office spaces provide educational and income generation services.

Post Alley is particularly primed to test and market this model by being known for whimsical public art and its connection to the oldest continuously functioning farmer’s market in the country. Weekly performative harvesting delight urban eaters with kale and lettuces caught by a net strung between two buildings. A high-end “Post Alley Greens Mix” is marketed to walkable local restaurants who vie for serving it one night a week. A significant portion is reserved for a local homeless shelter to provide critical nutrients for those who might not otherwise have access.

A MODEL FOR CITY

EXISTING CONDITIONS

HABITAT

CULTURE + RETAIL

FOOD

EXEMPLARYING STRATEGIES IN POST ALLEY

CURRENT USES

union to university  university to seneca  seneca to spring  spring to madison

loading dock by day | disco by night

vertical cisterns serving seattle steam

vertical cistern
visible water runnel
permeable pavement
biofiltration + irrigation
vegetated bioswale
vegetated downspout
green roof + food production
vegetated wall + food production
vegetation
retail
culture + art
seating

driving goals of urban food system
shade | sun placement + seasonal sequencing of edibles
Visible and artful stormwater runnel

Pollinator alley

Vertical + rooftop food production

Gravity fed + solar-pumped irrigation

Street + loading dock art installations

Post Alley Food Hub, processing + distribution

Activated local food retail + cafes

Micro mobile food carts + seating

Compost collected from local residences + restaurants

Walls + roofs irrigated by stormwater

Vertical hydraulic harvesters allow for access, compact storage + performative harvesting

Visible + community oriented distribution hub brings food from wall + roof to table

Demand + need | serving local restaurants and providing fresh food to those in need

The vision | a network of hyper-local food production made possible by alley infrastructure

Number of square feet of green roofs

Chicago 534,907
Seattle 94,488
Post Alley 205,338

Source: Green Roofs in Seattle | A Survey of Vegetated Roofs and Rooftop Gardens

Gis | Cad analysis + computation

Starts cultivated in rooftop greenhouse

Wash
Sort
Package
Deliver
Sell
Eat + Share
Educate

Public Spaces | Public Life for Seattle's Central Waterfront

FOOD | WATER | HABITAT | CULTURE
Seneca Thread [thickening the strand]

contextual illuminations

the seneca thread_1st ave. to end of pier 56_evening rush hour

strategies

the introduction of social and ecologically performative surfaces that offer opportunities for dynamic function and interpretation of uses. building upon Chris Reed’s StoSS LU team research, these variable surfaces serve to thicken and enrich ecological, social, economic and infrastructural systems over time.

ecological surfaces

social surfaces

visual and mobility barriers

site stills progress from first avenue and seneca intersection [where the seneca viaduct spur meets grade on first] all the way to the end of pier 56

mapped locations of barriers and current building usages

Gehl architects 12 quality criteria

human-scaled planning with a focus on quality urban environments that provide proximity, comfort, protection and a lively public realm shaping opportunities for play, delight, rest and walking

Source: Gehl Architects

design goals

manifold, open ended threads_strengthen the strand and enliven public space by thickening ecological, social, economic and infrastructural threads

reflective, watery threads__provide visual and physical series of insertions and extensions that project water/light inland as well as pull people into physical contact with the ecology and drama of elliot bay

historical threads pulled in multiple directions_reuse of water and vestige material from the viaduct, deep bore tunnel, and cuts from pier 56 are transferred to select points along the thread

successful failures_produce resilient, flexible thread designs that can adapt to variable conditions and fail successfully with the projected 25-36' sea level rise in the next 50-100 years

usage map

Gehl Architects 12 quality criteria

image credit: Gehl Architects
Public Spaces | Public Life for Seattle's Central Waterfront

Vital Traces + Performative Futures
Jordan Bell + Tera Hatfield

Seneca Thread [thickening the strand]

seneca thread stormwater simplified

multiple threads

flows

scaffold

lighting

biotic armature

pier planking

water

collapsed surface threads

thickening seneca thread ecologies I transitions + sea changes
Seneca Thread [thickening the strand]

- Pier steps with salt marsh benches
- Retrofit loading docks and pedestrian street
- Alaskan Way thread plan
  - Scale: 1” = 80’ - 0”
- thread section: A
- Scale: 1” = 80’ - 0”

- Pier 56
- Waterside promenade
- Habitat corridor
- Bike path
- Alaskan Way
- Western Ave.
- Lift 1 (ADA)
- Lift 2 (Elevator)
- Elevated scaffold
- Biotic armature

- Seat wall/store front
- Market street
- Thread section: B
  - Scale: 1/32” = 1’ - 0”

- Catenary lighting
- Seneca Thread [thickening the strand]
  - Cut/floating steps
  - Cut/soft panels
  - Cut/rock panels
  - Cut/groundcover panels
  - MAPT/the wave
  - Gordon Matta-Clark/pier 52
  - Bisterschall/MFO park
  - Toyo Ito/crematorium
  - Seat wall/store front
  - Market street

- Post alley
- Post alley
- Lift 2 elevated scaffold
Public Spaces | Public Life for Seattle’s Central Waterfront

**pier 56**

- creation of saturated salt marsh benches at the foot of the new steps and a floating deck area allows for multiple types of interaction and expanded aquatic habitat
- extensive lighting allows for 24 hour use
- interior civic space + cafe replaces parking on pier end
- creation of a new public space by building seating and textured surfaces, cutting into the edge and allowing access to the water below as well as raised areas for viewing and diving

**retrofitted loading docks and pedestrian street**

- lighted metal seat walls and steps are cut into the high curbs and loading docks around the historic warehouses allowing for access to new commercial spaces
- retaining viaduct columns and adding biotic armature creates urban rooms and human scale spaces by dividing the street. Small bridges allow access across the armature
Seneca Thread [thickening the strand]

**lighting morphology + details**

**deck**
- in the spirit of gordon matta-clark, pier end planks are cut and repurposed for green armature and alaskan ped crossing on seneca, pulling the historical thread of the pier inland
- standing water beneath the decking provides illuminated reflections up through the planking, lighting the path to pier 56’s end

**illuminated bench**
- stainless steel bench with high polished interior and point lights
- a series of repeated cuts and insertions allow light to bleed into the street and sidewalk
- bench runs the length of the historic building’s loading dock facade, simultaneously creating a stage, an event and seating

**biotic armature**
- surface runoff from 1st ave. and seneca is collected stored and treated and recycled to seattle steam
- a series of planked crossings [repurposed cuts from the pier] allow pedestrians to cross the armature at a multitude of points

**lighting scheme**
great seattle fire
- the fire decimated waterfront construction; reconstruction followed, and in 1900 pier 56 was built

viaduct construction

seneca spur

quick wins
- light sculpture under the viaduct
- small tribal lead tours onto elliot bay and into the city to retrace historical shoreline and tribal ecology
- ball pit under viaduct on seneca + first

thickened surface detail construction

successful failures
- based on recent scientific models from UW, the failure plan demonstrates the impact of climate change on seneca’s future shorelines [moderate estimates of a 25’ sea level rise were used]
- successful failures denotes a strategy that allows for maximum flexibility and adaptation of existing structures and ecologies [includes a habitat island on top of the pier 56 building, retrofitted/gutted rooftop buildings with a new elevated waterfront park, transitional pier walk, and an urban beach at the foot of seneca and first ave]

failure section: B

failure section: A

failure plan
Scale: 1” = 160’ - 0”

habitats island

buildings retrofitted and gutted first and second stories/ waterfront park occupies roof and subsequent floors

scaffolds become transitional pier walk with marine habitat occupying the column legs + spurs off the walk providing access to surrounding buildings

biotic skate spot transitions to an urban beach with stairs descending into the water at high tide and in storm events

Image Sources:
http://www.wsdot.wa.gov/Projects/Viaduct/Photos/Historical.htm
1. **INTRODUCTION**

10. **ANALYSIS + FRAMEWORK**

22. **DESIGN**

- Central Waterfront Composite
- Central Waterfront: *The Irregular Edge*
- Aquarium/Pike Place Market: *Streams, Eddies, and Tidal Pools*
- Historic Piers: *Vital Traces + Performative Futures*
- Colman Dock/Pier 48: *WaterIBorn: Life on the Southern Waterfront*

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Columbia Opportunity: the Connection
Colman Deck
The Epicenter
Growing in the GAP
Interface Park
**Enhancing Experience:** Diverse users and needs converge daily in the district. Our goal is to create synergy between them and to enhance the experiences of each. We want to use the richness of the historic fabric, the beauty of the natural surroundings, and the liveliness of the transportation hubs to create dynamic places day and night.

**Challenges:** The district suffers from a land/water divide, though the topography and shallow bathymetry create a level of accessibility unique to the waterfront. Both people and salmon can benefit from a restored shoreline between Pier 48 and Colman Dock. The day/night divide is also pronounced. Though there are several bars and restaurants in the district, there are practically no hotels or nighttime retail to encourage people to stay and explore. Along the waterfront, a lack of activity attracts the homeless while still leaving them in the cold. Both pedestrian connectivity and green networks are also impoverished in the district. Isolated pedestrian and park areas exist, but they do not encourage movement between spaces. Marion Street, which has the highest level of pedestrian activity (over 10,000 people per day), is planned as a major auto corridor from Alaskan Way into the city.

**Strengths:** Our district is a gateway to the city. Over 7,000 cars and 17,000 passengers arrive at Colman Dock every day. Nearly 10,000 commuters use King Street Station per day, supplemented by 1.5 million Amtrak passengers per year and by the Pioneer Square and International District LINK stations. Situated between the Port and industry, the stadiums, the International District and the Central Business District, our district facilitates movement between the most diverse elements of downtown Seattle. It is also the birthplace of Seattle – remnants of the pioneer and Native American culture abound and give the district its unique identity. Pier 48 serves as the southern waterfront bookend, complementing the Olympic Sculpture Park to the north, and offers a unique opportunity for new active space in the district.
strategy: make logical connections from Colman Dock to the surrounding city, providing activities for passersby and convenient amenities for ferry users, along with opportunities for different users to interact.

strategy: turn Columbia Street, a main connector to Colman Dock, into a pedestrian-priority street, using remnants of the removed viaduct ramp to create a pedestrian park and areas for stormwater treatment.

strategy: create a link between Pioneer Square and the waterfront, providing a series of recreational activities to draw pedestrian flow across Alaskan Way.

strategy: provide a southern bookend to the Central Waterfront and connect to Colman Dock and the rest of the district, with civic space for activity and a restored natural beach, creating a habitat for both humans and marine life.
Columbia Opportunity - the Connection

Orientation

The site is located on lower Columbia Street. After the ramp is demolished, it will be an open space. There is also a current parking lot located between Marion and Columbia, 1st and Western. There is an undone/unplanned/undecided plan for this parking lot. It will more likely to be a building plan.

Spatial Relationship

The site plays a important role of this district. From this diagram, you can see its strong relationship with Colman dock and Pioneer square. Colman dock and Pioneer square station brings thousands of people daily. With proper design, Yesler way and Columbia Street will together make the whole district coherent.

Water and the City

All the functional spaces/ utilities in Seattle are located in upper city. These two blocks between Alaskan Way and 1st Ave play an important role of the city. Lacking of connection from the waterfront to the city is the biggest problem currently. This problem not only exists in Pike market district but also exists in Southern waterfront district.

Terrain

Terrain below 1st Ave is quite flat. After 1st Ave, the slope becomes steeper. This creates a stronger flow of surface runoff. When rain water flows to the end, the amount will be large. And the speed of flow will be faster than other streets.

Current Conditions

Satellite picture of the Southern district

To improve the connection between land and water

Current condition/street view of Columbia Street and the ramp of the highway. (looking toward waterfront from 1st Ave.) A big “waterfront” sign is here but the path is poorly designed.

Concept and ideas

To create an identity for the city and people

To make a better space for different users

To create an identity for the city and people
There are three major users in this area:
1. Residents
2. Commuters
3. Tourists

Commuters and tourists’ needs sometimes will conflict. For example, Commuters want fast access to the city (to work), on the other hand, tourists like to enjoy the space in a slow tempo.

Seattle is a rainy city. However, we are not dealing with rains very well. How to make the space more sustainable by retaining and reusing rain water will be a focal point.

A better connection between the waterfront and the city is needed. “Waterfront users” also includes large amount of commuters from Coleman dock everyday. How to use landscape design to enhance pedestrians’ space is an interesting question.

Rain water collection pools located on greenroofs
Only overflow water goes into green street storm water filtration/retention structure
Stormwater filtration/retention pools, functions as landscape element too

Granite-made sculptures in pool. They provide resting area for animals. They are also visual extension from the Colman dock new design.
Columbia Opportunity - the Connection

Time Line: Long term
The Floating Filtration idea
-Time line simulation
As sea level rises, Alaskan way will be covered by water within 50 years. The end of the Columbia St design allows the whole storm water filtration structure floats. It not only provides continuous water filtration process but also provides open space/linear park for people in the future. Also, it can be an alternative pier for future use.

The Entrance
Green Roofs
All of the buildings’ roofs in this area are designed as green roofs. Green roofs not only can reduce the heat island effect, but also can collect rain water. Rain water is clean, and it is cleaner than gray water. In this design, the overflow rain water that is collected by these roofs will go into the ground level stormwater filtration structure and the landscape space.

An image of Entrance
In this design, a giant tree that drops leaves will be an image of the entrance. Visually, this tree does not block all the views if people are looking at the site from Coleman dock. Instead, it reveals a distant view partially and randomly (branches swing because of the wind). It builds an identity, also an impression.

A better paving pattern
This site plays a role of connector. A better paving pattern creates a better space for connection. The new designed Coleman dock guides people to exit in front of Columbia St. Therefore the crossing part on Alaskan way is important. This pavement leads users. Also, this paving pattern/material will extend up to New Coleman dock’s roof space.

Reused Old Buildings- Mixuse
Mix-use has lots of advantages. Different types of uses have different time zones in a day. These uses can cover each other and activate the space. Also, it creates security. Reusing these facades keeps the original atmosphere of the space but creates newer program/activities.

Creating a 24/7 Space
By planning different types of uses in this site, there will be different types of users appearing in different time zones. In weekday-daytimes, commuters and tourists will mostly use this space. In holiday-daytimes, tourists and residents will be the major users. At night, by extending some restaurants/cafes opening hour, people will walk in the space. With a comfy lighting design and constantly-walking-people, the space’s security will be enhanced. Therefore this connection will be not only productive, comfortable but also secure.

Time Line: Short term
Creating a 24/7 Space
By planning different types of uses in this site, there will be different types of users appearing in different time zones. In weekday-daytimes, commuters and tourists will mostly use this space. In holiday-daytimes, tourists and residents will be the major users. At night, by extending some restaurants/cafes opening hour, people will walk in the space. With a comfy lighting design and constantly-walking-people, the space’s security will be enhanced. Therefore this connection will be not only productive, comfortable but also secure.
Colman Deck | Reimagining the Seattle Ferry Terminal

CHALLENGES WITH PRESENT CONDITIONS

- Unrealized views
- Restricted public access
- Unused capacity (much of the time)
- Insufficient capacity (some of the time)
- Traffic congestion (rarely)
- Underserved ferry riders find practical but limited use
- Unserved residents of PSQ area have no reason to use space
- Recreationalist (with various purpose) have extreme seasonal use patterns

INCREASED ACCESS TO VIEWS | DIVERSIFIED PROGRAM FOR USERS | RECLAMATION OF PUBLIC SPACE | INNOVATIVE TRAFFIC PATTERNS

Strategies for Improvement

- Better public space
- 24-hour, diversified uses
- Activated street
- Colman as gateway

NEW LIFE | NEW IDENTITY

Source: Allan Co
Colman Deck | Reimagining the Seattle Ferry Terminal

3 SPATIAL ZONES

PASS
a place for pedestrian transit movement between program, between spaces flexible hardscape can accommodate overflow queuing

PLAY
a place for active recreation skipping, dancing, running, jumping wood decking to nurture quicker movement

PERCH
a place for passive recreation sitting, watching, relaxing, viewing softscape, green space, gentle slopes and curves

(Above) Existing conditions at Colman Dock. Source: Allan V. Co

NEW EXPERIENCE | NEW LIFE

Conceptual sketch showing three spatial zones

Sources: superstock.com; urbansoccer.org

Sources: archidose.org; diychatroom.com; archidose.org

Sources: superstock.com; richardbonfield.com
Plan of upper decking and ferry terminal

Plan of grocery store and revised queuing area

M/V Tacoma to Bainbridge Island
M/V Kitsap to Bremerton
The Epicenter

A compelling bookend to the Central Waterfront

Enriching spaces that connect to the existing context
The Epicenter urban park is a proposal that redefines Seattle public space while creating an elegant architectural and urban design solution that responds to the Olympic Mountains to the west, the Port of Seattle cranes to the south, the Seattle skyline to the north and the stadium district to the southeast. The existing Pier 48 structure was constructed in the 1920s; since then, the pier has gone through many different uses and is currently abandoned. The Epicenter is to become the southern bookend to the central waterfront, as the Olympic Sculpture Park is the bookend to the north. The Epicenter pavilions are green folds that rise to create an outdoor amphitheater, providing seating to the theater of life that is the city of Seattle. The different street access points at the urban interface respond to how different users at the regional, waterfront, and district scales will interact with each other here; the beach offers an enhanced natural habitat for wildlife as well as for humans.

**A center for education, recreation, and relaxation**
The Epicenter

Enriching spaces that embrace the region, waterfront, and district

Enriching spaces that connect to the existing context

EPICENTER URBAN BEACH PARK

VIEW FROM WASHINGTON STREET

CEREMONIAL ALLEE

MATERIALS PALETTE

Image sources: flickr.com

PERMEABLE PAVERS ASSEMBLY
Edge restraint
Granite pavers with sand filled joints
Bedding sand
Compacted aggregate
Geotextile
Drainage outlet
Compacted soil subgrade

RAIN GARDEN ASSEMBLY
Plantings
Water storage layer
Soil
Compacted aggregate
Drainage outlet
Compacted soil subgrade

RAIN GARDEN DETAIL

0                10              20              30              40 feet

URBAN STREET INTERSTITIAL NATURAL HABITAT SECTION A: LANDSCAPE ORDER

WATER ACTIVITIES | SHORELINE | BEACH | BOARDWALK TERRACE | RAIN GARDEN | PROGRAM SPACE | SIDEWALK | ALASKAN WAY

SECTION A: LANDSCAPE ORDER  NATURAL HABITAT  INTERSTITIAL  URBAN STREET

Scan | Design Master Studio 2010
A variety of experiences

Seattle Central Waterfront as exhibit

GREEN ROOF ASSEMBLY
- Planting layer
- Filter fabric
- Drainage layer
- Filter fabric
- Rigid insulation
- Roof barrier membrane
- Waterproofing membrane
- Drainage outlet
- Topping slab
- Structural decking

COLUMN FIELD HABITAT

COLONIAL FIELD HABITAT

VIEW FROM GREEN WAVES

EXHIBIT DETAIL

ELLIOTT BAY WILDLIFE
Image sources: flickr.com

WATER ACTIVITIES
BOARDWALK
OUTDOOR SEATING
RETAIL SPACE
AMPHITHEATER
BOARDWALK
COLUMN FIELD
BRIDGE
WATER ACTIVITIES

SECTION B: PIER 48 ORDER
Growing in the GAP

Design Concept

Yes, GAP is tiny, but...

Step 1: Three Basic Units
Step 2: Grow and Extend
Step 3: Integrated and Coherent

Methodology

Current Condition Analysis

Grey Space

Byproducts of the Large Patches

Alaska Way Separates Waterfront and City

Rigid Boundaries limit the connections with other patches

How to break the boundaries?

How to change into an Attractive, Coherent, and Democratic Space?

Programming
This site is a node of this district, it helps connect the waterfront and the historic district. How to cross Alaska Way to guide the social flow from Pioneer Square to the waterfront is the biggest challenge of this site. The design uses three basic units, an neighbourhood scale square, an circular intersection, and a wavy waterfront plaza, to create a series of recreational activities. It can make the space coherently, make the city life continuously, and give people an image of "portal"(the portal of waterfront, and the portal of the central city). The designed area is 1.14ha.
This project proposes the reclamation of a portion of the shoreline of Elliot Bay along the central waterfront from Pier 46 to Pier 52. The newly created native beach and upland habitat is conceived as an interface between two spatial hierarchies: ecological and urban. The site is regraded to optimize nearshore salmon habitat and to provide direct water access for the residents of Seattle. Ecological infrastructure replaces the seawall. Segments of the old viaduct are secured with new pilings and infilled with rubble. Pier 48 is rebuilt to minimize over water coverage and maximize both terrestrial and nautical accessibility.
Interface Park: Reclamation & Place

- Beach at Pedestrian Pier Ramp
- Central Gateway at Beach
- Rock Outcroppings at Beach
- Beach Looking South
- Central Gateway

Nodes:
- Brackish Marsh
- Sauna
- Docks
- Fir Cone Pavilion
- Mirror Field
- Stormwater Treatment
- Water Taxi Depot
- North Trail
- South Trail
- Central Gateway

- S Washington Looking West
- Culturally Modified Tree
- Forest Trail
- Fir Cone Pavilion
- Mirror Field

Scan | Design Master Studio 2010
"We expect the Decatur back tonight or tomorrow. We shall feel much safer when she gets here."
- Catherine P. Blaine, December 1st, 1855

The US Navy sloop 'Decatur' fired a volley of cannon rounds at Native American aggressors, January 26, 1856.

Washington Territory

Habitat Typologies

Terrestrial

Wetland

Intertidal

Nearshore

Marine

Seawall as fortification, 1934

Pier 48 Dock Configurations

Marine Access Only

Partial connection

Interconnected, with moorage

Pier 48 Programming

Sloop Decatur [Source: UW Libraries Digital Collection]
“In lively, safe, sustainable and healthy cities, the prerequisite for city life is good walking opportunities. However, the wider perspective is that a multitude of valuable social and recreational opportunities naturally emerge when you reinforce life on foot.”

- Jan Gehl, Cities for People