TEAM 4: MOTION OF NATURE
BY JINGJING BU + JIYOUNG PARK

PROJECT DESCRIPTION
This proposal will explore locating an Aquatic Research Center in the Union Bay Natural Area. We developed the design concept in terms of story-telling lines focusing on three key points: Researching, Learning and Activating.

Three story-telling lines went through our proposal for the purpose of educating people, infrastructure including fish rearing and non-fish rearing period, as well as outreach to neighbors, including elders and children.

The name we gave our proposal is ‘Motion of Nature,’ in order to give a general sense of our proposal on the Union Bay Natural Area site. It is designed not only for the movement of salmon but also for the movement of nature’s systems.

GOALS
• To conserve and protect salmon by creating a self-sustaining environment
• To demonstrate the impacts and importance of self-sustaining environments;
• To serve the community with educational knowledge through experience;
• To provide social gathering areas/activities for the community.
• Implement green stormwater infrastructure techniques and utilize native plant species;
• Provide knowledge and experience at educational facilities.

KEY WORDS
• RESEARCH
• EDUCATION
• ACTIVATION
CONCEPTUAL DIAGRAM

Three key points, three story-telling lines:

Three story lines in terms of educating people, infrastructure (fish rearing + non-fish rearing), and outreach to neighbors, including elders and children.
The UW’s East Campus currently accommodates athletics and recreational activities with parking to support sporting events and campus commuters, along with the Union Bay Natural Area, UW Farm, and the Center for Urban Horticulture.

According to the 2018 UW Campus Master Plan, East Campus will remain largely a restoration and conservation area, with added academic and athletic use where possible.

For the precedents studies, we are focusing on activation for education and research.

Figure 1. Aquatic Research Center
Figure 2. Horticultural Education
Figure 3. Hatchery Research
Figure 4. Water Re-use (example from the Bertschi School, Seattle)
EDUCATIONAL ACTIVATION

Precedent studies of educational, interpretive outreach and activation.

Figure 5. Fish and Game Clubs Encourage Future Generations

Figure 6. Salmon Art School

Figure 7. Homeschool Classes and Field Trips

Figure 8. Child-friendly Fish Ladder

Figure 9. Homing Pond Viewing Area

Figure 10. Community Education at the Auditorium
The plan shows exterior site context, new landscape features, and relevant research infrastructure.

Legend
1. Elisabeth C. Miller Library
2. School of Aquatic and Fishery Sciences
3. UW Botanic Gardens
4. Center for Urban Horticulture
5. Douglas Research Conservatory
6. Urban Horticulture Field House with Pump House
7. Service Access
8. Flexible Raceways
9. Spawning Channels
10. Homing Pond with Observation Area
11. Fish Ladder
12. Raceway with Crowder and Covered Processing Area
13. SAFS Research Buildings with Greenroof and Solar Panels
14. Cafe and Education Building
15. Main Entrance
16. Public Gathering Area
17. Wetland Area
18. Event Lawn
19. Union Bay
FACILITY AND SITE SECTIONS

Section Showing Fish Ladder

Section A-A Showing Public Areas

Section B-B Showing Research Facilities
SALMON FLOW DIAGRAM

**SALMON MOVEMENT**

- Lake Washington
- Fish Ladder
- Homing Pond
- Sorting Facility (Crowder)
- Processing Facility
- Spawning Channel
- Incubation Rooms (Fertilized Eggs)
- Compost Facility
- Interior Rearing (tanks, race ways, labs)
WATER SYSTEMS DIAGRAM

WATER FLOW

- Intake Pipe
- Lake Washington
- Fish Ladder
- Pump House (pump, filter)
- Water Storage Tank (underground)
- Temperature Control (combined with storage)
- Chilled water
- Sedimentation Pond (underground)
- Homing Pond
- Incubation Rooms
Program, support and outreach programs with restricted access.

Legend
- Research/production program 16,828 sqft
- Outreach program 9,627 sqft
- Support program 10,210 sqft
- Coffee Shop 636 sqft
- 200' Shoreline District Overlay Setback
CIRCULATION DIAGRAM

Public and private access and circulation routes.
SEASONAL PROGRAMMING DIAGRAM
Use and programming of the ARC throughout the year.

WINTER
- Ice Skating
- Indoor Workshop

AUTUMN
- Homeschooling Classes and Field Trips
- Salmon Art School

SPRING
- Lying on the Soft Lawn
- Spring Harvest Event
- Coffee Shop Exploration

SUMMER
- Family Soccer Challenge
- Dog Friendly Frisbee
- Introducing Kids to Fishing
# MATERIAL PALETTE

Paving materials, building materials, and facility materials.

<table>
<thead>
<tr>
<th><strong>PAVING MATERIAL</strong></th>
<th><strong>BUILDING MATERIAL</strong></th>
<th><strong>FACILITY MATERIAL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceramic fish on the path</td>
<td>Greenroof insulation layer</td>
<td>Stainless steel handrail</td>
</tr>
<tr>
<td>Water permeable paving with gravel</td>
<td>Green wall</td>
<td>Plastic homing pond</td>
</tr>
<tr>
<td>Wooden bridge</td>
<td>Steel building facade</td>
<td>PVC pipe</td>
</tr>
<tr>
<td>Multiple linear pavement</td>
<td>Greenroof water-proofing</td>
<td>Wooden seating wall</td>
</tr>
<tr>
<td>Pavement detail</td>
<td>Outreach-wooden and glass roof</td>
<td>Bird protection netting</td>
</tr>
<tr>
<td>Granite hardscape paving</td>
<td>Greenroof sedum substrate</td>
<td>Fish ladder concrete</td>
</tr>
<tr>
<td>Wetland bridge</td>
<td>Greenroof wooden-roof</td>
<td>ADA industrial ramp</td>
</tr>
<tr>
<td>Linear pavement with gravel</td>
<td>Greeroof solar panel</td>
<td>Concrete pedestrian beside fish ladder</td>
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</table>
PLANTING PALETTE

Green roof plants, native plants, raingarden plants and wetland plants.

GREENROOF PLANTS PALETTE

RAINGARDEN PLANTS PALETTE

NATIVE PLANTS PALETTE

WETLAND PLANTS PALETTE
**GREEN STORMWATER INFRASTRUCTURE**

Green stormwater infrastructure (GSI) is a set of distributed stormwater management practices that mimic natural systems.

GSI is used across multiple scales and site contexts - including residential, commercial, and in the public right-of-way - and delivers multiple community benefits in addition to stormwater management.

Graphic by the Philadelphia Water Department
GREENROOF WATERFLOW DIAGRAM

The stormwater can be purified through the green roofs, green walls, and linear planters.
WATER RE-USE + GSI DIAGRAM

Stormwater surface flows into the wetland where it is purified and then is either released back to Lake Washington or pumped for use in the facility.

WATER RE-USE PROCESS

- Using Existing Elevation
- Sending water to Lake Washington
- Pump House (pump, filter)
- Hatchery
BIRD’S EYE VIEW PERSPECTIVE

Perspective looking north, showing the new center’s relationship to its context
PERSPECTIVE FROM THE ELEVATED BOARDWALK

Perspective looking from fish ladder to new aquatic center.
ENTRANCE PERSPECTIVE

Perspective looking from the main entrance to the new hatchery buildings with greenroof and solar panels.
BIRD’S EYE PERSPECTIVE OF THE HATCHERY FACILITIES

Perspective showing a close up view of the hatchery facilities and green roofs as well as green walls.