

Future-Proofing: Towards Living Building Challenge

During the design process, the team looked at the potential for this project to meet the Living Building Challenge as well as other sustainable strategies. Due to budgetary constraints and code barriers, the strategies were not incorporated into the building, but many are still viable options to be added to the project at a later date. Strategies that were proposed and presented include:

- Net Zero Energy through Micro-hydro power production and Solar Photovoltaic Array
- Net Zero Water through Composting Toilets, On-site waste treatment, Rainwater collection for irrigation and plumbing
- Urban Agriculture/Orchard
- Ecological Water Flow/Raingardens
- Red List Materials Prohibited
- Responsible Industry & Appropriate Sourcing

“For the first time since the program began in 1978, the public can see and appreciate the incredible work of the students and faculty inside the hatchery. The building represents a commitment to sustainability and resource stewardship that is emulated in BTC’s Fisheries and Aquaculture Sciences programs,”

*-Julie Blazek, Partner,
HKP Architects*



Ratings and Awards:

LEED Silver
NWAIA 2014 Sustainability Award
NWCCC 2014 Best Project Under \$10 million Award

Team:

OWNER
Bellingham Technical College

ARCHITECT
HKP Architects

LANDSCAPE ARCHITECT
SvR Design Company

MECHANICAL ENGINEER
Notkin

CIVIL ENGINEER
Wilson Engineering

STRUCTURAL ENGINEER
AHBL

ELECTRICAL ENGINEER
Travis Fitzmaurice Associates

GEOTECHNICAL
GeoEngineers

COST ESTIMATING
The Woolsey Company

SIGNAGE/INTERPRETIVE
BrandQuery

HARDWARE
Adams Consulting & Estimating

ENVELOPE
Wetherholt & Associates

ARCHAEOLOGY
Equinox Research & Consulting Int.

GENERAL CONTRACTOR
Roosendaal-Honcoop

HKP architects

CASE STUDY

hkpa.com



PERRY CENTER Bellingham Technical College

LEED Silver

Sustainable design principles have always been at the heart of HKP’s design decisions, particularly when it comes to natural ventilation, passive solar strategies, light, views and material expression in the Pacific Northwest. HKP architects actively incorporates sustainable design principles in all of our work and we help clients understand the long-term benefits to our environment and to their operation and maintenance costs.

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Project Overview

Buried landfill, digester tanks and old building debris, shorelines setbacks, high-voltage overhead power lines, street easements, cultural mitigation, and Old Town Design Review are just a few of the challenges and opportunities faced in this project.

Since 1974, Bellingham Technical College has been running the Whatcom Creek Hatchery on this site, teaching students through a “books and boots” approach the many facets of fish rearing, habitat restoration and eco-systems protection. They ran this program out of the crumbling old power house from the defunct city wastewater treatment plant. Not many people knew the hatchery even existed, or what the students did inside the building.

The new building sits within the Maritime Heritage Park, owned by the City of Bellingham. The park is heavily used by the public, as a destination as well as a greenway thoroughway. The building needed to allow for movement through the site for visitors, as well as work for the students’ access to the fish ponds. To protect the public open green space, the new footprint could be no larger than the removed buildings.

Squeezing the program into the tiny footprint, providing clear, organized circulation, and relating to the maritime and industrial context of the site rendered a building with a simple form and expression. With a focus on showing off the inner workings of the ground floor hatchery, the transparency from the lobby and exterior allows the public to see and appreciate the students’ work, even when the building is closed.

PROJECT FACTS

Square Feet:
7,823 SF, 2 story

Site:
0.83 acres
(within larger park)

Location:
Bellingham, WA

Construction Cost:
\$332/sq. ft.
w/site remediation

Total Cost:
\$2.6 million

Completed:
September, 2013

LEED facts - NC Silver (50-59)



Testimonials

“Bellingham Technical College’s partnerships are a vital cornerstones of our mission. This building - The Perry Center for Fisheries & Aquaculture Sciences - is a prime example of how public & private partnerships work together for a much larger purpose. BTC is very appreciative for each and every gift towards this project. These donations will live on for generations by providing countless students with educational opportunities and honoring this region’s natural maritime resources.”

- Patricia McKeown,
BTC President

“...I am jealous but happy that the new students get to enjoy a state of the art building, to better prepare them for their futures.”

- Former BTC Fisheries Student

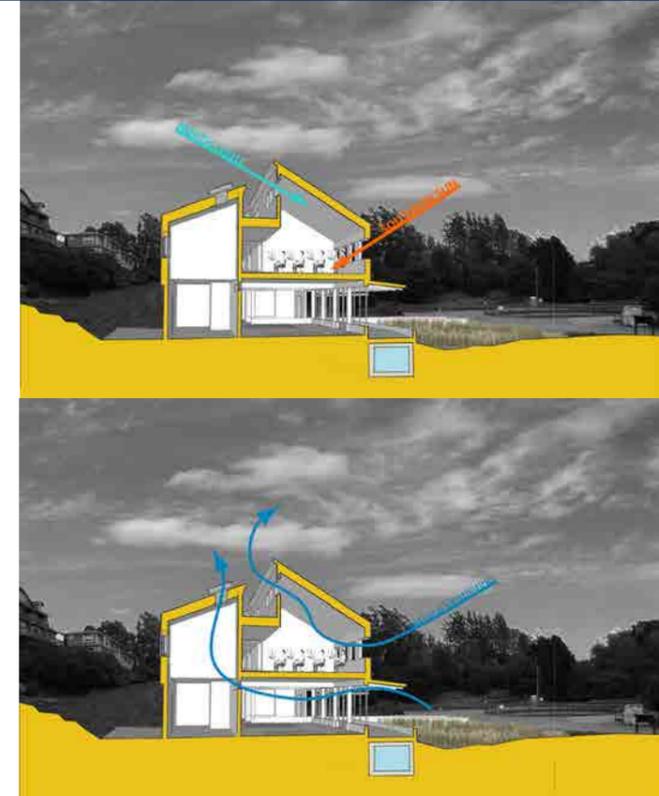


Energy & Conservation

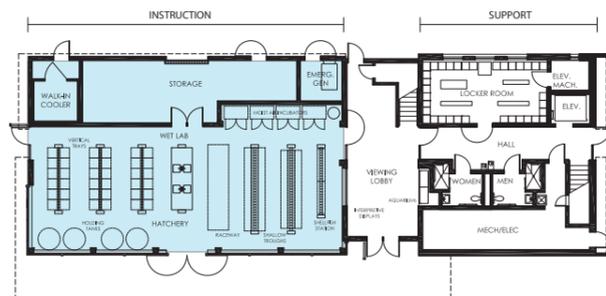
The building design optimizes natural daylighting and ventilation. Classrooms benefit from high clerestory daylighting provided with solar shading and daylighting controls on the lighting fixtures. The classrooms also use the clerestory for natural ventilation.

The hatchery is an unheated space, with UV protection on the glazing to simulate the temperature and shading of the natural stream habitat. There are outside air louvers above the hatchery glazing that allow air to pass through the hatchery and escape up through the storage high bay space via a roof vent.

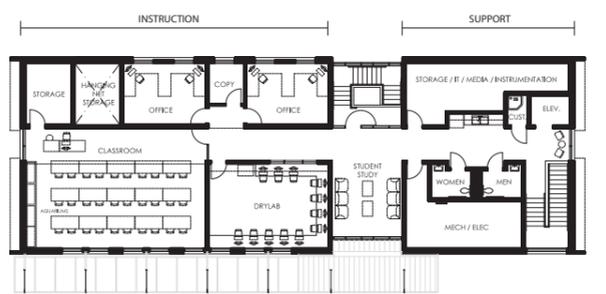
Cellulose foam and dense-pack insulation is used in the ceiling and wall cavities to provide above code thermal insulation with sustainable materials. Heat recovery ventilation is used on the mechanical system to recover exhaust heat. The result is 25% less energy use overall.



Sustainable Design & Construction



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Concrete, steel, and wood make up the main structural building components. The framing was kept simple, with little waste. Exterior materials were chosen for durability and appropriate character for the maritime/industrial setting. A composition of metal roofing and siding, cementitious lap siding and colored concrete help to define the areas of the building.

During construction, construction waste management resulted in 98% recycled waste and landfill reduction. The building is designed to be LEED Silver with future-proofing strategies to add to its sustainability in the future if funding allows.



Materials & Resources

The material palette is minimal, reducing the amount of finishes throughout the facility. Finishes are sealed concrete, recycled-content ceramic tile, linoleum and rubber stair treads. Metal products were all chosen for high recycled-content, durability and future recyclability. All tolled 12% of all the building materials are recycled.

Even the donor recognition and signage materials were chosen with sustainability in mind - glass, metal, cork and soy-based inks were used in their design and fabrication.

