

1st

Living Building on the West Coast certified to meet the Living Building Challenge

100%

of water treated on site

100%

of materials sourced regionally

Bertschi School Science Wing Seattle, Washington

Completion: February 2011
Project size: 0.8 acres | 2,250 sf open space
Owner: Bertschi School

Restorative Design Collective

Landscape Architecture: GGLO
Architecture: KMD Architects
Civil Engineer: 2020 Engineering
Structural Engineer: Quantum Consulting
MEP Engineer: Rushing
Contractor: Skanska
Sustainability Consultants: O'Brien & Co.

LIVING BUILDING CHALLENGE 2.0



Certified 'Living'
Spring 2013



"...a stream running through the classroom."

-Bertschi student wish from project visioning activity



The Bertschi Science Wing was the winner of the 2012 WASLA Award of Merit



Background

The Bertschi School is an independent elementary school in Seattle's Capitol Hill neighborhood. Its new Science Wing building is a cutting-edge, sustainable learning environment designed by the Restorative Design Collective, with GGLO providing landscape architecture services. The Science Wing is the first Living Building Challenge certified building in the state of Washington as well as the West Coast.

Restorative Design Collective

The Restorative Design Collective (RDC) is a group of green building professionals who endeavor to further the Living Building Challenge. The RDC's highly integrated design process was essential for achieving this project's aggressive sustainability goals. Through early, intensive, all-discipline design charrettes the team condensed the time of a traditional design process in half, and allowed construction to begin faster than a conventional project. For more on the group, [click here](#).

Living Building Challenge

Using the metaphor of a flower, rooted in place and harvesting its own water and energy, the Living Building Challenge is based around seven environmental category 'petals' and twenty mandatory measures or 'imperatives.' Launched by the Cascadia Chapter of USGBC in 2006 and now administered by the International Living Future Institute, the Living Building Challenge takes over where LEED leaves off. A Living Building is only awarded certification after a one-year performance period. For more info, [click here](#).

Ecological Water Flow

To achieve net-zero water, both rainwater and greywater are collected, filtered and re-used on site; and blackwater is eliminated through the use of a composting toilet. **Rainwater** is collected from the roofs, visibly transported via a runnel in the classroom floor to a catchment tank, filtered, and either re-used or released into a rain garden outside. **Stormwater** is also absorbed in an "intentional" Moss Mat roof, which is both the first of its kind in the Northwest and a beautiful view from the floors above in the adjoining building to the south. **Greywater** is collected from the classroom sinks, cleaned and dispersed by a continuous loop of evapotranspiration within a large green wall; no greywater is discharged outside of the building envelope. The green wall serves as a decorative feature within the classroom and was partly inspired by an idea generated in a student visioning session to create "a greenhouse where something is always growing." It is planted with low-light, dry-tolerant and wet-tolerant house plants.

Living Building Challenge

An ethno-botanical garden was designed to celebrate native Northwest natural/cultural history, provide student learning opportunities, strengthen human-nature relationships, and fulfill the Urban Agriculture imperative of the Living Building Challenge. Plants include tubers, berries and leaves for edible and herbal use. Project team members, teachers and students worked together during a "planting party" to plant the gardens.

In summary, here are some of the major site sustainability features of the design:

- Ecological water flow is expressed in the exterior and interior design
- Rain garden provides stormwater infiltration on site
- Green wall provides important greywater infrastructure
- Ethno-botanical garden was designed to thrive in a heavily shaded site
- Irrigation materials are PVC-free

The Bertschi Science Wing is:

- The First Living Building in the world constructed on an urban site
- First in the world constructed to meet the Living Building Challenge v2.0, including Urban Agriculture