

# Painters Hall Community Center

Pringle Creek Community | Salem, Oregon



The first project to achieve Net-Zero Energy Building Certification and Petal Recognition by the Living Building Challenge, Pringle Creek's LEED Platinum Painters Hall Community Center has become the heart and hub of this truly innovative community.



## A Case Study in Sustainable Design

Pringle Creek Community Center is envisioned to become the heart and hub of Pringle Creek Community. It offers office and conference spaces for Pringle Creek Staff, but also the facilities for hosting events and classes. Providing a forum for sustainability education is a primary function of the Community Center. And to create a building that could embody these principles of sustainability, the project team employed a high efficiency, yet simple systems.

The Community Center is located in the renovated Painters Hall, a building remaining from the site's former use as the Fairview Training Center. The Community Center is connected to the rest of Pringle Creek by a network of green streets and porous paths. Below ground, the Community Center is connected to the larger development through the groundwater heat pump, geothermal system that is a key contributor to the building's energy efficiency. The heat pump serves the primary heating needs of the facility, while passive ventilation provides cooling and fresh air ventilation during the summer months. Walls are highly insulated, with R-19 walls and R-30 floors and ceiling.

In keeping with its function as a teaching tool, the building systems engage the building users in operating the systems. CO2 sensors activate indicator lights to instruct the occupants to open windows for fresh air intake. Users can also control thermal temperature, with ample operable windows in every space.

With energy consumption significantly reduced, annual energy use is supplied by an expansive roof mounted photovoltaic array. Annual energy use for the building is around 20,000 kWh and the PV array generates approximately 25,000 kWh. The Community Center not only has net-zero energy use, it also feeds additional energy into the grid for use by other buildings on site.

The Community Center is also highly innovative in its water usage. Low-flow fixtures and dual flush toilets reduce annual water consumption by over 5,000 gallons. Rainwater is collected in barrels adjacent to the building and piped in for use in toilet flushing to reduce potable water use for wastewater conveyance by 100%. This has the added benefit of significantly reducing on-site stormwater runoff.

To reduce the use of virgin materials, many of the materials in the Community Center were reused from other deconstructed buildings at the site. New materials were selected for their recycled or rapidly renewable properties, and nearly all of the construction waste was recycled.



**Pringle Creek Community Center is frequently used a living laboratory and classroom for students from the University of Oregon and Portland State University. The photograph above was taken during a creek restoration project undertaken by local middle school students. For all of the activities and classes that take place at Pringle Creek, the Community Center acts as the home base and gathering space.**



Painters Hall achieved Living Building Challenge Petal Recognition for Energy, Equity and Beauty.

## Community Center Sustainability Features

### Sustainable Sites

- The building is located in one of the most sustainable communities in the nation, complete with green streets and 13 acres of open space.
- Bioswales collect and treat stormwater runoff from the site area.
- The neighboring Flower Power Coop offers a biodiesel alternative fuel option

### Water Efficiency

- Low water native vegetation reduces water use for irrigation by 25,901 gallons annually. The remaining water needed for irrigating the landscape uses greywater discharged from the site's geothermal system.
- Low flow fixtures and dual flush toilets reduce the water used in the building by 6,359 gallons per year, a 36% reduction. The building saves an additional 6,916 gallons a year by using rainwater collected in reclaimed totes to collect and store rainwater at the site, which is piped into the building and used for toilet flushing.

### Energy and Atmosphere

- The community center has a net-zero annual energy use, and during the majority of the year will have a net-positive energy generation, producing more energy than it uses.

- Net-zero has been achieved by significant improvements to the building envelope, the use of simple and efficient ground water heat pump and natural ventilation cooling systems, and augmented by a photovoltaic array that generates 25,483 kWh.

### Materials and Resources

- Construction waste was carefully managed, diverting 36 tons, or 99%, of the waste generated during the renovation from a landfill.
- Many of the project's materials were reused, either collected from buildings that had been deconstructed at the site. 24% of the materials used on the project, calculated by cost, were reused; this not only reduces the impacts from extracting and processing virgin materials, it also reduces emissions resulting from transporting those materials.

### Indoor Environmental Quality

- All paints, adhesives, and composite wood products used on the project were low VOC.
- Extensive daylighting and natural ventilation provide a high degree of user comfort, as well as the ability for occupants to control their own lighting and thermal comfort.

### Innovation and Design

- The building is intended to be a living laboratory and teaching tool. Students, teachers, and government officials will be using the building to study the principles of green design and planning principles.

