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bend parks and recreation district administration building

bend, oregon



a case study in sustainable design

The new Administration Building for the Bend Parks and Recreation District will provide office space for current staff and allow for the department's anticipated growth over the next twenty years. In keeping with the Bend Parks and Recreation District mission, the Administration Building project is committed to environmental stewardship and respect for the surrounding landscape. Public indoor and outdoor spaces are integral to the overall design, making the building a point of congregation and creating a welcoming "park-like" experience for visitors.

The site, in the Mill District area of southwest Bend, was selected due to its visibility and central location, ideal for serving the community and the district at large. In an effort to respect the existing landscape, existing trees and groundcover were maintained as much as possible. The project also included the restoration of native habitat along the Deschutes River. Vegetated open space that was preserved as part of the Administration Building project totals 377,836sf, 345% more than is required by the local zoning code. On site stormwater is collected, treated, and infiltrated by an expansive green roof, a series of bio-filtration basins and rock trenches designed for infiltration.

In addition to using native plantings, the project employs a drip irrigation system to reduce water use for irrigation. Waterless urinals and low flow fixtures further reduce water use within the building. These efforts result in a water savings of 45%, or approximately 85,500 gallons every year.

A 37% building energy efficiency is achieved through an integrated high performance building envelope and high efficiency mechanical systems. A high thermal performance exterior envelope is paired with a mixed mode natural ventilation system, radiant/chilled floor slab for heating and cooling, two high efficiency condensing boilers, a solar hot water system, and energy efficient lighting with occupancy and daylight sensors. Additional energy consumed by the building is supplied by green power.

Construction waste for the project was tightly managed, allowing over 88%, or 159 tons, to be diverted from landfills. Juniper trees on site that had to be removed during the project were harvested, milled on site and reused as custom Juniper woodwork in the building's interior. From the structural steel to the toilet partitions, the building incorporates a significant amount of recycled materials. Based on cost, 19% of the materials used on the project were recycled, reducing the impacts that result from the extraction and processing of virgin materials. The selection of local materials was also a high priority for the project, reducing the impact from transportation and supporting the local economy. Based on cost, over 40% of the materials used in the project were extracted, processed and manufactured within 500 miles of the project site. Door frames, stair treads, and casework are made from bamboo, a rapidly renewable resource.

Extensive daylight and views contribute to the indoor environmental quality of the Administration Building. Natural ventilation enhances the indoor air quality, and allows building occupants a high degree of control over their thermal comfort. Low VOC adhesives, sealants, paints, and carpets were used to maintain a high level of indoor air quality.



bend parks and recreation district administration building sustainability features

Sustainable Sites

- The project has access to public transportation, dedicated alternative fuel vehicle parking, as well as facilities to support bicyclists.
- 377,836sf of open space has been preserved as part of the project, existing trees and groundcover were preserved, and the native habitat along the Deschutes River adjacent to the site was restored.
- An extensive green roof helps to mitigate stormwater runoff and reduce heat island effect, while bio-filtration basins and rock trenches collect, treat and infiltrate stormwater.

Water Efficiency

- Low water native vegetation and a high efficiency drip irrigation system reduce water use for irrigation.
- Low-flow faucets and waterless urinals result in a water savings of 45%, or 85,500 gallons annually.

Energy and Atmosphere

- The building envelope is designed for thermal performance, with R-50 recycled cellulose-filled stud walls and insulated panel roofing.
- Two high efficiency condensing boilers paired with radiant/chilled slab flooring provide heating and cooling to the

building, augmented by operable windows that allow natural ventilation.

- A solar hot water system heats water before it makes its way to the water heater.
- Occupancy and daylight sensors monitor lighting systems to prevent unnecessary use when the building is unoccupied or supplied with ample daylight.
- Green power is purchased to supply the additional power consumed by the buildings.

Materials and Resources

- 88% of the construction waste, or 159 tons, was diverted from landfills and transferred to recycling facilities after careful sorting.
- Juniper trees that had to be removed during the project were milled on-site and installed as custom casework.
- 19% of the materials used for the project, calculated by cost, were recycled materials.
- Based on cost, over 40% of the materials used on the project were extracted, processed and manufactured within 500 miles of the project site.
- Door frames, stair treads, and casework are made from bamboo, a rapidly renewable resource.

Indoor Environmental Quality

- All paints and adhesives and carpets were low VOC.
- Extensive daylighting, views, and natural ventilation were provided throughout the building, enhancing user comfort and allowing for individual thermal control.