

Thanks for visiting!

Please deposit this Field Guide in the drop box on the third floor, or return to the Ecotrust reception desk on the second floor.

For more information on green buildings, visit the City of Portland's Office of Sustainability on the third floor or online at www.green-rated.org.



WWW.ECOTRUST.ORG

ECOLOGY | ECONOMY | EQUITY

JEAN VOLLUM NATURAL CAPITAL CENTER
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JEAN VOLLUM
NATURAL CAPITAL CENTER



FIELD GUIDE



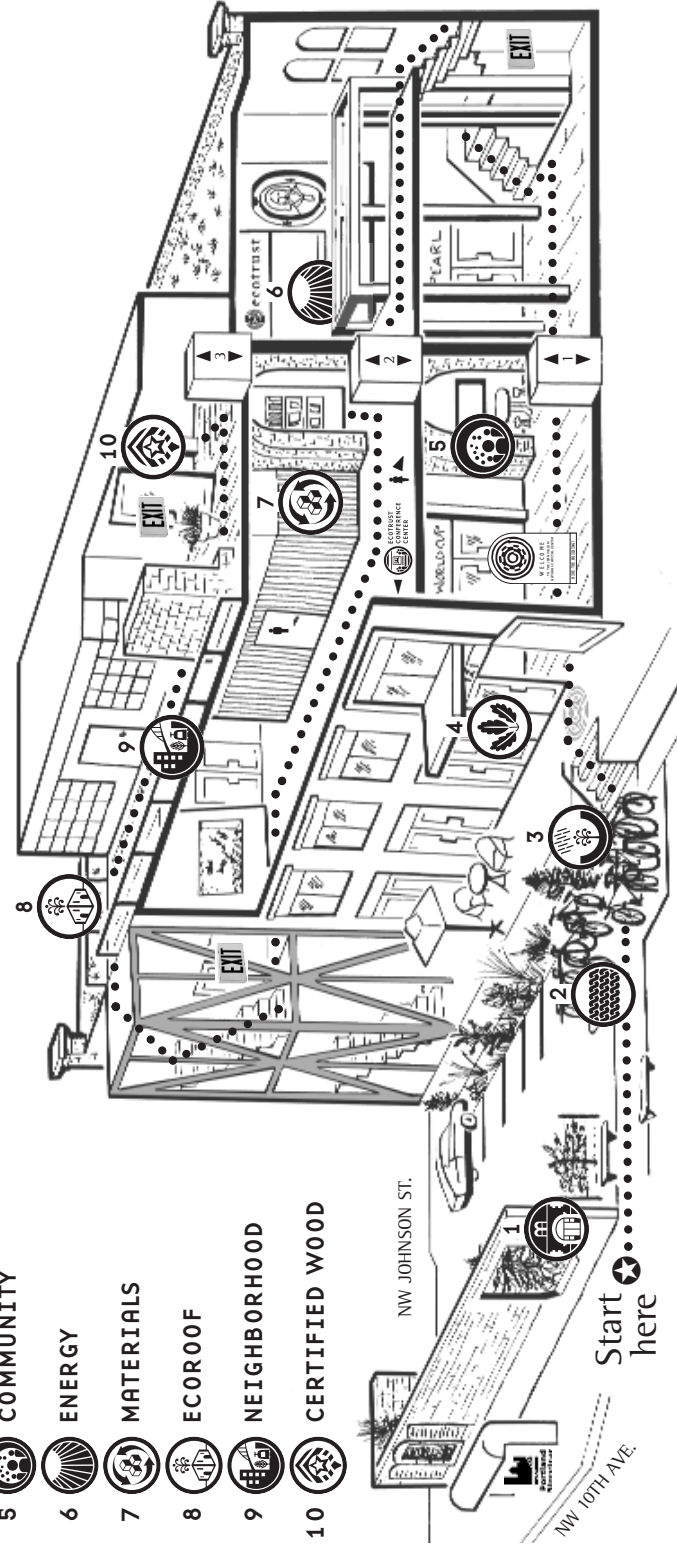
WELCOME
TO THE
JEAN VOLLUM
NATURAL CAPITAL
CENTER

We invite you to let this Field Guide be your escort on a tour of the building and its exceptional features.

Follow the trail of signs starting at the “remnant wall” on 10th Avenue, continuing through the atrium, and up to the second and third floors. Just look for the icons depicted in this guide.

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- 5 COMMUNITY
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HIKE THE BUILDING!





HISTORY

Some buildings serve a single purpose and are demolished to make way for the new. Others adapt. Responding to the demands of a new era, the Jean Vollum Natural Capital Center serves as a marketplace for ideas, products, and services that take their cues from nature.

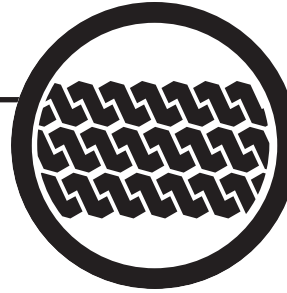
Natural Capital Center timeline:

- Built in 1895 in a Romanesque style inspired by architect Henry Hobson Richardson
- Purchased by Ecotrust in 1998 to demonstrate the potential of design that is both community-friendly and environmentally sound
- Second building deconstructed, preserving this wall on 10th Avenue as a historic remnant
- Stairtowers added for seismic stabilization; façade and parapet restored
- Completed and opened to the public in 2001

PORTLAND AND MANY OF ITS RESIDENTS prospered during the final decade of the nineteenth century. Among them was John McCracken, who built a thriving wholesale company distributing Monterey sand, Roche Harbor lime, Tenino sandstone, and other building supplies. Situated strategically between freight yards, McCracken’s warehouse was a commercial hub for a generation.

By the 1930s, truck shippers had displaced the dray teams and railroads, and McCracken’s building adapted to the changes. As the central truck terminal, the building housed as many as 32 independent trucking companies plus a café and the Terminal Cigar Store.

The new phase in the life of this historic building is tied once again to the engines of economic change and began with its purchase by Ecotrust in 1998. Today’s economic opportunity is reflected in the growing number of Portland residents and visitors who believe that their choices, purchases, and investments make a difference in the wider world. We invite you to explore this building and those opportunities with us. •



TRANSPORTATION

CO₂ produced by cars is a major contributor to climate change. In an urban environment, there are many ways to promote alternative transportation choices.

Alternative transportation support:

- Fifty space-efficient, vertical bike parking spots in the basement
- Bicycle-sharing program for tenants
- Locker and shower facilities available on-site
- Two Flexcar hybrid cars parked on-site
- Employee transportation stipend instead of reserved parking
- Two electric vehicle charging stations

THE NATURAL CAPITAL CENTER fosters innovative approaches to transportation. Ample bicycle parking, the Flexcar car-sharing program, and transportation stipends are a few of the ways in which the building and its tenants seek alternatives. Locker and shower facilities are also available for commuters who walk or bike to work.

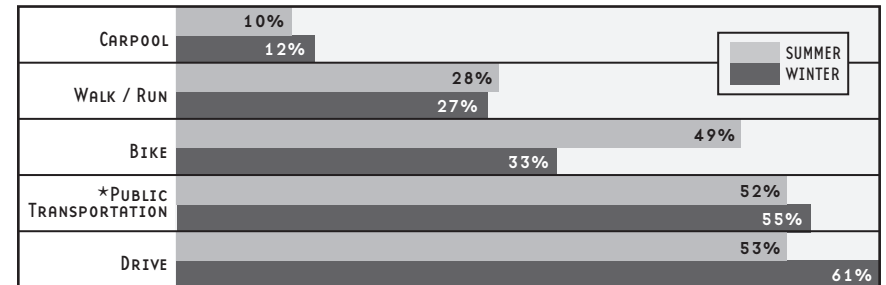
Two designated Flexcar parking spaces in the Natural Capital Center parking lot provide hybrid vehicles for use by Flexcar members. The company operates a car-sharing program that reduces overall automobile use by lending cars to members by the hour. Natural Capital Center tenants have enthusiastically embraced the program: over 30 are Flexcar members.

Employee transportation stipends can also promote alternative methods of transportation. It’s common for downtown businesses or agencies to provide parking for their employees. Instead, Ecotrust and others in the Natural Capital Center provide a stipend that employees can choose to use as they see fit: for automobile parking, for public transportation, or to help offset the higher cost of walking-distance urban housing.

Providing for the future, our parking lot is also equipped with the infrastructure for two electric vehicle charging stations. •

GETTING TO WORK

Transportation used by NCC tenants to commute in 2002



*Includes bus, Portland Streetcar, and Max



BIOSWALES

When it rains, runoff from rooftops and pavements flows into the Willamette River, collecting sediment and absorbing chemicals harmful to aquatic life. Landscaping that retains rainwater on-site helps to protect our rivers.

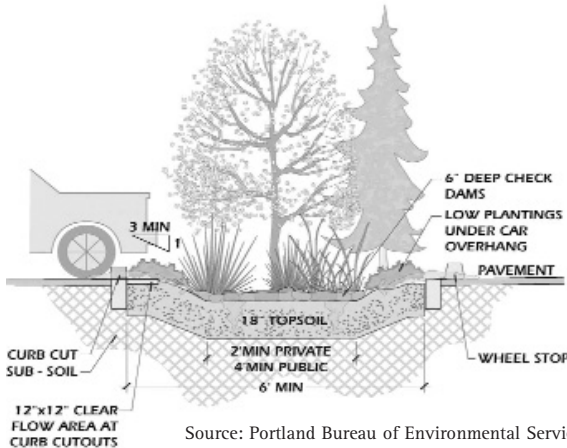
Bioswale plants:

- Oregon Myrtle
- Shaggy-Barked Manzanita
- Point Reyes Bearberry
- California Coffee Berry
- Ceanothus Joan Mirov
- Ceanothus Frosty Dawn
- Incense Cedar
- Dwarf Oregon Grape
- Red Twig Dogwood
- Boston Ivy
- Massachusetts Bearberry
- Lyngby's Sedge
- Soft Rush
- White Alder
- Espalier Apple

THE LANDSCAPED DEPRESSIONS on either side of this walkway are called bioswales. They capture and control the flow of the building's rainwater runoff, or stormwater. By capturing stormwater, these bioswales lessen the amount of sediment and chemicals flowing into the Willamette River.

The Natural Capital Center swales are bottomless; the water they drain from the parking lot and the building's downspouts filters through the vegetation and soil to either evapotranspire into the atmosphere or seep into the groundwater. The native trees, shrubs, rushes and sedges planted in the swales were carefully selected for their ability to tolerate seasonal fluctuations between inundations of water and intense heat. Once established, these plants require little maintenance.

The bioswales are part of a stormwater management system that includes an ecoroof and the partially permeable asphalt and concrete pavers used in the parking lot. This system is funded in part by the City of Portland's Bureau of Environmental Services and will greatly reduce, if not completely eliminate, the total volume of stormwater flowing off the Jean Vollum Natural Capital Center site.



GREEN BUILDING

The U. S. Green Building Council certifies projects that demonstrate Leadership in Energy and Environmental Design – the coveted LEED™ award for “green” buildings.

LEED™ benchmarks achieved, and exceeded, by the Natural Capital Center:

- 30% reduction in water use
- 20% reduction in energy use
- 75% of existing construction shell reused
- 90% of construction waste recycled
- 50% of materials harvested locally
- Daylight available in 75% of indoor spaces
- Low toxicity carpets and paints used throughout

LEEDERS IN GREEN BUILDING

Number of registered LEED™ projects in each city, 2002



IN JANUARY 2002, the Jean Vollum Natural Capital Center became the first historic restoration in the nation to receive a gold-level Leadership in Energy and Environmental Design (LEED™) award from the U.S. Green Building Council. The strict standards set by the Council evaluate factors such as site selection, water efficiency, energy performance, materials use, and indoor air quality.

From the beginning, the Natural Capital Center team approached the building redevelopment with the goal of honoring its history while incorporating community-friendly and environmentally sound design. The LEED™ standards gave us a system of benchmarks worth striving for. Now that Portland is one of several cities that have adopted the LEED™ standard for government-funded projects, the influence of green building is transforming the market.

LEED's growing popularity signals the rise of a new approach to construction – one that creates healthier spaces for building occupants and has a lighter impact on nature.



COMMUNITY

The businesses, organizations and public agencies in the Natural Capital Center work from a multitude of starting points yet share a common destination: the intersection of economic vitality, ecological health and social equity.

Venues for nurturing connectedness among the Natural Capital Center community:

- Central atrium
- Communal kitchen
- Open access deck with fireplace
- Ecotrust Conference Center
- NCC Building Council
- Un-earth Seasonal Suppers

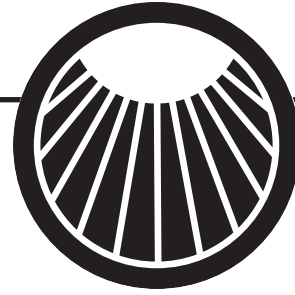
NCC TENANT COMMUNITY



IN A THRIVING ECOSYSTEM, such as a forest, diversity is a hallmark of health. We like to think of the Natural Capital Center as an ecosystem, one that is healthiest when its individual components are most diverse. Identifying a community of tenants to inhabit the restored building was critical to the seeding of this ecosystem. The result is that today you'll find within these brick walls a roster of non-profit, for-profit, and public institutions that embody a powerful new vision for a sustainable society.

Still, four walls alone do not create a sense of community. Synergies arise through spaces in which interactions flourish. The central atrium where we stand now, a communal kitchen, and an open-air deck and fireplace are examples of areas in the building that consciously remain loosely defined and thus able to foster spontaneous connections.

Also crucial are specific venues, both formal and informal, for the sharing of knowledge and experiences. The Natural Capital Center Building Council meets every two months to discuss events, purchasing practices, an energy plan, and an annual sustainability report. Workshops and seminars are held at the Ecotrust Conference Center, and seasonal dinners allow community participants to break bread in a traditional setting.



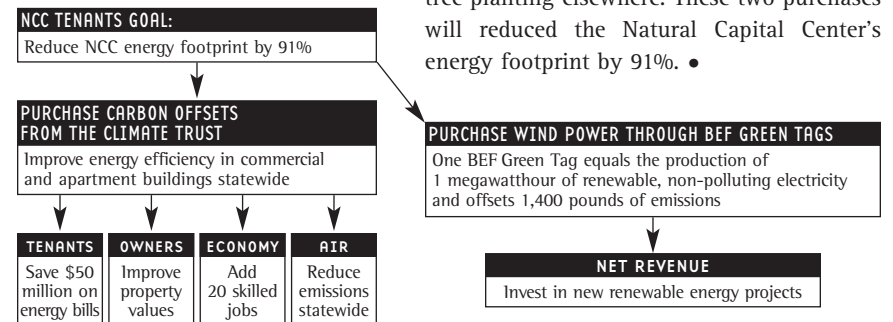
ENERGY

Reducing the energy consumption of buildings – through materials choices as well as through innovative lighting and temperature control systems – is crucial to lessening our impact on global climate change.

Energy-saving systems:

- Self-adjusting lighting sensors optimize use of natural light
- Hallway and restroom lighting equipped with occupancy sensors
- Hot Lips hot water heater utilizes excess heat from pizza oven
- Kitchen appliances shared by tenants

FIGHTING CO₂ HERE AND THERE



A BUILDING CONSUMES ENERGY in several ways. First, and easiest to overlook, is the energy used in the extraction, manufacture and transport of a building's construction materials, its "embodied energy." Wood is the material with the lowest embodied energy, about 640 kilowatt-hours per ton; brick uses 4X as much, steel uses 24X and aluminum 126X. The absolute lowest embodied energy is attained, as in the Natural Capital Center, through careful restoration of an existing building.

The natural lighting of this old warehouse was improved through the addition of the large skylight above and twenty-four smaller skylights circling the second floor.

The temperature control system for the building is a "variable air volume" model. It allows the percentages of fresh and recycled air to vary depending on the existing conditions and is equipped with carbon dioxide sensors that trigger a flush of fresh air through the building when the air has grown stale.

In addition to the building's various efficiencies, the Natural Capital Center has made a commitment to be climate-neutral by purchasing renewable energy from the Bonneville Environmental Foundation and carbon offsets from The Climate Trust. Carbon offsets balance the effects of one's CO₂ output by funding energy efficiencies or tree planting elsewhere. These two purchases will reduce the Natural Capital Center's energy footprint by 91%.



MATERIALS

Waste is, by definition, a lost opportunity. Through creative adaptation, many materials that are often discarded can become useful again.

Reclaimed materials all around us:

- Rubber flooring manufactured from recycled rubber tires
- Wood paneling on this wall formerly the subflooring of the annex
- Green paint on the wall to your left from METRO's paint recycling program
- Steel plate at the entrance to the Conference Center formerly used under construction forklifts
- Pipes in the lighting design of the display niches formerly part of the original plumbing
- Coffee table in Ecotrust reception area originally gears for the old warehouse freight elevator.
- Fabric on the armchairs in Ecotrust reception area contain 78% post-industrial recycled fiber

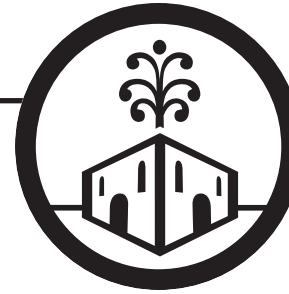


THE NATURAL CAPITAL CENTER REDEVELOPMENT saw 98% of all construction debris reused, recycled, or reclaimed, a record for the city of Portland. The careful use of building materials not only saves landfill space and prevents the extraction of virgin materials, but also saves money and resources by eliminating the packaging and shipping of new ones.

When redevelopment began, a second building stood on the northwest corner of the lot. Walsh Construction Company performed an exacting month-long deconstruction of that building to reclaim as many of its materials as possible. These materials provided most of the interior of the new third floor of the Natural Capital Center.

When utilizing or purchasing materials, priority was given to those that were: a) salvaged from this lot; b) made with a high percentage of recycled content; c) easily recyclable; d) regional; or e) certified as sustainable, or manufactured by a company committed to sustainable design.

Detailed information about materials used throughout the building is published in our Materials Guide, available at the Ecotrust reception desk or online at www.ecotrust.org.

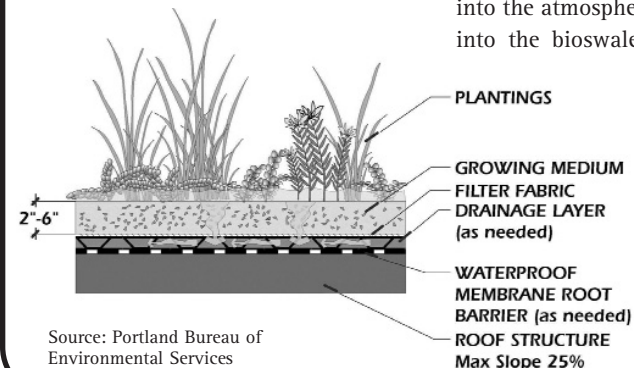


ECOROOF

The practice of using grass on rooftops for temperature control is centuries old. Ecoroofs, or greenroofs, can also help to improve the durability, regulation of water flow, and overall aesthetic value of buildings.

Ecoroof plants:

- Oregon Sunshine
- Stonecrop
- Field Chickweed
- Coastal Strawberry
- Roemer's Fescue
- Pearly Everlasting



Source: Portland Bureau of Environmental Services

THE WELL-DOCUMENTED ABILITY of grassy rooftops to provide temperature insulation is being rediscovered in modern construction projects around the world. In urban environments, the cumulative effect of these ecoroofs is to reduce the "heat-island effect," or higher temperatures that urban areas generate because of their paved and built surfaces. Now, the Natural Capital Center is home to the third lightweight ecoroof in the Portland area.

Using the Famos system designed in Germany, this ecoroof carries only two inches of soil and supports a mixture of hardy grasses, wildflowers, and succulents. Seeds were selected for their Pacific Northwest origin, root system, drought tolerance, and aesthetic value. Native plants and minimal watering means that the roof will wilt when our region is dry, be lush during the rains, and bloom as flowers emerge in June. After the plants are established, they will require little maintenance.

This ecoroof is part of a stormwater management system that allows the Natural Capital Center to minimize its rainwater runoff, thereby lessening the burden placed upon the Willamette River. Functioning like a sponge, the ecoroof slows the flow of water to the ground. Some will evapotranspire back into the atmosphere and the excess will drain into the bioswales in the parking lot. This stormwater system is funded in part by the City of Portland's Bureau of Environmental Services and captures at least 90% of the rainwater falling on the site.



NEIGHBORHOOD

Compact cities offer significant advantages for their inhabitants, while at the same time easing development pressures on the rest of the landscape.

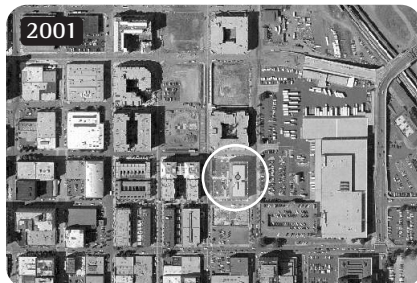
Key urban planning features:

- Urban growth boundaries, like those in Oregon, insure greater density for our cities
- Density allows for efficiencies in transportation and services
- Mixed retail, residential and professional development fosters livability
- A diversity of housing types avoids concentrated pockets of poverty
- Today's empty warehouses can be tomorrow's green buildings

LOCATION WAS PIVOTAL to Ecotrust's purchase of the warehouse that became the Jean Vollum Natural Capital Center. A building restoration is an investment in urban density, and density supports neighborhoods that are both walkable and efficient for public transportation. The success of the Portland Streetcar, which passes in front of us on 10th Avenue, speaks for itself. Dense neighborhoods are well served by buildings that offer a mix of retail, residential and professional uses, and so the Natural Capital Center fits right in.

The Portland River District we look out on is now experiencing a revival, but that wasn't always the case. Just a decade ago the brick structures of this former industrial neighborhood were mostly empty. Now many are gone, and this building is among the few originals that are still standing in the vicinity. Where many developers have seen profits in razing and erecting anew, Ecotrust and Heritage Consulting saw value in maintaining continuity: value for ourselves, and value for our neighborhood as well.

As Patagonia founder Yvon Chouinard said at the Natural Capital Center's opening celebration, "If you're going to buy clothing, the most responsible thing you can do is go to the Salvation Army. And if you're going to open a new business, the most responsible thing you can do is find an old building and restore it." We think it's not only responsible, it's sensible too. •



Source: Metro Data Resource Center



CERTIFIED WOOD

Labeling and certification systems for timber, like the one used to verify the new wood in this building, assure consumers that their purchases were produced and manufactured with care for people and planet.

Forest Stewardship Council Principles & Criteria include:

- Forest management shall not threaten or diminish the resources or tenure rights of indigenous peoples
- Communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services
- Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest
- The management plan and supporting documents shall provide rationale for rate of annual harvest and species selection

CERTIFIED FOREST PRODUCTS originate from forests managed in a way that ensures the long-term health of ecosystems and of the communities that depend on them. The process of certifying wood is similar to that of certifying organic food: accredited third parties use environmental and social performance standards to evaluate how the forest is managed and the wood business conducted. The platinum standard for forest certification worldwide is set by the Forest Stewardship Council (FSC).

Over 75% of the new wood used in the redevelopment of the Natural Capital Center is FSC certified. This beautiful FSC certified guariuba hardwood flooring is a "lesser-known species." The selection of a lesser-known species sends a signal to forestland managers that diversity in the forest is a valuable asset. The decking on the outside patio is ipe, an FSC certified hardwood and another lesser-known species that requires no finish; its visible color is its natural hue. Other uses of certified wood in the building include: tables from The Joinery in the first floor atrium and Lisaak-harvested paneling in the Ecotrust Conference Center.

The third floor has become a showcase for certified forest products thanks to the Certified Forest Products Council, a non-profit building tenant that promotes environmentally responsible forest products throughout North America in an effort to improve forest management worldwide. •



REDEVELOPMENT OVERVIEW

PROJECT TYPE

Green restoration of a historic
1895 warehouse

CONCEPT

Encourage the exchange of environ-
mentally and socially responsible
ideas, goods and services

COST

\$12.4 million (approx. \$140/sq. ft.)

COMPLETION DATE

September 2001

INTERIOR SPACE

70,000 sq. ft.

BUILDING FOOTPRINT

20,000 sq. ft.

LOT SIZE

0.92 acres

USE GROUP

Retail, office, display, and events

CERTIFICATION

- U.S. Green Building Council's Leader-
ship in Energy and Environmental
Design (LEED™) Gold Certified.
- PGE Earth Advantage Green Certified.

RECOGNITION & AWARDS

- Portland Oregon Visitors
Association's "It's not easy
being green" Award, 2002
- BEST Business Award for Best
Innovation, Waste Reduction,
2002
- PGE's Renewable Power Award, 2002
- Rotary Club of Portland's 2002
Environmental Achievement Award
- Honorable Mention, Governor's
Livability Awards, 2002
- 10,000 Friends of Oregon's
Developer of the Year Award, 2001

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