

SUSTAINABLE

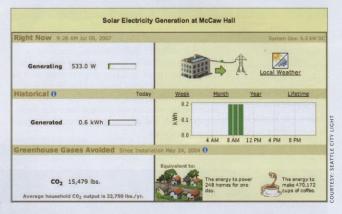
The Northwest is becoming known worldwide for fostering communities that will be good places to live and work for years to come | By Francesca Lyman

It almost seems like a futuristic city planner's dream: A solar-powered opera house glistens in the sun, generating renewable energy to meet some of its energy needs. ■ Trees and a community garden—irrigated with recycled rainwater—adorn the rooftop in a neighborhood previously considered an industrial part of town. ■ City Hall has a green roof—planted with grasses and with sedums known for their water-storing leaves—that reduces rainwater runoff to the stormdrain system, boosts insulation and helps reduce the "urban heat island" effect of having lots of buildings in close proximity. The building also recycles water for irrigation and to flush toilets. ■ Hybrid vehicles from the city's fleet use electricity to whir past City Hall, beside a lane filled with softly hum-ets donate funds for solar projects. ming bicycles. Inside a glass-enclosed public room, a seminar on rainwater harvesting is just ending.

onderfully, it's not a dream, or even just a plan. All of the above exists right now in downtown Seattle, one of several Northwest communities working to become a sustainable city—a city in which officials, businesses and residents preserve natural resources; reduce car pollution and congestion; and safeguard and improve quality-of-life-boosting features such as waterfronts, vistas and pedestrian traffic. The goal is to foster a city that will be an attractive place to live and work for years to come.

Seattle Center's Marion Oliver McCaw Hall—home of Seattle Opera and Pacific Northwest Ballet—has been capturing solar power since May 2004—in the process generating enough electricity, as of July 6, at 9:28 a.m., to make 470,172 cups of coffee.

The 6.3-kilowatt project is the largest of more than 23 solar projects completed or under develop-



ment as part of the city's Green Power Program,
started in 2002, in which Seattle City Light customets donate funds for solar projects.

Left: The green roof at
Seattle's City Hall has
grasses and sedums the

Solar energy is now helping to meet power needs at the federal courthouse, at several public schools—including the University of Washington—and even at Woodland Park Zoo. The projects completed so far have total peak generating capacity of 70 kilowatts and are estimated to produce enough annual power for eight average households or up to 20 energy-conserving homes.

Trees and landscaping, including an 800-square-foot community garden, grace the roof of the Alcyone apartment building, completed in 2004 on South Lake Union land once considered industrial but shifting to an area of biotech, office and residential space

Developed by Paul Allen's Vulcan Real Estate in partnership with Harbor Properties, the 162-unit building was the first residential project in Seattle to be "green certified" under the U.S. Green Building Council's LEED—Leadership in Energy and Environmental Design—program. Alcyone, whose rents are aimed at households earning \$32,000 to \$60,000 a year, was built with 7.1 percent recycled materials, and 98 percent of its

Left: The green roof at Seattle's City Hall has grasses and sedums that reduce rainwater runoff and boost insulation. Above: Marion Oliver McCaw Hall at Seattle Center has been utilizing solar power since 2004.



The Louisa—a Gerding **Edlen Development** mixed-used project in Portland's Brewery Blocks—features rooftop gardens and ecoroofs. It is named for Louisa Weinhard, wife of the founder of the original brewery.

construction waste also was recycled.

The Seattle City Hall Greenroof, completed in 2003, has a mix of 60 percent grasses such as fescue and June grass, and 40 percent sedums such as Frosty Morn and John Creech. Although the new City Hall building uses, to city officials' surprise, more energy than the old one, and the city is working to identify and address the reasons why, the roof is a point of pride.

The city began adding hybrid vehicles to the fleet

in 2000 and now has about 268. In 2002, the city announced a Clean and Green Fleet Action Plan, which has included using biodiesel in all of the approximately 1,000 vehicles that run on diesel, and using 15 Segways for tasks such as water-meter reading. While the green-fleet vehicles are just a fraction of the city's 3,300 vehicles, they are a start.

The green fleet is complemented by the Flexcar program—which began in 2000—and a bike station where bikes can be rented at the ferry stop downtown. Flexcar features car use shared among various citizens, who pay by the hour.

The city's seminar on rainwater harvesting is part of an ongoing series of seminars sponsored by the city's Department of Planning and Development to encourage sustainable-city activities. Other seminars have focused on rainwater-capturing gardens, permeable paving systems, plant selection for healthy landscaping, and natural drainage.

Of course, these efforts are just a beginning in addressing the Seattle area's numerous eco-challenges, says Heather Trim, urban-bays project coordinator for People For Puget Sound, who attended the seminar on rainwater harvesting. People For Puget Sound is a nonprofit group whose mission is to protect and restore Puget Sound and Northwest straits.

The group was one of the organizations that lobbied hard for legislative funding of the Puget Sound Partnership, a state agency approved in April and



launched last month to "lead efforts to protect and restore Puget Sound and its spectacular diversity of life, now and for future generations." Bill Ruckelshaus, the U.S. Environmental Protection Agency's first administrator, from 1970-1973, is chairman of the new agency.

"Seattle is going to see a lot more 'green,' " says Trim, who joined some 150 planners, landscape architects and building architects to explore new ways to carry out the city's "Green Factor" ordinance, a model imported from Malmo, Sweden, and Berlin, Germany.

As of January 20, 2007, developers

must provide enough landscaping in new development in the city's commercial zone to achieve a green-factor score of at least 30 percent. To calculate a project's score, the developer first uses a city-determined green-area multiplier for each landscaping item. For instance, the city has determined that each small tree counts as 50 square feet of landscaped space, with a multiplier of 0.3. Thus, a small tree would have an individual green-factor total of 15. The developer then totals the green factors for all of the landscaping items, and divides that total by the total area of the lot to come up with the final green-factor score.

Developers get bonuses for rainwater harvesting, planting of low-water use greenery, and using plantings that slow and filter storm water that can carry polluted runoff from streets down to creeks, rivers and bays.

'Green isn't just beautiful—it cools the city, puts out oxygen, soaks up water, even softens the noise," says Steve Moddemeyer, a senior strategic adviser with the Seattle Department of Planning and Development.

High on the list for future greening is the waterfront along Elliott Bay, where citizens and city planners want to improve habitat for salmon, a Northwest icon and a vital link in the region's ecosystem. After salmon spawn in the river, their juvenile offspring travel to Puget Sound, where they may spend up to a year or more feeding, resting, hiding from predators and growing, says Kathy Fletcher, executive director of People For Puget Sound. There has been a severe decline in salmon because of poor-quality habitat, she says.

"It used to be, we thought, 'There's the city, and then there's the valuable environment somewhere else.' But the salmon teach us that a healthy environment needs to be protected every step of the way. Salmon that hatch in a pristine river environment can't thrive as juveniles if there's no clean water between the rural river and the open ocean. The cityside Sound that the rivers feed into needs to be hospitable, too."

A plan for reshaping the downtown Seattle waterfront is pending decisions about what to do with the Alaskan Way Viaduct, an elevated freeway alongside the shore. Options range from tearing down the earthquake-sensitive roadway and directing traffic to surface streets to tunneling a highway along or even in Elliott Bay. But some reclamation has already occurred, thanks to the Seattle Art Museum's Olympic Sculpture Park.

To create the park, which opened in January, the museum reclaimed a former contaminated industrial site-a "brownfield"-that had been used for fuel storage and transfer. At the park's lowest point, where it meets Puget Sound, the seawall has been renovated, and north of the seawall, a natural shoreline was created. Along a gravel path—which zigzags through the park's 9 grassy acres and provides access to sculpture viewingsnowberries and other native plants sprout in soil that has been painstakingly designed to reduce rainwater runoff and allow it to percolate, naturally filtered, before draining out to the bay.





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he quest for urban sustainability has also been taking place in other Northwest cities. In Tacoma, south of Seattle, the 2002 opening of the sparkling Museum of Glass was part of a major transformation of the area along the Thea Foss Waterway. The once-thriving industrial area had declined, and become known for its various vacant buildings and for being part of a major Commencement Bay Superfund site—the result of industrial waste and sewage having been dumped into the bay in a time when "eco" wasn't part of most people's vocabularies, according to the City of Tacoma. Last year

the city celebrated the massive, 12-year multiagency, public-private effort to clean up the waterway and the bay, including the removal of contaminated sediments.

Onshore, pedestrians and bicyclists now enjoy pathways and public piers as they stroll to the Museum of Glass, cross the Chihuly Bridge of Glass to the Washington State History Museum, and visit the new Tacoma Art Museum facility, opened in 2003.

Spokane is using Environmental Protection Agency "brownfield" grant money to redevelop its downtown university district

and redirect growth away from suburban

Boise, Idaho-which for years has used renewable geothermal energy to heat its state Capitol and many downtown buildings-is moving to hybrid cars, and biodiesel- and ethanol-fueled cars. An advisory committee is also at work on building-code changes and incentives to encourage energy efficiency, with the committee's report going to Mayor David Rieter this summer.

In Montana, Governor Brian Schweitzer in May signed the "Clean and Green" energy bill into law to provide tax incentives for development and transmission of clean and renewable energy. In his January State of the State Address, the governor noted, "Montana can and we will lead in clean and green energy for this entire country with our wind power, our biofuels and our solar potential."

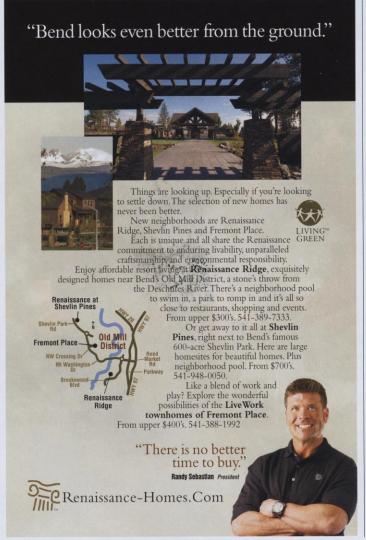
Montana is also home to the nation's first LEED-certified border station, which opened at Sweetgrass in 2004 and was certified in 2005. The project was built in partnership with Canada, and serves Canadian and U.S. border staff.

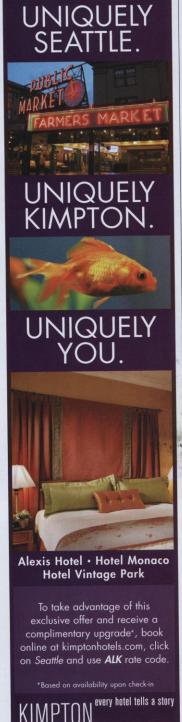
In Yellowstone National Park, Xanterra Parks & Resorts built two single-family, highly energy-efficient homes for park employees that were LEED-certified in 2004. The building project was the first LEED-certified project in Montana, and the first certified concession building for the National Park Service.

In Bozeman, the city's new 52,300square-foot public library achieved silverlevel LEED certification last year, thanks in large part to studies on the best use of daylight, conducted at the University of Washington's Integrated Design Lab.

Meanwhile, Vancouver, B.C., has long been famous for its ability to preserve miles of city waterfront in the midst of high-density urban high-rises whose residents enjoy walkable streets and parks.

"We're very much inspired by Vancouver," says Seattle City Councilman and Urban Development Planning Committee Chairman Peter Steinbrueck. The city council even hired former Vancouver city planners to help create new zoning regulations that increase downtown density what Larry Beasley, former director of city planning for Vancouver, calls "eco-densification," Steinbrueck says. It's a compact, resource-efficient style of planning exemplified in Vulcan's South Lake Union projects, with mid-rise towers providing housing for lots of residents, who enjoy gardens on the roofs and parks below, and are just





steps to retailers, pharmacies, dry cleaners and other service providers.

By this fall or winter, South Lake Union should be connected to downtown Seattle by a new electric streetcar running on 1.3 miles of track each way, something Steinbrueck says is much needed in a city that is still figuring out what to do about mass transit.

Portland, with its efficient light-rail system, waterfront parks, urban trails, greenways, long-range 2040 Growth Concept Plan for preserving its green spaces, and dedication to redeveloping languishing parts of the city, is another source of inspiration for creating a sustainable city, says Clark Williams-Derry, research director for the Sightline Institute, a Seattle nonprofit that promotes sustainability. He points to redevelopment of the warehouse Pearl District into a vibrant residential, arts and shopping area.

"High-rise living isn't just about packing people in but creating livable, urban and pleasant places," he says.

Dennis Wilde, a partner in the Gerding Edlen Development firm—which played a role in the Pearl District's revitalization by turning five blocks of mostly defunct brewery buildings into a thriving "Brewery Blocks" neighborhood with mixed-used condo-apartment-office-retail development—says, "It's not just about the bricks and mortar but about creating community out of the empty fabric of cities."

His company used environmentally friendly materials, energy-efficient appliances, high-efficiency window glazing, rainwater harvesting and a photovoltaic system for generating electricity, and installed a centralized chilling plant atop the Whole Foods Market for air conditioning of the Brewery Blocks and surrounding area. But in addition, it worked with groups focused on the arts to bring performance art to the new neighborhood.

igh Point, a development in Seattle, is receiving national attention for how it has been revitalized.

Set high on a hill overlooking Elliott Bay, High Point once comprised 120 acres of dilapidated public housing. Over several decades, the area's isolation and hard-core poverty led the project to become a haven for drugs, violence and crime—a gangland so dangerous, pizza companies refused to deliver to its doors.

But how bright, green, lively and friendly the whole neighborhood—now comprising market-rate homes as well as low-income housing—looks today, four years after demolition of the original

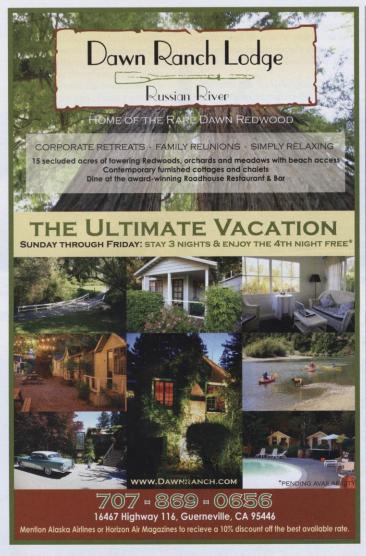
This past spring I toured the site with Bill Kreager and Stephen Antupit, architects and planners from Seattle's Mithun, an architectural firm credited with playing a key role in turning High Point into a showcase of sustainable design. We walked past a variety of townhouses, painted in vibrant colors such as fireengine-red and sunflower-yellow, and past majestic trees saved by construction crews-trees so beloved they have names, such as "Big Papa." A city library is popular with residents, and a quickly developing retail district will include shops and stores as the project approaches its fall 2009 completion. More than half of the project is completed to date, featuring more than 1,600 housing units.

High Point, built for and used by defense-industry workers during World War II before becoming low-income housing, has been transformed into what some regard as a model of sustainability. Ecoaccomplishments include energy efficiency, pedestrian-friendly street design and an experimental system of natural-drainage swales to efficiently handle storm water.

It was a rainy day, and we strode under umbrellas, but our feet sprang lightly on porous pavement bordered by amply vegetated swales filled with plants that soaked up rainwater. That's important, because the neighborhood sits on about 10 percent of the watershed feeding Longfellow Creek below, which flows to Puget Sound. The creek is host to chum and coho salmon. Keeping it running clear and clean is important to the fish, and to everyone with an interest in the health of the Sound.

To create the new High Point, the developer, the Seattle Housing Authority, was able to use, as seed money, federal funding that had been designated for projects that combined affordable housing with marketrate homes to bring a mix of people into a community.

The strategy seems to be working. The development has been touted as one of the best places to live in the city, says George Nemeth, a housing developer with the Seattle Housing Authority. High Point even won an "excellence" award this year from the Urban Land Institute. It was one of just 10 projects from throughout the Americas to be honored. Vulcan's South Lake Union 2200 project, and Portland Center Stage's Bob and Diana Gerding Theater at the Armory in Portland, developed by Gerding Edlen Development, were other winners from the Northwest.



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February 2005 among the 141 countries that ratified it. While the United States as a whole has not fully committed to the protocol, approximately 600 mayors, representing more than 67 million citizens, have accepted Nickels' challenge, committing their local jurisdictions to reduce their greenhouse gases in accordance with the protocol. All of the major cities of Washington and Oregon have signed on, along with the Idaho communities of Bellevue, Boise, Hailey, Pocatello, Sandpoint and Sun Valley, and the Montana cities of Bozeman, Billings and Missoula.

"The Northwest is in a key position to use our sustainability values to lead the country," says Amy Keiter, industry cluster specialist with the Oregon Department of Economic and Community Development. "It's not just that we have the brains and the expertise, but that our brains and expertise are being sought out, and that we can export that expertise."

Patricia Chase, CEO of Seattle-based International Sustainable Solutions—a small company started in 2003 to educate governments, corporations and nonprofits about sustainability, particularly in the urban environment—agrees. Chase regularly takes public- and private-sector urban professionals to places such as Sweden and Denmark—"where sustainability is ingrained as a cultural value," she says—to see green roofs, energy-efficient buildings and systems, bicycle lanes, waste-to-energy plants and successful public spaces.

This year, for the first time, Chase says, "We're bringing urban professionals from throughout the United States and other parts of the world to see global best practices in urban sustainability in Seattle, Portland and Vancouver. B.C."

Seattle writer Francesca Lyman is the author of The Greenhouse Trap: What We're Doing to the Atmosphere and How We Can Slow Global Warming, with World Resources Institute (Beacon Press, 1990).

Here are some Websites that provide information on sustainable practices for your home or community: Green roofs, www.greenroofs. com; sample bicycle master plan for a community, www.portlandonline.com/transportation/index.cfm?a=hbied&c=deibc; zerowaste study for recycling in your community, www.zerowasteamerica.org/WasteWatch. htm; how to draw a green map of your community, showing parks, farmers markets, green buildings, car-share stops, bike stations, public transit and other places that contribute to sustainability, www.greenmap.org.