



Gracefully commanding a northern Nevada mountainside, Suzanne Johnson's green-roofed home saves energy while giving native grasses and flowers a new place to thrive.

## Eaves of grass

From the Northwest to Nevada to California, homeowners are discovering the beauty and efficiency of the green, "living" roof

BY FLORENCE WILLIAMS

**AT FIRST**, Suzanne Johnson was skeptical of putting a "living" roof on part of her new house in the hills near Gardnerville, Nevada. But she wanted a home that blended into the surrounding alpine meadows of the Sierra Nevada, and she liked the idea of catching a glimpse of native grasses from the windows of her upper-level home office. A retired Intel executive who volunteers on behalf of marine-mammal conservation and sustainable energy, she was committed to building an eco-friendly home with her architects, David Arkin and Anni Tilt, of Berkeley-based Arkin Tilt.

Now, after living three winters in her solar-powered 3,400-square-foot home, "I'm a convert," Johnson says. The green

roof, which tops her garage and guest wing, is richly textured. Native poppies, fescues, and saltgrass, among others, dance in the breeze, and the added insulation value keeps her heating costs low. Deer have even enjoyed browsing her roof.

Johnson, whose home won a *Sunset* Western Home Award last year, is hardly alone in discovering the unexpected delights of living with a planted roof. Ford Motor Company has one, and so do the new Ballard Branch of the Seattle Public Library and the Church of Jesus Christ of Latter-day Saints Conference Center in Salt Lake City. Much more technologically advanced than in the pioneer days of dank sod—as well as

the brief sod revival of the '70s—today's roofs feature leakproof membranes, low-weight soils, and carefully researched mixes of hardy, colorful plants. Corporations and civic entities such as Gap Inc., the Bill & Melinda Gates Foundation, and British Columbia's Vancouver Convention & Exhibition Centre have embraced the green-roof idea and are helping drive the technology.

When Johnette Orpinela added a small guesthouse/music studio to her property just outside of Portland, she was wary of the planned metal roof. The view from the main house "used to be trees full of squirrels, and now it was going to be a roof," she said. So she switched to plants. After two seasons, the steep,



## The next frontier



**FROM TOP** Architect Jonathan Feldman designed a green-roofed retreat for his parents near Carmel, California. Architect Erez Russo designed a plant-covered guesthouse near Portland—the West's capital of "ecorooofs."

sedum-carpeted roof is now attracting squirrels and birds. "The colors are always changing," says Orpinella, whose rooftop garden includes a variety of succulents that change from red to green at different times of the year.

She and her architect, Erez Russo, were able to tap into local expertise and enthusiasm, even attracting volunteers to recommend plants and help install the roof. "It takes a certain type of client," Russo says, "one who's willing to do a little weeding and watering the first couple of years, and one who's willing to pay more up front." While green roofs cost anywhere from two to three times that of a conventional roof, they have a much longer life expectancy, between 40 and 50 years, if properly installed.

### A roof grows in Portland

As a leader among cities adopting what it calls the "ecorooft," Portland encourages them as a solution to myriad urban ills, from storm-water collection to habitat loss. Homeowners and businesses that install the roofs can benefit from city grants. A number of other cities—among them Los Angeles, Seattle, San Jose, and San Diego—are also researching and developing policies to encourage green-roof construction.

The reasons are both practical and ideological. Portland suffers more than 50 rainfall events per year that cause its dated storm-water system to overflow. The system can be spared up to a half-million gallons of water for every 1 acre of impervious surface replaced with a living roof, according to Tom Liptan in the city's Bureau of Environmental Services. He estimates that the city has more than 80 buildings with green roofs, with about 50 more planned.

And consider the so-called urban heat island effect: Asphalt gets scorchingly hot, leading to higher urban temperatures. In Chicago, where Mayor Richard M. Daley installed a grass roof atop city hall in 2001, a black-tar roof can reach a temperature of 170°, which is 70° hotter than a vegetated roof. This translates to savings in air-conditioning bills and helps fight global warming. Thanks to its incen-



tives and policies over the last half-decade, Chicago has sprouted more than 2 million square feet of green roofs, including the one atop the spanking new Apple store downtown.

Now homeowners can create a natural habitat that smells like a salad instead of a petrochemical plant. "It's the greenest thing you can do in construction other than not build," says Patrick Carey of Hadj Design in Seattle. "The green roof is the only building element that gives back to nature. It filters the air, saves energy, and is great for butterflies and birds. I swear that if you green-roofed L.A., you could radically alter the atmosphere and climate for the better."

#### The greening of San Francisco

Such reasoning certainly helps propel institutions like the California Academy of Sciences. Its new building in San Francisco's Golden Gate Park, designed by Renzo Piano and slated for completion in 2008, will feature more than 1.5 million

**"The green roof is the only building element that gives back to nature. It filters the air, saves energy, and is great for butterflies and birds" —Patrick Carey, Hadj Design**

individual plantings on the roof. All the plants will be native to a 25-mile radius of Golden Gate Park, according to Paul Kephart of Rana Creek Living Architecture in Carmel Valley. "From my perspective," says Kephart, who founded the company in 1996, "green roofs are one of the key ways to restore biodiversity to cities." He estimates that demand for such roofs has grown 80 percent in the last two years.

At the new Ballard Branch of the Seattle Public Library, designed by Bohlin Cywinski Jackson with landscaping by Swift & Company Landscape Architects, librarians and patrons alike are dazzled by the curved roof bursting with woolly yarrow, red creeping fescue, phlox, thyme, and other plants. A playful fringe of grass peeks out over the street, and a glass viewing tower lets visitors get up

close. "I love working under it," says branch manager Sibyl de Haan. "It doesn't have a dark or cave-like feeling at all. Kids and adults both love it. It's a great public-education tool."

For many homeowners, though, the choice comes down to simple aesthetics. When San Francisco architect Jonathan Feldman built a house for his parents on a steep meadow above Carmel Valley, the living roof was a no-brainer. "We wanted to respect the site and build into the land," Feldman says. Using natives like grasses, poppies, lupine, and strawberries, the house complements its surroundings and is naturally fire-resistant. "We're kind of putting back what would have been in the hillside," he says.

**INFO** Visit [www.ecoroofofseverywhere.org](http://www.ecoroofofseverywhere.org), [www.greenroofs.org](http://www.greenroofs.org), and [www.greenroofs.com](http://www.greenroofs.com) for more on green roofs. ■

## 100% QANTAS NEW ZEALAND SALE

Glenorchy, Southern Alps



Now is a great time to book your vacation in New Zealand with fantastic deals from Qantas.  
Los Angeles to Auckland.

**\$798**

\*Round trip.  
Web fare only.

**100% PURE**  
[newzealand.com](http://newzealand.com)

**QANTAS**  
[qantas.com/us](http://qantas.com/us)

\*Terms and conditions: Advertised economy price only available by purchasing online at [qantas.com/us](http://qantas.com/us). Valid on Qantas nonstop flights from Los Angeles to Auckland for travel on Mondays, Tuesdays, and Wednesdays departing 1 April - 31 May 07. Add \$25 each way for other days of week. Seats are limited and not available on every flight. Minimum stay 5 days; maximum 330-350 days. Instant purchase required at time of booking, no later than 2/28/2007. No refunds or changes permitted. US/foreign taxes/fees, including September 11th Security Fee, up to \$121 are additional. Cancellation penalties and other restrictions apply.