



Z For Two

In Portland, Oregon, two adjoining six-story homes on a formerly run-down urban lot add to the neighborhood's density and its green cred.



Story by Amara Holstein
Photos by Shawn Records

From backyard chicken coops and homegrown rainwater harvesting to energy-efficient building codes and sod roofs sprouting wind turbines, Portland, Oregon, wears its sustainability street cred proudly. But as much as locals are happy to get innovatively earth-friendly, they're often stuck in the architectural past, clinging tightly to Douglas fir roots and craftsman moldings. Portland-based architect Ben Waechter and his wife, Realtor Daria Crymes, set out to show that well-integrated modern design is as much a part of sustainable community building as are the latest, greatest green products. To prove it, they designed and built the Z-Haus.

After putting in time at renowned architecture offices Allied Works, in Portland, and Renzo Piano Building Workshop, in Genoa, Italy, Waechter started his own practice, Atelier

Waechter, in 2008. The couple had returned from Europe, where "they have nicely designed, energy-efficient buildings as a matter of course," says Crymes, whose input was instrumental to the Z-Haus's design. "They don't feel the need to go around on green house tours."

The location of the Z-Haus itself is evidence of their environmental ethos. "We wanted to infill an abandoned urban site that was underutilized instead of a site that was farther out and required the residents to rely on cars," says Waechter. As a result, they bought a run-down lot in an area of Northeast Portland that's frequently described as "up and coming" and is in close proximity to downtown, funky stores, and a diverse mix of residents—and where land and houses are still relatively affordable. Though the lot itself was a messy mélange of glass, garbage, ♪

Instead of installing a typical cement slab driveway, Waechter and Crymes opted for concrete pavers mixed with patches of Corsican mint that let rainwater permeate

into the ground. "We drag chairs out there in the summer, hang out, and watch the kids ride their bikes around," says Crymes. "It's like a front porch."



Daughter Zoë finds a cozy spot at the dining-room table, by Dux, seated on an Eames Molded Plastic chair and under a George Nelson Saucer lamp.

laurel, and “even a car that we didn’t know was there until we cleared away a bunch of blackberry bushes,” Waechter remembers with a laugh, it was well situated near transit, grocery stores, and a pedestrian-friendly street of windowfronts and restaurants. Plus, the idea of contributing to urban revitalization appealed to the couple.

Waechter’s design similarly favors a neighborly approach to architecture. Sandwiched between two traditional foursquare-style Portland homes, the Z-Haus imitates their boxy feel, plus both front and back facades line up perfectly with the houses on either side “so we can look through our backyard to the neighbors’ yards,” says Waechter, which maximizes everyone’s sense of space. The natural wood siding was also chosen to match nearby

houses, though those are mostly painted sprightly blues and greens and basic beiges rather than a very dark brown. A rainscreen system that separates the siding from the building lets air circulate, keeping out mold in the perpetually damp climate.

Since it’s a large lot, Waechter had the option of building two separate homes on the property. Instead, he decided on two attached houses with a common middle wall. Aside from imparting a sense of greater sociability, the joint wall has many green benefits, from decreasing the overall footprint of the project to reducing stormwater runoff with its smaller roof to an increase of 25 percent in energy efficiency by having to insulate only three exterior walls per house rather than four each. A small air pocket

buffers the shared wall between the two homes from noises made in either house, making good neighbors better ones when they can’t hear each other.

The structure holds itself trimly in place rather than sprawling to the edges of its lot because Waechter maximized interior space by building up instead of out. Six rooms, each identical in size at 14 by 19 feet, zig-zag their way up to the top of each 2,800-square-foot home—hence the name Z-Haus. Each room is offset from the others by a half level of stairs. The arrangement creates an open-plan feel within the homes where someone in the dining room, say, can easily see and talk to people in the rooms above and below. At the top of each house’s stairwell, a skylight lets in the sun’s rays and, on warm summer days, draws in



The kitchen (top left) maintains the white hue of the house, and the couple finished its custom cabinetry in a glossy thermofoil to emphasize its utility as part of the

central core. In the master bedroom (bottom right), a red Womb chair and ottoman by Eero Saarinen are offset by furniture from Waechter’s grandparents. The home

is conducive to both work and play—Waechter attends to business in his home office (top right) while Ari plays in the art area of the dining room (bottom left).

out hot air, passively cooling the home and eliminating the need for ceiling fans or air-conditioning.

The remaining spaces are contained in what Waechter calls each home's "core," a series of small rooms stacked in the center. It's here where a visitor would look for the two and a half bathrooms, get a glass of water in the kitchen, or do a load of laundry. Having all of the water, ventilation, and mechanical systems in a central column allows for everything to vent through a few openings in the roof and lets the rest of each house remain a continuous open space.

To maintain a seamless feeling throughout the interiors, Waechter kept the material palette simple. A sustainably harvested white oak floor slides through each house and ribbons its way up the stairwell. All of the walls are painted white, and most of the windows are the same size. Each home is a blank canvas for personality to be imbued by the homeowners inside and the landscape outside. "We just wanted to make a functional container, like a gallery space," says Waechter. "The art is the people living here, their furnishings, and the views."

As a result, the houses feel serene and coolly minimal. There are neither

predetermined bedrooms nor living rooms; any room can be used for any purpose. There's a lack of doors everywhere but in the bathrooms, although sliding walls create privacy when desired, and there are no closets ("because then there is less flexibility," Waechter points out). The generic quality of the rooms also "emphasizes the views," he says. "As you're moving up through the houses, what's inside is staying the same, so your view of the street or downtown or Mt. Hood is heightened."

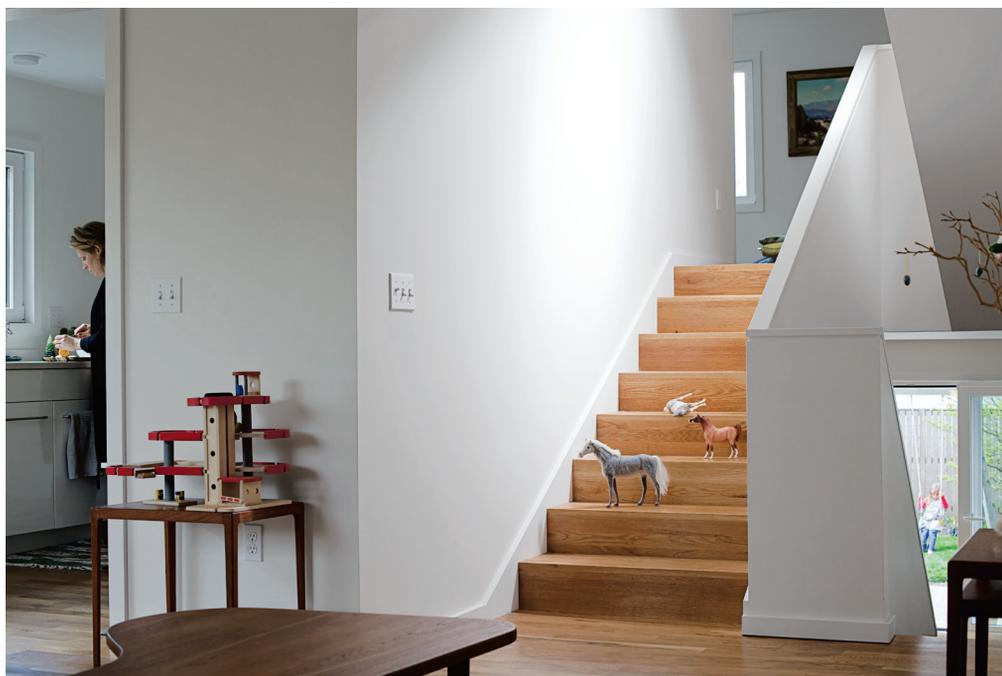
Under this composed calm, however, is a frenzied working of green elements: radiant heating under all the floors, a central vacuum system, low-VOC paints, and a tight building envelope sealed with blown-in and spray-foam insulation.

Though some Portland denizens are still a bit confused by the idea of integrated sustainability—"a few people have said they don't really understand what's green here, since we don't have solar panels or a geothermal heat pump," says Crymes—the response has been overwhelmingly positive. One of the two attached houses sold to commercial photographer, Marv Johnson, who moved in with his two sons and raves about the flexible



space, ample natural light, easy access to shopping, and "surprisingly nice electrical bills."

As for the other half of the Z-Haus? On a blistering 107-degree day last summer, Waechter and Crymes moved in with their two young children, Zoë and Ari, relocating from a 1955 suburban-development home. "We were sort of designing it for ourselves anyway," Waechter says with a laugh. Crymes chimes in, "It's more urban here. Our veterinarian is located two blocks one way, our doctor is two blocks away in another direction, we can walk or ride our bikes to parks in the summer. It's a more interactive-with-our-community place to live. It's more us."



"To maintain the seamless connection from room to room, it was important that the flooring material was the same throughout the house," Waechter says (left). "We took

that continuity down to the smallest detail, eliminating the nosing so the treads look like a folded floor rather than a stair made up of treads and risers." With white walls,

rooms take on the characteristics of their inhabitants, such as in Zoë and Ari's bedroom (right) with its Ikea shelves of toys, books, and trinkets. **1**

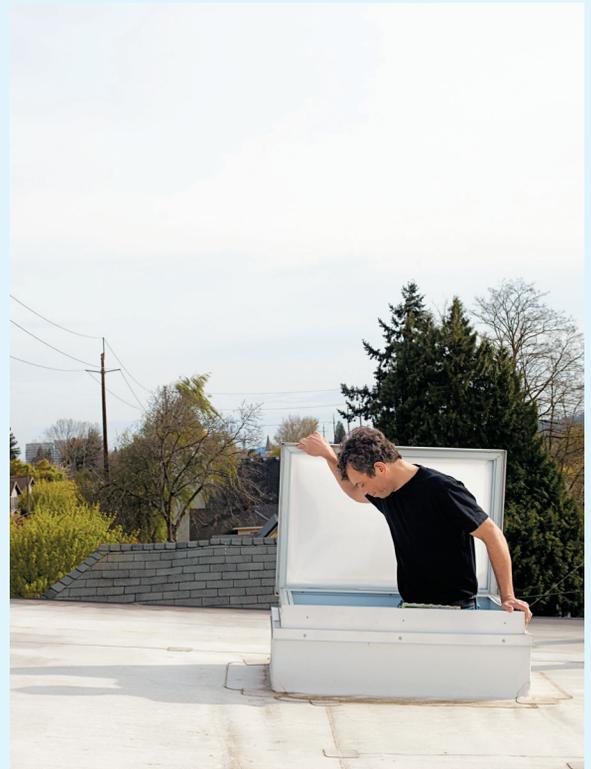
See TPO

Even the top of the Z-Haus is environmentally considerate. Made of thermoplastic polyolefin (TPO), the roof is a rubberlike material that's entirely recyclable and hardy in wind, rain, and sun. Often found on Eichlers or other flat-roofed homes, it's a single membrane instead of the more commonly found cover that Waechter describes as "a bunch of layers of asphalt, tar, and felt that you build up and that are essentially heat banks." Instead of greedily sucking up sun, the white TPO roof on the Z-Haus reflects solar rays back into the sky, reducing heat gain and saving energy for all.

In addition, Waechter designed the roof to follow the offset of the floor levels, so that it slopes four and a half feet from front to back. Not only do the sides of the angled roof give a flirty glimpse of the interior layout of the house to passersby, the roof

also provides a practical purpose. The pitch directs rainwater to a single gutter in the backyard where it flows down drains to be absorbed into the ground—instead of into the city's storm drains. It also makes it easy to install a rainwater collection system for irrigation or graywater use, which Waechter and Crymes are hoping to do in the near future. ■■■

For more information about TPO roofing, visit buckaroo-thermoseal.com, firestonebpco.com/roofing/tpo, or nrca.net/consumer/types/thermop.aspx.



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