

Want to build green? Demolish with care

Some builders are swapping their bulldozers for more careful methods of taking down old homes, citing the environmental gains of reusing materials as well as job creation. The approach is not without its costs, however, in time and money

By Erin Golden / *The Bulletin*

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For Paul Schmitz, taking apart a building is a little like putting together a series of puzzles.

In thin boards speckled with nails, he sees the materials for a new fence.

In worn cedar shingles, he sees siding for a house.

And when he can't think of a new use for something right away, he'll usually keep it, rather than toss it in the garbage, figuring it will work for some building project in the future.

Schmitz, the owner of Boxcar Productions, a Bend business that specializes in green building with used materials, is one of a growing number of professionals around the country trying to change the way people think about tearing down old buildings and using their materials for something new.

Currently, Schmitz is heading up the deconstruction of two houses on Northwest Shasta Place, a site on which a Bend couple hopes to build a new home that will be among the city's greenest. He said his approach to deconstruction — painstakingly pulling apart each board and removing each nail, rather than bringing in a bulldozer, crushing the materials and taking everything to the landfill — is a key part of the project because it will provide building materials and help reduce the overall impact on the environment.

“Everything's got a purpose,” he said. “Even the boards that they put in the junk pile — I'll retrieve more boards and find people that want them. Because, in the end, if we can share as much as we can, the less there is that goes to the landfill ..., and the less resources we use.”



Photos by Dean Guernsey / The Bulletin

Forest Ortiz, 18, of Madras, and Jamal Hernandez, 16, of Redmond, right, work with Heart of Oregon's YouthBuild Program construction trainer Penny Mosby, of Redmond, to remove nails from lumber that will be reused for a new home on Northwest Shasta Place in Bend.



Photos by Dean Guernsey / The Bulletin

Matt Rose, 21, of Sunriver, stacks pine boards from two houses under deconstruction on Northwest Shasta

Schmitz has been working on Shasta Place since late September, taking apart the two early-20th century houses, which were about 2,000 square feet and 1,200 square feet, respectively.

Once the work is done, property owners Tom Elliott and Barbara Scott plan to build an approximately 3,000-square-foot, two-story home, along with a detached two-car garage and a separate guesthouse.

The couple will build the house with the help of environmental building guidelines, including the Leadership in Energy and Environmental Design system developed by the U.S. Green Building Council, and they hope to include green features ranging from solar panels to small wind turbines.

But before anything can go up, the two old houses must come down.

Elliott and Scott met Schmitz by happenstance, when Scott was riding her bicycle past Schmitz's house and stopped to admire it.

"I saw his house and I thought, 'There's the house; that's what we want to do,'" she said. "We want to build something that's recycled, but let's do it in a way that's both new and old."

The three didn't make any immediate plans to work together, but as Elliott and Scott began hiring others to work on their new home, they asked Schmitz to help.

Salvage army

Before Schmitz started pulling boards out of the roof and taking down walls of the old houses, Elliott and Scott called in a crew from Bend Area Habitat for Humanity's ReStore, which sells used building materials, appliances and furniture. Profits go to Habitat for Humanity.

The store has existed for more than a decade, but until this year, it depended on people bringing in items on their own — mostly appliances and odds and ends from old homes. Building materials were uncommon.

"I don't think many people take time to deconstruct, so we never had lumber," said Callahan Dillon, the store's lumber salvage coordinator.

About eight months ago, ReStore organized a volunteer team and

Place. Many of the boards pulled from the houses will be reused in Tom Elliott and Barbara Scott's new home, while others will be donated to the Bend Area Habitat for Humanity's ReStore, which sells used building materials.



Photos by Dean Guernsey / The Bulletin

Matt Rose, 21, of Sunriver, stacks pine boards from two houses under deconstruction on Northwest Shasta Place. Many of the boards pulled from the houses will be reused in Tom Elliott and Barbara Scott's new home, while others will be donated to the Bend Area Habitat for Humanity's ReStore, which sells used building materials.



Dean Guernsey / The Bulletin file photo

Tom Elliott and Barbara Scott, pictured in October, figure a careful deconstruction of the two existing homes on their Bend property will cost them about \$9,000 to \$15,000 more than they would have paid for a traditional demolition.



started doing deconstruction work, which dramatically expanded the store's inventory. In just a couple of days on the Shasta site, a small team of ReStore volunteers salvaged about 3,300 pounds of stuff: granite countertops, appliances, doors.

Dillon estimates the materials could earn ReStore about \$2,000.

On a windy morning last week, Dillon was back at the site, overseeing a team of six young participants in the Heart of Oregon's YouthBuild Program, who were pulling nails out of recovered boards.

The program, for teens and young adults ages 16 to 24, provides job training through hands-on construction work and credit for a high school diploma or GED.

Nearby, Schmitz and another member of his small crew were taking apart the frame of the smaller of the two old houses.

On most days for the last few weeks, there have been at least a half-dozen people coming and going from the site, from the project's general contractor, Kristian Willman, who's the owner of Timberline Construction of Bend, to small groups of people hired through a local employment agency to spend the day removing nails from boards.

Elliott and Scott have spent \$4,200 to pay people to pull out nails, and about \$6,000 to remove hazardous materials from the houses. They estimate they'll spend about \$51,000 on the deconstruction of both homes — about \$9,000 to \$15,000 more than they probably would have spent on a more traditional demolition.

The projected cost for building the new house is \$350 per square foot, or about \$1 million total.

The couple expected the deconstruction process would be expensive, and take longer than simply demolishing the house and taking the materials to the landfill. But Elliott and Scott were surprised at the amount of additional expenses — like people pulling nails — and the time it takes to coordinate groups working on separate pieces of the deconstruction.

“Overall, it's probably taking longer than I originally thought, but part of that was understanding what had to take place and coordinating all the different players,” Elliott said. “I sort of had a fantasy that it was going to be two or three weeks and it was going to be done — and that was totally unrealistic.”

The deconstruction business



Boxcar Productions employee Adam Walton, of Bend, salvages shingles during the deconstruction process on a house on Northwest Shasta Place in Bend. Crews have been working for the last several weeks to take down two houses, board by board, and are sorting the materials to be reused in a new house on the site.

Editor's note: Tom Elliott and Barbara Scott invited The Bulletin to follow their green-building project from start to finish to share their goals, decisions, costs, concerns, problems and achievements, and to be an open book on what it takes to build such a home.

The Bulletin will follow the couple's project through periodic stories. Today, follow the often painstaking task of pulling apart a house so the materials can be reused.

In Central Oregon, the business of deconstruction is just catching on.

“There's only a couple of us,” Schmitz said. “It's a really tough industry to be in, and it's not a very fruitful industry. It's dirty, painstaking work, and there's not a lot of glory.”

On most of his projects, Schmitz gets to keep a majority of the materials he recovers, which he can use in new projects or provide others at a low cost.

For the Shasta job, however, Elliott and Scott plan to incorporate many pieces of both old houses into their new home, so Schmitz will only take the leftovers. Schmitz prefers being able to sort all the materials himself, but he's glad to contribute to a project that's making people think about deconstruction in a new way.

The combination of more people learning about deconstruction techniques and the tough economy have helped the industry, he said.

“I work with and sell a lot of projects to little guys doing little remodels that do it because they know it's the right thing to do,” he said. “That's a real change in opinion when you think about what it used to be: Tear it down, put it in the dump.”

In some parts of the country, more builders are opting to deconstruct, rather than demolish buildings for a variety of reasons, said Dave Bennink, a Bellingham, Wash.-based deconstruction consultant since the early 1990s.

A large draw is the environmental benefit of using old materials instead of having new items produced and shipped.

On the Shasta project, Schmitz expects to take five or six small trailers of garbage to the landfill.

If Elliott and Scott had opted for demolition, Schmitz estimates that they could have filled 10 or 12 dump trucks for the landfill.

But for some builders, Bennink said job creation is just as big of a draw.

“I would say that right now, it's been catching on less for its environmental benefits,” he said. “It's catching on in the Rust Belt cities for its social benefits, for job creation and providing materials — the materials we reclaim are available for low-income homeowners, they can afford to buy our stuff. There are so many benefits to it that it's catching on all over the place.”

As builders become more familiar with the deconstruction process, Bennink said the work becomes more efficient. In some cases, it can be accomplished as quickly and as cheaply as more traditional demolition, he said.

Last week, Bennink said his company took down two houses in four days — with just five people doing all the work.

He estimates that only about 5 percent of projects in the country use deconstruction to save building materials. But he expects that number to grow.

“It's really about education of the contractors, letting them know how to do this competitively, and the education of the building owners, letting them know they can have the power to demand this,” he said.

Though the process is sometimes unpredictable and has stretched out longer than Elliott and Scott planned — a couple more weeks of work remain — the couple doesn't regret their decision to deconstruct.

Elliott and Scott said they're excited about the materials they're finding in the old houses, from wood floors that will be sanded and reused, to old rock walls that will be broken up and incorporated into new walls.

"It's sort of a treasure hunt, because each day something new is revealed, and it could be disappointing or it could be exciting," Elliott said.

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