

The Rivas-Scott Home

Remodeling for Solar and Energy Efficiency

SCOTT AT A GLANCE

Project Owners
Alan Scott and Ana Rivas-Scott

Location
3716 SE 13th Ave.

Project Type
Remodel

Project Size
870 sq. ft.

Contractor
Craftsmen Unlimited

Energy Efficiency
Blown-in cellulose insulation
Replacement window sash
South facing windows to increase sun tempering
Solar hot water heater
Radiant floor heating system
Solar powered attic fan
Renewable power from PGE/
Green Mountain

Water Efficiency
Reduced lawn and stopped watering remaining lawn
Rain barrels on downspouts for irrigation
Low-flow showerhead
Dual flush, low-flow toilet
Planned 2,000 gallon rainwater collection system

Materials
Deconstructed portions of house
60% framing lumber is salvage
30% framing wood is FSC-certified from Collins Co.
Bathroom cabinets FSC-certified maple and plywood
Bamboo floors

Indoor Air Quality
Low-VOC interior wood finishes
Heat recovery fresh-air ventilator
No particleboard in cabinets

Alan and Ana purchased their 1904 house in the Brooklyn Neighborhood in the winter of 1991. It was described in real estate terms as a “Victorian honeymoon cottage”, which in the real world means “small, affordable fixer-upper”. The 870 SF house sits on a 4,000 square foot lot with west facing street frontage. It is long and narrow (19’ wide), with the long sides facing north and south, and has a steep roof.

Alan and Ana immediately had visions of what the house could be. As they learned more about ecology and the environment, they planned improvements that would improve livability, style, comfort and environmental performance.

As time and money allowed, they have slowly implemented improvements, including a small addition and remodel project. The addition increased the house to 1,030 square feet. An architect, Alan did his own design work with frequent input from Ana. Much of the earlier construction/installation work they did themselves, while a general contractor, Craftsmen Unlimited, did the bulk of the work on the recent addition. The Scotts installed a solar hot water heating system. With the help of a tax credit from the Oregon Office of Energy, the solar system cost about \$1000.



Radiant floor heating system provides comfortable, quiet warmth.



PHOTOS: MIKE O'BRIEN

A restored victorian with high tech guts.

They replaced their old forced-air furnace with in-floor radiant heat that provides excellent comfort and efficiency, operates silently, and was eligible for a state tax credit. The water heater provides both space heating and hot water. It is supplied with pre-heated water from the solar water heater. A second solar water heater is planned to increase pre-heat capacity.

“We’re concerned about global warming and other environmental impacts - we wanted to reduce our ecological footprint”

– Alan Scott

Wood used in framing was either salvaged or was certified sustainably harvested. Certified wood was also used in their cabinets. Re-using wood, and selecting certified wood, helps take the pressure off of forests to provide more building materials. Another way to reduce wood use is to replace it with a different material. The Scotts selected bamboo flooring for their bedroom.

Alan is planning future installation of a cistern in the basement so they can use rainwater for clothes washing and toilet flushing.

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Results

- A far more comfortable home year-round
- Reduced energy usage by ~35% (electricity by 38% & natural gas by 34%), saving approximately \$40/month on typical winter energy bills.
- Annual CO₂ emissions were reduced by approximately 2,800 pounds (equivalent to planting 108 trees).
- Purchasing green power further reduces emissions by approximately 3,642 pounds of CO₂ per year (equivalent to planting 140 trees).
- Reduced water usage by ~35% (before installation of rainwater collection system) saving approximately \$140 per year in water and sewer charges. Even with a new baby at home (with associated daily laundry), water usage remains within the Water Bureau's lowest rate tier.



PHOTOS: MIKE O'BRIEN



G/Rated: A project of OSD

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