

REID HOME

Green Under Cover

By Stuart Green and Michael Vanderwater, *Solar Oregon*



Solar panels, interesting angles and warm color finishes. Credit: Michael Vanderwater



Sola Tube Lighting. Credit: Michael Vanderwater

As a long time contractor and builder, Tom Reid saw first-hand the amount of waste and potentially toxic materials that accompany conventional construction. So when Tom and his wife Monica set out to design and build their home, one of their goals was to maximize the use of recycled materials. But at a glance, you might not notice. The Reids designed their house to look 'conventional' and to show people that you can build a comfortable, beautiful home while incorporating sustainable building practices.

The Reids moved to the site of their future home in the summer of 2005 and spent two full summers camped out on the property. Living on-site allowed them to become intimately familiar with the landscape while mapping out the house design, all the while running two businesses and caring for their two small children.

Prior to beginning construction, the Reids began salvaging and storing materials. Tom came across attention-grabbing, high quality lumber on job sites and deconstruction projects. Old redwood fences and decks were carefully deconstructed and stored, destined to become gorgeous, clear-grained cabinets, floors and finish work. The modified post and beam walls are built from recycled glu-lam beams. Innovative recycling is everywhere – the stair railing is a refinished section of railroad rail, and a second (outdoor) kitchen was built from salvaged appliances and hardware.

The Columbia River gorge can be cold, windy, and prone to forest fire, but inside the home the atmosphere is quiet and cozy. The straw bale dwelling incorporates passive solar orientation, solar water heating, super-insulation, and environmentally safe building materials throughout. Tom and Monica selected a straw bale wall system because it is highly insulative, environmentally friendly, and fire resistant. Deep eaves protect the straw bales from winter rains and augment passive cooling during hot dry summers.

FEATURES

- 2,300 sq.-ft., three bedroom, three bath, home office
- Modified post and beam with straw bale infill
- Solar water heating
- Thermally isolated slab on grade with radiant heat
- Solatube skylights
- Energy recovery ventilator
- Locally harvested strawbales
- Salvaged wood used in cabinets, floors, and interior finish work
- American clay/plaster interior finish
- Energy efficient lighting throughout
- Dual flush toilets
- Wired for future PV system

TEAM

Owner / Designer / Builder

Tom Reid, Green Home Construction

Architectural Plans

Christine Yun, Communitecture

Engineering

Scott Bowman, Angle Design

Hardware

Van Kellum, Lonely Mountain, LLC

A solar hot water system, propane water heater, and radiant concrete floor are tied together and form an efficient whole-house heating system. The open floor plan helps to distribute heat from the radiant floor and stone hearth, while folding glass doors allow ample ventilation during warmer months and blur the line between indoor and outdoor living. Natural light streams into the great room from two Solatube skylights, accentuating the American clay walls and finish work by local artisans. The home is pre-wired for a future solar photovoltaic system, and they may add a sunroom in the future.

Designing a sustainable home is sometimes accompanied by building code and financing challenges, but the Reids found a surprising amount of community support. "It was really great,

the inspectors were excited and very helpful," Monica said. Tom noted that he felt the inspectors and bank were very interested in what they were attempting to do from a sustainability point of view. Because of this personal interest, they were more involved and accommodating. Yet, Tom does caution those wishing to build a home to be very realistic with their time expectations. Even with Tom's vast experience as a contractor and builder, it took the Reids 13 months to complete their home.

All in all, Tom and Monica view the design and building of their home as a deep self-exploration of their values and beliefs in living with their environment. Monica likened it to the famous naturalist, E.O Wilson's philosophy of Biophilia; "the love of life or living systems" in which humans have biologically ingrained feelings toward landscapes and these feelings dictate where they live. Tom reflected that the home breathes in night air to recharge the home with 'cool' in preparation for the next hot day. The end result is a spacious and inviting home that does not let high-performance get in the way of simple living. "The house has an old world feel, with a little bit of technology, and we like that" said Tom.

Tom & Monica's Advice

- Energy savings come mostly from good design.
- Design and build with your personal values in mind.
- View the house as a complete system. Explore how the home's goals can synergistically enhance one another.
- Set your budget first and design within your budget. A common mistake is to design the largest house you can afford. Over-budget often results in cutting back on the green features that are "causing" the project to be over budget.
- Work with professionals to help design and build your green home – by working with them your project has a better chance at success. ■



Window of Truth. Credit: Michael Vanderwater

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