

Green + Solar

BUILDING OREGON

**Tips for Going Green
in a Difficult Economy**

**Expanded Commercial
Green Building Section**

**Featuring the 2008
Green & Solar
Home Tours**

**A Comprehensive
Guide to Green and
Solar Building**



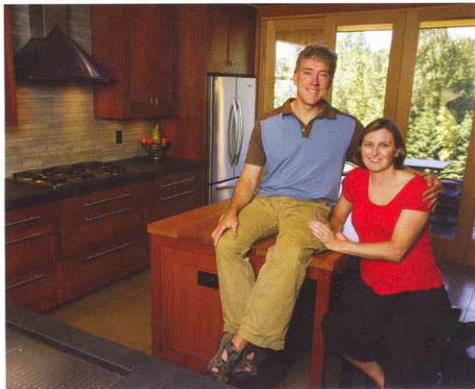
MCKENNA HOME

Dream with a View

By Lizzie Giles, *Energy Trust of Oregon, Inc.*



Efficient wall systems, doors and windows, solar electric and hot water systems.
Credit: Lizzie Giles



Ian and Aspen in their sunlit kitchen. Credit: Lizzie Giles

For five years, avid windsurfers Ian and Aspen McKenna were drawn to their Hood River property each week by nothing more than a tent, a spectacular view of Mt. Hood and a reliable west wind. When they finally decided to build, it was with a deep respect for the natural landscape they had come to love.

"After all that low-impact tent living," said Aspen, "building a house almost seemed like the wrong thing to do."

To help them realize their dream of a contemporary home that fits its surroundings and treads lightly on the environment, Ian and Aspen called on Matt Raphael — a Portland builder and designer, and Ian's longtime childhood friend. Ian and Matt grew up together in Alexandria, Virginia in a 1950s neighborhood noted for its modern architecture, generous use of windows and emphasis on complementing the natural surroundings. With their shared history and design ethic, Matt was a natural fit for the project.

Ian and Aspen encouraged Matt to research and incorporate green building techniques as he designed and built the home. As a result, half of the house and the garage are built from RASTRA® insulated concrete forms which provide structure, insulation and soundproofing in one product, and they contain 85 percent post-consumer recycled content.

At 2,500 square feet on two and one-half floors, the house has a modest footprint, making it easier to heat and cool. South-facing, floor-to-ceiling windows provide excellent daylighting and open the home to the outdoors. To manage heat gain in the summer, high reflectivity shades on timers automatically lower during peak sunlight hours without compromising natural light. A whole house fan pulls in cool evening air from basement levels.

The stairs, trim and exposed posts and beams were reclaimed from an old Schnitzer warehouse on Portland's south waterfront. Matt transformed



The home integrates into the landscape. Credit: Lizzie Giles

the remnants of the salvaged wood into furniture for the home. Integrated color plaster walls are cool to the touch but look like soft suede, bringing warmth and comfort to the living spaces.

Solar was always part of the plan. Clean rooflines were important, so thin-film photovoltaics designed to adhere to the surface of a standing seam metal roof were selected. The 2.7 kilowatt (kW) system is nearly invisible against the charcoal grey roof of the garage. Only the inverter and meter mounted in the garage provide visible evidence that the system exists.

After touring the solar home of Common Energy's Tod LeFevre during the Hood River Green and Solar

Homes Tour, Ian and Aspen decided to incorporate solar water heating into their project as well. Thirty-two square feet of Heliodyne collectors provide most of their hot water, and the McKennas are pleasantly surprised at how cost effective it has been. "I love guiltlessly running appliances in the middle of the day," said Aspen.

The commitment to low-impact living doesn't stop at the front door. Drought-tolerant and native plants require little or no watering and blend well with the existing landscape of grasses and wildflowers. Wind, the very element that initially drew Ian and Aspen to Hood River, is a challenge for any vegetation, so the McKennas relied

continue on page 63

FEATURES

- RASTRA® Insulated Concrete Form construction
- Task-specific lighting design with goodbye function that turns off all lights in the house when homeowners leave
- Low-reflectivity, high efficiency windows and doors
- Automated sun-tracking shade system
- 2.7 kW thin-film photovoltaic system with Sunny Boy inverter
- Heliodyne active solar water heating system
- Reclaimed, salvaged timber used to build the majority of the visible wood, including stairs, beams, window and door trim and some wood furniture
- Integrated color plaster walls
- Soapstone countertops
- Low or non-toxic finishes
- Xeriscape drought-tolerant and native plantings
- ENERGY STAR® appliances
- Dual-flush toilets & low-flow fixtures
- Metal roof
- Extensive daylighting
- Natural ventilation and nighttime air flushing
- Stained concrete and bamboo floors
- Hydronic radiant floor heating
- Received incentives from Energy Trust of Oregon, Oregon Residential Energy Tax Credit and federal tax credits.

TEAM

Builder/Designer

Matt Raphael, Raphael Design

Landscaping

Andrea Flint, Andrea's Garden Works

Hardscape Design

Pat Lando, Lando Landscape

Architecture

Solar Water Heating Installation

Tod LeFevre, Common Energy

Solar Electric Installation

Stapleton Electric and Solar

SOLAR OREGON
ENCOURAGING OREGONIANS
TO CHOOSE SOLAR ENERGY

www.SolarOregon.org

Solar Oregon is your central resource for going solar in Oregon:

• Solar workshops	• Directory of solar professionals
• Solar tours	• Solar e-newsletter
• Online information clearinghouse	• Listing of solar events



Salvaged lumber makes for beauty and sustainability. Credit: Lizzie Giles

on local guidance to choose site-appropriate plants.

For homeowners deciding to build their own green and solar home, Ian recommends incorporating sustainable features early into the design process. An impressive rainwater catchment system was proposed toward the end of construction and was ultimately abandoned due to prohibitive expense. "If we had considered it earlier in the process," said Ian, "we could have done it."

The house that Aspen confesses was originally intended to be a vacation home has become an influential force in the McKennas' life. Ian and Aspen celebrated their marriage with friends and family at the partially completed home site in 2006, and spent their wedding night on an air mattress in the unfinished master bedroom. Their love of the house and surrounding area ultimately resulted in their permanent move to Hood River. ■



Pepsi Cola of Klamath Falls



Kettle Foods



Industrial Finishes



Guaranty RV

Commercial solar is our business



Pepsi Cola of Eugene



TWC Solar Pool



University of Oregon



West Wind Products



Market of Choice



Rainbow Valley Const.



Burton Saw and Supply



ADVANCED
ENERGY
SYSTEMS

Oregon's Solar Company
www.aesrenew.com

We can transform your tax liability
into **green energy**.

1-800-399-1596

SHARP