

# Sleepless No More

Chris Herman

A 1928 SEATTLE COTTAGE GOES GREEN AND RESTS EASY.



Living in a small house gives Brian Higgins and Jill Weems more time to spend with each other rather than working on the house. In addition, they have more money to spend on adventures than on the mortgage and utilities, more time for school and community service, and a way to show friends and family the benefits of living in a small, sustainable space.



**OLD ROOFING AND CRACKED SIDING** make for a homeowner headache.

**GAS ROOM HEATERS** should have an outside flue, earthquake valve, carbon monoxide sensor, and setback thermostat.

**WALLS** can grow scores and scores of mold spores. *Photos by Anne Herman*



**Which type of fiberglass is green? Possibly none** because formaldehyde binders color most FIBERGLASS BATTS.



**Look for MOLD** around roof or plumbing leaks, damp basements or crawl spaces, where there's been flooding, and where there's moisture condensation on cold surfaces.



**The old pink TOILET** ain't what it used to be, and it never was very green.

**B**rian Higgins, a young landscape designer and environmental consultant, and his fiancée, Jill Weems, recently bought their first home: a 550-square-foot (not including the unfinished basement) “war box,” built in 1928 to house workers for the nearby Boeing plant. Previously a rental, the house had endured much do-it-yourself work; its infrastructure, space utilization, energy and resource efficiency, indoor air quality, and aesthetics now provide ample opportunities for green upgrading.

Because Brian and I are both designers with strong environmental consciences—and white-water kayakers, too—we had instant rapport. We started in the basement because I like to see the home's bones and circulatory system first. Brian and Jill had already made some improvements, including new wiring and plumbing, compact fluorescent lights, a natural gas heater with a carbon monoxide sensor, and a high-efficiency Fisher and Paykel washing machine. For their efforts they had received a \$100 rebate from Seattle Public Utilities.

## Can YOUR Home Be Greened?

Send us information on your home and what you'd like to accomplish in it. You could be the lucky recipient of a visit from one of our eco-experts. To submit your home or get more information, contact [NaturalHome@NaturalHomeAndGarden.com](mailto:NaturalHome@NaturalHomeAndGarden.com) or write Can This Home Be Greened?, 201 E. Fourth Street., Loveland, CO 80537.

## CAN THIS HOME BE GREENED?

### How's the skin?

**PROBLEM:** The home has wavy, multi-layered, asphalt-composition roofing and cracked, beveled-cedar siding.

**SOLUTION:** Brian can recycle the old roofing and install a standing-seam metal roof (with recycled content) that facilitates rainwater catchment, or he can choose Ondura corrugated sheet roofing, with 50 percent post-consumer recycled cellulose content, which costs about the same as thirty-year composition-roofing material but carries a fifty-year warranty. He can add ridge and soffit vents to minimize attic condensation in winter and overheating in summer. He can also fill in siding gaps with paintable silicone caulk, although cracks larger than one-quarter inch require applying backer bead (also called “backer rod”) first so the caulk stays pliable.

### Getting to the guts

**PROBLEM:** Jill had injured herself on the steep, slippery basement steps.

**SOLUTION:** A tied-in deck eliminates the option of reducing the stairs' slope, but building a roof over the steps can minimize slipperiness.

**PROBLEM:** The home's floor system isn't anchored to the foundation or to support beams and posts. Toenails (nails driven in at an angle to hold two pieces of wood together—a common practice in framing houses) can come loose in an earthquake, turning a home into waste.

**SOLUTION:** Explore the possibility of getting a “Project Impact” grant from Federal Emergency Management Agency to bolt the house to the foundation. Buy galvanized post caps and framing anchors to attach joists to beams and beams to posts. Simple, surface-mounted connectors can keep the living space from falling into the basement in the event of major ground convulsions.

### Heart of the matter

**PROBLEM:** The bedroom has health, comfort, and safety issues to be reckoned with—from old wallpaper with paint (and perhaps lead) on top to cold walls and a cold ceiling, no legal-egress window, and visible mildew.

**SOLUTIONS:**

- Cover wallpaper seams and encapsulate the potential lead paint with a skim coat of low-toxic plaster that also provides rich texture and visual interest.
- Apply a coat of low-emissivity (“low-E”) paint that helps block radiant heat transfer, keeping the room warmer in winter and cooler in summer.
- Insulating existing walls with beveled siding to prevent heat loss isn't high on the cost/benefit hierarchy in Seattle's climate, but adding twelve inches of blown-in attic insulation and sealing air leaks is well worth the effort. Johns Manville produces formaldehyde-free, recycled-content fiberglass insulation. In addition, installing cardboard baffles helps keep eave vents and bird blocks open.
- Lower the windowsill to a height of forty-four inches or less from the floor and replace the metal window with either a Marvin Wood Tilt-Pac or a Renewal by Andersen (fiberglass) egress window that makes the room safer and warmer.
- Keep the home as mold-and-mildew free as possible—a real challenge in rainy Seattle. Typically, bedrooms are damp because of people respiring moisture there for seven or eight hours a night. Leaving the door open is the easiest way to prevent moisture buildup.



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From basement to roof, Brian and Jill's Seattle home will benefit from Chris's recommendations.

### Into the bowels

**PROBLEMS:** The bathroom lacks natural light, features an old pink toilet, and sports vinyl flooring. In addition, the fan vents to the attic, and mold is visible on the ceiling.

**SOLUTIONS:**

- Cut back the manufactured-plastic shower enclosure to expose the existing exterior window. Replace the window with a new one that meets code, make sure the windowsill slopes down to avoid water ponding, and paint trim around the window to keep it from absorbing moisture.
- Replace the old toilet with a 1.6-gallon-per-flush, low-flow toilet, and, when the vinyl (PVC) flooring needs replacing, choose true linoleum.
- Vent the exhaust fan to the outside with a storm cap and as few bends as possible in the ducting. Some models now have motor-operated insulating covers that reduce heat loss.
- To alleviate mold, scrub it with a solution of no-rinse TSP (trisodium phosphate), isopropyl alcohol, and a touch of vinegar. Then, wipe down, let it dry, and seal it with alcohol-based shellac and water-based enamel. (Note: TSP is caustic to skin, so wear gloves and eye protection.) 

CHRIS HERMAN, founder of Winter Sun Design, draws plans and consults on homes using green building materials and systems, and solar energy. Contact him at (206) 525-3969 or [chris@wintersundesign.com](mailto:chris@wintersundesign.com).



This attractive Avalon Hideaway fireplace by Travis Industries of Mukilteo, Washington, heats rooms of up to approximately 650 square feet in Seattle's marine climate. The Avalon Hideaway takes in fresh air from—and vents to—the outside of the house.

## Rx AT YOUR HOUSE {bring the wisdom home}

- **MOLD** To prevent mold in the bathroom, run the exhaust fan for at least one hour after you finish showering, and squeegee and wipe down the shower walls. To keep mold from getting into your walls and ceilings, maintain your home's exterior skin.
- **CONDENSATION** Insulate walls and ceilings. Lower the relative humidity inside your home.
- **VOCS** Choose low-toxic finishes and furnishings to reduce your exposure to formaldehyde and other VOCs.
- **APPLIANCES** Natural-gas appliances should vent to the outside, and you should have a carbon-monoxide sensor on the ceiling near the appliance. In seismic hazard areas, natural-gas appliances should have flexible connections and be accompanied by an earthquake valve, located at the gas meter. Replace your old appliances and plumbing fixtures with more energy- and resource-efficient models and recycle your old ones.
- **EARTHQUAKE RETROFITTING** In seismic hazard areas, earthquake retrofitting can mean the difference between a livable home and a pile of rubble after a quake. Consult an earthquake retrofit specialty contractor and get the job done right.

### RESOURCES

**DEGUSSA BUILDING SYSTEMS**  
(800) 766-6776  
[RadianceComfort.com](http://RadianceComfort.com)  
*low-emissivity paint*

**FEDERAL EMERGENCY MANAGEMENT AGENCY**  
FEMA.gov  
*Project Impact grants*

**FORBO INDUSTRIES**  
(800) 342-0604  
[ForboLinoleumNa.com](http://ForboLinoleumNa.com)  
*Marmoleum flooring*

**JOHNS MANVILLE**  
(800) 654-3103  
[JohnsManville.com](http://JohnsManville.com)  
*formaldehyde-free insulation*

**MARVIN DOORS AND WINDOWS**  
(888) 537-7828  
[Marvin.com](http://Marvin.com)  
*Tilt-Pac replacement window sashes*

**ONDURA**  
(800) 777-7663  
[Ondura.com](http://Ondura.com)  
*recycled-content corrugated roofing*

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