

COMPACT URBAN DWELLING

A ramshackle addition is rebuilt, gaining space and daylight without increasing the footprint



Randy Eveleigh's small Berkeley home has undergone a radical transformation. The property's original house dates to 1928; over the next few decades several poorly built additions were tacked on, transforming the structure into a duplex. By the time he took possession of the ramshackle addition, it was near collapse, says Eveleigh, who is an architect. But the location was a major draw — it's within easy walking distance of shops, public transit and other downtown Berkeley amenities — so he decided to rebuild the dilapidated structure.

Zoning rules required him to keep within the existing footprint, so he gained space and light by removing interior walls and reconfiguring the floorplan, increasing the 500-square-foot cottage to 730 square feet. Gutting and rebuilding the structure gave Eveleigh the perfect opportunity to take green building principles into account from top to bottom. "All materials from foundation to roofing were chosen for their green attributes," he says.

"Last year, the total PG&E electric bill for both homes combined was only \$38.10."

—Randy Eveleigh, homeowner

REUSE & RECYCLING

An emphasis on reuse. Eveleigh salvaged as much as he could from the existing structure, and when selecting new materials he gave priority to salvaged and recycled products. Much of the framing lumber is from the original house (new framing lumber is FSC-certified or engineered). The stair treads and maple flooring upstairs are reclaimed wood. The bathroom floor is salvaged ceramic tiles, while the bathroom counter is made with recycled glass.

GREEN at a GLANCE

ENERGY & SYSTEMS

- 1-kW photovoltaic system (Sharp panels, Sunny Boy inverter, installed by Sun Light & Power)
- Passive solar heating and daylighting
- Tankless water heater (Bosch)
- Hydronic radiant-floor heating
- Compact fluorescent light bulbs
- Water- and energy-conserving washing machine
- Insulated foundation/slab before backfill
- Wall insulation: spray foam (Icynene) and recycled cotton batts (Bonded Logic's UltraTouch)
- Ceiling insulation: spray foam (Icynene) and reused foam boards
- Low-e windows (Marvin's Integrity)

MATERIALS & PRODUCTS

- 25% flyash in concrete
- Engineered lumber: reclaimed glulams, OSB for subfloors and sheathing
- FSC-certified framing lumber (Hayward Lumber)
- Reclaimed lumber (Caldwell's, Whole House Building Supply)
- Fiber-cement siding (Cembonit)
- Standing-seam galvanized steel roof for low maintenance and durability (IMSA)
- Urban salvage wood for stair treads (Community Woodworks)
- Salvaged maple flooring (Whole House Bldg Supply)
- Salvaged ceramic tile on bathroom floor (Urban Ore)
- Exposed concrete as finish floor
- Bamboo plywood and FSC-certified maple for kitchen, bathroom and bedroom cabinets (EarthSource)
- Recycled glass counter in bathroom (Counter Production)

OTHER GREEN FEATURES

- Walkable urban location
- Efficient, compact space
- Reused existing structure
- Recycled clean construction waste

ENERGY UPGRADES

Daylighting and passive solar design. Large new window walls provide light, ventilation and some passive solar heat. The insulating windows have a low-e coating; frames are low-conductivity fiberglass with wood cladding inside. An exposed concrete floor provides thermal mass to moderate solar heat gain from the south- and west-facing windows.

Lower utility bills. With new insulation in the walls and ceilings, hydronic radiant heating in the concrete floor, and a tankless water heater for household water use, gas use declined markedly, Eveleigh says. Spray-foam insulation in the wall and ceiling cavities reduces air infiltration. Eveleigh also used recycled-cotton batt insulation in some walls. At the roof, he installed rigid foam board insulation that was reclaimed from a deconstructed industrial building. A 1-kW photovoltaic system generates electricity for both living units on the site.

ORIGINALLY BUILT: 1928–1950

REMODEL COMPLETED:
Spring 2005

ORIGINAL SIZE:
500 SF

SIZE AFTER REMODEL:
730 SF

ARCHITECT:
RANDY EVELEIGH, ARCHITECT

CONTRACTOR:
RANDY EVELEIGH, ARCHITECT

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