

TOP-TO-BOTTOM GREEN

A remodeling specialist gets inspired on the job, and brings green-building methods home



As a design/build architect and remodeling specialist, Maurice Levitch of Levitch Associates had always helped clients select design elements and materials based on economic factors and aesthetics. Recently, the combination of a client's request that he learn more about sustainable building and an employee's suggestion that he get certified as a green builder prompted Levitch to take a closer look at green building philosophies and methods.

Coincidentally, Levitch and his wife Ruth were starting to remodel their 1923 home, where they had lived since 1993. The 1,500-square-foot bungalow had three bedrooms, one bath and no garage. The Levitches, who have two children, remodeled the existing structure and added a second floor, expanding the house to 3,000 square feet, including a 600-square-foot garage and basement. Levitch's growing knowledge of green building inspired him to incorporate in his own home many strategies and materials that are healthy and that save energy and natural resources.

"It's possible to make value-oriented remodeling choices that are green as well as aesthetically pleasing."

—Maurice Levitch, homeowner & architect/builder

REDUCED WASTE

Reuse and recycling of construction and demolition waste. Levitch transformed original fir rafters into dining and kitchen tables. Old roof sheathing was given to an employee to build a shed at his home. Brick from the chimney was reused for the new pervious driveway. Recycled base rock was used below the slab. Jobsite waste that couldn't be reused was recycled to the greatest extent feasible.

Salvageable materials such as old roof vents were taken to Urban Ore in Berkeley. Clean gypsum board scrap was brought to the City of Berkeley Transfer Station for recycling. The old concrete driveway was taken to Syar Industries in Richmond for recycling. Jobsite waste such as beverage containers and paper were recycled with the normal residential curbside pickup.

Reused and recycled materials. Levitch reused painted doors and trim, and installed two new, mis-ordered windows that Levitch Associates had on hand from another project. The new basement walls and slabs contain 25% recycled flyash in the concrete. Reusable plywood forms were used for constructing the basement's concrete walls.

GREEN at a GLANCE

ENERGY & SYSTEMS

- 2.8-kW photovoltaic system (Panasonic panels, Sunny Boy inverter)
- Passive solar design
- Hydronic radiant-floor heating
- High efficiency boiler (Munchkin)
- Heat recovery ventilation (Aprilaire)
- Recycled cotton wall insulation (Bonded Logic's UltraTouch)
- Rigid foam basement wall insulation (Dow Styrofoam)
- Low-emission fiberglass batt insulation at ceiling (Certainteed)
- Whole house fan (Dayton)
- Low-e2, argon-fill windows (Marvin)
- Tubular skylights (Velux)
- Interior transoms for daylight
- Energy Star® clothes washer (Frigidaire)
- Recessed CFL lighting (Lightolier)

MATERIALS & PRODUCTS

- 25% flyash content in concrete
- Reusable plywood forms for basement walls
- Engineered lumber, floor joists (Trus Joist) and OSB
- Advanced framing techniques include 4x6 window and door headers
- Recycled glass tile (Oceanside)
- Precast concrete counter with flyash and rice hulls (Concreteworks)
- Recycled glass counter (Counter Production)
- Bamboo flooring (Eco Timber)
- Antique heart pine flooring (Albany Woodworks)
- Recycled-content carpet (Shaw's Turkey collection) and carpet cushion pad (Reliance)
- Zero-VOC interior paint (Benjamin Moore Pristine Eco Spec)
- Low-VOC adhesive (PL Premium)
- Low-VOC clear wood finish (Bioshield Hard Oil #9)

OTHER GREEN FEATURES

- Pervious driveway with salvaged bricks
- Natural-gas fireplace replaced wood-burning fireplace (Heat-n-Glo)

ENERGY EFFICIENCY & COMFORT

Radiant-floor heating. A high-efficiency boiler provides hot water for radiant-floor heat and household use. The system includes PEX tubing embedded in the basement slab. Under the slab, an insulating barrier called R-Foil prevents heat loss to the ground. At the main floor, the PEX tubing is stapled to the underside of the subfloor between the floor joists. For the new second floor, Levitch used a radiant-heat underlayment product called ThermalBoard under the finish flooring.

Heat recovery ventilation. An HRV unit exchanges stale inside air with filtered fresh air. Heat from outgoing air is used to warm the incoming air, saving energy.

FINISHES

Resource-friendly materials. Flooring includes bamboo, reclaimed heart pine, and recycled-content carpet and carpet underlayment. Glass tiles in the bathroom and countertops in the laundry contain recycled glass. A concrete counter in the bathroom contains 25% recycled flyash in the concrete, while 50% of the aggregate is rice hulls.

ORIGINALLY BUILT: 1923

REMODEL & ADDITION COMPLETED: 2004

ORIGINAL SIZE: 1,500 SF

SIZE AFTER REMODEL: 3,000 SF (includes basement and garage)

ARCHITECT: LEVITCH ASSOCIATES, INC.

CONTRACTOR: LEVITCH ASSOCIATES, INC.

“We both feel better about our home knowing that it is energy efficient and made of many recycled materials.”

—Ruth Levitch, homeowner

