

Hilltop Harvest



Two determined homeowners build their own Passive House

BY GEORGE OSTROW

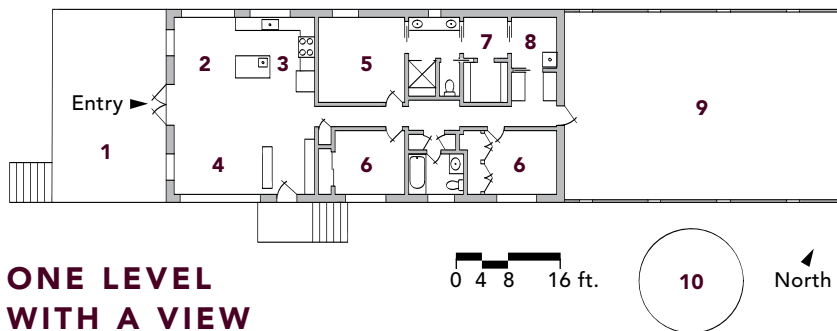
Long-time environmentalists, Gary and Marian Aamodt wanted their next home to be comprehensively green: low-VOC and net-positive energy, with formaldehyde-free materials, FSC-certified lumber, and solar electricity and hot water. To reach their ambitious goals on a limited budget, the Aamodts had another uncommon request: They wanted to do the construction themselves. In my practice, I welcome homeowners taking on portions of the design or construction effort, but I'd never had clients who wanted to build an entire house with their own hands.

The homeowners' DIY plan led me to keep the design and buildability dead simple. The cross section is the same throughout—an insulated floor, walls, and ceiling over a crawlspace in the living area, switching to exposed framing on a slab in the garage. This simplicity minimized thermal bridges and helped the homeowners frame their first house with relative ease. In the living half of the house, I used a frame-within-a-frame strategy to adjust the insulation thickness as needed to achieve Passive House certification.

Building a Passive House requires an extreme level of airtightness. The Aamodts addressed each hole as the build progressed, caulking the backs of nails and screws and applying tape and mastic on every joint.

The Aamodts built their own house over the span of six years. The house is net positive, has an EUI of 2.03, and is comfortable in 90°F weather without any air conditioning—and these two determined people achieved more than I dared to hope. □

George Ostrow is principal at VELOCIPEDA architects in Seattle. Photos by Asa Christiana.



ONE LEVEL WITH A VIEW

The rectangular floor plan transitions from garage to bedrooms to an open living and dining area to a large deck with beautiful views of the Cascades.

- 1 Deck
- 2 Dining
- 3 Kitchen
- 4 Living
- 5 Master bedroom
- 6 Bedroom
- 7 Closet
- 8 Laundry
- 9 Garage
- 10 Rainwater tank



SPECS

Bedrooms: 3 **Bathrooms:** 2

Size: 1340 sq. ft. **Location:** Carnation, Wash.

Architect: George Ostrow, velocipede.net

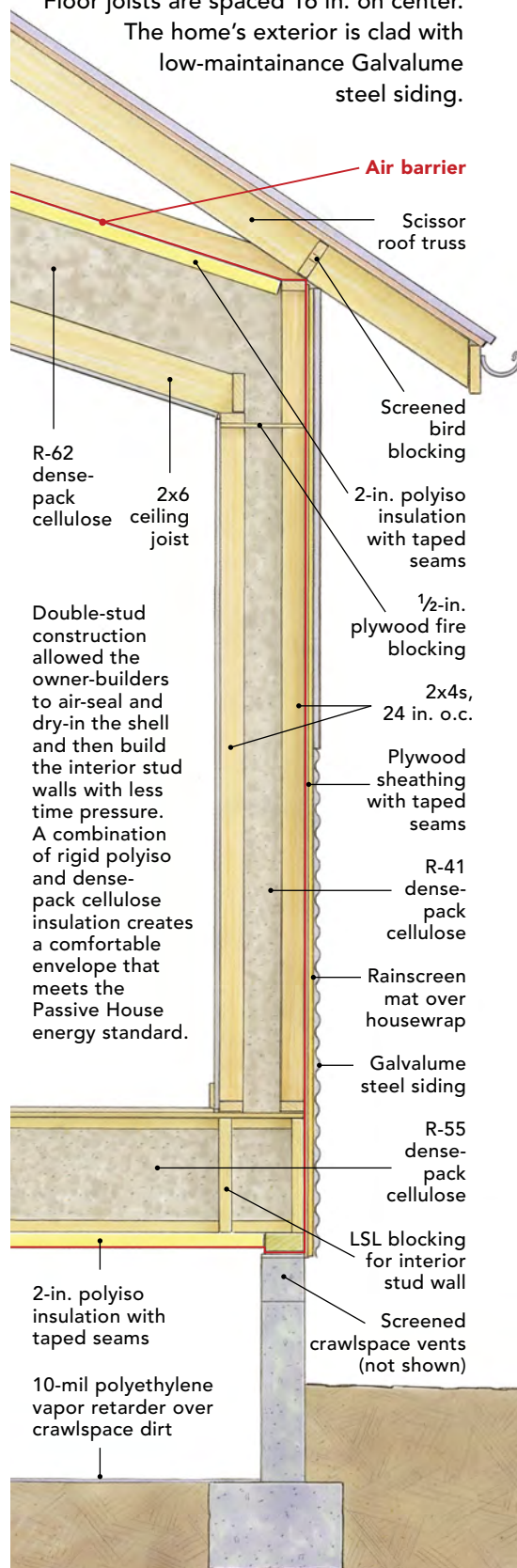
Builder: Gary and Marian Aamodt

Rainwater to the rescue. The site had one substantial defect: no water. All the water the homeowners need flows from the roof into a gutter, through debris filters, and into this 8800-gal., PVC-lined storage tank. The water is then pumped through filters and a UV light in the garage to make it potable.

A TIGHT SHELL THAT'S EASY TO BUILD

To minimize thermal bridging, eliminate unnecessary lumber, and make the house easier to build, the roof trusses, ceiling joists, and wall studs are stacked on top of each other 24 in. on center. Floor joists are spaced 16 in. on center.

The home's exterior is clad with low-maintenance Galvalume steel siding.



ONLINE EXCLUSIVES

For more on this project, visit FineHomebuilding.com/houses.