



Anatomy of a PRETTY GOOD HOUSE

In a nutshell, the PGH approach is about finding the sweet spot between the cost and benefits of energy-efficiency measures. The originators of the concept list 23 distinct characteristics that identify a Pretty Good House. Several of those as exhibited by the Sheehys' house are shown here.

Near net-zero

The 6.5kw of solar panels on the roof should generate about 8000kwh per year, roughly equal to what the author expects to use, although initial use so far has been lower than expected.

No fossil fuels

The house is 100% electric. Heating and air-conditioning

are provided by a pair of Fujitsu RLS3H minisplits (9000 Btu and 12,000 Btu), with additional radiant heat under the bathroom tile. Although a heat-pump clothes dryer was chosen for its efficiency and to eliminate a vent that would impact the building envelope, a conventional electric-resistance water heater was chosen for its quiet operation[what does the relationship mean?]. Cooking appliances include an induction cooktop and an electric convection oven.

Adaptability, durability, and recyclability

On the exterior, both the standing-seam metal roofing and the unfinished white-

cedar shingles require little maintenance. Inside, a polished concrete floor is scratch-resistant, is easy to maintain, and stores heat when the sun shines through the south-facing windows. Recycled materials include 4-in.-thick foam under the slab (greeninsulationgroup.com).

Air leakage capped at 2 ACH50

Air leakage in the house was minimized by taping sheathing and housewrap and by limiting penetrations through the building envelope. A blower-door test measured 0.59 ACH50, meeting Passive House standards. Airtightness was enhanced with Siga Majpell



membrane behind the ceiling drywall and inside the walls, and windows were sealed with Siga Wigluv tape.

Service core for plumbing and wiring

Flat ceilings on the north side of the house create room for a utility chase between the ceiling and the roof trusses that is accessible through a hatch. Almost all wiring and plumbing are on the conditioned side of the building envelope. The only exceptions are the lines for outdoor lights, outdoor receptacles, and hose bibs. These and the other penetrations through the envelope—for the plumbing vent, the HRV's intake and exhaust, and the lines for

the two minisplits—were air-sealed carefully.

10-20-40-60 insulation (slab, foundation, walls, roof)

Built atop the R-20 insulated slab, double-stud walls combine dense-pack cellulose and fiberglass batts for a total wall R-value of about 40. The roof is framed with raised-heel scissor trusses, which allow for an R-70 insulated cathedral ceiling.

Good design and a simple structure

A single-story, relatively open floor plan makes for easier heating and cooling, and most of the glazing faces south, which allows

for significant solar gain, especially when the sun is low in the sky in winter.

Mechanical ventilation

A Zehnder HRV located in the mechanical room brings 72 cfm of fresh air into the bedroom, den, and great room, and expels spent air from the bathrooms and kitchen. A boost switch in the master bath can be activated to remove humidity when someone is running the shower.

Universal design

The house has wide doors with lever handles, no stairs, and a curbless shower to make accessibility and aging in place possible.

SPECS

Bedrooms: 2

Bathrooms: 1½

Size: 1860 sq. ft.

Cost: \$242 per sq. ft.

Completed: 2015

Location: Whitefield, Maine

Architect: Kaplan Thompson Architects; kaplanthompson.com

Builder: Tom Greenleaf; greenleafbuilding.com