



Photos courtesy of Paul Torcellini

"Of course it's going to be a zero-energy house!" *Paul Torcellini, home owner and builder*



## PROJECT DATA

- **Layout:** 3 bdrm, 2 bath, 2 fl + bsmt, 3,597 ft<sup>2</sup>
- **Climate:** IECC 5A, cold
- **Completed:** March 2016
- **Category:** custom for buyer

### MODELED PERFORMANCE DATA

- **HERS Index:** without PV 35, with PV 2
- **Projected Annual Energy Costs:** without PV \$2,303, with PV \$80
- **Projected Annual Energy Cost Savings:** (vs home built to 2009 IECC) without PV \$3,246, with PV \$5,469
- **Annual Energy Savings:** without PV 17,404 kWh, with PV 29,758 kWh

## CONTACT

Paul Torcellini  
paul.torcellini@gmail.com  
860-315-5475

## KEY FEATURES

- **Walls:** Double-stud walls, 12" cavity dense-packed with fiberglass insulation (R-52); plywood sheathing taped at seams to act as drainage plane; fiber-cement lap siding.
- **Roof:** Taped plywood roof decking, furring strips, standing seam metal roof.
- **Attic:** Insulated along roof line with R-60 to R-80 fiberglass dense packed in roof rafters.
- **Foundation:** Daylight basement of poured concrete walls insulated on interior with R-10 rigid foam + fiberglass batts in stud cavities.
- **Windows:** Double-pane, double-hung, argon filled, low-e coating. South U=0.31, SHGC=0.48; all other sides: U=0.29, SHGC=0.24.
- **Air Sealing:** 0.75 ACH 50.
- **Ventilation:** HRV with timered high-speed boost for kitchen and bath spot exhaust.
- **HVAC:** CO<sub>2</sub> air-to-water heat pump for radiant floor heat, 4 COP; ductless mini-split heat pump for cooling 26 SEER and supplemental heating, 12.5 HSPF.
- **Hot Water:** Air-to-water heat pump with 80-gal storage tank, 2.5 EF.
- **Lighting:** 100% LED.
- **Appliances:** ENERGY STAR refrigerator.
- **Solar:** 9.4-kW PV. Emergency circuits tied to inverters in case of grid disruption.
- **Water Conservation:** WaterSense fixtures, separate black water and gray water plumbing, rainwater collection from metal roof, low-irrigation landscaping.
- **Energy Management System:** Radiant heat thermostats for each room.
- **Other:** No-VOC paints, glues, finishes; wired for electric car station.

