



CGA Studio Architects

Forever House | Hastings-on-Hudson, NY | CGACNY.com



Photos courtesy of CGA Studio Architects

"In recent months, we have not paid even one cent for electricity." Homeowners



PROJECT DATA

- **Layout:** 3 bdrm, 1.5 bath, 2 fls + bsmt, 1,713 ft²
- **Climate:** IECC 4A, mixed-humid
- **Completed:** June 2022
- **Category:** Custom for Buyer

MODELED PERFORMANCE DATA

- **HERS Index:** without PV 32; with PV -17
- **Annual Energy Costs:** without PV \$1,800; with PV \$-705
- **Annual Energy Cost Savings:** (vs typical new homes) without PV \$1,100; with PV \$3,600
- **Annual Energy Savings:** without PV 7,450 kWh; with PV 19,000 kWh
- **Savings in the First 30 Years:** without PV \$47,500; with PV \$ 49,200

CONTACT

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KEY FEATURES

- **Walls:** Double wall, Total R-55: Two 2x4 16" oc walls 8" apart, R-55 dense-pack cellulose. Interior smart vapor retarder. Exterior CDX plywood, vapor-open membrane + mesh rain screen; cedar siding.
- **Roof:** Rafter gable roof: 5/8" CDX plywood, 2x3 furring, 1/2" CDX plywood, 3-layer air-tight, vapor-permeable house wrap, fiberglass roof shingles. Continuous ridge and soffit vents.
- **Attic:** Vented cathedral ceilings, R-64 total: 18" dense-pack cellulose, airtight vapor-open membrane, 2x2 furring service cavity.
- **Foundation:** Uninsulated basement, reused existing concrete slab, CMU walls, and 2x8s + new 2x10 joists dense packed with R-34-41 cellulose held in by air-tight membrane and 1.5" rigid mineral wool.
- **Windows:** Triple-pane, Passive House-qualified, U=0.15, SHGC=0.34, shaded.
- **Air Sealing:** 0.82 ACH 50, interior walls and ceiling wrapped in airtight, vapor-open membrane. Fluid-applied airtight coating over subfloor, window and basement sills.
- **Ventilation:** ERV, with separate ductwork from HVAC.
- **HVAC:** Ducted mini-split air source heat pump, 12.6 HSPF, 18 SEER, 1 indoor + 1 outdoor unit.
- **Hot Water:** Heat pump water heater, 80-gal, 3.61 EF. Compact plumbing, R-7 on pipes.
- **Lighting and Appliances:** LED lighting. ENERGY STAR appliances, induction cooktop.
- **Solar:** 10.8 kW solar PV; 9 kW battery.
- **Energy Management System:** Apps for tracking energy use, PV output, battery, HVAC.
- **Other:** All electric; reused existing foundation; no foam.

