



Fireside Home Construction

Pleasant St. Passive House | Birmingham, MI | FiresideHomeConstruction.com



Photos courtesy of Fireside Home Construction

“There are no drafts or anything, it is just sheer comfort.” Homeowners



PROJECT DATA

- **Layout:** 6 bdrm, 4 bath, 2 fl + bsmt, 6,010 ft²
- **Climate:** IECC 5A, cold
- **Completed:** Custom
- **Category:** May 2023

MODELED PERFORMANCE DATA

- **ERI:** without PV 30; with PV -20
- **Annual Energy Costs:** without PV \$2,050; with PV \$650
- **Annual Energy Cost Savings:** (versus typical new homes) without PV \$9,200; with PV \$12,050
- **Annual Energy Savings:** without PV 37,620 kWh; with PV 64,880 kWh
- **Savings in the First 30 Years:** without PV \$385,100; with PV \$503,650

CONTACT

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KEY FEATURES

- **Walls:** Double wall, R-49 total: Two 2x4 walls, 24" o.c., set 8" apart, dense-packed fiberglass in cavity, coated OSB taped, plastic mesh rainscreen, fiber cement siding.
- **Roof:** Gable truss roof, OSB, self-adhered underlayment, standing-seam metal roofing.
- **Attic:** Vented, 30" R-120 blown-in cellulose, 36" to 48" raised-heel trusses. From interior: drywall; 2x4 service cavity; coated 7/16" OSB attached to bottom of truss chords.
- **Foundation:** Insulated basement, R-54 total. R-22 ICFs: 5" EPS + 10" concrete core. On interior: 2x4 24" o.c. wall dense-packed with blown fiberglass. Exterior: self-adhered waterproof membrane, 2" rigid XPS, 3/8" stucco.
- **Windows:** Triple-pane windows, U=0.16, SHGC=0.50, low-e, argon-fill. Passive House rated, dynamic glazing.
- **Air Sealing:** 0.23 ACH50; continuous air barrier, all joints caulked; windows and door frames sealed with expanding foam tape, flashing tape, and sealants.
- **Ventilation:** ERV, separately ducted supply and return to each room; boost buttons in baths and kitchen; humidifier and dehumidifier on sensors; IAQ sensors.
- **HVAC:** Ducted mini-split heat pumps; 10.4 HSPF, 18.4 SEER, 3 air handlers, 3 outdoor compressors. Cold-climate heat pumps.
- **Hot Water:** Heat pump water heater, 80-gal, 4.07 COP. Demand recirculation.
- **Lighting and Appliances:** ENERGY STAR appliances.
- **Solar:** 21 kW, 45.6 kWh batteries.
- **Energy Management System:** Water heater is WiFi-enabled; IAQ monitor.
- **Other:** PHIUS Passive House certified.

