Minneapolis builder Vujovich Design Build gave this classic craftsman home a facelift and cut its energy consumption by nearly 50 percent, largely through building envelope improvements. After removing the existing siding, 4-inch-thick retrofit insulated panels were installed over the exterior—providing continuous R-14 insulation, a complete air barrier, and a solid nailing surface for new siding. Crews sealed the rim joist with spray foam, added insulation to the attic, and installed new windows and doors. The result was a dramatic reduction in air leakage and thermal bridging for a more comfortable home and over $1,300 in savings annually for the homeowners.

**Energy-Efficient Features**
- R-14 retrofit insulated panels over existing cavity insulation
- R-50 attic insulation (total)
- Low-E, U-0.30 windows
- Spray foam around rim joist
- 95% AFUE natural gas boiler for existing radiators and domestic hot water
- Energy recovery ventilator (ERV)
- Whole-house air sealing

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**Cold Climate Retrofit**

**Deep Energy Retrofit with Retrofit Insulated Panels**

**Location:** Minneapolis, MN

**Size:** 2,686 sq. ft.

**Builder:** Vujovich Design Build

**Retrofit Panel Provider:** Panelworks Plus

**Total Reduction in Energy Use:** 49%

**HERS Index:** 59

**Energy savings per year:** $1,371

**Air infiltration before:** 8.26 ACH50

**Air infiltration after:** 3.97 ACH50