ENERGY STAR Multifamily High Rise Building Profile

Steve O'Neil Apartments

115 West 4th Street
Duluth, Minnesota 55806

Building Developer:

1 Roof Housing

Licensed Professional:

Russ Landry, Center for Energy and Environment

Year Certified:

2015

Construction Type:

New Construction

Sector:

Affordable Housing

Technologies Used:

- High-performance envelope
- High efficiency, condensing boilers and water heater
- Heat recovery ventilation

Building Description:

Hillside Apartments is a 4-story, 50-unit, affordable housing development, offering 3 studios, 7 one bedroom units, 29 two bedroom units, and 11 three bedroom units. The wood-frame building is insulated on the interior with R-21 fiberglass batts between studs and with 2 1/2" of continuous foil faced polyisocyanurate (R-15) on the exterior. 3" of closed cell spray foam is used to insulate the rim joists and the tapered polyisocyanurate insulation at the roof deck results in a minimum R-25. 2" of XPS insulation (R-10) is used to insulate the foundation walls and also extends horizontally below the slab-on-grade for 4 feet. ENERGY STAR certified fiberglass windows complete the high-performance envelope. The apartments were tested for air leakage and were 24% tighter than the ENERGY STAR MFHR program requirement.

Apartments are heated via hydronic baseboard, with hot water provided by three 95% efficient, central gas boilers. While no cooling is provided in the apartments, ENERGY STAR certified ceiling fans are installed, along with compact fluorescent lighting, ENERGY STAR certified kitchen range hoods and ENERGY STAR certified refrigerators. Central exhaust ventilation serving the apartment bathrooms meets ASHRAE 62.2, with risers duct-sealed to less than 2 CFM50 per register, and heat recovered through the use of two HRVs on the dedicated outdoor air systems. Domestic hot water is provided by a 95% efficient central gas water heater. Low-flow showerheads and faucets (1.5 gpm) are installed to further reduce energy consumption, as well as water.

Energy model estimates 18% annual energy cost savings, compared to a building that meets ASHRAE 90.1-2007.