

FIRST ADDITION HOME

This near Net Zero retrofit home is equipped with a 10 kW solar system, energy efficient appliances, solar hot water, upgraded insulation, electric heat pump, upgraded energy efficient windows, LED lighting, and rainwater catchment system. The system saves thousands per year and reduction of almost 100% of net carbon footprint.



SPECS

- 47 solar panels (9.7 kW)
- 3000 gal. rainwater catchment system
- Insulation achieves R32 walls and R45 ceilings
- LifeBreath Heat Recovery Ventilator
- Industrial Mitsubishi Heat Pump
- Solar hot water system
- LED light bulbs

FINANCIAL IMPACT

- Total system costs: \$80K
- Added value to home: \$65K
- Payback: 7-9 years

INSTALLATION RESOURCES

- A&R Solar: a-rsolar.com
- EcoHeat: ecoheatpdx.com
- Solar Energy Solutions: solarenergyoregon.com
- JB Insulation: truteam.com



Sponsored by:



Micha McNerney
WINDERMERE REALTY TRUST

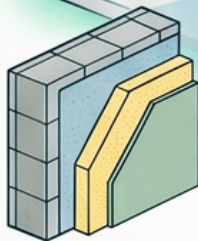
Presented by: **LOSN**
Lake Oswego Sustainability Network



1 Tightened Building Envelope



89% Reduction in Air Leakage
From 34 to 3.7 air changes per hour through rigorous sealing.



High-Performance Thermal Barriers: R-1.5 cement block upgraded to R-32 with 6-inch foam; Ceilings boosted to R-45-50 with fiberglass/foam mix.

Strategic Glazing Upgrades: Double-pane glass; Specialized triple-pane inlow Windows on north side for maximum resistance.

2 Ventilation & Air Quality



LifeBreath Heat Recovery Ventilator (HRV)
Constant fresh indoor air supply, conserving 70-80% of indoor temperature from exhaust.

Dual Attic Energy Recovery Ventilators (ERVs)
Dedicated units vent off-passing from insulation for a healthier environment.

4 Solar Energy & Water



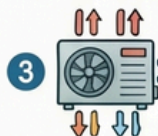
9.7 kW Solar PV Array
Generates the bulk of electrical needs on-site (A&R Solar).

Resilient Solar Hot Water
Provides hot water during outages (2006), with seasonal gas backup.

Future-Ready Plumbing
Staged for AD Smith Heat Pump Hot Water Heater.

Optimized Airflow Infrastructure
Basement main air ducts expanded by 50% to support high-volume requirements.

Industrial-Grade Heat Pump
Primary HVAC (2010), projected 40-50 year lifespan.



3 Efficient Heating & Cooling



5 Power Outage Resiliency



Full Fossil Fuel Decoupling
Natural gas fireplace and other devices removed (2010) to eliminate carbon reliance.

Full-Spectrum LED Lighting
Entire home utilizes LED, with full-spectrum reading lights to improve comfort and reduce load.

3,000-Gallon Rainwater Catchment
Harvests rainwater for non-food garden irrigation, reducing municipal pump demand.

6 Resource Efficiency



Low-Flow Conservation
High-efficiency faucets and showerheads minimize related emissions and consumption.

High-Efficiency Wood Stove Backup: Keeps main floor at 65°F for a full week even at 12°F outdoor temperatures.

