



Photos courtesy of Bundle Design Studio

“We have been blown away at how drastically different living in a high-performance home is compared to a code minimum house.”  
 Dan Welch, owner of Bundle Design Studio and owner, designer, and builder of the Birch house



## PROJECT DATA

- **Layout:** 3 bdrm, 2 bath, 2 fl, 2,065 ft<sup>2</sup>
- **Climate:** IECC 4C, marine
- **Completed:** July 2015
- **Category:** custom spec

### MODELED PERFORMANCE DATA

- **HERS Index:** without PV 36, with PV -9
- **Projected Annual Energy Costs:** without PV \$763, with PV -\$91
- **Projected Annual Energy Cost Savings:** (vs home built to 2012 IECC) without PV \$924, with PV \$1,914
- **Annual Energy Savings:** without PV 11,803 kWh, with PV 21,866 kWh

## CONTACT

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## KEY FEATURES

- **Walls:** 2x6 24" o.c., R-23 rockwool batt, 1/2" plywood sheathing, fluid-applied air barrier and window flashing, 2" R-8 rigid rockwool exterior insulation, 1x4 fir battens rainscreen, metal and cedar siding.
- **Roof:** R-60 total: 5/8" plywood roof sheathing, fluid-applied membrane, three 3" layers R-60 polyiso rigid foam, 30 min. roofing felt, 2x4 battens for venting, 1/2" OSB, full ice & water shield, standing seam metal roof, ENERGY STAR Cool Roof certified.
- **Attic:** Cathedral ceilings.
- **Foundation:** Vented crawlspace. R-60 rockwool batt, 3/4" plywood subfloor, 2" concrete slab w/micro-rebar, 1/2" EPS under and at slab edge. Radiant heat tubes in slab.
- **Windows:** Fiberglass-framed, triple-pane, argon-filled, U=0.16, SHGC=0.47.
- **Air Sealing:** 0.4 ACH 50.
- **Ventilation:** HRV MERV 13 filter.
- **HVAC:** Air-to-water CO<sub>2</sub> heat pump for hot water and radiant floor heat, EF=4.50.
- **Lighting:** 100% LED lighting.
- **Appliances:** ENERGY STAR frig., dishwasher, clothes washer; HP dryer, induction range.
- **Solar:** 9.28-kW solar PV array.
- **Water Conservation:** Net-zero water: rainwater catchment + onsite waste treatment and infiltration, ultra low-flow fixtures, waterless composting toilets.
- **Energy Management System:** Web-based energy monitoring.
- **Other:** Extensive salvaged wood from local demolition, FSC certified countertops. Indoor solarium for edible plants + oxygen + greywater treatment + passive solar gain. Green roof.

