AquaZephyr
TREE at EcoVillage | Ithaca, NY | EcoVillagemithaca.org

“In most cases, we find building to zero net energy ready levels is not a significant added cost.”
Kendall Carpenter, builder, AquaZephyr LLC

PROJECT DATA

- Layout: 1 bdrm, 1 bath, 1 fl, 467 ft²
  4-story building with 15 apartments
  + 3,750 ft² shared space.
- Climate: IECC 6A, cold
- Completed: Fall 2015
- Category: multi-family

MODELED PERFORMANCE DATA

- HERS Index: without PV 58, with PV 26
- Projected Annual Energy Costs: without PV $1,050, with PV $583
- Projected Annual Energy Cost Savings: (vs home built to 2009 IECC) without PV $274, with PV $1,137
- Annual Energy Savings: without PV 1,525 kWh, with PV 6,314 kWh

KEY FEATURES

- Walls: 2x6, 16” o.c. dense-pack cellulose. Door and window headers have 2” polyisocyanurate. Sheathing is ½” coated OSB, then fire-rated exterior-grade fiber rock, then 2” foil-faced polyisocyanurate, all seams taped on all layers, then 1” furring strips, then fiber cement and wood siding. Total wall value is R-32.
- Roof: Metal 29-gauge over 2x4 purlins over engineered trusses.
- Attic: Vented with 18” blown cellulose for R-65. All penetrations caulked or foamed.
- Foundation: Slab-on-grade, 3” R-20 polyisocyanurate under slab plus slab edge.
- Windows: Triple-pane, U=0.17.
- Air Sealing: 6,134 ACH at 75 cfm.
- Ventilation: Continuous ERVs.
- HVAC: Electric resistance baseboard.
- Hot Water: Solar with 400-gal pre-heat tank with back-up electric heater.
- Lighting: 72% LED, 28% CFL, motion sensors.
- Appliances: ENERGY STAR dishwasher, refrigerator, HRVs, clothes washer, water heater, ceiling fans, light fixtures.
- Solar: 50-kW PV grid-tied; twelve 4x8 solar hot water collectors.
- Water Conservation: Low-flow toilets.
- Other: No-/low-VOC paints, LEED platinum, electric car charging station.

CONTACT

Kendall Carpenter
KendallMCarpenter@gmail.com
607-279-5559