Eco-Solar Home Tour 2024

Saturday 1 June, Noon to 5 pm

Langdale NZE Home

Tour Day: Sat 1 June
Address:
Hosts: Homeowners
Parking: On Street
Energuide: 0 GJ/year

Summary:

- This house may appear conventional, but we're aiming for NetZero using a variety of lower-cost strategies
- Strong focus on environmental health with non-toxic building materials and finishes wherever possible

Features to see and learn about:

- Above grade: ~R42 offset double-stud walls using dense-packed cellulose insulation; airtight @ 0.60 air changes per hour
- Attic: R80 fibreglass; basement: R36 cellulose offset double-stud walls and R20 under-slab spray-foam
- Dettson air-source heat pump/air conditioner with backup electric furnace
- A.O. Smith Voltex air-source heat pump hot water tank with 60" drain water heat recovery coil
- 14.6 kW grid-tied, battery-ready SolarEdge system with 55 panels, optimizers, and dual inverters
- Venmar energy-efficient heat-recovery ventilator
- LED lighting, Energy Star appliances, including induction cooktop
- Stain-resistant carpet and felt underlay free of widespread and toxic PFCs and flame-retardants
- Large triple-paned/low-e/south-facing windows w/ solar gain glazing
- Low flow showerheads and faucets, dual-flush toilets
- Hardie Plank cement/cellulose siding

Features that are not visible:

- No gas service to house, saving hundreds of dollars a year just in delivery and administration costs
- Minimal thermal bridging due to offset double-stud walls
- Mid-velocity heating is quiet and prevents temperature swings

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This home is on the tour because:
We want to showcase this as a typical suburban home that happens to be ultra-efficient, self-sustaining, and non-toxic. We also want to grow as much food ourselves as possible. We're on the tour to promote change by showing people that it's not difficult or too expensive if they have the will to do it!

Drone photo credit: Paul Swanson for Tim Querengesser and Avenue Magazine

Features that save energy:

- Air-tight building envelope
- R42 walls with minimal thermal bridging
- 14.6 kW solar array
- LED lighting
- Up to 80% heat recovery from interior air and water
- Triple-paned, argon-filled, low-e, Energy Star windows for solar heat gain and heat retention
- Energy Star appliances

Features that save water:

- Low-flow showers and faucets
- Dual-flush toilets
- Rain barrel

Special features:

- non-toxic interior and exterior finishes
- vegetable garden and food forest (a work in progress)