

39 VILLAGE HILL LANE

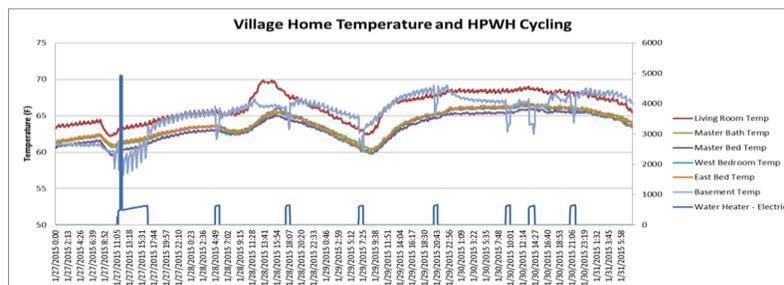


This demonstration home is the first in a planned neighborhood of super-insulated, high performance houses. The homes will be arrayed around a shared green space and gardens. They are accessed by a low traffic, pedestrian friendly street off the main road and are just a quick walk from Huntington Lower Village. These homes are designed and built with the intent of striking a balance between energy efficiency, low carbon footprint, accessibility and affordability in a Vermont village setting.

The home you are looking at is a 3 bedroom 2 bath 1894 square foot home (including half of the 896 square foot partially finished heated walkout basement) and an attached, shared garage with storage above. From your first glimpse at the house you'll see this is something special. Natural wood was harvested from the site to form the siding for the garage, the front porch timbers and timber detailing on the interior. The solar panels on the roof foreshadow the energy consciousness of the construction.

The front porch provides protection from the elements as you move from the garage to the accessible first floor living areas, bath and bedroom. The open layouts of the kitchen/dining/living areas speak to contemporary life styles and make the home seem larger than its footprint. The timbered ceiling and overlook in the dining room provide a cozy feeling of home. An open stair leads to the large lower level. The walkout windows and door give the space many possibilities for use, be it a home office, game room, exercise room or even just storage. The second floor features a pair of bedrooms with excellent views, a landing suitable for a desk, and a full bath.

The real story with this home is what's under the surfaces. From the beginning of the project the landowner has worked with Hillview Design Collaborative and Huntington Homes to create an aesthetically pleasing extremely energy efficient home. It's very well insulated and meticulously air sealed. Efficiency Vermont has blower-door tested the home and it has met Passive House Standards for air tightness. It's a Gold Tier High Performance Home with a Five Star Plus rating. The deep window sills give a feeling of comfort and also represent the thick walls filled with cellulose insulation. The primary source of heating and cooling(!) is a heat pump located on the lower level. Hot water is provided by a heat pump hot water heater. Fresh air is provided through Lunos active ventilation systems. These electrical loads will be almost entirely offset by the photovoltaic system on the roof over the course of a year.



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Thermal Envelope:

- **Slab Insulation**
 - Two layers of 3" XPS foam insulation, joints taped = R30
- **Basement Wall Insulation**
 - Nudura insulated concrete forms + 2" polyisocyanurate insulation = R33
- **Wall Insulation**
 - 12" thick staggered stud walls filled with dense-pack cellulose = R40
- **Roof Insulation**
 - Sloped: 18" double rafter system filled with dense-pack cellulose = R67.4
 - Flat: 22" loose fill cellulose = R80
- **Air Sealing**
 - Intello Plus intelligent high performance one-way vapor membrane for airtight construction

Equipment:

- **Heat Pump**
 - Mitsubishi Electric MSZ-FH15NA Split System Heat Pump
- **Domestic Hot Water**
 - State Premier Hybrid Electric hot water heater SPX50DHPT 100
- **Heat Recovery Ventilation System**
 - Lunos e², one pair on each above grade floor
- **Chimney installed for future wood stove**
 - 6" ID Excel Insulated Stainless Class A chimney pipe
- **Solar Panels**
 - Nominal 7290 watt array with expected 8748 kwh yearly output
 - 27 Suniva Opt270 modules with 27 Enphase M250 micro-inverters
 - Gateway Envoy Monitoring system

