

# *Sustainable South Shore e-News*

October 11, 2012

This Saturday you can tour homes and other buildings that have incorporated sustainable features to save money on utility bills, create comfortable living spaces and help the environment. The places are participating in the Northeast Sustainable Energy Association green open house tour. The tour is free. The NESEA web site has an easy-to-search guide with interesting information for all the buildings on the eight-state tour. ([www.nesea.org](http://www.nesea.org)) On Saturday you can see the buildings for yourself and talk directly to people about the process, who did the work, brands that were used and results.

There are five buildings to visit nearby. Three of the homes are participating in National Grid's Deep Energy Retrofit pilot program. The results of the Deep Energy Retrofit pilot will be evaluated for inclusion in National Grid's energy efficiency program in 2013. If Deep Energy Retrofit measures are approved for 2013, the application process will resume under the new program guidelines.

**11am-2pm, 124 Forest Ave, Cohasset.** The owners are doing a Deep Energy Retrofit for their 2400 square-foot home in stages. To date the windows have been replaced, new furnace, hot water heater, heat recovery ventilator, and air conditioning have been installed and basement walls and floors were insulated. The central courtyard has been beautifully enclosed with an insulating skylight system. Work this fall includes insulation of the above-ground exterior walls and roof.

**10am-3pm, Hall Family, Quincy.** The Hall family wanted the best for a home they have loved and owned for 18 years in a community where they wanted to stay and raise their 3 children. This Deep Energy Retrofit project began with achieving city approval to add a full new second floor to the home, a fully functioning attic for home offices, and a comprehensive basement renovation and new insulated radiant slab. The usable space has increased 34%. In addition to significantly reducing its energy use, the building is also supplying over 50% of its annual fuel needs with solar electric and solar thermal panels, fully exposed on the south side of this highly visible corner lot with exceptional solar exposure. Work has included spray foam open cell insulation, daylighting, solar domestic hot water, Energy Star appliances, rain barrels, recycled materials, and super insulated walls and roof. Get the Halls' address by signing in on the [www.nesea.org](http://www.nesea.org) open house tour web page.

**9-11am, 30 Watkins Street, Quincy.** This brand new for-sale 3-bedroom home overlooking Wollaston Beach and the Boston skyline is in final stages of completion. There is a lot you can learn here.

The entire house is wrapped with one inch of high insulation rigid foam board. The foam board, foam sealed at all edges, prevents heat loss through the studs and acts as the home's first layer of defense against air infiltration. On the inside, the walls are covered with cloth blankets stapled tightly to the framing. Then high density cellulose insulation is blown into the cavities. The small fibers fill every crack and fit together tightly, which creates a second air barrier and prevents the insulation from settling and losing effectiveness over time.

All roof slopes are insulated with high density cellulose insulation, which acts as a complete air barrier at the top of the house and a very effective thermal barrier. The floor is foamed tightly around the entire perimeter of the home to prevent unwanted air leakage. The floor joists are heavily insulated with conventional fiberglass batt insulation and the subfloor is glued and tongue and grooved to create an air seal. All window, door, wiring, pipe, and duct penetrations are tightly foamed to complete the home's air seal and prevent a fire from spreading.

Because the house is built so air tight to avoid energy loss, a heat recovery ventilator (HRV) removes stale indoor air and replaces it with fresh air from outside. In the process the HRV transfers heat from the outgoing indoor air stream to the incoming air stream. This very quiet system is used in place of conventional noisy bathroom fans, with a control on the wall to turn the central unit up to high when needed in the bathroom.

For hot water, the 98% efficient tankless condensing gas hot water heater is the most efficient hot water heating available. This tankless model has a small tank internal to it with its own circulation system so that the unit responds immediately. Hot water travels through a very short pipe from the water heater to a central manifold and then through a small diameter pipe to whichever faucet is calling for hot water. All this means less time to get hot water to the faucet, saving water and energy.

**10am-3pm, 225 Gun Hill Street, Milton.** You can watch the progress on the Deep Energy Retrofit of this 30 year old house at [www.miltongreenhome.com](http://www.miltongreenhome.com). The carefully sealed closed cell foam and rigid foam insulation (R52 roof, R39 wall, R21 foundation, R10 basement floor, R5 windows/doors) results in ultra low heat and air leakage. Other features include: 96% efficient condensing water heater, heat recovery ventilator, 90% LED/10% fluorescent lighting, high-efficiency appliances, condenser air conditioning unit, sealed combustion natural gas fireplace, whole home monitoring, zero-VOC (Volatile Organic Compound) paints, strand bamboo flooring and recycled stone countertops.

**10am-3pm, Planet Subaru Green Car Dealership, 596 Washington Street, Hanover.** Planet Subaru has the only Subaru showroom in the world powered entirely by the sun. Planet Subaru's PV system generates approximately 88,000 kWh annually, comparable to the energy required to power approximately eight average American homes. It provides almost half of the electricity used by the entire dealership building annually. Planet Subaru also has a five acre nature preserve on the property. The owners take Theodore Roosevelt's advice for care of the environment to heart: "Do what you can, with what you have, where you are." They would like to share what they learned.