



Up-Country Building Inspection NEWS

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What are Energy Efficient Mortgages?

An Energy Efficient Mortgage (EEM) recognizes a home's energy efficiency in the mortgage itself. EEMs give borrowers a way to finance cost-effective, energy-saving measures as part of a single mortgage which allows them to qualify for a larger loan amount and have a more energy-efficient and comfortable home.

An EEM is typically used to purchase a new home that is already energy efficient such as an ENERGY STAR qualified home. However, one type of EEM, called an Energy Improvement Mortgage (EIM) may be used to purchase an existing home that will have energy efficiency improvements made to it. EIMs allow borrowers to include the cost of energy-efficiency improvements to an existing home in the mortgage without increasing the down-payment. Money saved in utility bills will finance energy improvements.

To qualify for an EEM, a borrower typically has to have a Residential Energy Savings Network (RESNET) home energy rater conduct a home energy rating before financing is approved. This rating verifies that the home is energy-efficient (or will be when completed). Both EEMs and EIMs typically require a home energy rating to provide the lender with the estimated monthly energy savings and the value of the energy efficiency measures — known as the Energy Savings Value. EEMs and EIMs are supported by federally insured mortgage programs (FHA and VA) and the conventional secondary market (Fannie Mae and Freddie Mac).

Up-Country's certified RESNET raters can help you or your clients through the EEM process.

Check the Antifreeze in your heating system.

Up-Country inspectors have always emphasized the importance of having heating systems serviced regularly. This means having oil-fired boilers and furnaces cleaned and tuned annually, while gas-fired equipment is usually serviced once every two years.

Freezing can severely damage heating system components. Some boilers utilize a glycol solution for protection against prolonged power outages in the winter or for heating zones that are prone to freezing. Pipes in unoccupied buildings may freeze if boiler failure goes undetected. And drafty homes are more susceptible to distribution pipes freezing.

The addition of a glycol solution to the heating system results in a lower freezing point as well as a higher boiling point, just like in an automobile. The glycol solution must contain a corrosion inhibitor. Corrosion reduces the service life of the boiler and its components. Corrosion results when the inhibitor is either absent or has become degraded over time or due to improper pH of the antifreeze.

How do you know if your boiler contains antifreeze? The service record should state if the system contains glycol. Another indication may be the presence of green corrosion on piping or fittings.

The antifreeze should be checked annually to determine its concentration and pH. While properly maintained boilers with high quality antifreeze may last for 20 years, improper maintenance or contamination will result in a drastically shorter service life. Service may include simply adding more glycol or inhibitor solution to the system, adjusting the pH, or completely flushing the system and replacing of the water/glycol mixture. Most importantly, if your boiler contains antifreeze, be sure to have it checked annually so that you can count on your heating system when you need it most!

Your House 101 Where does my hot water come from?

When Up-Country conducts a home inspection, we are not just looking for defects but also try to educate the potential home owner about how the house works. We may, for instance, show a client how hot water is made and the condition of the home's water heater.

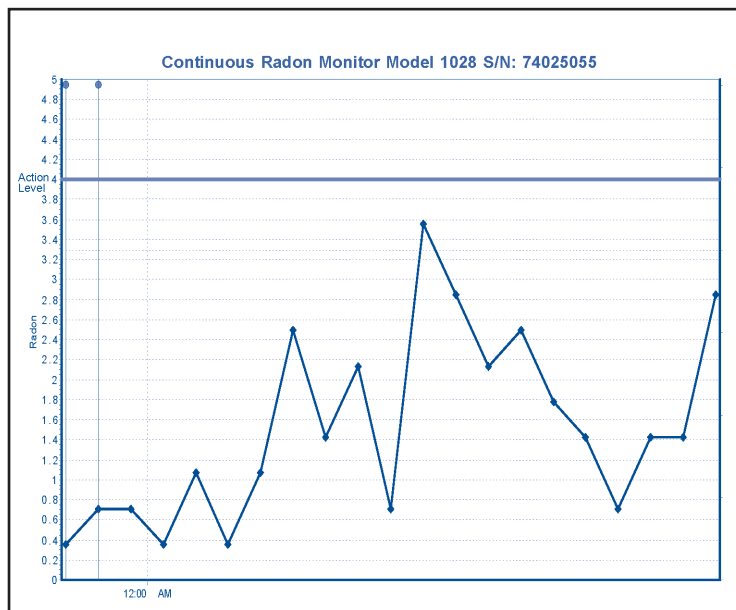
The most common type of water heater we find is a boiler with a tankless coil. A coil of tubing filled with water is immersed in the boiler's water. In a tankless coil steam system, the water is heated to 212°F. The water inside the tubing may be nearly as hot as the

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New Equipment Corner

Continuous Radon Monitors

In an effort to increase our level of service, Up-Country has invested in several continuous radon monitors (CRMs). CRMs not only provide an average radon concentration, but also hourly values over the course of the test. Multiple data points can then be compared to house conditions, barometric pressure, temperature and other parameters that can influence radon concentrations. CRMs will allow us to report radon levels at the conclusion of the test **without the usual wait associated with other radon testing methods.** The devices we are utilizing even have motion sensors to detect any funny business! We look forward to utilizing CRMs to provide quicker reporting.





Winterbird's Houses

During the course of our home inspections, we will often ask our client if they are going to reside in the house year 'round. Some of our more sensible clients leave Maine in the winter for fairer climates. A vacant house in the winter may suffer issues that range from a minor nuisance to catastrophic.

Minor nuisances include small uninvited guests such as mice. Mice may enter a house through holes smaller than a dime. Entry points include gaps in chimney flashings, utility penetrations for power, water, sewer, etc., and gaps in the foundation and around doors. Sealing these entry points should include wire mesh thick enough that the mice cannot chew through, and an air sealer such as foam insulation. Because the holes are so small, they may be difficult to find. An energy audit utilizing a blower door and infrared camera will find many holes.

Water problems may lead to catastrophic damage, especially in a vacant house. A typical house has many potential sources of water damage: broken plumbing; leaks through the roof, windows, doors, or foundation and condensation. Routine maintenance should prevent leaks from exterior above ground sources. Shutting off the water supply's main valve before leaving can prevent leaks from broken pipes. The valve is generally located near the water meter or expansion tank. Older homes may have a gate valve with a circular handle. We often find gate valves frozen and difficult to use. Consider installing a ball valve with a lever handle. It is easier to use and obvious when the valve is closed - the lever will be perpendicular to the pipe.

If water enters through the foundation, sump pumps are used to keep the basement dryer. We often recommend a back-up battery energy supply to keep the pumps working during power outages common during our winters. Installing a generator has become more common in recent years.

Winterbirds have a decision to make about whether to heat their house during their absence. Turning the heat off may lead to shrinkage cracks in the walls and ceilings, and to condensation on exterior walls and ceilings. The house may also take on a musty smell. But even if the heat is left on at a minimal temperature, what happens if the heating system fails? Water left in a hot water system may freeze. Although some hot water systems are filled with antifreeze to prevent damage (See *Check Your Antifreeze* article), we often recommend Winterbirds find a way of alerting someone when the temperature falls below a set level, typically about 40 or 45 degrees. Alert systems can range from a thermostatically-controlled light in a window (often an odd color such as red or green) to alert a neighbor, to a more involved temperature-actuated sensor that is part of a security system and monitored by a security company.

A few simple measures will make the Winterbird's house more welcoming when they return to "The Way Life Should Be".

Where does my hot water come from? *Continued fom front*

boiler's water and would cause injury to the user if it were not mixed with cooler water. So the water coming out of the tubing is combined with cold water in a mixing or tempering valve to bring the domestic hot water to a safe temperature which is between 110 to 120°F.

After a while, the tankless coil system becomes less efficient. Scale accumulates on the coil which insulates it from the boiler's hot water. When this happens, the hot water temperature at the tap may reach a peak and drop 10 to 30 °F and the coil tubing and/or the tempering valve must be replaced. Even when new, a tankless coil system can only produce about three gallons per minute. Running the washing machine and shower simultaneously may result in cooler than expected hot water. An option is an indirect water heater which avoids some of the short comings of a tankless coil. It has a storage tank that is like a separate zone off the boiler. The swings in hot water temperature that are typical of a tankless coil are avoided. We often see an indirect water heater that has replaced a tankless coil system. Although both systems require the boiler to operate year round, an indirect system may use less fuel. However it may take a long time to heat up if the boiler has been shut down for a long period. Tank style electric, gas and oil-fired water heaters will heat up faster than indirect systems, but because they cost more to operate they are becoming less common.

The quickest way to generate hot water is with an on-demand unit. These units may utilize natural gas, propane or electricity to heat water. Because hot water is made only when needed, on-demand water heaters use less energy because no energy is required to keep stored water hot. Another big advantage is that they can be installed near the hot water demand point. In a large house with widely scattered bathrooms, kitchens and laundries, a properly located on-demand system can eliminate the annoying and wasteful delay.

All water heaters should be checked periodically for corrosion, scaling or leaking. Systems utilizing combustion need to be cleaned and serviced at the manufacturer's recommended intervals. Replacement should be expected every 10 to 15 years.

Trees and shrubs need to be prepared for the winter months, especially if there is little snow cover. They suffer when the amount of water lost exceeds the amount picked up by the roots. When there is little snow cover, soil freezes more deeply making moisture unavailable to the roots. Newly planted shrubs are most in danger of dying the following spring.

With good snow cover, the roots are insulated and the snow cover provides the needed moisture as it melts on the warmer winter days. Most people put away the hose in the fall and never think about watering the trees and shrubs. But periodic watering during the fall and early winter before the ground is frozen and when the temperature is above 40 degrees can help the plants survive the winter. Trees and shrubs benefit most from a slow deep watering, so take the nozzle off the hose and leave the end of the hose on the ground with a slow trickle for an hour or so. There is evidence that a ring of mulch around the base of trees and shrubs helps conserve soil moisture and helps prevent deep freezing of the soil. Winter is also a good time to prune all dead and diseased branches.

One Call

At Up-Country Building Inspectors, one call is all that is needed to schedule

- Home Inspections
- Septic Inspections with fiber optic camera
- Well Recharge Testing with graphic report
- Radon Air
- Radon Water
- Insect Infestation
- Water Quality
- Mold (visual)
- Investigations and problem solving
- Energy Audits with blower door and infrared camera

To speak with our staff call 800-244-9876 between 8am to 5pm, Monday through Friday.