Green Sense 01/19/2014

**Mini Heating Time?**

Do you have a room you'd like to be cozier this winter? (Or, thinking ahead, cooler next summer)? A number of companies are offering something called 'mini-splits'. These are mini-split-system heat pumps and an energy saver article by the US Department of Energy (search at http://energy.gov/) notes that they make good retrofit add-ons to houses with "non-ducted" heating systems, such as hot water heat (hydronic) or steam radiators, radiant panels, and space heaters (wood, kerosene, propane).

These wall-mounted units can also be a good choice in a home addition where extending or installing heating or cooling ductwork is not feasible. These little units can also work in very efficient new homes that require only a small space conditioning system. For best results, it's recommended to choose an ENERGY STAR® compliant unit and hire an installer familiar with the product and its installation.

Like standard air-source heat pumps, mini splits have two main components -- an outdoor compressor/condenser and an indoor air-handling unit. A conduit containing the power cable, refrigerant tubing, suction tubing, and a condensate drain, links the outdoor and indoor units.

The main advantages of mini splits are their small size and flexibility for heating and cooling individual rooms ("zoning"). The size of the unit is based on the space you are looking to heat and/or cool. Some models have as many as four indoor air-handling units (for four zones or rooms) connected to one outdoor unit.

Ductless mini-split systems are easier to install than some other types of heating and/or cooling units. For example, the hook-up between the outdoor and indoor parts of the unit generally requires only a three-inch hole through a wall for the conduit. You can get a variety of lengths of connecting conduits, and, if necessary, you can locate the outdoor unit as far away as 50 feet from the indoor evaporator. This makes it possible to heat or cool a room on the front side of a house, but locate the compressor in a preferable place on the outside of the building.

Mini splits have no ducts, so they avoid the energy losses associated with the ductwork of central forced air systems. According to Energy.gov, duct losses can account for more than 30% of energy consumption for space conditioning, especially if the ducts are in an unconditioned space such as an attic or unfinished basement.

In comparison to other add-on systems, because they are small and compact, mini splits also offer more interior design flexibility. The indoor air handlers can be suspended from a ceiling, or hung on a wall and floor-standing models are also available. Most indoor units are about seven inches deep and have sleek, high tech-looking jackets. Many also offer a remote control to make it easier to turn the system on and off no matter where it is hung.

Energy.gov mentions a few disadvantages to these units. The cost of installing mini splits can be higher than some systems. The unit must be correctly sized and put in the best location for maximum savings. Oversized or incorrectly located air handlers can result in short cycling, which wastes energy and does not provide proper temperature or humidity control. Too large a system is more expensive not only to buy but also to operate, although this is true for other home or room heating and air conditioning options.

Some people may not like the appearance of the indoor part of the system. While less obtrusive than a window room air conditioner, these units don't have the built-in look of a central heating or cooling system. There must also be a place to drain condensate water near the outdoor part of the unit.

Energy.gov notes that qualified installers and service people for mini splits may not be easy to find, but the Reading Municipal Light Department's home energy audit company provides these units. Contact our RMLD if you want more information on their program (see www.RMLD.com). (For the full information on this technology go to http://energy.gov/energysaver/articles/ductless-mini-split-heat-pumps).

A Column by Reading Climate Committee member Gina Snyder