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Forced Air Heating Systems

Forced air heating and cooling systems are what most folks in the NW are familiar with. Typically a forced air heating system consists of a fossil fuel furnace (gas, oil, or propane), a duct system to convey heated or cooled air throughout the home and a thermostat located near the center of the home. Any of these furnaces can have air conditioning installed for home cooling. More advanced systems can consist of air to air heat pumps which extract heat from the atmosphere and through a refrigeration process then transfer the heat into the home via air handler or furnace. Heat pumps also have the capacity to reverse the process and provide central air conditioning.

For many years natural gas was so affordable that heat pumps were not economically viable because of the added expense of the heat pump itself and their inefficiency operating at low outside temperatures. A better investment was a natural gas furnace with air conditioning. Now we have reached the crossroad where fossil fuels are diminishing, we have a responsibility to reduce our carbon footprint and technology has caught up with our demand for more efficient and environmentally safe heating and cooling equipment.

Furnaces

For a long time, fossil fuel furnaces provided us with all of its heat producing capacity regardless of what the actual heat demand was. A typical home might require 80,000 Btu's of heat to maintain a 70 degree inside temperature when the outside temperature is 30 degrees. This would require a 100,000 Btu furnace because they were only 80% efficient. Twenty percent of every dollar spent on heating went up the flue or chimney. But what happens when it's 50 degrees outside? You would still get that 80,000 Btu's of heat and suffer in an uncomfortable environment.

Next came two stage furnaces. These furnaces would provide roughly 60% of their heating capacity (48,000 Btu's with an 80,000 Btu furnace) when activated by the thermostat. This is good technology. We're not wasting 32,000 Btu's of un-necessary heat and we're not paying for it either. But at 80% efficiency, we are still wasting 20 cents of every dollar spent on heating.

Now we have solved these problems in conventional forced heating systems. We have furnaces that are up to 96% efficient in converting fuel to heat. That's a 16 cent saving on every heating dollar spent. We also have furnaces that operate in three stages (and one model in 65 stages!) to provide you with the exact amount of heat you need in relation to the outdoor temperature. We can now save our clients money on their energy bill and make their homes more comfortable while reducing their impact on the environment. And that is just the starting point in environmentally responsible heating and cooling systems in relation to forced air. Yes—forced air!