

# Heating System Comparison Guide

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Heating in a northern climate is the largest expense of the yearly operating cost of a home or business. Below are a few factors that should be considered when comparing heating systems:

**Comfort**  
**Health**  
**Safety**  
**Install Cost**

**Operating Cost**  
**Life Span**  
**Maintenance**  
**Payback**

**Track Record**  
**Aesthetics**  
**Sound**  
**Space**

## **Comfort – Does the heating system truly create a warm and comfortable space ?**

“All” forced air systems including ground and air source heat pumps, gas, fuel oil, propane, corn, wood, electric forced air and baseboard systems focus on heating the air and not people. Air is not only an inefficient medium for heating a space, but it also contributes to dry eyes, nose, throats and skin. Just as the sun naturally warms the earth, the SmartRooms Radiant Heating Systems warm people and objects first creating a natural and comfortable environment.

## **Health – Does the system fundamentally lend itself to a healthy atmosphere ?**

Indoor air pollution due to microbiological growths such as mold, spores, dust, pollen, hair, skin, etc. distributed into the space through air ducts, registers and grilles by air handling units is a major issue for forced air heating systems. Some of these contaminants may cause allergic reactions or other symptoms in people if they are exposed to them. By not requiring traditional distribution equipment, the SmartRooms Heating Systems create a truly natural and healthy living space.

## **Safety – Is the heating system safe ?**

Some heating systems have high surface temperatures dangerous to the touch or utilize gas as a power source, which includes the possible hazards of carbon monoxide and explosion. The SmartRooms Heating systems use electricity and are completely concealed with no moving parts and low surface temperatures.

## **Install Cost - What is the “Total” cost of the heating system ?**

Ground source and hydronic (Tubing) systems commonly do “Not” include the costs of the entire heating system. Sometimes the costs are included or hidden in other areas of the construction process. Be sure to find out how much for items like: boilers, manifolds, zone valves, thermostats, styrofoam insulation, excavation, drilling, trenching, labor, etc. Ask enough questions to be confident that you have “all” the information and costs. **Get it in writing!**

## **Operating Costs - Ask for examples of actual operating costs, references and case studies.**

Do not rely on any manufacturers small print propaganda. Test lab costs and efficiencies can be drastically different than “Actual” real world efficiencies and costs. Ask for examples of actual operating costs of heating systems with temperatures conducive to the area in which it is being installed. **Get it in writing!**

## **Lifespan/Maintenance – Ask about the life expectancy and maintenance of the heating system.**

All heating systems with the exception of the SmartRooms Heating Systems at a minimum will require yearly maintenance and will all ultimately need partial or total replacement. Depending on the system, it may require replacement 2 - 4 times in a 20 year period. Ask about yearly costs relating to start up, maintenance, duct cleaning as well as costs to repair and replace boilers, circulating pumps, condensing units, fans, air handlers, A-Coils, heating elements, zone valves or any other distribution equipment involving moving parts. **Get it in writing!**

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## **Payback – Does it make “Common Sense” or “Nonsense”. Will it “Actually” be worth it ?**

Decide what you want for comfort and health and then factor in the install, operating, maintenance, repair, and replacement costs associated with the heating system to determine which system is best for your application. For example - Some systems like baseboards or forced air systems can be less expensive to install, but cost exponentially more to operate and maintain and are not comfortable, healthy or even safe. More expensive systems like Hydronic (Tubing), Ground or Air Source Heat Pump systems claim low operating costs, but they normally compare their operating costs to baseboards and inefficient forced air systems using propane or expensive electric rates.

When you compare a geo/ground source system to a SmartRooms heating system, the difference in actual operating cost is sometimes nonexistent. However, the SmartRooms system is considerably less expensive to install, more comfortable and healthy with no maintenance repair or replacement of expensive condensing or distribution equipment.

## **Track Record and Experience - Technology, History and Credentials?**

Any heating system installed improperly will not operate properly or efficiently. Ask not only about the track record and success of the technology, but also for the credentials of the installer and the manufacturer. For over 25 years with millions of installs worldwide, SmartRooms systems have been successfully installed with no defects or failures.

## **Aesthetics / Sound - How does it look and sound?**

The SmartRooms systems are completely concealed and quiet with no moving parts allowing for complete decorating freedom. No rush of air, fan motor noise, ticking of baseboards, circulating pumps, registers, vents, etc. that are common with all other types of heating systems.

## **Space – How much space will it require?**

Hydronic (tubing), ground source heat pumps and forced air systems take up a considerable amount of space in the mechanical room. A SmartRooms system requires a minimal amount of space in a mechanical room with a control center that's only 16" x 24".

## **Cooling - What about cooling ?**

In our climate, we typically heat 10x more than we cool so heating is the biggest operating expense of homes and businesses. However, air conditioning is still a necessity for most buildings. If physics tells us that cool air falls, then a properly installed cooling system should have the cool air introduced into a room from an elevated position allowing the cool air to gently and more efficiently fall down to the people in the space. You can install a traditional air conditioning system with elevated ductwork, but you would still have the air quality issues mentioned earlier. However, if you decide to handle it in this manner “and” a SmartRooms heating System is installed, you can focus the ductwork towards the core of the home instead of running the ductwork to the outside walls.

Geo/ground source heat pumps claim the lowest cooling costs in the industry, but as previously mentioned in northern climates we typically heat 10x more than we cool so the cooling expense alone is not worth the high upfront costs of ground source system not to mention the life expectancy, maintenance or replacement costs of their systems.

Other good cooling options would be a high-velocity ceiling system installed in the attic or a mini-split ductless system that offer cooling without any ductwork. A very allergy-free combination for a SmartRooms Heating System.

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