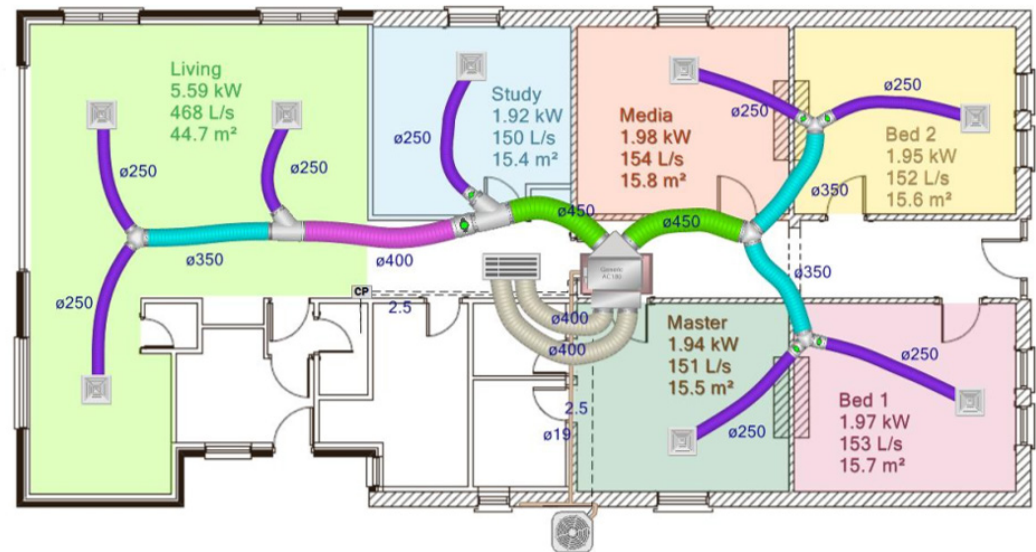


Heat pumps have become the new standard in HVAC heating & cooling systems because of they're considerably higher operating efficiencies vs. furnaces, boilers/hydronic, and standard electric heaters. Air to air heat pumps is typically the most common due to cost, and they function more efficiently by transferring warm/cool air between indoor and outdoor environments.

Depending on the price tier a customer is willing to pay and the features and benefits of the particular heat pump (in many cases because of price point), the heat pump can struggle to produce enough warm air during the colder stretches of winter. Electric heaters can still have a very important role to play in both supplemental interior heat comfort and providing an emergency backup heat source. No matter the type of primary heating system, it can be a challenge to get comfort heat uniformly spread across an entire footprint. Strategically placed electric heaters can help remedy this challenge.

Inherently, almost all interior heat pump designs cannot cover ALL the areas to be heated and rely on natural convection to get warmer air into those places.

Strategically placed **ELECTRIC HEATERS** can optimize comfort and also provide necessary emergency heat back up or run them during the colder months to ensure overall system efficiency.



Sample 2D air to air heat pump floor plan

Utilizing supplemental electric heating can also help offset high kWh/electrical usage during colder days. This sample heat pump layout is designed at over 15kW if running flat out in all rooms. If we sized this for standard electric heat as the primary heat source, the calculation is 1 watt per cubic ft., or 10w/sq. ft. to maintain 70F inside at 0F outside in a well insulated space. By keeping your electric heaters working at a supplemental set point, you diminish the need for the heat pump to work harder and potentially decrease its "normal" efficiencies. Electric heaters are low cost and easy to install. There is a wide range of supplemental product choices to optimize comfort, efficiency on cold days, and provide emergency back up heat.

There's a wide variety of product recommendations. Here's a few ...



Qmark/Berko Artisan Smart Series

- Up to 4.8kW output
- 4:1 turndown
- 99F max temp.
- Good for large rooms, finished basements



Qmark/Berko HT Smart Series

- Up to 2kW output
- 4:1 turndown
- 99F max temp.
- Very quiet, great for most applications.



Qmark/Berko CWA SRHA Series

- Small and compact
- These heater aren't the quietest, but are capable of higher kW outputs



Qmark/Berko GFR Series

- Up to 1.5kW output
- Small footprint and operate quietly
- Perfect for bathrooms, foyers, and bedrooms



Qmark/Berko COS-E Series Economical

- Up to 2kW output
- Small footprint and operate quietly
- Perfect for bathrooms, foyers, and bedrooms

Electric baseboard heaters, convectors, storage heaters, and radiant panels offer quiet, reliable, and sometimes invisible heat options. These products use natural convection to move heat through spaces, and because they have no fans or moving parts, they are literally maintenance free.



Qmark/Berko HBB Series Baseboard

- Up to 2.5kW output
- Premium quality
- Use with line or low-voltage thermostat



Qmark/Berko 2500 Series Baseboard

- Economical and reliable
- 2' - 8'L, 300-2500w output
- Use with line or low-voltage thermostat



Elnur Storage Heater Convactor

- "Stores" heat energy and re-releases during daytime hours
- 450w - 2.6kW range, internal t-stat



Qmark/Berko CP Series

- Radiant ceiling panel heater
- 2'x2' or 2'x4' surface or recessed mounted.
- Up to 750w output, mountable up to 11'H
- Silent, no maintenance



Qmark/Berko RCC Series

- Radiant "cove heater"
- Radiant bar heater mounted 7'-11'H
- Fixture length from 3'-11'
- Wattage output; 450 - 1.8kW

Electric wall heaters are a very practical and easy-to-install supplemental option. There is only 1 wiring connection to power, the thermostats are internal, and fan-forced air will heat the room up faster than natural convection.



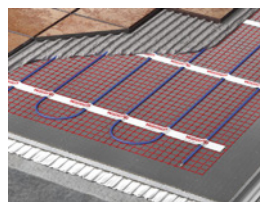
STEP Warmfloor

- Low-voltage floor warming system
- Solar system compatible DC voltage
- Customizable wattage output; can be used under trusses
- Easy install



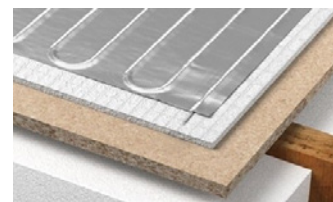
WarmUp DCM Pro

- Radiant floor warming system
- Easy install with insulative and protective membrane
- 20-year warranty



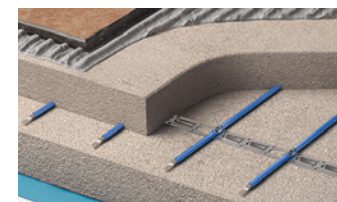
WarmUp Sticky Mat

- Radiant floor warming, self-adhesive for fast, accurate install
- Easy, economical
- Zero maintenance system



WarmUp Foil Backer

- Radiant floor warming system, ideal for under carpets or floating floor installation
- Easy, straight-forward install; zero maintenance



WarmUp In-Slab

- Heating system
- Buried 2" depth in concrete to provide a permanent floor warming solution for patios, pole barns, basements, etc.