



**DESIGN YOUR COMFORT**

**PERFECT TEMP**

GEOTHERMAL • HEATING • COOLING

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# Greetings from Perfect Temp!

We are a provider of custom heating, venting, air conditioning, and geothermal products for your home. We have energy efficient, comfortable solutions to fit every home and every budget!



# About Perfect Temp

Established in 2006 in Loveland, Colorado, Perfect Temp is the leading geothermal, heating, and cooling firm in Northern Colorado. We are experts in high efficiency energy solutions, offering a wide range of products and services with your comfort, your budget, and the environment in mind.

Our passion is providing clients with the most energy-efficient heating and cooling systems available—reducing the use of fossil fuels, supporting the adoption of renewable resources, and caring for the health of our planet.

## Our Premier Brands

### GEOHERMALHEAT PUMPS



### AIR SOURCE HEAT PUMPS



### CONVENTIONAL FURNACE AND AIR CONDITIONERS



### INDOOR AIR QUALITY AND ACCESSORIES





Building your dream home has so many components and can be overwhelming. We've prepared this guide to inform you of your HVAC options so you can design the Perfect System for you.



## How To Use This Guide

There are three main steps in designing your Perfect System, we'll guide you through each step:

- STEP ONE: Choose your heat distribution
- STEP TWO: Choose your heat source
- STEP THREE: Choose your Indoor Air Quality (IAQ) and other Accessories

Let us know which options you would like to explore, and we will work up an initial proposal.

# DESIGN YOUR COMFORT

CLIENT  
PROJECT

PHONE NUMBER  
EMAIL

1

## CHOOSE YOUR HEAT DISTRIBUTION

- Infloor radiant heat with optional ducted cooling
- Ducted heating and cooling
- Mini-splits heating and cooling (Requires air source heat pump)

2

## CHOOSE YOUR ENERGY SOURCE

- Geothermal heat pump (ground source heat pump)
- Air source heat pump
- Natural gas with electric air conditioner

3

## CHOOSE YOUR IAQ AND ACCESSORIES

- Desuperheater (only with ground source heat pump)
- Tankless Water Heater
- Electronic Air Cleaner
- Zoning
- Humidifier
- Energy Recovery Ventilator
- Smart Thermostat
- Vent Kitchen Hood (and make up air, if required)

# STEP ONE: CHOOSE YOUR HEAT DISTRIBUTION

## OPTION ONE: IN-FLOOR RADIANT HEAT WITH OPTIONAL DUCTED COOLING



Tubing installed in the slab (for basement) or under a layer of gypcrete is connected to manifolds that pump warm water through the system.

### PROS OF IN-FLOOR RADIANT HEAT

- Ultimate heating comfort
- No air flow noise
- Consistent temperature provided all day long

### CONS OF IN-FLOOR RADIANT HEAT

- Cost is approximately double of ducted heating
- Duct work will still need to be installed for cooling (radiant cooling is not available)

### DESIGN CONSIDERATIONS FOR IN-FLOOR RADIANT HEAT

- A gypcrete contractor should be consulted, and costs factored in
- Gypcrete will increase the height of the floors, this should be considered in the early design stages so countertops, doors, appliances are not impacted
- Appropriate space should be provided in the mechanical room for manifolds
- Radiant cooling is not recommended due to the potential for mold issues to condensation with limited effectiveness

### GOOD FIT RECOMMENDATION: COMFORT IS HIGH PRIORITY

This is a great option for people building a new home. The radiant floor option adds to the cost but those who choose this option do not regret it. Unlike a forced air system, it takes time for the system to warm up the home so it's best to keep the thermostat at a consistent setting all day.

# STEP ONE: CHOOSE YOUR HEAT DISTRIBUTION

## OPTION TWO: DUCTED HEAT AND COOLING



Duct work is installed as needed in attics, ceilings and walls to distribute heated air in the winter and cooled air in the summer.

### PROS OF DUCTED HEAT

- Lowest cost option
- Newer, 2-stage units minimize air noise

### CONS OF DUCTED HEAT

- Air can be dry, humidifier is recommended
- Air noise from duct work is to be expected

### DESIGN CONSIDERATIONS FOR DUCTED HEAT

- Soffits and chases need to be factored in for adequate heat distribution

### GOOD FIT RECOMMENDATION: BUDGET IS HIGH PRIORITY

When the cost of in-floor radiant heat is not in the budget, this is the option to choose

#### WHY DO COOLING?

Cooling is not necessary in all Colorado homes and some people just don't want it. However, it may not be possible or may be very costly to add cooling once the home is complete. We encourage all clients to consider how future homeowners will react should the home resold.

Adding cooling now may be an investment that pays off in future years.

# STEP ONE: CHOOSE YOUR HEAT DISTRIBUTION

## OPTION THREE: MINI-SPLITS HEATING AND COOLING



Wall or ceiling cassettes are installed in each conditioned area. These cassettes are connected to an outdoor air source heat pump to provide both heating and cooling.

### PROS OF MINI-SPLITS

- Great option when duct work cannot be ran
- Each space can be set a different temperature
- Uses 100% electricty, no fossil fuels
- Efficient and quiet

### CONS OF MINI-SPLITS

- Cassettes impact room aesthetics
- Outdoor unit will make some noise when running
- Outdoor is exposed to the elements

### GOOD FIT RECOMMENDATION: COMFORT IS HIGH PRIORITY

Mini-splits are great option for even the most unique situations, particularly when it is not practical to run duct work through an existing home or if a single room/ area is need of additional heating or cooling.

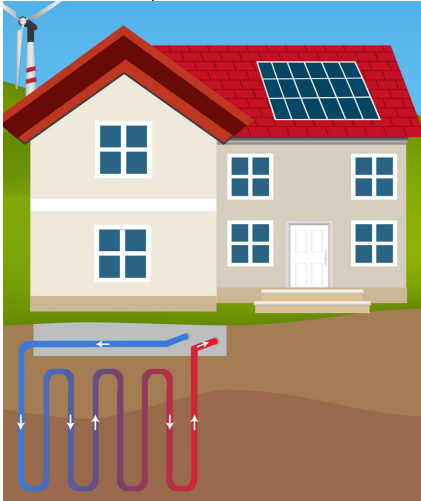
### MINI-SPLIT REBATES:

- PVREA Electric Customers: up to \$650 per ton rebate
- Xcel Electric Customers: up to \$500 per ton rebate



# STEP TWO: CHOOSE YOUR ENERGY SOURCE

## OPTION ONE: GEOTHERMAL HEAT PUMP



The most energy efficient heating and cooling system available. A single geothermal unit (about the size of a standard furnace) will keep your home warm in winter and cool in the summer. The idea behind geothermal energy is simple. The earth stores a vast reservoir of thermal energy which is constantly replenished by the sun. Geothermal systems transfer heat from the earth to the home in the winter and from the home back to the earth in the summer using ground loop installed 200-300 feet deep. For more information on geothermal, check out our website: [www.perfecttempvac.com](http://www.perfecttempvac.com).

### PROS OF GEOTHERMAL HP

- Lowest system lifetime cost
- Net Zero component
- Most efficient technology available, 400% efficient
- Does not use fossil fuel, no carbon monoxide concerns
- Save up to 70% on utility bills

### CONS OF GEOTHERMAL HP

- Higher upfront investment cost, typical investment payback is 7 years
- May incur landscape costs for existing homes

### DESIGN CONSIDERATIONS FOR GEOTHERMAL HEAT PUMPS

- Loopfield contractor should be consulted and cost factored in
- Geothermal heat pumps work most efficiently maintaining temperature, thermostat should not be set back at night or during the day for peak efficiency

### WARRANTY AND SYSTEM LIFE:

- Geothermal Unit: 10-year parts warranty / Typical life is 20+ years
- Ground Loop: 50-year warranty/ Typical life is 100+ years

### TAX CREDITS AND REBATES:

- Federal Tax Credit: 26% refundable tax credit (after 2022 goes to 23% tax credit)
- PVREA Electric Customers: \$500 per ton rebate
- Xcel Electric Customers: \$300 per ton rebate, max \$2,000 per customer

# STEP TWO: CHOOSE YOUR ENERGY SOURCE

## OPTION TWO: AIR SOURCE HEAT PUMP



Air Source Heat Pumps are *heat movers*. In winter, they extract heat from outside and circulate it inside your home. In the summer, heat pumps extract heat from your home and move it outside, leaving cool air behind. For more information on air source heat pumps, check out our website: [www.perfecttempvac.com](http://www.perfecttempvac.com).

### PROS OF DUCTED HEAT

- Lower initial investment compared to geothermal
- No gas bill, no fossil fuels
- Up to 20 SEER units
- Great option when no gas is available

### CONS OF DUCTED HEAT

- Outdoor unit will make some noise when running
- Back up heat comes on more frequently compared to ground source heat pump

### DESIGN CONSIDERATIONS FOR AIR SOURCE HEAT PUMP

- An outdoor space will need to be provided for the heat pump

### GOOD FIT RECOMMENDATION: BALANCE BETWEEN COST AND COMFORT IS A PRIORITY

Air source heat pumps are a great option when a geothermal heat pump is not in the budget or land is very limited. Today's ASHPs work efficiently even in cold Colorado winters. Using ASHP with in-floor heating is a relatively new technology that is now available.

### WARRANTY AND SYSTEM LIFE:

- 5-year parts warranty
- Typical life is 15+ years

### REBATES:

- PVREA Electric Customers: \$300 per ton rebate
- Xcel Electric Customers: \$800 per customer, flat amount

# STEP TWO: CHOOSE YOUR ENERGY SOURCE

## OPTION THREE: HIGH EFFICIENCY GAS FURNACE AND AIR CONDITIONER

Conventional, high efficiency gas furnace and air conditioner is a great option when budget is a factor.

### PROS OF FURNACE AND A/C

- Lowest cost option
- Simple install/ swap out of existing equipment

### CONS OF FURNACE AND A/C

- Most costly system to operate
- Outdoor unit will make some noise when running
- Carbon monoxide concerns

### GOOD FIT RECOMMENDATION: BUDGET IS PRIORITY

If considering this option, explore pairing a high efficiency furnace with an Air Source Heat Pump in place of the air conditioner. Often the cost difference is minimal compared to the energy savings.

### WARRANTY AND SYSTEM LIFE:

- 5-year parts warranty
- Typical life is 15+ years

### REBATES:

- PVREA Electric Customers: None
- Xcel Electric Customers: \$200, flat for high efficiency air conditioner
- Xcel Gas Customers: \$300, flat for high efficiency furnace





# STEP THREE: CHOOSE YOUR ACCESSORIES



## DESUPERHEATER FOR GEOTHERMAL SYSTEM

Have your geothermal system to create hot water for your domestic needs! Excess heat created from operating your geothermal unit is transferred to your desuperheater and used to heat your water up to 120 degrees, in a cost-effective way. This option includes an electric water heater to supplement the desuperheater when needed.



## ON DEMAND WATER HEATER

Shower as long as you'd like with endless domestic hot water, while keeping your utility bills low with a high efficiency tankless water heater. On demand water heaters are available for use with gas or electricity. This option pairs excellently with a desuperheater on a geothermal system.

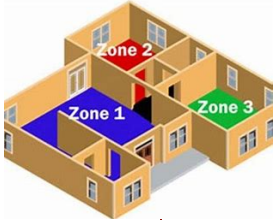


## ELECTRONIC AIR CLEANER

Keep the air in your home fresh and clean with an electronic air cleaner. Greater than 90% of airborne particulates can be removed from the air your home, by naturally deactivating viruses and bacteria, effectively neutralizing odors, while driving aerosols and particulates out of the breathing zone.

# STEP THREE: CHOOSE YOUR ACCESSORIES (continued)

## ZONING



Zoning your home allows you to regulate the energy use in less frequently used areas in your home by setting them to warmer temperatures in the summer and cooler temperatures in the winter. In addition to adding comfort to your home, zoning help you save on your heating and cooling bills.

## STEAM HUMIDIFIER



Steam humidifiers are the most effective way to add humidity in Colorado's dry air. Humidifiers help reduce the incidence of respiratory infections and symptoms related to allergies and asthma. Humidity adds comfort to your home and helps preserve the natural beauty of your wood floors, cabinetry and furnishings.

## ENERGY RECOVERY VENTILATOR



Optimize your new home for even greater comfort and performance. Energy Recovery Systems (ERVs) are air exchange systems for new homes that enhance indoor air quality and help reduce heating costs. They supply fresh air to today's tightly sealed homes and exhaust stale air while retaining humidity and recovering heat from the exhausted air in the process.

## SMART THERMOSTAT



Control your thermostat by voice or through your phone. Whether at home or on the go, your comfort is at your fingertips. Easy to use Smart Thermostats gives you control and peace of mind.

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