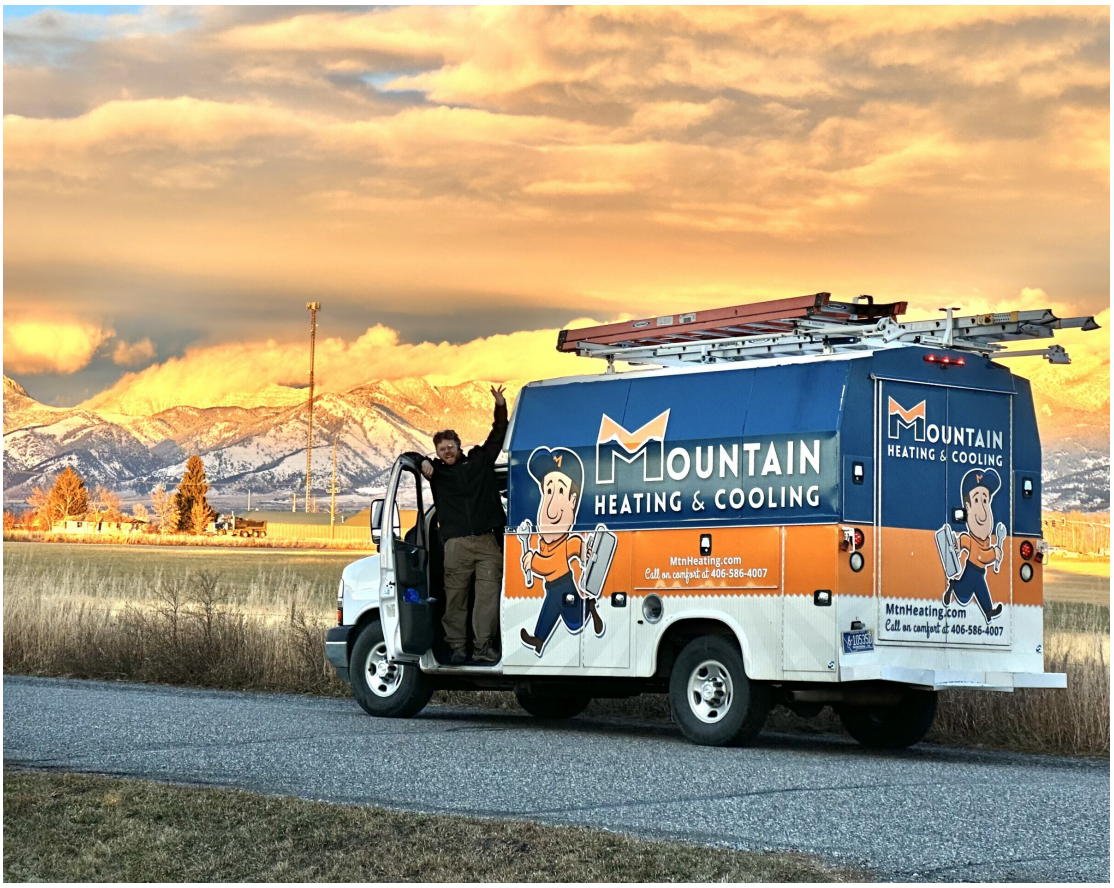
Mountain Heating & Cooling

Case Study #1

High Altitude Ductless Heat Pump Installation in Bozeman Pass Montana



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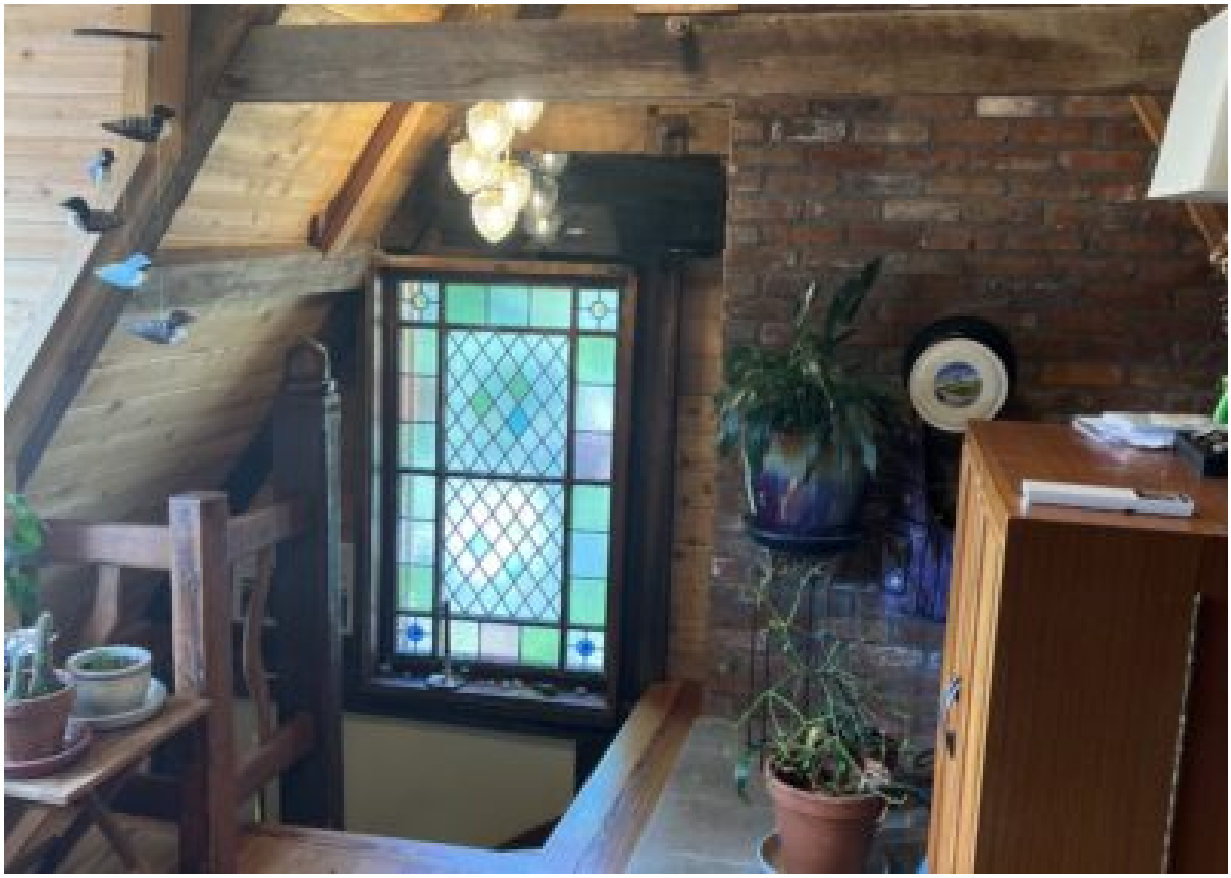
Overview: High Altitude Ductless Heat Pump

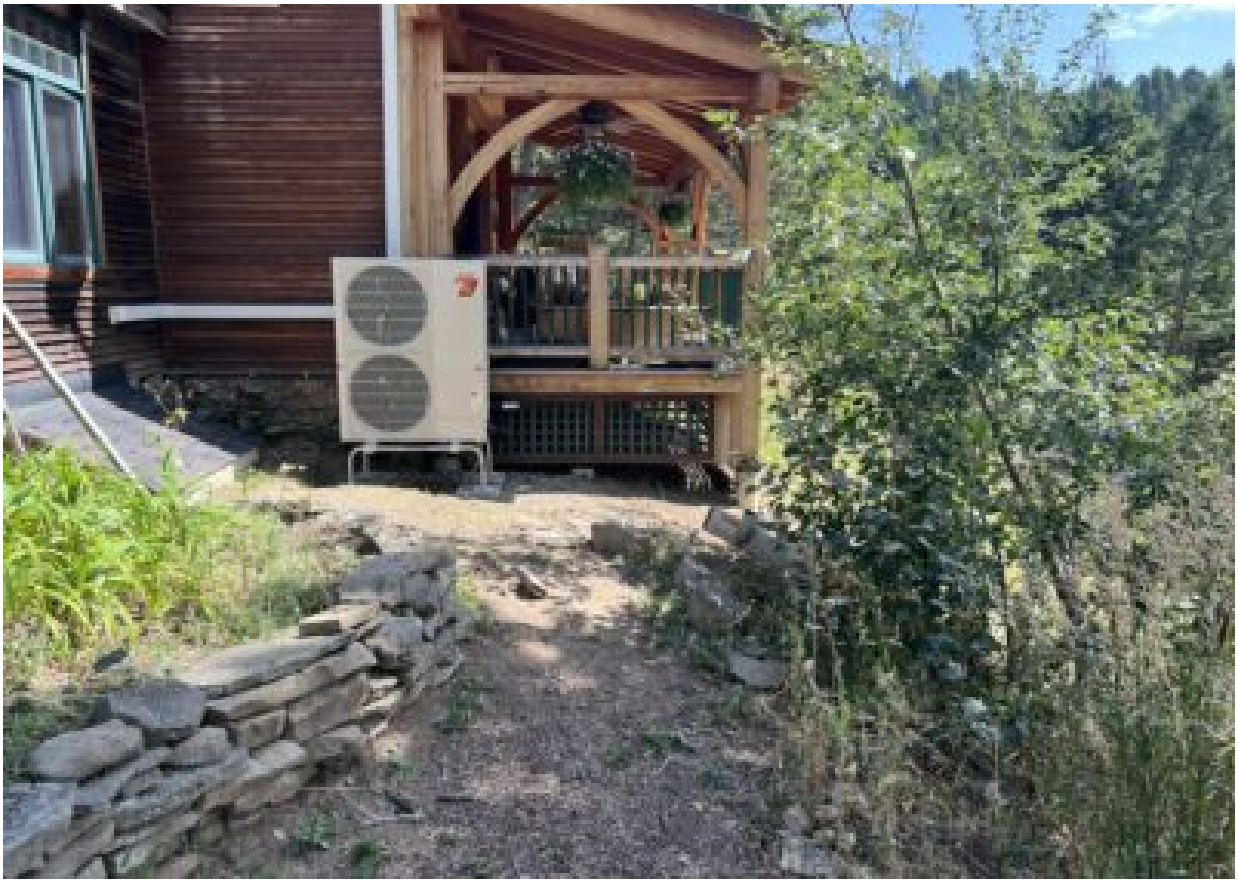
- **HVAC Contractor:** Mountain Heating andCooling
- **Client Profile:** Anna P., a design and environmentally conscious homeowner.
- **Location:** Bozeman Pass, Montana
- **Type of HVAC Service:** Installation of a Mitsubishi Hyper Heat unit with 3 heads
- **System Type:** Mitsubishi Hyper Heating Multi Port system
- **Products Used:** MXZSM48NAMHZ2-U1, MFZKJ09NA-U1, MSZ-EF15NAW, MSZ-EF18NAB
- **Duration:** 3 days
- **Specific Challenges:** Measuring and coordinating fit of interior units.
- **HVAC Features:** High altitude, high efficiency model.
- **Rebates/Tax Credits:** 12 year Manufacturer warranty
- **Maintenance:** Professional annual services provided by Mountain Heating & Cooling Membership

Summary:
High Altitude Ductless Heat Pump Installation

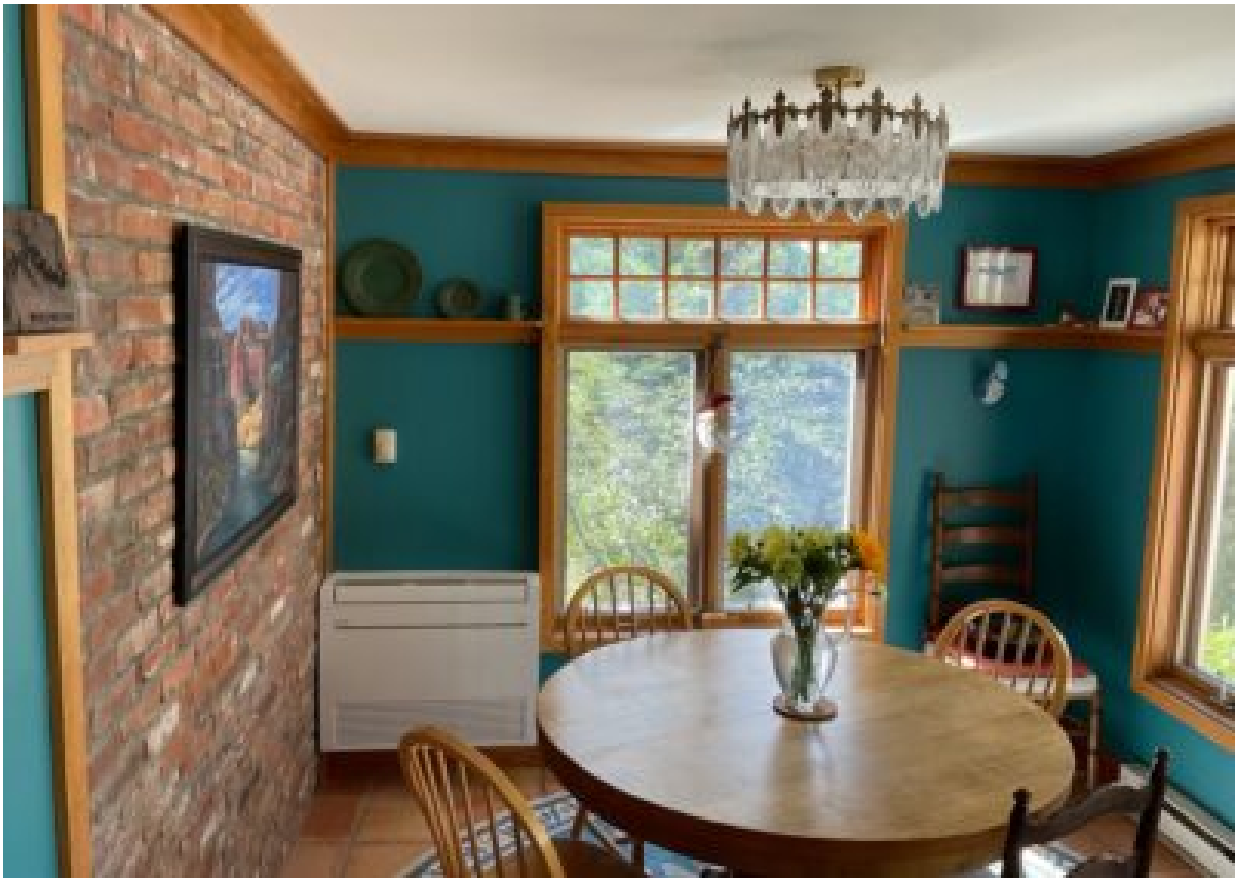
Anna P., a homeowner in the Bozeman Pass area, was looking to move away from individually fired propane heaters and a fireplace by utilizing a heat pump. Given the unique architecture of her home which is a post and beam structure, we worked through solutions around Mitsubishi Hyper Heat units while working to hide the system or make it work with a beautiful interior and exterior design. Anna was also looking for some ways to cool sleeping quarters that get overly warm in the summer. The Bozeman Pass has a few unique considerations for your Heat Pump Contractor. First, the high altitude causes a decrease in rated capacity for each mini split head. Second, the weather up there is much more intense than Bozeman's climate. Snow is deeper, and average temperatures are much lower.



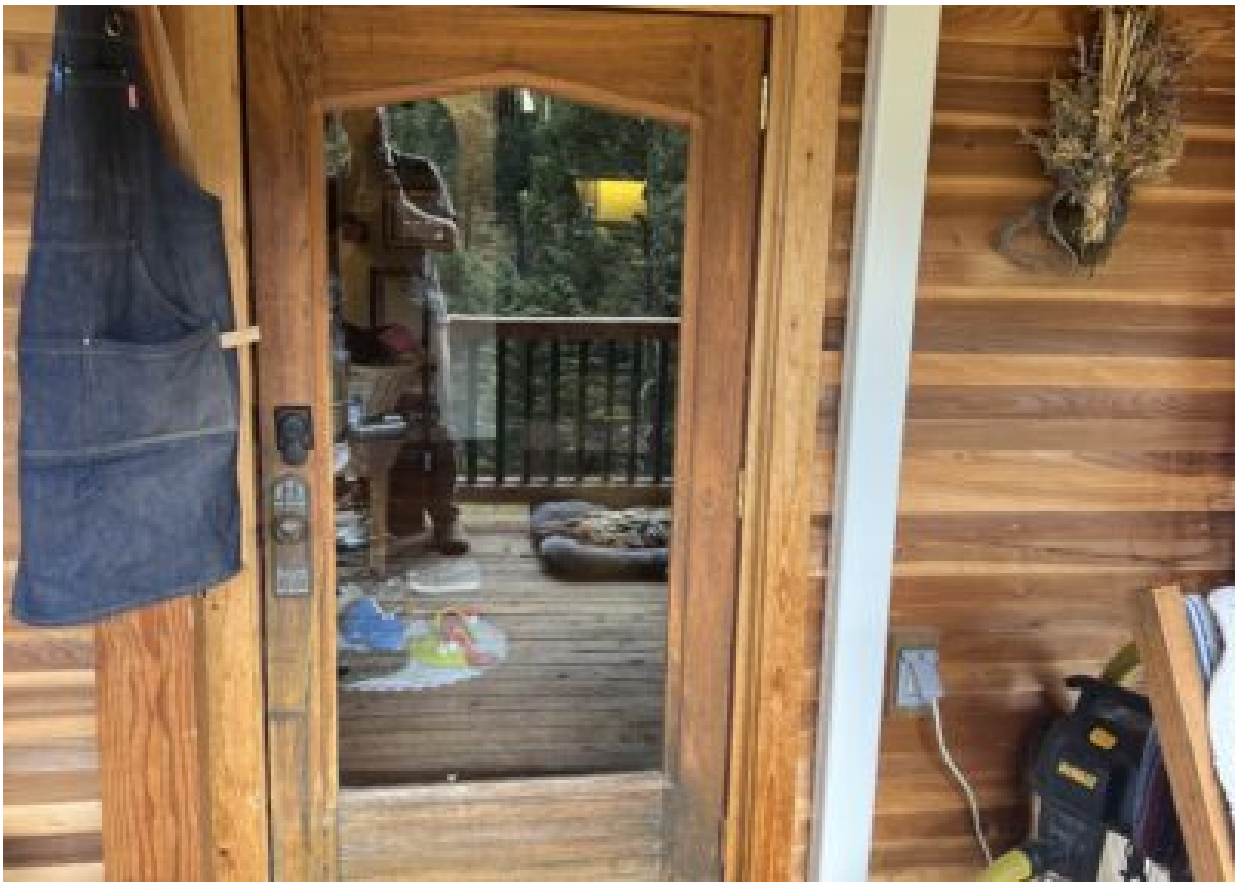
Wall Mounted Unit Master Bedroom



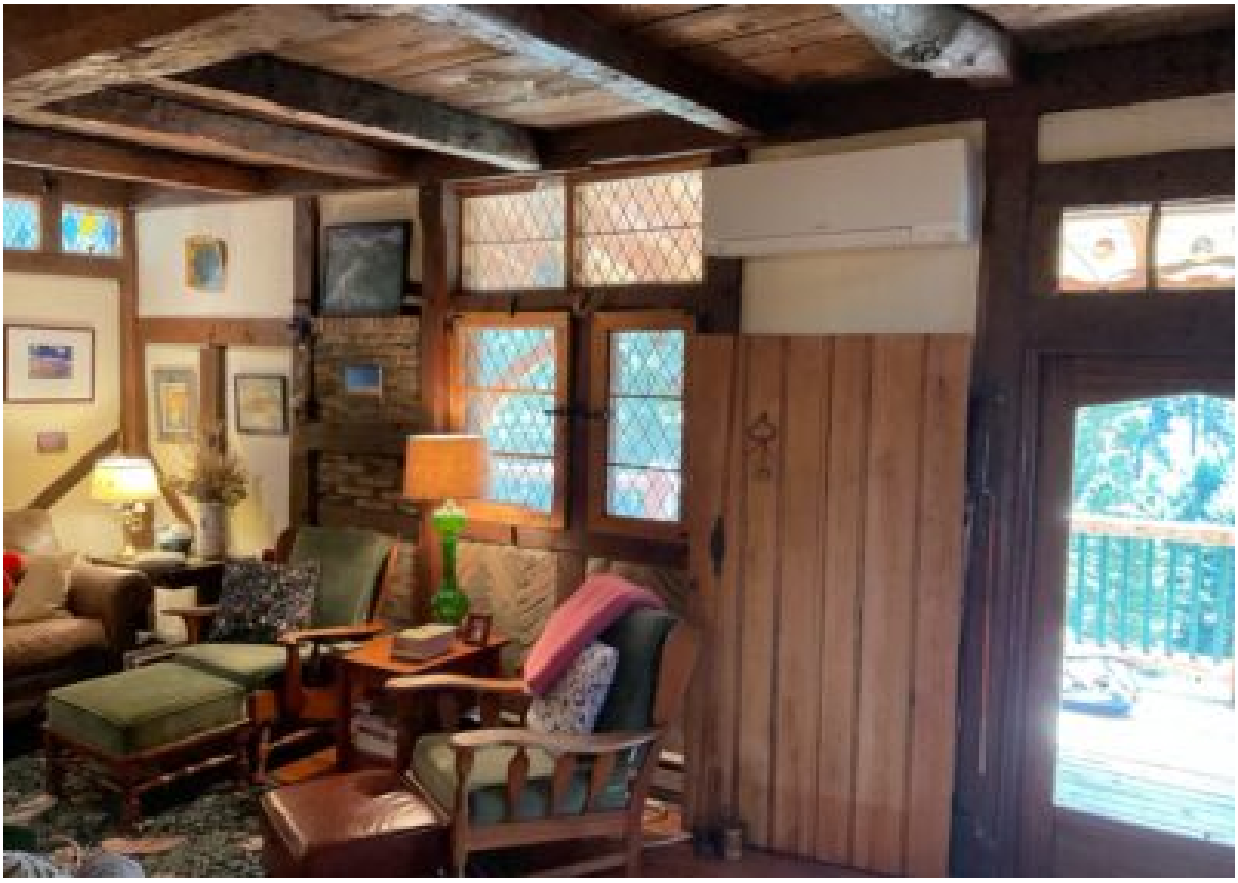
Outdoor Condenser Unit



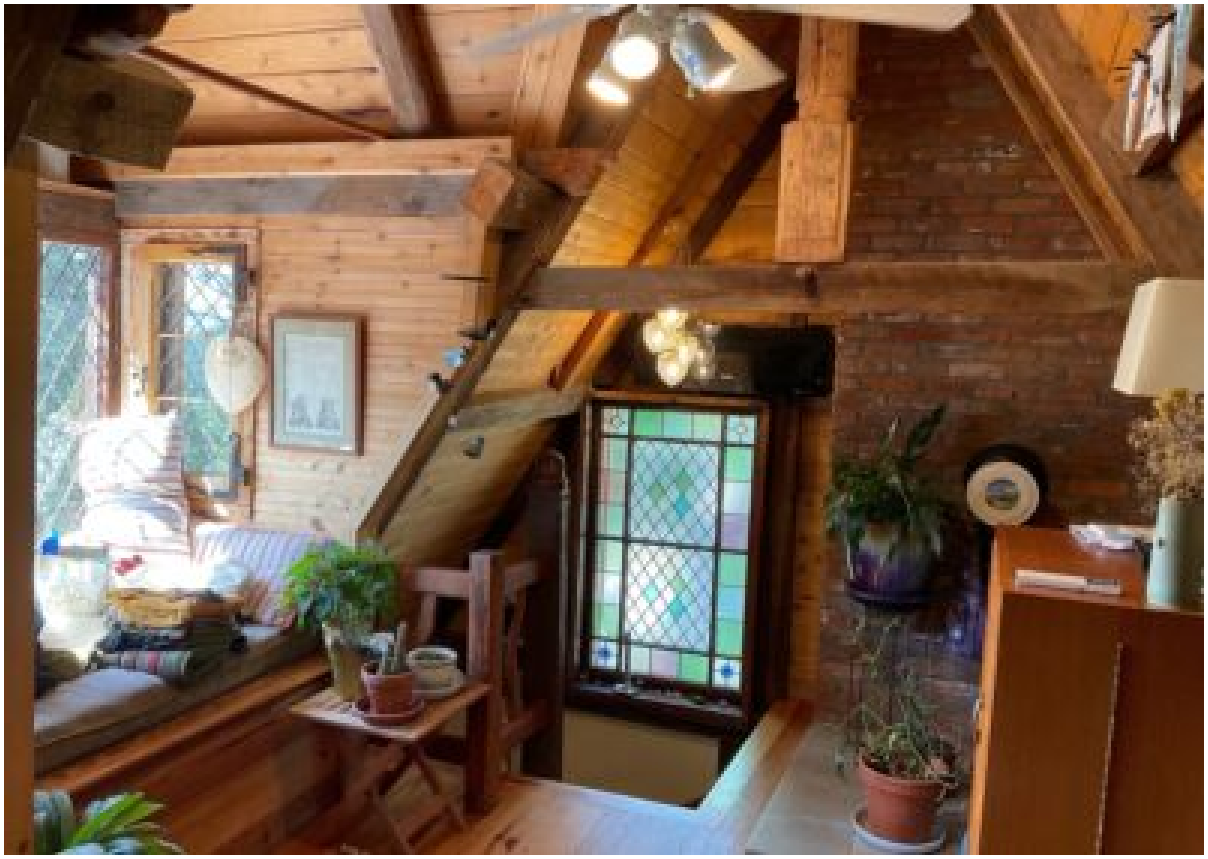
Floor Mounted Unit In Dining Room



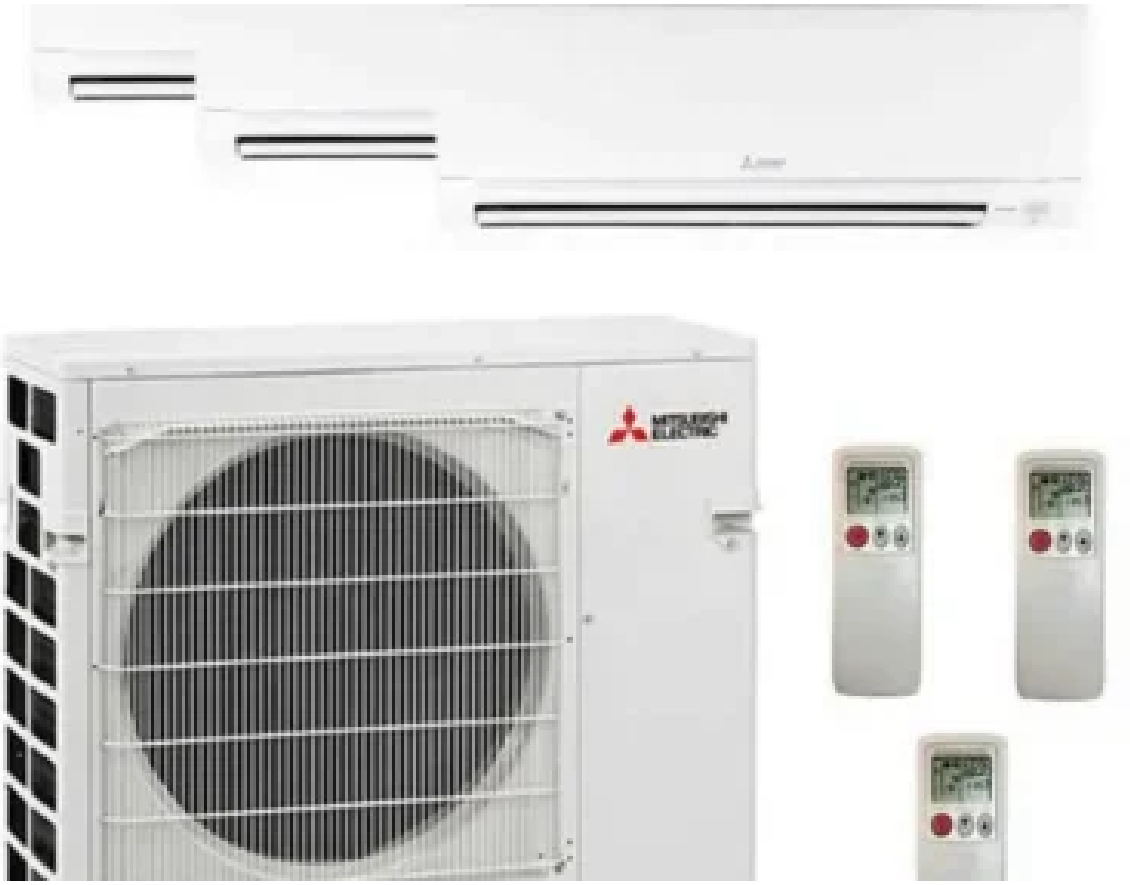
Front Entrance



Wall Mounted Unit in Living Room



Master Bedroom



Mitsubishi 3-Zone Wall Mounted Unit

The Challenge:

There were a few challenges that Anna P. wanted resolved:

- **Challenge 1:** The existing system being fireplace and individual propane heaters can be onerous to operate and hard to walk away from for even a day or two.
- **Challenge 2:** The Master bedroom has never been comfortable in summer or winter.
- **Challenge 3:** The architecture of the home is almost historic in nature and is paired with a structural system not often used anymore.
- **Challenge 4:** The altitude and weather patterns are both important challenges.

The Solution:

- **Solution 1:** The homeowner sought comfort. But it was just as important for her and for us to make it look right. Like it was always there. This includes planning and documenting the aesthetic choices and making the installation team aware of them. While on site, they are trained to have the same conversations with the owner so they can verify choices before they are installed.
- **Solution 2:** The altitude presents some challenges for heat pump capacities. Luckily, we pair up with Mitsubishi technical support and their handy Diamond System design tools. These steps ensure the heating or cooling demand can be met when paired with a properly done Manual J heat load calculation.
- **Solution 3:** We perform a thorough start-up report to field test the unit to the specifications recommended by the factory to ensure the system is charged properly and is running efficiently from day one.

The Benefits:

Mitsubishi systems offer some of the best home comfort we have seen. The system constantly adapts to provide consistency in temperature no matter the demands outside. In this case, the layout was carefully considered along with the mechanical needs and delivered in a way that was pleasing to the owner.

Cost/Benefit Analysis:

In this case, we could offer a state of the art Mitsubishi Hyper Heat system for much less than a traditional ducted system of lower efficiency and comfort features. This is always rewarding for our team. We like seeing the pleasure that a pleasant surprise offers. Plus, the system will operate at a much lower cost than any other considered these factors:

- The existing propane heaters cost nearly 3.5X to operate for only heat.
- A traditional propane furnace cost over 2x to operate.
- Even a high end ducted heat pump option would cost 1.7X to operate.
- Geothermal could beat it out for cost of operation, but may have drawbacks in the “home comfort” area.

Summary of a Successful HVAC Installation

This homeowner was looking to increase the comfort of her home through exploring heat pump options. The system she decided on, is an understated addition to her home aesthetically while delivering all the comfort at a much lower operating cost than other systems. We love taking on challenges like this!
– Corey Johnson, President of Mountain Heating Cooling

Homeowner's Review

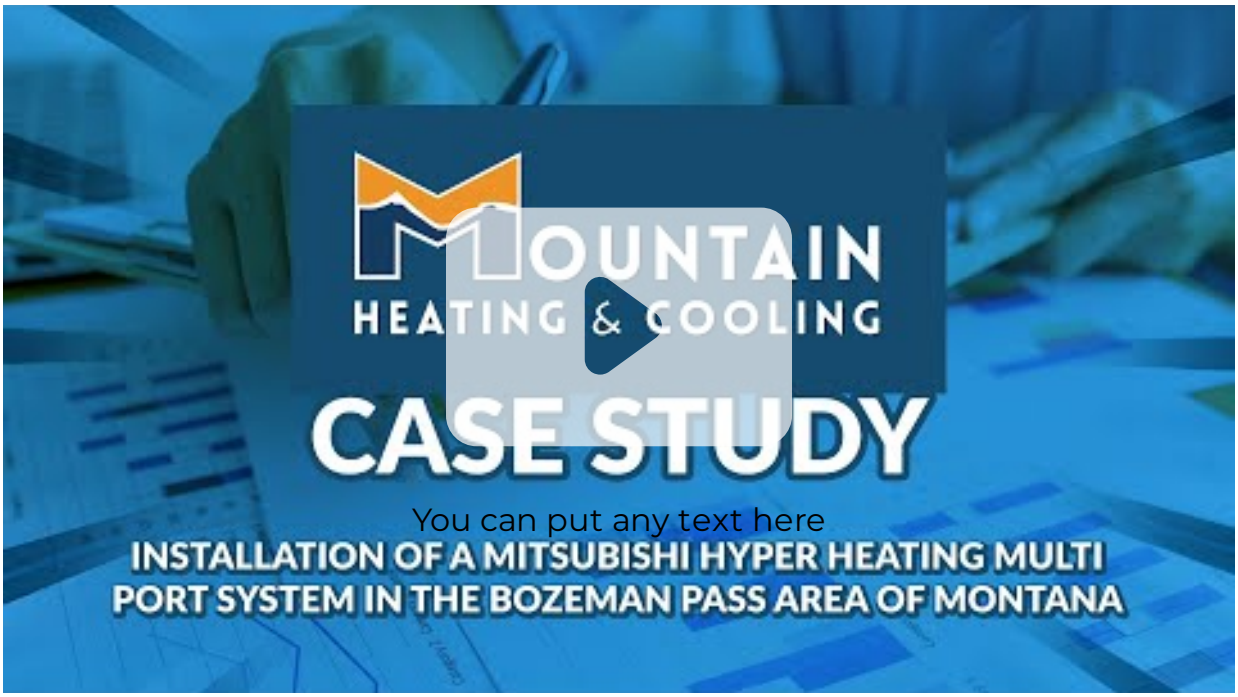
Coming soon...

Find out how a **Custom Mitsubishi HVAC System Installation** can increase your home comfort.

Based in Bozeman, Montana we serve the entire Gallatin Valley including Gallatin Gateway, Livingston, Belgrade, Manhattan, Three Forks, and Big Sky.

Get a FREE consultation today. CALL (406) 586-4007 Today!

Case Study Video



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Since 1977 we have been providing heating and cooling installation and service to Bozeman homeowners and businesses. Ours is a family business so we know that every project we do bears our name and carries our reputation.

To learn more you can go to:
https://mountainheating.com/cs1