



MOUNTAIN CONTRACTING

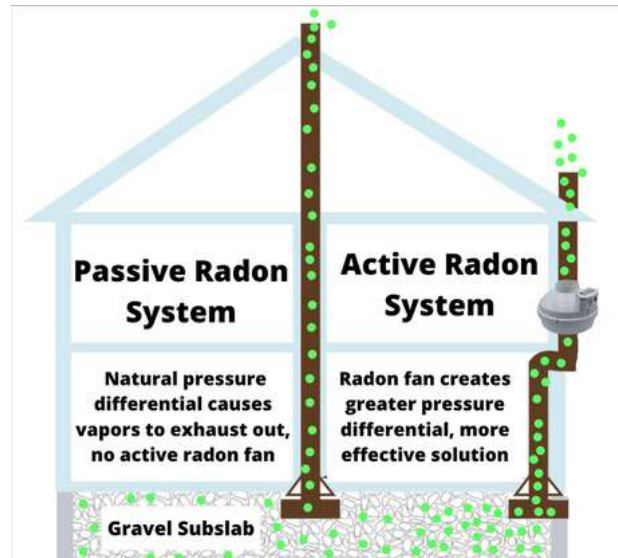


1863 River Queen Ln is a single-family residence that is tailored as both a personal residence and vacation home/mountain retreat. It has been designed by Scott Myller, a contemporary architect from Steamboat Springs. Scott's knowledge of Steamboat Springs, mountain town needs, and necessities has been invaluable in designing a practical, efficient, and environmentally friendly home.

The design phase of this home went through several changes until all requirements were met. We were focused on practical aspects of the home that will be used as either primary residence or vacation home. This is the reason that the home has two lock-off units for the owner's personal belongings that can be secured in the event that the home is used by someone other than the owners. Architectural features and visual identity of the home were not the only aspects of the design stage. Special attention was given to energy efficiency and mechanical systems. Home has significantly increased thermal resistance (insulation) in the walls and ceilings than what code requirements are. The ceiling R-value (insulating value) has been increased from code required R49 to R60, walls are increased from R23 to R35, and crawl space walls from R15 to R23.59.

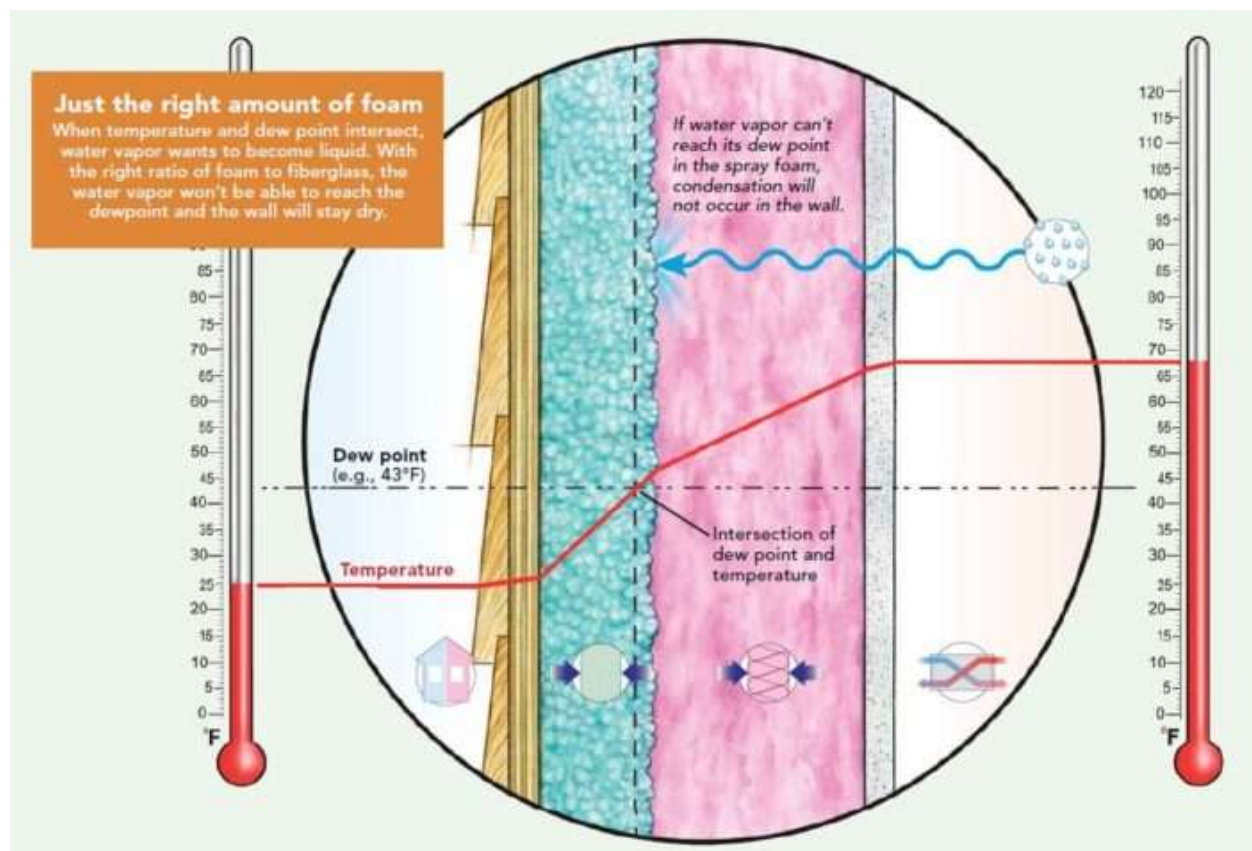
On the mechanical systems side, the home has been designed with a passive radon mitigation system. Radon is colorless, odorless naturally occurring radioactive gas that is present in the soils in our area. With a passive mitigation system, the chimney stack effect is creating suction that evacuates the gas from the porous gravel area under the crawl space to the outside. For additional radon protection crawl space floor has been covered in polyethylene sheeting and

finished with a 4" concrete slab to protect sheathing and eliminate gas leakage into the crawl space (basement). Radon pipe has been stubbed up in the mechanical room where a radon mitigation fan can be easily added in the future if the need for increased gas suction becomes needed.



1863 River Queen In is a *high-performance home*. What this means is that besides increased insulation values from the code minimums, special attention has been given to the sealing of the building envelope to minimize air leakage and the sensation of cold drafts. Locally adopted IRC (International Residential Code), 2018th edition limits air leakage to 3 air changes when tested using ACH50 blower door test. Mountain Contracting has built homes that routinely have less than 2 air changes. Design features implementing closed cell spray foam in the walls and ceilings, Huber zip system sheathing, tape and liquid flashing are specified and implemented to reduce this value even further. High-performance homes with very tight building envelopes do not rely on incidental air leakage through the walls and wall penetrations but on the designed mechanical ventilation system. This system utilizes a Heat Recovery Ventilator (HRV) whose purpose is to remove stale indoor air from the bathrooms, kitchen and laundry and replace it with fresh outdoor air that is supplied to the bedrooms and living areas. Fresh outdoor air has been run through the heat exchanger unit inside the HRV where it is preheated. This is the main energy saving feature of this ventilator. On the 1863 River Queen In we have implemented an additional, custom feature where fresh air leaving the ventilator is additionally heated using the hydronic heating coil. By doing this we are increasing occupants' comfort by reducing the likelihood for occupants to feel a cool air breeze next to the supply registers. Besides supplying constant fresh air to the home, HRV has another important feature of reducing relative humidity inside the home. Dry winters in our climate have traditionally resulted in dry indoor conditions and the necessity to use humidifiers inside the homes. This is the result of excessive uncontrolled air leakage due to the poorly sealed building envelope where excessive quantities of outdoor dry air were entering the home while also requiring more energy for heating. In high-performance homes, higher humidity levels as a result of cooking, showering and human

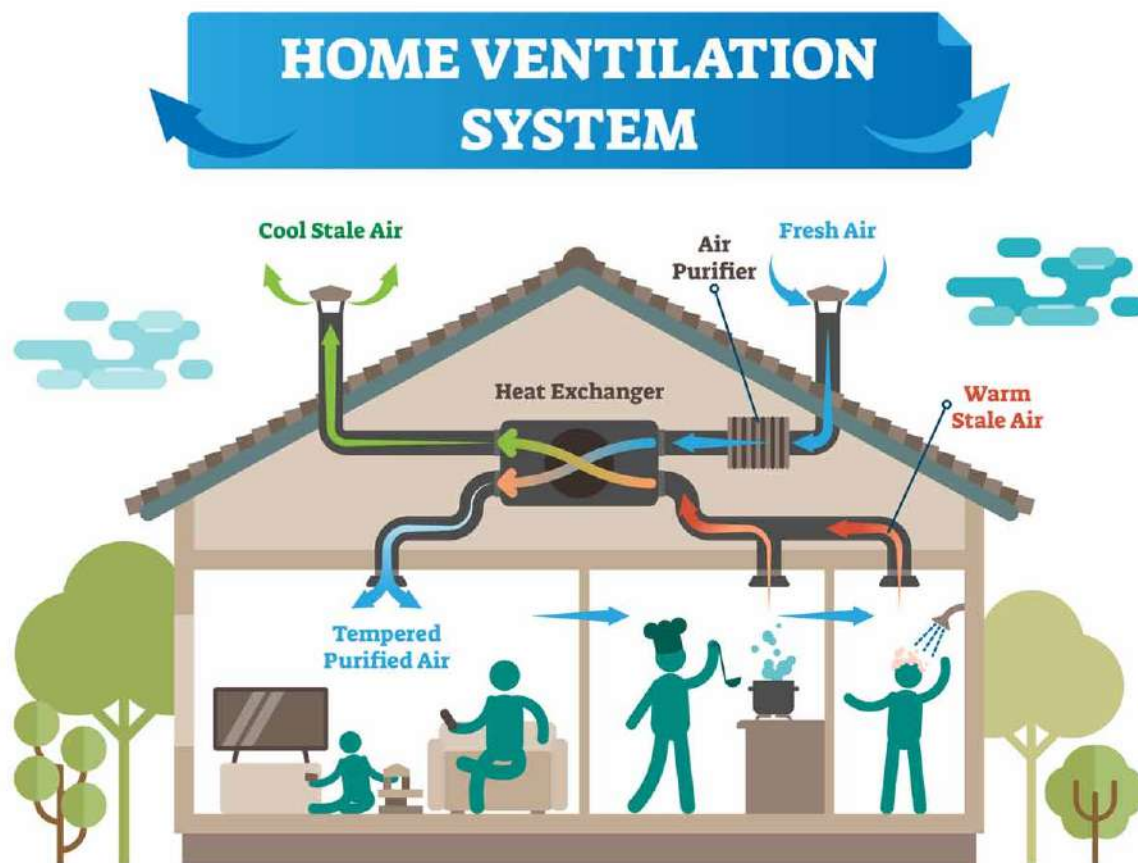
occupancy are expected. Indoor relative humidity in excess of 35% during winter months is not a desirable feature in most homes as there is potential for condensation inside the walls that can result in structure deterioration as well as mold formation. To protect the home and the occupants, we have implemented both continuous insulation on the exterior side of the wall sheathing and closed cell spray foam on the interior of the sheathing. This puts a dew point inside the foam, even on the coldest nights, thus completely eliminating the risk of condensation if interior relative humidity is kept at reasonable levels. The home is going to be equipped with a humidistat that will automatically increase HRV speed if relative humidity exceeds levels preset by the occupants. Bathrooms are another area where high humidity is expected due to the showering. Bathrooms will be equipped with a humidistat that will automatically increase ventilation to control humidity levels.



When designing wall assemblies for 1863 River Queen In we have gone a step further and besides insulations shown in the picture, we have added one more layer of exterior continuous insulation and a rain screen. An extra layer of insulation additionally reduces energy requirements for the home and moves the dew point further into the foam layer eliminating the risk of condensation inside wall assemblies. Exterior continuous insulation also reduces thermal bridging through framing members, thus further increasing energy efficiency of the home. Rain screen promotes drying and increases the life of siding and siding finish.

HRV is equipped with a MER13 filter that filters some of the allergens, viruses and bacterias from the outside air. When exterior air is not required HRV has the option to switch to

recirculation mode where interior air is continuously filtered. Low humidity conditions are not expected in high-performance homes, but if windows are left open for prolonged periods of time, if the home is not occupied or under-occupied or if occupants purposely maximize ventilation of the home it is possible that low humidity conditions occur. Significant variations in the humidity levels are not desirable and can have adverse effects on the home finishes, especially cabinetry and wood flooring. To minimize these effects, the home is going to be equipped with a steam humidifier unit that will increase humidity levels in the interior air to the levels preset by the occupants.



Heating is implemented using both an air source heat pump and a backup gas boiler. Air source heat pump will have high efficiency exceeding 400% during favorable conditions and it will make both domestic hot water and hot water for radiant floor heat. During coldest winter nights heat output from the heat pump will not be sufficient to provide the necessary heat, thus the home is provided with a backup gas boiler that will provide additional heat. Total heating needs are supplemented with a rooftop solar water heater that is capable of producing large quantities of hot water even during the winter months. On top of that 57% of the heat from the water going down the sanitary drain is recovered through ThermoDrain copper coils. This recovered heat is

used to preheat incoming cold water before it gets into a domestic hot water heater, thus reducing energy needed to heat domestic hot water..



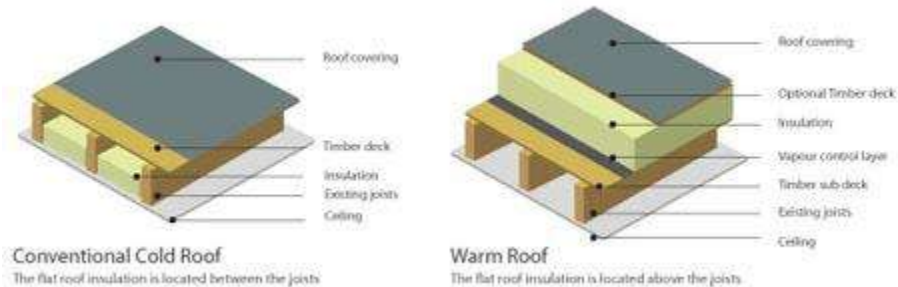
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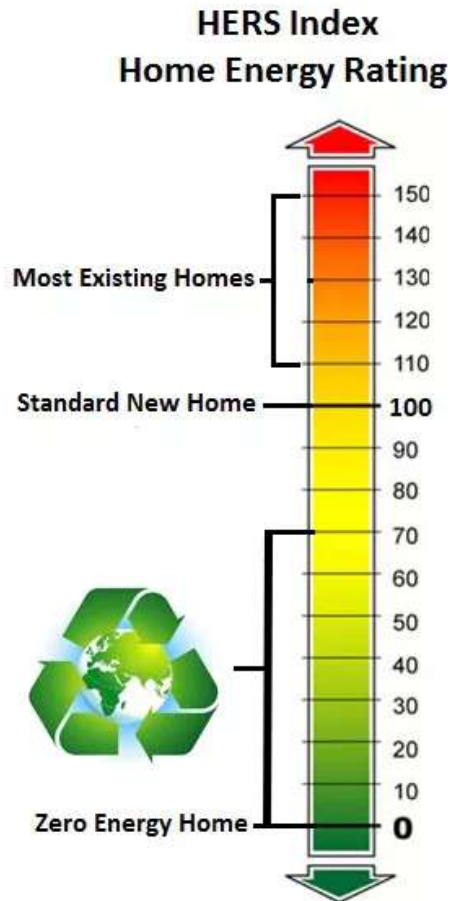
In recent years there has been increased demand for cooling in the homes in Steamboat Springs. This trend continues and in all homes built or remodeled by Mountain Contracting in recent years a cooling system has been installed. For 1863 River Queen Ln home cooling has been implemented with a water-to-air heat exchanger where cool air is supplied through the central air ducts.



We have opted for a standing seam metal roof due to its durability and very low maintenance. Our roofs are designed to hold projected snow loads without the need for them to be shoveled off. All of the roof is covered with water-impermeable ice and a water shield. This eliminates the risk of water damage from ice dams. Ice dams form when the snow melts in contact with the roof deck and refreezes on roof overhangs. Ice and water shield prevents any water in the ice dams from entering the home. This house features a custom cold roof design within the roof framing members. We allow for airflow between the insulation and the roof deck that additionally cools the roof deck reducing, but not eliminating the possibility for ice dam formation.



In order to provide independent verification of the home performance, we have approached Daniell LaBlanc with Colorado Building Performance to have the home LEED-certified and to provide us with HERS energy index rating. LEED (Leadership in Energy and Environmental Design) certification is the program where builders have to meet significant criteria to have their project certified. Based on preliminary information we are expecting LEED certification, but there is no guarantee until the home is completed as there are numerous prerequisites to have home certified. According to information available to us, to date, there are only two homes in Steamboat Springs that are LEED-certified. HERS (Home Energy Rating System) focuses only on energy efficiency. HERS rating of 100 is an average rating for a newly built home and any rating below 100 indicates improvement in energy efficiency with 0 being Net Zero home or home that does not require any energy. We are very pleased that initial projections for HERS score for 1863 River Queen In are at 37 which is one of the lowest scores in Steamboat Springs. This means that this home is projected to use 63% less energy than a comparable code-built home. All of the above assumptions regarding LEED and HERS will be re-evaluated through the construction process and will be re-calculated upon completion. Once construction is completed it will be known if the home will be LEED-certified and what the final HERS score will be. In addition to the LEED and HERS we are expecting this home to be one of the very few Energy Star certified homes in Steamboat Springs.



The heating and mechanical system is not the only one that features custom design. We are planning on installing infrared motion detection switches in all bathrooms, laundry room and hallways. These switches detect people and automatically turn lights on and off. Manual operation is enabled as well, by pushing the switch button. Showers present the greatest source of humidity in every home. All bathrooms and laundry room are going to be equipped with an automatic dehumidifier that will start the ventilator to control humidity levels. The ventilator can be started by pushing the manual switch as well. Powder rooms will be equipped with manual timers where occupants can select preset times from 1 minute to 30 minutes for a fan to operate. No more need to come back to turn the fan off manually. Ventilation will be provided utilizing a heat recovery ventilator to increase the home's energy efficiency. All bedrooms, living room, rec room, kitchen and dining lights will be controlled using dimmable smart switches. These switches can be programmed to operate using voice commands through smart hubs like Amazon Alexa or by using a phone app. Automatic and remote operation is also possible and lights can come on and off even when the home is not occupied. The garage door opener is LiftMaster myQ enabled smart opener that can be controlled from the smartphone and that can control multiple myQ devices through the garage opener. Heating and cooling are divided into

multiple zones and zones are going to be controlled using smart thermostats. These thermostats learn occupant's room usage patterns and adjust heating and cooling to maximize energy efficiency.



Colorado winters can be harsh. It is not uncommon that we get over 400" of snow during the big snow season. Driveway and home have been designed in a way that allows the driveway to get lots of sunshine. In case the driveway develops ice, a radiant driveway snowmelt heating system can be activated. For the best energy efficiency, driveway snowmelt system will utilize a heat pump and solar before additional energy is requested from the gas boiler system.



Another item worth mentioning is that the home will be protected with an alarm system. We are opting for a system that will not only alert owners during the burglary attempt but will monitor for water leaks and low temperatures in certain areas of the home. Owners will have the ability to monitor the status of the home using their smartphone or tablet and they will have the ability to expand the system with video surveillance and such.

DISCLAIMER: All of the information in this document is believed to be accurate at the time of the creation of the document. Due to the nature of the construction process, availability of materials, recommendations and limitations by the suppliers and distributors there could be changes to the specifications and implementations of the final product.



About Mountain Contracting

Mountain contracting is a small spec home builder that takes pride in the quality of construction and functional, mountain contemporary designs. By doing only one or two projects per year, the primary focus is on the quality of the construction. To bring the quality to the next level, Mountain contracting is now focused on energy-efficient homes, as well as the use of LEED-compliant materials for healthier living. Mountain Contracting has been remodeling and building properties in Steamboat Springs since 2008.

Some of the completed projects:

3309 Snowflake Circle (sold in March 2020)

<https://www.steamboatlodgingcompany.com/steamboat-springs-lodging/lucky-snowflake>

From the Buyer of 3309 Snowflake Circle:

"We purchased 3309 Snowflake Circle from the Brstina's in early 2020. It is a modern, stylish, elegant home that takes full advantage of its location and the features of the lot. It is obvious that a lot of pre-construction planning was done to optimize the end result. The house is well built with high-end details on every level. The builders have been great about addressing what few minor repairs were required in the first year and did so promptly and graciously. Their workmen are courteous, prompt and tidy. As we are out-of-state owners, they continue to make our life easier with their willingness to take on small improvement projects on reasonable terms. We would welcome the opportunity to do business with them again."

3311 Snowflake Circle (sold in February 2020)

<https://www.nomadnessrentals.com/properties-rentals/1021/luxury-new-build-with-awesome-amenities-and-stunning-views>

From the Buyers of 3311 Snowflake Circle

"We bought our house in Steamboat from Sunny and Srdjan in February 2020, and have been extremely impressed with their level of professionalism ever since.

We had a few snagging issues that needed putting right but they were very quick to take care of them, and we liked the quality of their work so much that we actually asked them to do a few extra jobs here and there around the property. They have always been responsive and polite and paid attention to detail every step of the way.

All in all, they made a potentially stressful process much easier to navigate.

Marc and Christina"

1478 Clubhouse Drive (sold in May 2021)

<https://www.estate.com/listings/info/1478-clubhouse-drive>

"Buying a new home is always stressful, especially a new construction. Having bought several new homes, you learn to expect a long list of issues to be identified and resolved in the first year. In this case the list is almost zero. Everything worked the first time, and the feel of the home is cozy and welcoming. The construction is sound, well insulated, and overall top notch. Sunny and Srdjan put a lot of thought into the design to make the house more comfortable and user friendly. We cannot be happier with our new home.

Both Sunny and Srdjan have been easy to reach and extremely prompt on getting information on everything from how things work in the house, to help with insurance, to which local activities

are worth visiting. Our experience has been overwhelmingly positive. Thank you both for making the transition to Steamboat so easy.

We can highly recommend Sunny and Srdjan Brstina as home builders and will be happy to share our experience with any potential buyers.

Brian and Karen Humes”

524 Sandhill Cir - built an addition to the existing home in January 2021

From the owner of the property:

“We had the pleasure of working with Srdjan Brstina and Mountain Contracting for an addition project at our house. We added a bedroom, bathroom and family room on the upper level with a lower level storage/rec room for our family. It was about a 6-month project that went very smoothly. We have never done a new construction project so had some initial hesitations after hearing stories about other friends’ remodel or new build construction projects. But it went very smoothly and we could not be more pleased with the final result. The first weekend it was finished my wife’s parents came out to live with us for a few weeks and they put it through the test and it passed with flying colors! We truly enjoyed getting to know all of the workers and they were all professionals and also fantastic people. Thank you Srdjan and your team for making our home exactly what we wanted it to be. Ryan and Blair”