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Who is Mountain Crest Builders?

A new generation designer/builder firm introducing innovation and best-management practices.

In simple terms: this means an architect who is current on the basic principles of sustainable design and a builder who is well versed in building science, product and process innovation.

Guiding Principles:

- Energy Efficiency
- Cost Efficient Design & Construction Principles
- Lifestyle Living - encouraging all to reconnect with nature both inside and out.
- “Over The Top” customer experience – from design thru build and way beyond after move-in.

People who consider building their dream home do so because they want it to be uniquely theirs based on their lifestyle and made perfect for a lifetime. In the end, your home is as unique as you are. It’s not rocket science, but it is building science based on efficiency and processes.

At MCB with over 75 yrs. of combined experience we focus on taking the mystique, high cost and difficulty out of building you an efficient, durable, and healthy home.

Here are a few of our guiding principles for your consideration:

- **Energy Efficiency/Sustainability:**
 - Sustainability is a word you hear a lot these days - let your ideals be your compass and then choose a partner that is engaged beyond the confines of the industry, is abreast of the research, and clearly trying to make a better future.
 - At MCB sustainability means maximizing savings, energy efficiency, home comfort and healthy home.
- **Cost Efficient Design & Construction Principles**
 - *Timber Frame & SIP Panel* – Timber Frame & SIP designs are 2 ½ times stronger than traditional framing with the benefit to you of saving framing/construction time, energy use, environmental resources, reduced labor, fewer trades, and most importantly – money, all the while offering the

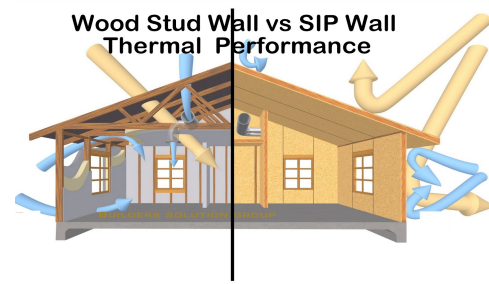
highest performance building envelope. SIP panels lead the way to energy efficiency.

- *Concrete Radiant Floor Heating & Cooling* - Decorative concrete flooring is a perfect example of this synergy of beauty, sustainability and economics, giving you a durable, low-maintenance floor lasting a lifetime.
 - *Trim less & embedded finishes* – you ask, what is that? MCB’s mountain modern homes are designed with efficiency in mind (less trades, less time) - while achieving a clean and modern look and feel to its finishes.
 - *Home Energy Solutions* – We’ve all seen tremendous benefits & growth when using solar. This new generation will debut the emergence of broader home energy solutions; integrating solar, storage, advanced lighting controls, smart home and more.
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- **Lifestyle Living**
 - The primary objective is to team with you to clearly understand how you live your life and to get the design right the first time, eliminating costly change orders and time delays.
 - Focus of MCB designs are around comfort, low maintenance and using natural resources more efficiently helping to create a sustainable future in a healthy home environment.
 - We engage our clients to achieve a well-executed design solution that uniquely transitions between interior and exterior spaces while maximizing its beauty and usability such as:
 - Indoor & Outdoor kitchens that double as entertaining
 - Specialized rooms that allow people to work at home in comfort
 - Bathrooms with character
 - Integrating lots of decorative concrete, stone, wood, and steel
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- **Customer Experience**
 - We want to be known for more than “building homes” by creating a transparent environment of trust and open communication to be your partner for the long-term.
 - We’ve established a money workflow process giving our clients complete transparency into all financial aspects of their project.
 - We offer a full range of design and construction services tailored to the unique qualities of each home and the dynamic schedules of our clients.
 - Building a home is a process of emotions, think of MCB as a resource which you really connect with to achieve your goals.

Energy Efficiency/Sustainability:

When it comes to energy efficiency requirements, virtually all local, state and federal building departments have set aggressive requirements to help lessen energy consumption and carbon footprints of homes and commercial/public buildings. In many cases, such standards become increasingly stringent year- by-year, with the eventual target of net-zero energy consumption. Title 24 of the California Building Code – sets the standard for mandatory emphasis on better insulated, more tightly constructed and energy efficient standards.

As tested by the U.S. Department of Energy, SIP Panels have been proven to outperform conventional frame construction by at least 66% for energy efficiency.



OSB is made from fast-growing, small-diameter trees that can be harvested from plantations, avoiding the need for cutting old-growth trees. Even the smallest scraps of wood can be turned into OSB, virtually eliminating waste.

EPS FOAM is a recyclable material that is completely inert in the environment, and is in fact often used as a soil additive. Producing EPS foam insulation requires less energy than producing fiberglass insulation, and no CFCs are used in the process.

ENERGY EFFICIENCY

SIP homes require up to 50% less energy to heat and cool than stick-framed homes, meaning less fossil fuel consumption and fewer greenhouse gas emissions. The efficiency of a SIP building is a result of both the air-tight envelope the panels create, and the substantially higher R-Value of SIPs when compared to stick-framed walls.

AIR QUALITY

SIP panels release no volatile organic compounds (VOCs). Furthermore, because SIP-built structures are so air-tight, indoor air quality can be closely controlled, a huge advantage for those with environmental or chemical allergies.

- Up to 60% more energy efficient than 2x6 R19 construction*, and factory cut SIPs dramatically reduce jobsite waste over stick-frame construction
- SIPs create a tighter envelope (blower door tests down to .05 ACH), significantly reducing air infiltration and outside pollutants, creating exceptional indoor air quality (IAQ) and a healthier environment
- Ideal product for green certifications, including LEED, National Green Building Standard, Energy Star, Building America, and qualifies for federal & regional energy tax credits
- While other foam cores off gas over time, reducing product R-value, EPS maintains its R-value and energy performance

SIP positively impact many stages of the building process.... SIP Panels are simply a better building alternative...

The whole-wall R-value is a more accurate measurement of real-world performance compared to the insulation's R-value alone. Many studies show a building's airtightness has more of an impact on energy efficiency than the R-value of the materials themselves. In fact, air leakage is responsible for 40% of heat/cooling loss (wasted energy).

According to the Dept. of Energy thermal breaks such as corners, windows, doors, and stud walls dramatically reduce the stated R-Value of virtually every product on the market except SIPs. As an example, a 2x6-stud wall 24" OC with R-19 fiberglass batts has an R-Value of 13.7. A six-inch SIP wall has an R-Value of 24.7. Simply put, a 6" SIP wall out performs a 6" stud wall by 58%.



SIPS make the job easier, saves money, and are kind to the environment.

At MCB sustainability is an ongoing practice whereby we pursue areas to minimize waste, maximize savings, energy efficiencies, home comfort and healthy living environment thru:

Innovation:

- Innovative concepts regarding design, integration of materials and methods, structure, enclosure and mechanical systems.
- Outstanding contributions to construction technologies and building processes, operation and maintenance.

Resources:

- Minimizing a project's ecological footprint and maximizing its positive impact on the environment
- Emphasis placed on the use of renewable energy in construction
- Resilient products, robust construction details, smart interaction of building systems and environmentally sound technologies.

Energy efficiency:

Structural insulated panels are one of the most environmentally responsible building systems available. A SIP building envelope provides high levels of insulation and is extremely airtight; meaning the amount of energy used to heat and cool a home can be cut by up to 50 percent. The energy that powers homes and commercial buildings is responsible for a large portion of greenhouse gasses emitted into the atmosphere. By reducing the amount of energy used in buildings, architects, builders, and homeowners can contribute to a clean environment for the future.

Resource use:

The insulation used in SIPs is a lightweight rigid foam plastic composed of 98% air, and requires only a small amount of petroleum to produce. The foam insulation used in panel cores is made using a non-CFC blowing agent that does not threaten the earth's ozone layer.

Waste minimization:

Since SIPs are prefabricated in the factory, there is less jobsite waste that needs to be land filled. Factory fabrication is often done using optimization software and many manufacturers recycle factory scrap to make other foam products.

Timber is a natural, renewable resource:

The preparation of unrefined wood into timber does not release toxic chemicals or other harmful vapors into the air. In addition, the natural aging of wood does not emit any byproducts that have adverse effects on you or the environment.

A misconception of the timber frame is that it is harmful for the environment, mainly due to deforestation. While it is true that the use of wood as a building material has some negative impact on the environment, the truth is that timber frame construction uses less wood than conventional platform construction.

Cost Efficient Design & Construction Principles

The core of your MCB home is the structural envelope, which combines: concrete, timber, concrete and SIP walls & roof.

Timber Frame & SIP Walls & Roof

A great advantage of building with SIP Panels stems from the benefit of being made with "factory precision". This precision enables the home to be very tight, which reduces the size of your heating and air conditioning unit (HVAC) by up to 20%, giving you immediate savings. And over the years you'll enjoy significantly lower energy costs too.

Roof SIPs (Structural Insulated Panels)

With insulation values reaching up to R-50, SIPs are ideal for keeping conditioned air inside your home, instead of escaping up and out. When SIP roofs are used in vaulted areas, those spaces retain a more consistent temperature and less energy is required to reheat the lower levels of your log or timber home.

Wall SIPs (Structural Insulated Panels)

Our timber frame homes utilize SIPs which have R-values reaching up to R-25.4 (typical batt-filled wall performance= R-12.8). This continuous insulation also reduces air infiltration.

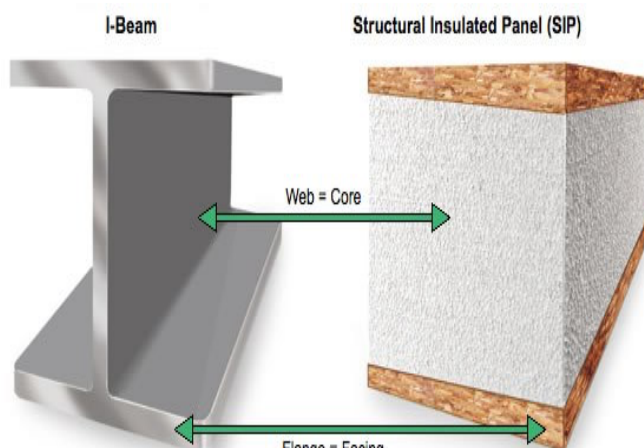
Efficient Design with SIPs:

- The electrical chases are factory installed in the foam, eliminating the time and labor expense associated with on-site drilling.
- SIP Panel walls are flat and plumb so the drywall contractor completes his work faster along with a better final finish.
- The interior finishes, including cabinetry, flooring, moldings, etc. will be installed easier due to the continuous attachment surface provided by the OSB. No more searching for studs.
- Continuous OSB sheathing allows building owners the option to hang shelves and pictures virtually anywhere

Stronger:

SIPs have been subjected to independent third party laboratory tests to

demonstrate the superior strength characteristics of our SIP panels providing you with a strong durable structure.



Capable of spanning up to 20 feet without trusses, ideal for cathedral and vaulted ceilings

Straighter:

Don't settle for the imperfections of lumber. With SIP's you are getting an engineered product that is consistent and without the warps, twists and cupping of common dimensional lumber.

- Engineered and prefabricated product is straight and predictable
- Reduced callbacks, warps, twists and cupping as dimensional lumber dries are virtually eliminated
- Solid drywall backing and factory pre-cut doorways, windows, walls, doors and archways mean faster finish work
- Stick-framed buildings rely on lumber at regular intervals to provide structural support. 15-25% of the shell of a stick-framed home is lumber, compared to as little as 3% in the shell of a typical SIP framed home.

Now let's talk about SIP's in Construction of Your Home...

Process work of structural insulated panel design and fabrication:

The construction of a SIP home begins with the construction documents. Once the construction documents are in the hands of a SIP manufacturer, they are converted to SIP shop drawings that give the dimensions of each individual panel. The shop drawings are reviewed by the builder, engineer, the building owner, and other involved parties. Once the shop drawings are finalized, the SIPs are fabricated and shipped to the jobsite for installation.

Time factor for building with structural insulated panels

SIP homes assemble faster than traditionally framed buildings. Panels can be manufactured as big as 8- by 24-ft., so entire walls can be put up quickly, reducing dry-in time. SIPs can be supplied as ready to install building components when they arrive at the jobsite, eliminating the time needed to perform individual jobsite operations of framing, insulating and sheathing stick-framed walls. Electrical chases are typically provided in the core of panels, so there is no need to drill through studs for wiring.

Saving Labor with structural insulated panels: Because SIPs are prefabricated, the amount of additional framing required is minimal. SIPs are always straight and true; there are far fewer callbacks, no culling studs, or need to straighten walls. SIPs also provide a uniform nailing surface for both interior and exterior finishing.

Money savings with structural insulated panels:

It's simple: you can save money through decreased construction and labor costs. The superior whole wall R-values and building tightness capability with SIPs allows HVAC (heating, ventilation & air conditioning) equipment to be downsized and ductwork to be minimized. Builders can also significantly reduce jobsite waste disposal and temporary heat during construction. Homeowners that incorporate other energy efficient features with SIP construction can benefit from the energy efficiency of a SIP home with reductions in heating and cooling costs of 50 percent or more possible and may, qualify for Energy Efficient Mortgages, and enjoy higher appraised value.

We are Strong:

The structural characteristics of SIPs are similar to that of a steel I-Beam. The OSB skins act as the flange of the I-beam, while the rigid foam core provides the web. This design is extremely strong and eliminates the need for additional framing. For most applications, SIPs are structurally self-sufficient. This design gives SIPs an advantage at handling in plane compressive loads. In cases where a point load from a beam or header requires additional support, a double dimensional lumber spline or engineered wood spline is field installed at in-plane panel connections. SIPs are also used as curtain walls for steel frame or timber frame structures. In roof applications, SIPs rely on beams and purlins for support. SIPs can span long distances, allowing a minimal amount of structural supports to be used.

Properly sizing the HVAC equipment:

The high insulating properties of SIPs allow smaller HVAC equipment to be used. Proper HVAC sizing is crucial because an oversized HVAC system will fail to reach the steady operating rate the equipment was designed for. Short cycling HVAC equipment will be less energy efficient and require more maintenance than properly sized HVAC equipment.

How important is ventilation?

SIP buildings are extremely airtight and require mechanical ventilation. Ventilation systems bring fresh air into the building in controlled amounts and exhaust moisture laden and stale air to the outside. By limiting air exchange to controlled ventilation systems, SIP homes allow for all incoming air to be filtered for allergens and dehumidified, amounting to better indoor air quality. Proper ventilation is important in all homes to preserve indoor air quality.

Vapor barrier requirements:

Air barriers or vapor barriers are not required in SIP buildings because properly sealed SIPs create a code compliant air barrier with a permeability rating of less than 1.0 perm. In addition, the foam core of SIPs is solid and continuous throughout the wall, eliminating the convection and condensation issues that can occur in cavity walls.

At MCB we strive to work with the most advanced products on the market to achieve the best and economical building envelopes. Blueskin VP100 is an example of the next generation vapor permeable air barrier. Ideal for wood frame construction, Blueskin® VP100 is a fully adhered, peel-n-stick system that eliminates air leakage while functioning as a water-resistant barrier and rain barrier.

By choosing BlueskinVP™100, you protect your home, your budget and your peace of mind. BlueskinVP™100 is your best defense against the damaging effects of water and moisture intrusion while maintaining the ability of the wall to breathe.

Features

- Increases building longevity by providing greater moisture and water protection than traditional water-resistant barriers
- Enhances occupant comfort by eliminating drafts
- Improves building thermal performance for reduced energy costs
- Improves air quality by helping to reduce mold proliferation

Improvement of indoor air Quality:

The tightness of the SIP building envelope prevents air from gaining access to the interior of the home except in controlled amounts. A controlled indoor environment is both healthy and comfortable. Humidity can be controlled more easily in a SIP home resulting in a home that is more comfortable for occupants and less prone to mold growth and dust mites.

Reaction of structural insulated panels to fire:

Residential building code requires that foam insulation be separated from the interior of the building by a material that remains in place for at least 15 minutes of fire exposure. Structural insulated panels faced with 0.5" gypsum drywall meet this requirement.

Blocking of sound transmission by structural insulated panels:

The sound resistance of a SIP wall depends on the thickness of the gypsum drywall applied, the exterior finish applied and the thickness of the insulating foam core that is used. SIPs are especially effective at blocking high frequency noise and most homeowners notice the quiet comfort of a SIP home. However, a SIP building envelope does not as effectively stop low frequency sounds.

SIP's compatibility with other building systems:

SIPs are compatible with other building systems. Wall panels can sit on a variety of foundation materials, including poured concrete, blocks, or insulated concrete forms. SIPs are sized to accept dimensional lumber and are seamlessly compatible with stick framing. SIPs are also popular as a method of providing a well-insulated building envelope for timber frame structures.

Modification of structural insulated panels:

What considerations do you need to take into account when building with structural insulated panels vs. conventional framing? The majority of construction with SIPs is very similar to conventional framing. SIPs accept dimensional lumber and are fastened together using staples, nails or screws. Proper sealing is especially crucial in a SIP structure. All joints need to be sealed with specially designed SIP sealing mastic or low expanding foam sealant, and/or SIP tape. Voids between panels and unused electrical chases need to be filled with low expanding foam. In addition to sealing, planning and consideration needs to be applied to material handling. Although smaller 8- by 4-ft. panels can be set by hand, larger 8- by 24-ft. panels require the use of equipment to unload and set. On-site modification can easily be done using a few additional SIP specific tools. Panels can be cut using a beam saw or a beam cutting attachment to a circular saw. The foam core can then be recessed for splines or dimensional lumber using a hot wire foam scoop or specialized angle grinder attachment to recess the core.

How are electrical wiring and fixtures installed?

Electrical wires are pulled through precut channels inside the core of the panels called "chases." Manufacturers cut chases during the manufacturing process according to the electrical design of the home. Electricians can then use fish tape to feed wires through panel chases without compressing the insulation or having to drill through studs. Wiring can also be run through baseboard raceways and in the cavity behind the beveled spacer on SIP roof-to-wall connections.

Can plumbing be installed in structural insulated panels?

Plumbing should not be located in exterior SIP walls because of the possibility of condensation or supply lines freezing in cold climates. During the design phase of the project, all plumbing should be relocated to interior walls. If plumbing must be located on an exterior wall, it is recommended that a surface chase be installed on the interior of the wall to conceal plumbing. Another option is to construct a small section of the wall using conventional wood framing that can be used to run plumbing.

Attaching siding or other exterior claddings to structural insulated panels:

Because SIPs use very little solid lumber, an increased fastener schedule is often required when attaching exterior cladding. It is also important that proper moisture management procedures be followed when applying any type of cladding to SIPs.

Attaching kitchen cabinets to structural insulated panels:

Typically, an increased fastener schedule is required. Another option is to install plywood strips behind the cabinets to provide additional holding strength for fasteners.

Can insects harm structural insulated panels?

Many manufacturers offer SIPs with borate treated foam to provide termite resistance. Termites may also be deterred through the use of a specifically designed steel mesh. Both these treatments are highly effective, but they are not a substitute for careful termite prevention and maintenance, as with any other wood structure.

Are structural insulated panels susceptible to mold and mildew?

An airtight SIP building envelope forms the basis of a successful mold control strategy. The extremely low levels of air infiltration in SIP buildings allow for incoming air to be provided in controlled amounts by air handling equipment. In addition to creating an airtight structure, SIPs are solid and free of any cavities in the wall where moisture can condense and cause unseen mold growth.

Does a building with a structural insulated panel roof need to be ventilated?

The area inside a SIP building envelope is considered conditioned space and will be ventilated by the building's HVAC system. There is no need to provide a vented attic beneath a SIP roof, and doing so would compromise the conditioned space of the building. Research conducted by Building Science Corporation on test homes in hot climates demonstrates that including the attic in the conditioned space allowed for more energy-efficient space conditioning and less probability of moisture related issues. Some building science experts, such as Building Science Corporation, have advocated venting the roof by providing an air space between the SIP roof panels and the roofing material (known as a "cold roof"). This practice is not a requirement for SIP buildings, but an extra measure to improve the durability and moisture resistance of the building.

Timber Frame:

A timber home is a kind of house that uses a frame structure of large posts and beams posts that are joined with pegs or by other types of decorative joinery. Almost always, the walls of the structure are positioned on the outside of the timber frame, leaving the timbers exposed for visual effect. Timber framing is strong, old and so well established that they used to just call it building. It forms the basis of a building that will last for hundreds of years.

One of the big advantages of timber-frame construction is that it is so strong it doesn't need load-bearing walls cutting through the middle of the house, so you can design the layout in any configuration you want, including a totally open great room/dining room/kitchen/entry. On the other hand, in open designs, the frame connects the volumes and brings them down to a more human scale due to the warmth of the wood and the joinery.



Beyond the aesthetics of exposed timber and open floor plans, timber structures enjoy durability unmatched by conventionally built homes. They also provide more structural integrity in the unfortunate event of fire damage, as the large timber supports are more resistant to burning completely through than the thinner cuts of wood that make up conventional building structures. Finally, a timber home affords the owner opportunity to make a bold design statement, as timbers come in a number of sizes, shapes and colors.

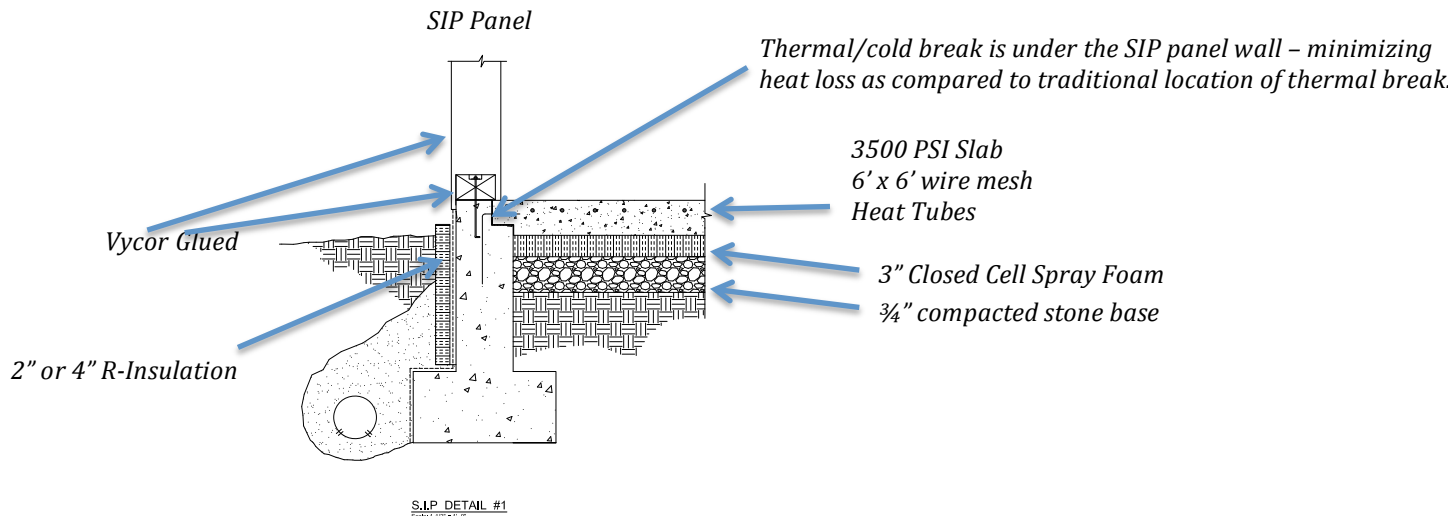
The speed of the build is quicker with timber. A timber frame can be partly pre-cut, modulated, and built to precision making build time much quicker. Time is also saved since less building debris is around to clear. Timber-framed buildings are far quicker to erect. A quicker build time clearly saves time and money for domestic property owners.

While each material has its pros and cons, a timber frame building provides several unique benefits that will help set your home apart from your friends and neighbors.

Foundation Details:

There are several ways to design/build your foundation walls, with some being more efficient than others. At MCB we believe everything starts with proper foundation design ensuring a more efficient building process for SIP panel installation while also minimizing heat loss.

Whether your home has a full height basement or a crawl space – our design process has similar characteristics as outlined in the detail diagram:



- Water proofing/vapor barrier using Vycor 5000 glued to foundation walls all the way down to the footings. The Vycor at the sill plate will also add an additional layer to block the cold break.
- 3" closed cell spray foam vs 3" rigid insulation board ensures a much tighter bond between the concrete slab and compacted stone base – allowing the hydronic heat to better penetrate the slab and into your home.
- On top of the foundation wall, the sill plate will be leveled using a laser ensuring a truly level surface for the SIP panels to sit upon.

Concrete Radiant Floor Heating & Cooling

The science behind radiant floor heating is quite simple: Tubes that circulate hot water or electrical heating elements are installed in the concrete slab when it's poured, turning the thermal mass of the concrete into an inconspicuous radiator of warm, even heat. Among the many benefits: Your feet are always toasty warm, the temperature is consistent and easy to control, you won't feel the drafts or hear the noise of blowing air, and no dust or allergens get circulated within your home through air vents. Best of all, you'll typically pay lower utility costs than with a forced-air system, because concrete floor radiant heating consumes less energy to achieve the same level of comfort.

Benefits of Radiant Heating by having the floor itself distribute the heat:

Natural Waves of Warmth.

- Warmth is carried to living spaces on invisible waves of radiant energy naturally.

Comfort-Comfort-Comfort

- No other heating system can come close to the high degree of comfort provided by radiant heating.

More for Less.

- The efficient delivery of radiant heat is more comfortable while using less energy.

Clean Breathable Air.

- No air passes through dusty ducts or dirty fins before reaching the room.

Even Heating.

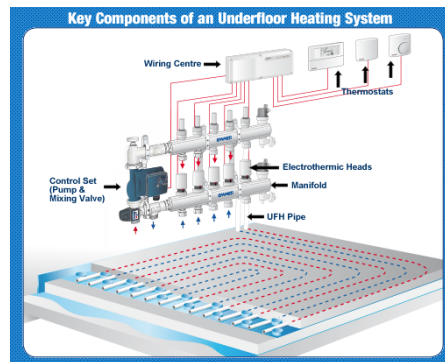
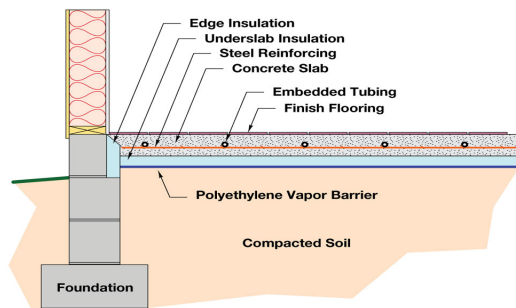
- Radiant systems gently warm the air, leaving no hot air to rise and be wasted at ceilings. Objects are warmed while cold windows and walls are neutralized by the heated surfaces.

Silent Running.

- The quietest way to deliver heat to your home or business.

Hydronic/Concrete Slab

Hydronic In-Slab System



Hydronic (liquid) systems are the most popular and cost-effective radiant heating systems for heating-dominated climates. Hydronic radiant floor systems pump heated water from a boiler through tubing laid in a pattern under the floor. In MCB, our designs utilize controlling the flow of hot water through each tubing loop by using zoning valves or pumps and thermostats regulate individual room temperatures. The tubing or elements are embedded in the concrete anywhere from the bottom of the slab to within 2 inches of the surface, depending on the design and installation technique.

Home Energy Solutions

Let's start with solar energy, which is sustainable, renewable, and plentiful. As the cost of using solar to produce electricity goes down each year, many Americans are increasingly switching to solar. Now, there are over a million solar installations across the country.

A solar electric system provides an opportunity for anyone who is looking to reduce monthly utility bills and make a long-term, low-risk investment.

Solar Works Everywhere

The solar resource of the United States is enormous. In fact, just one hour of noontime summer sun is equal to the annual U.S. electricity demand. Most states in the United States have good-to-excellent solar resource. Even places with relatively low solar resources, such as the Pacific Northwest and Alaska, can experience cost savings, and have similar solar resources to countries that have widely developed solar PV, like Germany.

Environmental

Each kilowatt-hour (kWh) of solar that is generated will substantially reduce greenhouse gas emissions like CO₂, as well as other dangerous pollutants such as sulfur oxides, nitrogen oxides and particulate matter. Solar also reduces water consumption and withdrawal.

Future of Tesla Roofing Tiles / Solar Integration

Tesla's objective is to "fundamentally change the way the world uses energy—"by "fostering a clean energy ecosystem and helping wean the world off fossil fuels" using backup energy storage for renewable energy.

Back in late 2016, Tesla ([TSLA](#)) moved to acquire Solar City, a solar panel manufacturer and installer. Shortly thereafter, the electric automaker revealed why: it had developed a new residential solar product, the solar roof. While it looked like any other home roof, the tiles that composed the roof actually contained solar cells. An individual roof tile won't produce much energy, but when linked with others in sequence, the tiles can potentially generate power equal to that of regular solar panels.

But while Tesla's solar roof energized the solar industry, it was hardly revolutionary. Solar shingles had already been available commercially for over a decade, and the technology behind them was patented in the 1970's.

Homeowners love solar shingles because unlike highly visible solar panels and from the ground level, the solar cell inside the shingle is invisible. They're also potentially cheaper than regular roofing tiles, especially in new homes that are built with solar power in mind. Normally, builders would first have to install shingles and then a solar installer would have to affix the panels. But by unifying both elements into a single, simple installation process, solar shingles allow homeowners to save time and money.

Future of Tesla Powerwall

Tesla battery packs are an ideal pairing for solar panel systems, especially in the case of off-grid projects where homeowners need or want to become fully independent of their utility. A solar storage solution like the Tesla Powerwall 2 allows you to maintain a sustained power supply during the day or night.

Tesla Powerwall 2, which aims to be a simple solution to the difficulties with solar power, by making sure you've actually got the power when you need it.

As with other energy storage products, the Tesla battery pack is sized for day-to-day use at your home, and is usually paired with a home solar panel system. When your solar panels produce more electricity than you can use in your home, the excess is stored in the battery pack instead of being sent back into the electric grid. Later, when your panels aren't producing enough electricity, you can use the electricity stored in your Powerwall instead of having to buy it from your utility.

Additional Design Elements of a Smart Home to consider:

- Smart Home Control
- Advanced Lighting Control
Turning on a lamp or ceiling light from a wall switch is old fashioned now. Lights can now be controlled from mobile devices, touchscreen panels or an automated system. Advanced lighting controls are becoming more commonplace; this technology is a standard feature in MCB designed homes.
- Remote Monitoring
- Automated Energy Efficiency
- Back up power, Outage protection

Lifestyle Living

A timber frame building represents your personal style. There are nearly unlimited options for creating your beautiful home. From current to classic, you can choose the home that fits your lifestyle. More than just a building, a timber home is a unique work of art, with beautiful craftsmanship on display. The exposed wooden frame emphasizes your interior, creating a comfort zone for you and your family to enjoy.

One of the ideas around MCB designs is to begin with a barn home. What, a barn?



Why?

Yes, a barn home possess the warmth and character of a modern mountain home but in an economical and time-efficient package – why not get started living your life quicker than later!

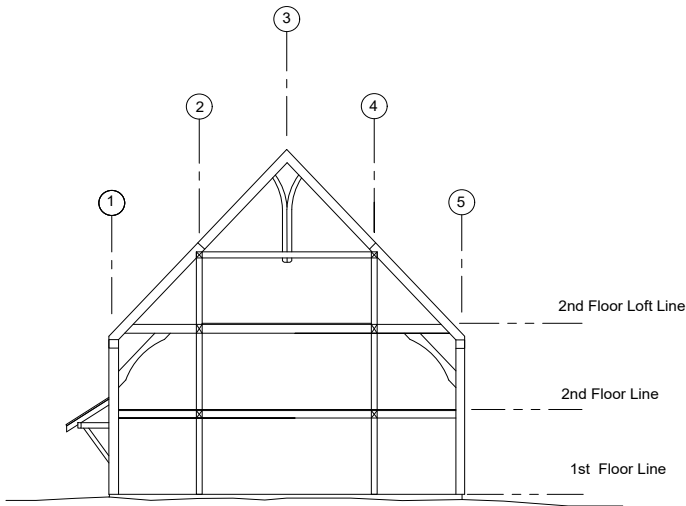
A barn home has all the traditional comforts and amenities that are found in any other home but a more flexible and creative twist. Barn homes are large enough that allows you to use the bottom floors wide-open space as a dual-purpose space such as a garage and living space, and add a second floor where you can have additional living quarters or bedrooms. One of the biggest aspects of this type of building that makes it very popular is the fact that the post frame design allows the homeowner to decide where the wall should be and how the interior should be designed. If someone wants a wide-open space it's easily achievable and yet for another person, they may want many individual rooms and that is equally achievable.

By starting with a barn home – you may elect to make it into a place of luxurious surroundings. Our wide use of concrete floors will be beautifully stained and the ceilings will be high and they will have these tremendously large sliding doors that make it a unique luxurious living space. Still, others will turn this into a retreat or a hunting lodge.

One of the biggest benefits is the fact that they are very affordable. As well as being substantially lower in cost to build, they may also provide the benefit of lower tax rates and lower insurance costs and more customization.

So lets get started:

With the unique structural design attributes of a barn style home, together we can quickly design your multi-purpose barn home, built and completed in a few months:



BUILDING SECTION

scale : $\frac{1}{4}'' = 1'-0''$

Step 1:

How do you envision living your lifestyle?

Will the 1st floor serve as a multi-purpose dwelling with a garage/workshop space and living area?

Will the 1st floor be dedicated to your transportation vehicles (cars/trucks/ATV's/Snowmobiles) with a workshop?

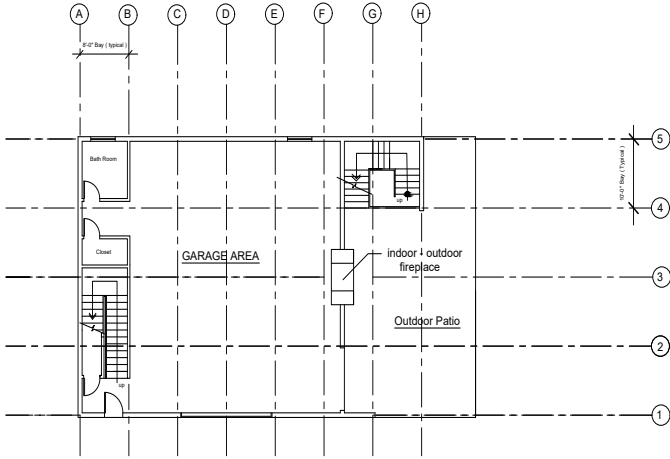
Will the 1st floor be dedicated to living space integrating your indoor/outdoor lifestyle?



Step 2:

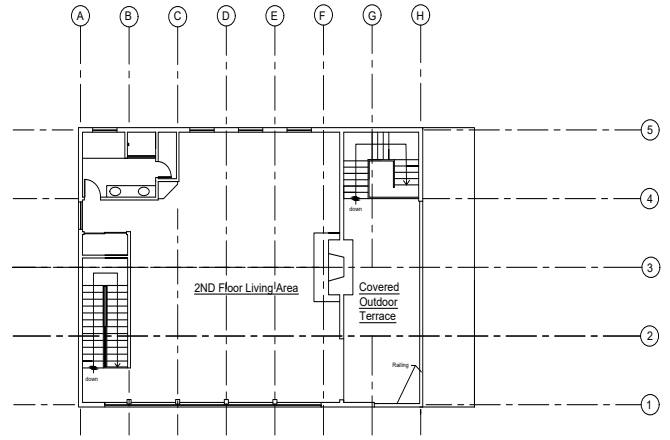
How do you want your lifestyle to flow within the walls?

The key is flexibility – One of the greatest benefits of this type of a post frame design allows the homeowner to decide where the wall should be and how the interior should be designed- freedom without the structural barriers of traditional designs.



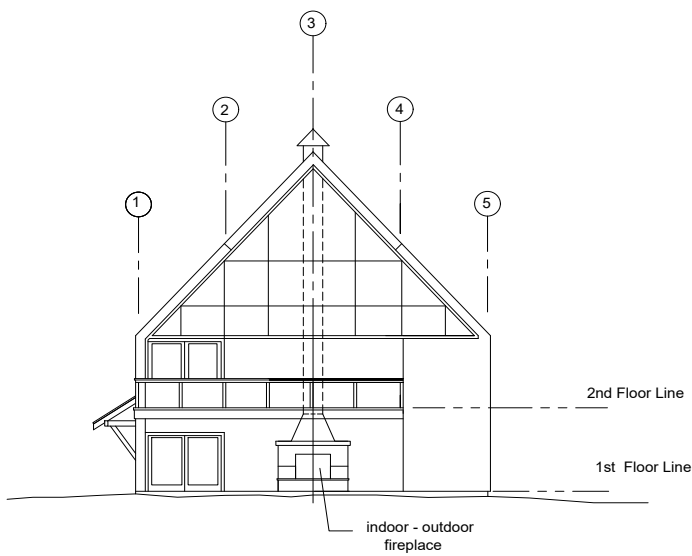
1st FLOOR PLAN

scale : $\frac{1}{4}" = 1'-0"$



2nd FLOOR PLAN

scale : $\frac{1}{4}" = 1'-0"$



RIGHT SIDE ELEVATION

scale : $\frac{1}{4}" = 1'-0"$

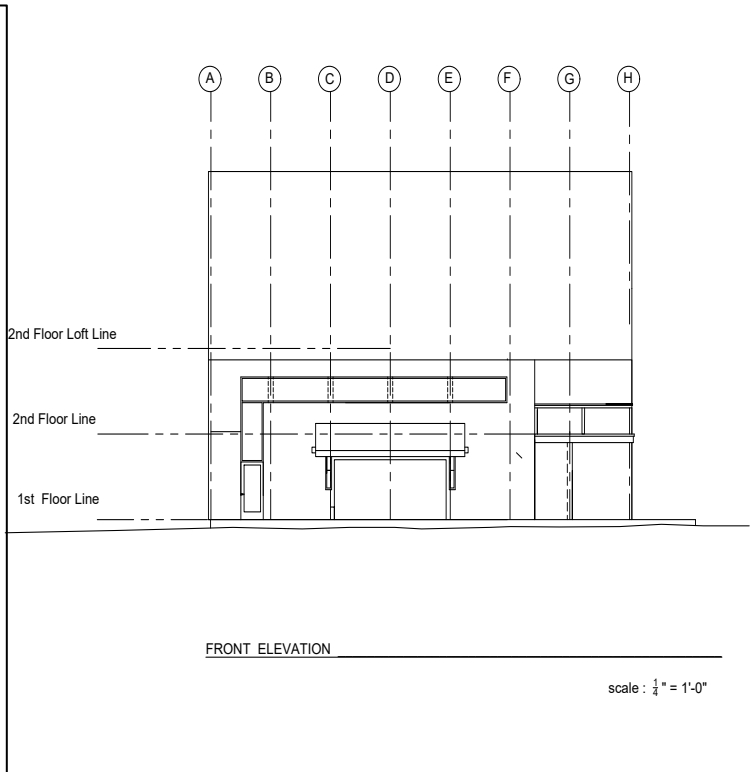
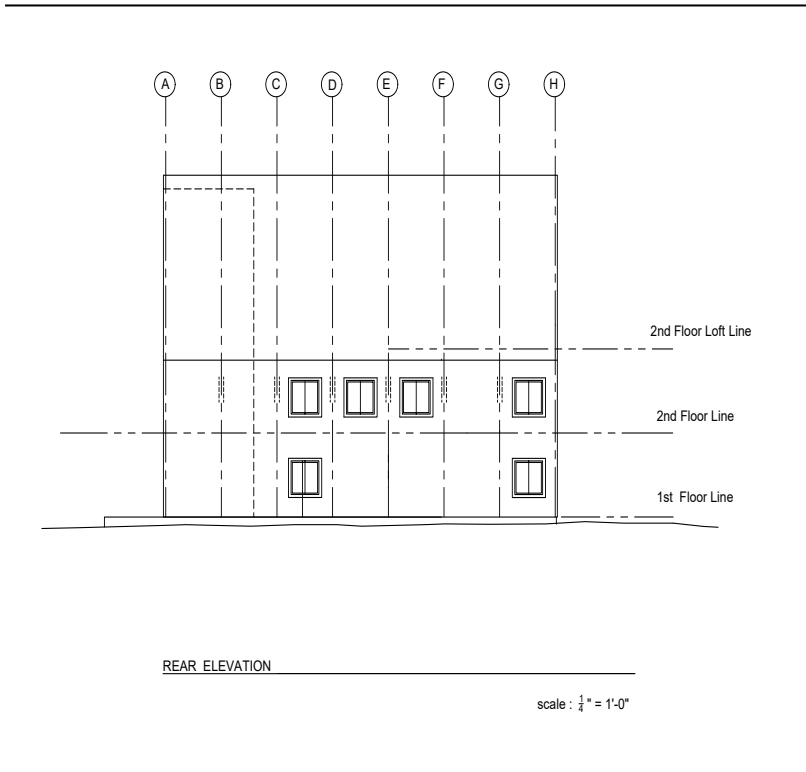
Step 3:

What is your style?

Do you want a contemporary, mountain modern, or rustic twist?

What are your favorite materials: stone, wood (reclaimed or modern), or steel?

Let your multi-purpose barn home be a reflection of who you are, your lifestyle and what inspires you.



From your vision to our design department to your home – we can create an everlasting impression that is a true reflection of you and your lifestyle.

