



Hoping to Build an Affordable Home in the Methow Valley?

In an era when building is increasingly expensive, Methow Housing Trust strives to build affordable, high-quality homes that are energy efficient and low-cost to maintain over time. We offer these home design, construction and product tips to any member of our community as a starting place to help you:

- Design a modest and beautiful home.**
- Reduce material waste.**
- Minimize labor costs.**
- Resourcefully use space.**
- Maximize energy efficiency.**
- Select building products.**

We recognize that every general contractor/building crew has developed their own set of skills and proficiencies, and we offer these guidelines simply as a starting place for wise home design in an era when every dollar (and hour) counts.

Please, share your learning with us, and we'll add it to this living document for others to learn from!

Before Buying Property

Considering these simple points will set you up to be able to build more affordably, and could also alleviate long-term maintenance costs.

- Does the property have power, a permitted water system/well and/or a septic/sewer system? How far are these utilities located from where you hope to build? These variables could dramatically affect total site development costs.
- What are the neighborhood fire risks, and what WA State Rating Bureau "protection class" is the property located in? This may strongly influence your homeowner's insurance rates.
- Is there a flat, buildable site on the property? Sloped lots are generally more costly to develop and build simple homes on.
- How long and steep is the driveway? This will impact long-term snowplowing and maintenance costs.

Architectural Design Considerations

Affordable construction starts with the design. Most building materials come in lengths of 2' intervals and sheeting materials like plywood and drywall are 4' x 8'. So, to reduce material costs and avoid waste, select a design with dimensions and framing specifications that avoid cutting (and wasting) materials. In addition, an efficient use of space allows reduced square footage, substantial construction savings, and long-term energy/maintenance savings.

- Modify or use previously built affordable floorplans.
- Exterior wall dimensions in 8' or 4' increments.
- Interior 8' ceiling height (two sheets of plywood/drywall tall and reduced heating cost).
- Framed walls on 16" (interior) or 24" centers (exterior) to reduce cut materials that cannot be re-used elsewhere.
- For homes 2000ft² or less, design single-story (stairs and hallways are an inefficient use of space), flat-floorplan and entryway level with exterior ground (no entrance stairs).
- No more than 6 exterior corners (reduces cutting materials and labor costs)
- Use pre-engineered trusses as rafters for supporting the roof. This minimizes structural engineering costs, allows additional space for ceiling insulation, and reduces labor costs in construction.
- Roof overhangs extending out 24-30". This adds to the durability of the house and helps prevent snow from piling up directly against the house. Longer overhangs look cool, but add cost.
- Consider a house orientation and landscaping that will maximize passive solar heating in the winter and minimize summer sun exposure.
- The roof design should shed snow away from entry-ways.

Electrical & Plumbing

- Consider a "Mini-Split" heat pump (AC/Heating) located in primary your living space. They require less ducting than a central air system, and are more affordable and efficient in most spaces.
- Supplement heat with electric baseboard heaters (bedrooms) – cleaner and lower cost than propane.
- Wall heaters are a wise option for bathrooms.
- If possible, group the plumbing systems/walls together and consolidate mechanical systems.
- Pex tube piping is good option (freeze resistant and affordable) - minimize numbers of "Ts" or connections between tubes.
- Surface mounted ceiling lights (ie., "Blinks") are easy to install, improve insulation in ceiling (compared to can lights), and reduces the cost of fixtures.
- Provide a generator outlet box on house exterior (in carport if possible) to allow for an alternative power source during extended power outages cause by extreme weather events (snow storms, wildfires).

Cost-Effective, Low-Maintenance Finish Materials

In addition to low up-front costs, consider materials that are durable and will not require substantial amounts of maintenance over the life of the house. Also, materials that are simple to install will save your contractor time (and you, money). Here are some recommendations on your most cost-effective, quality options:

- Exterior siding – Hardiboard, metal or stucco are all good options. Limit wood siding to trim and/or limited accent touches.
- Interior Trim – Pine or Medium Density Fiberboard (MDF) or other inexpensive softwood.
- Interior Paint – Vapor barrier style.
- Floors – Laminates or engineered wood. Easy to install, durable and low maintenance.

- Shower/Bathtub inserts (instead of tile)
- Vinyl windows – Standard sized (6” intervals), sliders
- Interior Doors – Solid core birch veneer, 32” wide (34” for ADA needs)
- Exterior Doors – Fiberglass (you can paint it yourself), 36” wide
- Counter Tops - Laminate

Maximize Insulation & Water Efficiency

A well-sealed and insulated house will increase the efficiency of your home, reducing utility bills and allowing for a less elaborate heating system upfront. In addition to energy efficiency, thoughtful consideration of water is important since water is a very limited resource and likely to be tightly allocated in the future.

- Truss Energy Heels – Increased “height” of rafters allows additional insulation in ceiling. Suggested: 24” tall at low end of a shed roof or 18” tall for a gable roof.
- Ceiling Insulation – R-60 (blown in) – one of the best investments you can make! Code for trusses is 49, however, a higher insulated ceiling will save money (heating costs) and reduce the likelihood of snow melting on the roof and forming ice dams that can result in a leaky roof.
- Wall insulation – R-22.5 fiberglass blown in.
- Floor R-30 fiberglass batts
- Windows - U- 0.23 glazing
- Water efficient appliances will reduce your monthly utility bills and help conserve water in an arid region.
- Xeriscape landscape choices that incorporate native vegetation require minimal maintenance and watering.

Snow and Firewise Considerations

The Methow receives substantial amounts of snow in the winter, and has experienced large wildfires that have burned homes. Snow and wildfires should both be highly considered in your design and material choices.

- Determine how and where snow will collect around the house (as it sheds off the roof) to avoid snow accumulation in front of doors, driveways or walkways.
- Simple roof lines (standard gable, or shed roof) are wise to avoid snow and ice accumulation in “roof valleys”
- Soffit Venting – creates ventilated “attic space” preventing the roof from being exposed to excessive heat from the house, and prevent ice dams that can cause roof leaking.
- All roofs need ice water guard between plywood and roofing material
 - Gable roof 3:12 – 4:12 pitch, asphalt shingle roofing recommended
 - Shed roof 0.5:12 – 1.5:12 pitch with mechanically seamed metal roof and snow breaks
- Fire Resistant & Durable Siding - Metal, stucco, or concrete fiber board (hardiboard)
- A covered outdoor carport with some enclosed storage space will protect gear/equipment and keep vehicles snow-free during the winter. Ideally, the carport should be accessible from the house without having to shovel snow in the winter.

Working with a Contractor

In the Methow Valley, General Contractors charge roughly an additional 15% on top of the building material and labor costs. For a house that cost \$300,000 to build, you would be saving roughly \$45,000

to act as your own general contractor. BUT, if you have to quit a different full-time job in order to build your own house, this might not actually be a cost savings. You may be able to save more money hiring a contractor and providing a clear set of expectations and guidelines. This will help prevent misunderstandings and ensure the most efficient use of their time. In addition, some helpful tips for working with your contractor are:

- Consider a design/build contractor, or an architect and contractor team who already have a track record of successful affordable outcomes for their clients.
- Pick a contractor based on homes they've built that you like the feel of.
- Ask the contractor for suggestions for building styles base on what his/her crew is most efficient at building.
- If you have specific recycled or custom materials in mind, discuss them with the contractor well in advance. Re-purposed materials don't always translate into cost savings.
- Don't change plans or ideas in the middle of the building process. Change orders are expensive.
- Be available to promptly answer questions and make decisions throughout the project. Time is money, and being decisive saves time.
- Offer to help with site cleanup and other time consuming basic labor that sets the building crew free to do their more skilled work with your budget.

Additional Resources:

Methow Conservancy Good Neighbor Handbook

<https://methowconservancy.org/discover/good-neighbor-handbook>

Methow Recycles (Best practices for construction waste recycling.)

<http://www.methowrecycles.org/index.php/recycle-guide/how-do-i-get-rid/>

Okanogan County Building Department

<https://www.okanogancounty.org/government/building/index.php>

Okanogan Conservation District Firewise

<http://033c467.netsolhost.com/firewise>

Built Green Washington

<http://www.builtgreenwashington.org>

Guidance for Wildfire-Resistant Building in Okanogan County

https://cms9files.revize.com/okanoganwa/Document_Center/Department/Building/Wildfire%20Resistant%20Buildings.pdf