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## Ways to Build Better Mountain Homes



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### 1 SPECIFICATIONS

Some Builders aren't interested in seeing Specifications for materials to be used on your project, or written & graphic instructions on how to install them. They'd rather use what they're familiar with, which is understandable. However, Architects research the latest improvements, as they want your home to be more durable, energy efficient, watertight & structurally sound. Written specifications in your Architect's CDs (Construction Documents) is one way of having a better home built, when you're dealing with Licensed, cooperative & professional Contractors. Hundreds or thousands of items can be in the Specifications, so this is important. Specifications can also provide bid forms so you can obtain "apples to apples" pricing from Contractors. The main job of "specs" is to indicate required material types, quality, physical characteristics & how they are installed.

**IMPLICATIONS:** without specs, material & system quality levels in your new home project will be questionable & possibly lead to maintenance & operational problems.

**SUGGESTION:** have an Architect use detailed, written specifications in your CDs.

### 2 ROOF STRUCTURAL STRAPS

Many homes are framed using toenailed connections instead of steel straps. Especially at roof framing to bearing walls (or with small "clips"). Big Mistake. Code Officials said after Hurricane Andrew that part of the reason homes blew apart was due to lack of hurricane straps. Those are strips of galvanized steel about 1-1/4" wide that are nailed up & over each roof member, & down both sides of the top wall plate & down the studs or under the top of the wall plate, along with other steel reinforcing.

**IMPLICATIONS:** Toenails (diagonal nails) pull out under high wind suction; they aren't strong enough. Roofs blow off, homes fall down.

**SUGGESTION:** Have Architect detail stronger connections using straps.



Typical attic truss strapping in a HOME ARCHITECTS® project.

### 3 LICENSED ARCHITECT CONSTRUCTION DOCUMENTS

Licensed Architects must create documents that protect the HSW (Health, Safety, Welfare) of Clients & the public. There are imposters. Ask for their license #. Real Architects have a B.A. or M.A. from a NAAB accredited major university, usually 10 years +/- experience interning under licensed Architects, have passed the demanding NCARB 3-day exam, have been accepted by a State's BOA, passed yearly CEUs, & conducted their practice in a professional manner. Unlicensed people have no requirements.

Architect's documents typically will have better design quality, both artistically & technically. Architects provide details that show proper ways to assemble components for better energy efficiency, structural stability, water-tightness & durability. Anything else is a crapshoot. Do you really want to gamble on a \$300k to \$1M+ investment?

**IMPLICATIONS:** poorly designed homes fall down in today's fierce storms, rot, leak & cost more to heat & cool.

**SUGGESTION:** Make sure your new home is designed by a pro: a real Architect.



### 4 FOAM PORTION OF HOUSE

A completely foamed house is much better in terms of energy tightness than a conventionally insulated one. However, spray foam insulation can cost 300% to 800% more than normal fiberglass insulation.

**IMPLICATIONS:** Totally foaming a house can be a budget buster. Not foaming can result in unwanted air infiltration. What to do?

**SUGGESTION:** The most economical method is to have the insulation crew take a day and small foam cans to seal all gaps along the interior side of the exterior walls where studs, rimboards & attic framing meet exterior structural sheathing. This modest investment can result in a much tighter home, then allow use of the more economical fiberglass insulation throughout. A more expensive hybrid method is to install a "flash" layer of foam first.

### 5 FOUNDATION WALLS

In mountain areas, there is something in the air (possibly acid rain) that seems to wear concrete block. There are situations where it was possible to reach out with a gloved hand & tear off chunks of older concrete block. Grout inside the block seems to be okay (if filled). Codes seem to ignore that seismic events created mountains. Often, nothing is required by law. Block cracks more easily during earthquakes.

**IMPLICATIONS:** Block is a riskier foundation.

**SUGGESTION:** Use cast in place steel reinforced concrete foundation walls.

### 6 RAIN WATER MANAGEMENT

Mountain regions often receive more rain & snow. Roof water is often not well managed, crashing directly to the ground around a home.

**IMPLICATIONS:** this can foster mold growth, wood rot, foundation undermining & water penetration into floors, walls, basements & crawlspaces.

**SUGGESTION:** Have Architect show gutters, ample downspouts, underground drainage piping & proper foundation wall drainage.