

Advanced framing

You won't be spooked by this skeleton

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Living Green



Wood lumber framing is the skeleton for most homes.

Wood is one of the least expensive and most renewable materials used in construction. For this reason, the majority of homes in southern New Mexico and the United States are built using traditional wood “stick frame” construction techniques.

Prompted by increased energy costs and lumber shortages in the 1970s, the National Association of Home Builder’s Research Foundation conducted studies to identify what wood frame structural configuration was necessary to maintain superior strength and allow the maximum insulation in wall cavities to improve energy efficiency. The result was called “optimal value engineering” (OVE).

Optimum value engineering – or simply “advanced framing” – has two main benefits. No. 1, it eliminates framing components that serve no structural purpose, this reduces waste as well as unnecessary costs for the buyer. No. 2, it makes more room for insulation and limits hot or cold spots, making the house more comfortable and less expensive to heat and cool.

The insulating value of Fiberglas, cellulose, spray foam or cotton batting materials is much greater than the adjacent wood framing. A wall described as R-19 will only have the rated insulating value in the space

between the wall studs. The R-value at the point in the wall where there is no space for insulation is only about R-6 or 7 (at the stud). Additional or unnecessary wood framing decreases the insulating performance of any wall system. A traditional framed (16-inch on center) 2-by-6 wall with R-19 insulation will have an overall thermal performance of only about R-13.

An OVE wall with studs spaced at 24-inch on center can improve cumulative wall system insulating performance to R-18. This means a builder can net almost a 30 percent improvement in wall system performance by adopting advanced framing techniques.

OVE, advanced framing practices can include:

- Walls framed with support studs on 24-inch centers rather than on 16-inch centers
- Corners made from two studs rather than four (allows for insulation at house corners - standard framing leaves gaps with no insulation)
- Headers sized according to the load they actually carry.
- Roofs built with engineered trusses rather than framed conventionally on site
- Floors framed with smaller/stronger laminated I-joists rather than dimensional sawn lumber
- Ladder blocking for partition wall intersections
- Stacked loads from trusses down to the foundation – alignment of truss loads over wall framing maintains structural strength with fewer wall studs
- Structural insulated sheathing can replace



OVE features in this Veloz Energy Star home in Del Prado include offset 2-by-4 framing and engineered and insulated headers.

conventional plywood or oriented strand board (OSB) used for exterior sheathing

- Variations include offset 2-by-4 framing on 2-by-6 plates – this allows space for insulation at each stud providing a thermal break between the interior and exterior.

These Advanced Framing or OVE practices are quietly being integrated as a new standard of home construction in our area. Most framing contractors have begun to use at least some of these recognized OVE features. Builders certifying homes with Energy Star, Build Green New Mexico or LEED for Homes work with framers to maximize the benefits of smart framing. The kicker is, you won't know if your new home has this feature unless you ask about it.

OVE framing can't be seen after insulation and drywall are installed. Homes with a Home Energy Rating Index completed during the construction process have the type of wall framing and the amount of insulation installed described and documented by an independent third-party inspector.

Don't be haunted by high-energy costs in your next new home. Learn about advanced and OVE framing and make sure this skeleton feature is working for you.

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