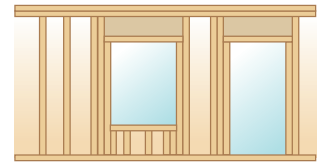




What Do We Mean by OVE?

Optimum Value Engineering (OVE) simply means “construction designs that use less wood and natural resources, but deliver equal or superior strength and quality.” OVE is also sometimes called “Advanced Framing Design,” because the techniques of OVE apply primarily to stick framing in residential construction. OVE home designs use efficient construction techniques to create corners, boxes, reinforcing supports and other joists or framing with a minimum of wood. These techniques were created by the National Association of Home Builders (NAHB).



Traditional Framing



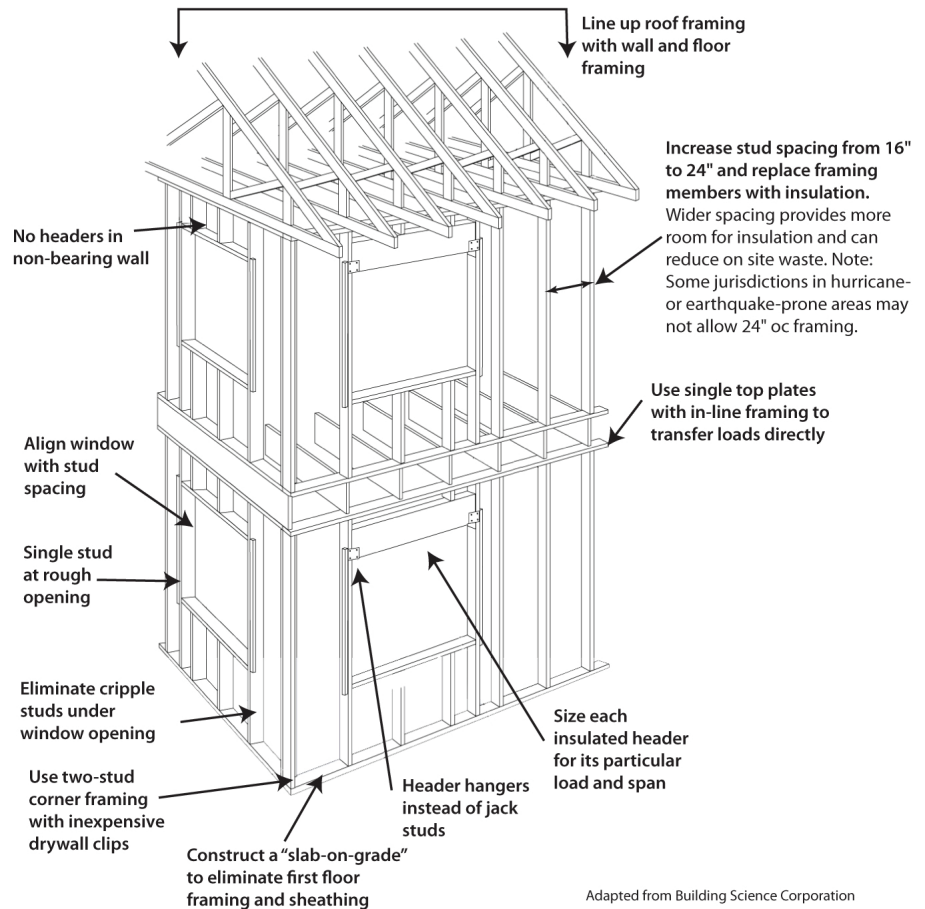
Advanced Framing Techniques can save 23-30% on lumber, reduce labor and scraps.

Why Use OVE Techniques?

- **Cost Savings** – OVE techniques can help save time and money during home construction without jeopardizing structural strength integrity. According to the Partnership for Advancing Technology in Housing (PATH), OVE can result in material cost savings of \$500 for 1,200 square foot homes, and \$1,000 for 2,400 square foot homes. Additionally, labor savings are estimated at around 3 to 5 percent.
- **Increased Energy Performance** – OVE techniques help improve a building’s thermal performance. The use of insulated headers in place of wood members can improve insulation and boost energy savings for the owner.

Basic OVE Techniques

Use a **two-foot modular construction**. A building design based on two-foot increments makes sizing more predictable and framing easier to install. It also minimizes the amount of waste produced when cutting framing materials.



Adapted from Building Science Corporation

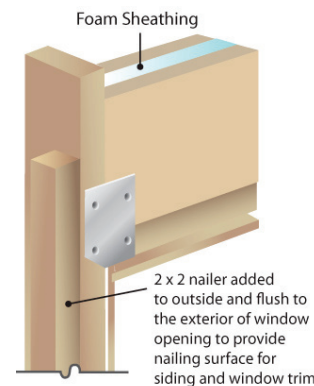
Courtesy of the Department of Energy's Building America Program.
www.buildingamerica.gov



Build a Box Header

One component of advanced framing is the box header. Simple to build, it reduces the use of wood products and provides insulation all at the same time. If you are building standard 2 x 4 exterior walls, follow these simple steps:

1. Use a 2x6 spf (spruce, pine, fir) and rip in half to 2 x 2-3/4" wide for the header frames. Since SPF is a softer wood, it is much easier to cut.
2. Assemble header frames using screws, with the vertical pieces set between the horizontal pieces.
(see the photo to the right)
3. Check the header frame to make sure it is square!
4. Cut a piece of 7/16" osb (oriented strand board) to size. If you use 11-1/2 x 12" as the header height, the combined thickness of the OSB and the ripped 2 x 6" EQUAL the thickness of a 2 x 4"!
5. Attach the OSB header frame using a low VOC adhesive (check again to make sure it is square). Check the engineer's requirements for screwing or nailing the header into place. Usually, spacing requirements are 3" for nails, and 4" for screws.
6. Fill the cavity with cellulose or cotton insulation.
7. Attach the second side of the header and you are done!



Modified Header and Window Opening

Reduced waste and increased insulation can be achieved by supporting an insulated header with hangers and by nailing surfaces for siding scabbed toward the outside edge of studs.

Source: www.doe.gov

KEY POINT TO REMEMBER

Many builders start off by using just a few techniques. As these techniques are perfected, other techniques are applied. This allows builders to learn new practices without becoming overwhelmed and to identify issues quickly to avoid replicating them in mass production.



Link and Learn

Learn more on the Shades of Green website about Optimum Value Engineering at:
<http://www.ybshadesofgreen.org/buildingenvelope/wallsystems.htm>

Visit Toolbase and enter "advanced framing" in the search window for many articles:
<http://www.Toolbase.org>

Read A Practical Guide to Saving Wood, Money, and Forests:
<http://www.nrdc.org/cities/building/rwoodus.asp>

The Energy and Environmental Building Alliance is a great source for green building education:
<http://www.eeba.org>