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# Advanced Wall Framing and Optimum Value Engineering: Pros & Cons

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More than a structure, house framing is a system. It not only holds a house together, it also serves as its strategic plan—a blueprint with which to design construction, manage workflow and track progress.

In 2005, the [NAHB Research Center](#) decided to study a framing technology called optimum value engineering (OVE). What it found was an alternative way to frame a house that helps the planet, and which may or may not help builders—depending on how much time, money and patience they can spare.

## What is OVE?

OVE, also known as advanced wall framing, is a framing technique that allows builders to use only the wood they really need, explains Laura Capps, director of residential green building services for Southface Energy Institute, an Atlanta-based nonprofit that promotes sustainable homes, workplaces and communities through education, research, advocacy and technical assistance.

“It’s trying to build a home that’s structurally sound and very durable while minimizing the amount of material resources required in the construction of that home,” Capps says.

Although it’s enjoying increased visibility thanks to the explosion of green building, OVE is nothing new, says John Peavey, director of applied technology for the NAHB Research Center. “It dates back to the early 1900s,” he says, “when Sears & Roebuck were selling kit houses.”

Despite its long history, OVE still has limited use, Peavey says. “Standard material sizes may make it challenging to get optimal lumber sizes without scraps,” he says. “Also, some of these techniques aren’t going to be applicable in certain code requirements, such as earthquakes and high winds,” Peavey says. OVE presents a number of obstacles, some of which are easier to do than others, making it harder to adopt, he says

### Advanced framing challenges

OVE’s biggest problem, according to Capps, isn’t real—it’s perceived. “OVE has gained somewhat of a negative reputation just because people don’t really understand what it is,” she says. “A lot of builders think less wood means less strength, and that’s just not the case.”

According to Peavey, more training and education will show builders over time that advanced framing techniques can actually improve durability and enhance performance—even with less wood. Harder to overcome than its perceived problems, he says, will be OVE’s practical problems:

- **Time:** Because OVE is all about engineering, it requires advanced planning in both the design and execution phases of construction. Advanced framing requires an engineer who can design framing for maximum efficiency and contractors disciplined enough to follow a detailed and sometimes more time-consuming framing plan.
- **Money:** Because OVE requires certain skills and oversight, it may necessitate hiring experienced OVE engineers and contractors, which can add to a project’s cost.
- **Knowledge:** Although basic OVE techniques are relatively easy to learn, mastering advanced framing takes time and training not only for builders, but also for subcontractors—electricians, plumbers and HVAC installers—workers and even code officials, who may need to be educated about OVE techniques.

### The upside of OVE

Despite its potential drawbacks, OVE has numerous advantages, according to Capps—of which eco-friendliness is only one. Other benefits include:

- **Cost:** Although builders may have to spend more on OVE-experienced talent, they’ll save more on materials by using less lumber.
- **Quality:** Because advanced framing uses less wood, it also uses fewer nails; the fewer nails you use to secure your drywall to your framing, Capps says, the less likely your walls are to experience cracking and settling later on.
- **Energy:** Less wood means more energy efficiency, as OVE leaves room for more insulation and therefore a better thermal break between a home’s interior and exterior.
- **Design:** Advanced framing impacts not only walls, but also everything that goes in them; it allows for better duct and pipe design and layout, which means better HVAC performance, higher-efficiency plumbing, etc.

“Builders may think that OVE framing is inferior,” Capps says. “But in reality, the builders who practically implement it have fewer callbacks, a more durable product and get better performance out of the homes they build.”

To learn more about OVE and advanced framing techniques, which can earn you green building points from [LEED for Homes](#) and the [National Green Building Standard](#), visit [ToolBase.org](#), courtesy of the NAHB Research Center.

**Sidebar Title:**

OVE for beginners

**Sidebar Body:**

According to John Peavey, director of applied technology for the NAHB Research Center, his center has provided specific framing techniques that builders who aren't deterred by the negative perceptions of OVE can use to see immediate tangible benefits.

For the average builder who decide the pros outweigh the cons, OVE is as easy as implementing these four basic framing techniques, according to the NAHB Research Center:

- Right sizing headers according to the 2006 International Residential Code
- Three-stud insulated corners
- Ladder-blocking for intersecting walls
- 24-inch o.c. floor joist framing (using L/480 deflection limits)

More advanced OVE builders might also consider these techniques, which are likely to require more time, consideration and code inspection, but can earn maximum points for LEED certification and save the most material:

- Single top plate
- In-line framing
- 2x4 and/or 2x6 o.c. framing (which provides thermal advantages, but which can cause detailing concern for attaching certain finishes)
- Two-stud corner
- Header hangers if exterior foam sheathing is not used
- Single member framing around window and door openings
- Single member headers