STEEL FRAME HOMES:

Why the Time Has Finally Come

By Alan MacQuoid

When complete, steel-framed homes look just like many other developments in Southern California. The difference is out of sight.

You’ve heard it before, but at last it’s about to come true: steel frame homes are going to start taking over an ever-increasing share of the home building market.

Why did it take so long? The reasons for the belated acceptance of residential steel framing are many and varied, but there is one simple fact that cannot be ignored: everything is now operating in favor of steel framing. Let’s briefly examine the reasons.

Poor Quality Lumber at Very High Prices

It sounds like a reversal of the normal sales pitch: “We’re cutting the quality and passing the cost increases on to you!” But unfortunately it’s true. You should see the poor quality of lumber arriving at sites today: warped, split and knotted wood that wouldn’t have made it past the sawmill gates 20 years ago. And you’ve all seen the skyrocketing prices this poor quality lumber is fetching. As the National Forest Products Association points out, many sawmills are actually running out of logs.

Some people saw the forests in Canada as a salvation, but this is, at best, a stopgap measure, and if current rulings by the Board of Forestry and the International Trade Commission are any indication, this is not a viable solution. And the published reactions of Canadians prove that they are not going to sit still for their forests being clear-cut in order to build American homes.

Much has been made of the reforestation efforts of lumber companies, but the fact is that it is not possible to obtain large amounts of good quality building lumber from trees that are very young (i.e., those which were planted within the past three decades).

As continuing conservation efforts place more forests off limits to cutting, and as fewer board feet of good quality lumber are taken from reforested trees, lumber prices will rise still higher.

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Suddenly, Steel is an Acceptable Solution.

Steel framing has always been recognized as a viable, strong, efficient, safe and simple solution—but with a catch: “Only for commercial buildings,” people added.

Once you’ve examined the differences and similarities between wood and steel framing, builders will have no hesitancy in using steel in homes. First of all, consider this: since steel framing is excellent for a 30-story, block-long skyscraper, it certainly should be excellent for a three bedroom home. Yet, there is resistance. Why? The answer is one of those maddening phrases to which there is never any logical response: “Because we’ve always used wood for homes.” Well, with reasoning like that, we would never have built homes at all; we’d have simply stayed in caves.

Framing with steel can be done in half the time required for traditional wood framed homes.

Now that residential steel framing is a cost-saving solution, a great many more builders are going to consider it. When they do, they will discover that steel framing is a solution that truly represents both sides of the term “cost effective.”

California Building Systems is supplying the galvanized steel for a
144-home project that Russell/Packard Development is building in Fontana. This is what Larry Russell, President of Russell/Packard, has to say about metal: “Why did we switch from wood to steel framing for this project? Cost. The steel framing and lower labor requirement for these homes are running 10 percent less than wood.”

**Steel Actually Handles Like Lumber**

Construction crews are often pleasantly surprised to discover that steel handles like lumber. The stud, track and joists used for residential steel framing are lightweight and easy to load, unload and move. Crews even frame with steel in the same way as lumber—the only differences are using a screw gun instead of a hammer and a metal-cutting saw blade instead of a blade for wood. There may be no welding or punching involved on-site.

Lanny Damitz, Vice President of Operations for Russell/Packard, explains how his construction crews reacted: “They were cooperative and open to learning this new technology, and we had no problems with the framing contractor. At present, some of our workers do both steel and wood, and we learned that the switch to steel framing was a lot more rapid than we thought it would be.”

Most often, steel is pre-cut at the factory, but it is as adaptable as lumber and may be cut easily just like wood. In many cases, you may even order sections, trusses or joists pre-cut and preassembled, saving even more time in framing.

While lumber varies in quality, steel frame components come in the

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same high quality, stud after stud. And as the American Iron and Steel Institute (AISI) points out, since light gauge steel is stronger than wood—it has the highest strength-to-weight ratio of any framing material—you have physically less material on site: the typical house requires 11,000 feet of wood, but only 4,000 feet of steel framing.

No Need To Go “Stick-for-Stick“

When you’re accustomed to seeing two-by-fours set 16 to 20 in. apart, it takes a couple of days to adjust to the fact that steel studs may be set as much as 48 in. apart. But the strength of steel has been proven in test after test by the AISI and such firms as U.S. Steel. CBS’s Galva-Frame was one of the first systems designed to replace traditional wood framing specifications with technologically superior light gauge steel procedures.

Steelstud, track, joists and trusses are all manufactured to strict standards of strength and consistency. Along with its proven strength, light gauge steel is also more stable than wood—it will not warp or buckle, it resists climatic changes, and it provides improved roof integrity as compared to wood. Over the life of the house, a steel frame will give more value at lower initial cost.

As is being demonstrated by the NAHB Resource Conservation House, residential steel frame homes are not just better in theory, they’re better in fact. And the facts are being proven over and over again in thousands of steel framed homes which already exist in all 50 states and in over a dozen foreign countries. Many of the world’s more luxurious homes, custom-built for residents of Beverly Hills, Aspen, and Hawaii, are steel-frame structures. In these instances, the cost savings were less important than the quality that results from steel framing.

Erect a Steel Frame Home Sooner—Get It On the Market Sooner

The opportunity to create a better product in less time is available to any builder who switches to steel framing. Due to the consistency of steel, there will be no more crooked walls and headers will always join properly. Plus, steel framing is non-flammable, so the framing material does not contribute combustibles to a fire. It may even result in lower fire insurance rates.

Since construction with a steel frame is faster than using wood, homes get built sooner. Not only are building costs lower, the new homes are on the market sooner, giving builders the opportunity of turning a profit earlier than ever.

Steel Framed Homes Can Receive A Seismic 4 Rating

Unlike wood-framed residences, homes constructed with steel frames have a distinct advantage when it comes to earthquake-prone regions. Properly built homes which utilize steel framing can be engineered to receive a seismic 4 rating—the highest rating available for residential dwellings. The reason lies not only in steel’s strength or in its resiliency, but also in its quality of assembly, positive attachment, consistent quality without defects and the fact that it is bolted to the foundation. As is borne out by insurance investigations, most earthquake damage to wood-framed homes results from the house separating from the foundation—something that will not usually occur with steel-framed residences.

Many Other Advantages of Steel Framing

Wood is attractive to the eye, but a wood frame is never seen by a homeowner. And unfortunately, wood is also attractive to creatures you don’t want living with you. A steel frame is vermin proof and termite proof, and not susceptible to carpenter ants. A home built with a steel frame never runs the danger of suffering wood rot in the studs, beams or rafters. In addition, a steel-frame home resists the splits, cracks and “creeping” long associated with wood-framed dwellings.

No Need For Consumer Fears of the “Myths of Steel”

Homeowners will not notice the difference between a wood and steel-framed house. Once the steel frame is up, it may be finished in stucco, wood, brick, vinyl siding or any other material you can name.

Although you find these myths or old wives’ tales still floating around, a steel frame does not cause any interference with TV or radio reception or with garage door openers; there is no problem with light-
ning striking the home; there is no additional noise; and there is no problem putting pictures on walls and putting up hanging lamps or plants because you simply use metal screws instead of nails. (It’s even easy for those inexpensive “stud finders” to find the steel studs.)

**Steel Is the Most Recycled Materials in the World.**


In fact, according to AISI’s published reports, the last decade saw over one trillion pounds of steel recycled—more than paper, aluminum, glass and plastic combined. The infrastructure and the mindset needed to recycle at a 90 percent plus rate are already in place in the steel industry. That is not the case with users of wood, as you can see from the dumpsters full of wood scraps hauled away from every site using wood framing. And since most cutting of steel maybe completed at the factory, there usually are very few pieces of scrap at the construction site.

Adding to the conservation, the steel used in steel framing is itself recycled—from crushed automobiles and other sources.

**For Steel Framing, the Time Is Now.**

No matter which way you turn—whether it’s the economics or the environment, whether it’s more educated consumers or efficiencies in construction—the arguments have now swung over to the side of those who are accepting steel framing for homes. And let’s face it, when it comes to conserving the planet’s resources, you can’t beat the one tremendous advantage of steel over wood: it saves forests. After all, when you build a wood frame house, you’re killing trees...but when you build a steel frame house, you’re simply recycling old Fords and Toyotas.

**About the Author:**

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