Residential Steel Framing Is Here.

Although the cost of lumber has backed off from the high achieved during the last few years, value has allowed light-gauge steel framing to be competitive as a framing material. Photo by Donna Granata.

Don’t Miss the Train!

By Alan MacQuoid

It seemed like an old train pulling away from the station. Starts and stops. A jerking motion while accelerating. Screeching braking sounds causing a commotion among the passengers. One could hear the question, “Are we on the right train?”
Residential steel framing in the United States certainly reminds us of the old train. It has experienced many starts and stops over the last few decades, and we still hear the question, “Are we on the right train?” It appears that, indeed, we are on the right train; the tracks are clear so it’s “full speed ahead.”

In 1971 there was an upward spike in domestic lumber prices that encouraged some U.S. framers and builders to take a close look at light-gauge steel as an alternative framing material. They did, and framed more than 1,000 houses with steel framing materials as light as 25 gauge, 16 inches on center. But when lumber prices dropped, so did interest in residential steel framing.

Lumber prices again spiked in 1977, and guess what? The industry showed renewed interest in residential steel framing. About 5,000 houses this time. But lumber prices dropped and so did the high hopes of the steel industry and the roll formers of steel studs. The builders went back to wood framing.

What was not obvious during these times in the 1970s was that certain roll formers and engineering firms were developing their data banks and were engaged in value engineering those products that were used for the load-bearing (structural) and non-loadbearing elements of the houses. It was after the mini-boom in residential steel framing in 1977 that the U.S. government started ordering military and government-dependent housing overseas to be framed in light-gauge steel. Bright and shiny steel was replacing cement block, stone, poured cement and the other building materials that had previously been the staple for U.S. housing around the world. This did not go without notice in the international community, but the world was more concerned with the Cold War and other matters.

**Building on the Past**

Lumber prices again began to increase at a fast pace in 1991, creating a new group of interested builders. This time, the premier developers and framers took a more serious look at steel framing. There was a better infrastructure in place, better engineering and a growing labor pool. The trade group for the steel industry in the United States is the American Iron & Steel Institute, which formed a Residential Advisory Group and funded studies for thermal transfer, design guides, fasteners, shear testing and other areas. AISI has instituted a series of seminars for framers, builders and building officials, which have been successfully held around the country.

Although the cost of lumber has backed off from the high achieved during the last few years, value engineering has allowed light-gauge steel framing to be competitive as a framing material. Other than cost, steel has many other benefits. We have all heard about them, but builders are basically interested in only the bottom line and not in the collateral benefits that steel framing may bring to a job.

Light-gauge steel framing is an alternative framing material. It is not a cure for cancer. If the cost of residential steel framing doesn’t make sense, it will not become the material of choice in the years ahead. Some problems associated with steel framing still exist, but they are on their way to being solved. One of the biggest problems has been the labor issue. Wood framers or commercial drywall contractors? That issue is being solved by formal and informal training programs for both trades.

**Expand Your Horizons**

A good example of the transition from commercial tenant improvement drywall work to residential steel framing is the story behind the photograph on the cover of this issue of *Construction Dimensions*. Art Willison is well known for his commercial work, mainly non-loadbearing partition walls. Located in Southern California, Art Willison Construction needed something new to make up for the decline in commercial projects. His is just one of
the custom homes framed out of light-gauge steel.

Helping him along the way was the technical services department of his steel manufacturer, Angeles Metal Systems of Los Angeles. Most stud manufacturers have technical services departments that can assist with the transition from commercial to residential steel framing. There are a few tricks to learn, but Willison believes “It doesn’t take a rocket scientist to frame a house.” His house is certainly not typical of the average steel-framed home, but it does show the amount of design flexibility provided by steel.

Art Willison Construction is now preparing to frame a large tract project in Taiwan. Willison believes he has to go where the action is, and for him the action appears to be in some international projects.

**Look Overseas**

The demand for residential steel framing offshore is even greater than it is in the United States. The demand for competent and skilled steel framers is even greater.

Perhaps it was the international attention given to the steel framing that went into the rebuilding of Kobe, Japan, after its 1995 earthquake. The hundreds of housing units shipped by Angeles Metal Systems immediately after the earthquake have been followed by a flood of interest (and orders) from Japan and other foreign countries. In most cases, American crews were sent to frame the projects. Through its residential steel framing subsidiary, Angeles Metal Systems has projects going in Portugal, Denmark, the People’s Republic of China, Taiwan, Korea, Malaysia and the Philippines. All these projects necessitate framing crews from the United States be sent. More are required.

It amazes me that many drywall contractors moan about the lack of business when there is a real shortage of trained and willing residential steel framers. Supply and demand will ultimately solve this, but, in the meantime, demand is ahead of the supply of trained framers.

The domestic residential steel framing
market is doing quite well, with more builders getting past the learning curve, which has been quite brutal for some.

One commercial drywall contractor, Commercial Enterprises, Inc. of San Diego, having just successfully completed a 155-unit steel frame “affordable” residential project in Santa Fe, N.M., is finding that the company’s services are in great demand. It is now involved in a 147,000 square foot residential steel framing project, which will be a “getaway house” for one person—and friends.

The market is there. Whether the smaller “affordable boxes” or the fantastic “villas” for the rich and famous, they are being built—and more are coming.

The next time I am at a trade association meeting with drywall contractors, I will listen to those who are complaining about the status of construction and then tell them, “Get on the train before it pulls out.”

About the Author
Alan MacQuoid is a director and chief executive officer of Angeles Metal Systems, Los Angeles. MacQuoid currently serves as chairman of the Education and Marketing Subcommittee of the Residential Advisory Group, American Iron & Steel Institute.