

# STRUCTURAL BUILDING COMPONENTS MAGAZINE

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## STCA Update

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Steel Wall Panels: Automation Brings Viability by Donald R. Moody, P.E.,  
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In our last column, "Steel Trusses: Entry Point for Light Gauge Steel Components in Today's Marketplace," featured in the December issue, we discussed the largest immediate opportunity for light gauge steel in construction: trusses. A \$160 million industry with a 25 percent annual growth rate, steel trusses are making impressive headway across many light commercial construction market sectors, from assisted living facilities to hotels/motels.

As a result, component manufacturers and fabricators are increasingly interested in outfitting their current operations for steel trusses in preparation of serving the market swell. But the smart managers are more interested in what's beyond the steel truss door. Offering one total construction framing solution in strong, flexible, cost-effective light gauge steel is what we, as an industry, can offer. And the next component poised for swift growth is wall panels.



**STEEL WALL PANELS HAVE GREATER POTENTIAL GROWTH THAN ANY OTHER COMPONENT; THE BARRIERS TO MARKET ALSO REPRESENT THE SINGLE BIGGEST REASON FOR THEIR USE.**

### WHY IS THE STEEL WALL PANEL THE NEXT BIG THING?

When we described the market potential for steel trusses, we were focusing on light commercial construction. With wall panels, the market potential greatly expands to include residential segments, new single and multi-family, basements and sheds. The new residential market's

potential alone is roughly 14 million tons in the U.S.; the size of the commercial market is somewhere between three and four million tons.

Of course, the obstacles to meet demands of this much larger and more fragmented audience are also greater. Increased cost of construction, the single biggest barrier to market entry, also poses as, theoretically, the single biggest reason that steel technology will help us gain significant market share. Because it takes longer and costs more to build a steel framed home, steel stick for wood stick, there is a general lack of incentive to switch to steel, and as a result, very few wood framers are prepared to frame in steel.

This obstacle also represents the reason, in theory, that steel panels can offer a clear-cut solution, offering a low-cost framing package that requires less on-site labor. Panelization saves time and money by fabricating steel wall panels in a controlled manufacturing environment, using less skilled workers on the jobsite. In fact, builders have found that using a panelized system can save generally 40 percent of the field labor cost and time.

However, without scrutinizing the shift in labor from the jobsite to the many man hours spent in engineering, design and layout, before the panels are fabricated, the viability of long-term market penetration for light gauge steel wall panel systems is precarious. Let's review the real costs associated with steel panelization.

## **INDIRECT COST**

Steel studs, plant labor and shipping are direct costs. But we're missing engineering, layout and design man-hours, for which there is a shortage of skilled labor. We're missing the lack of software options for panelizing in light gauge steel. So up until now, component manufacturers had large office staffs, real estate costs, equipment costs, utilities and other costs associated with running such an engineering and design labor intensive operation that when combined, make it difficult to deliver steel panels in a cost-effective way. Add that to the labor still required by field framers, and the budget is blown.

## **MATCHING OUTPUTS**

In order to be profitable and therefore offer viable building solutions in light gauge steel, panelizers must also match the outputs of the front office group with the plant. In a burgeoning industry like steel framed construction, there is typically more front end work required (e.g., implementing and managing estimating systems, improving software and adding details). When the front end is overloaded, the outputs are nearly impossible to match, and operating costs become more burdensome for steel panelizers than those using traditional materials.

## **ON-SITE LABOR COSTS**

Additionally, the trend to switch to panels has unearthed other hazards, even with traditional materials like dimensional lumber and composite wood products. If a builder wants to switch to panels, it takes about half of the framing money in the package away from the framer. This inevitably causes the framing contractor to be uncooperative with panelizing companies. So

panelizers and/or builders may have to hire their own crews, which adds employee payroll costs to their bottom line, pushing them further outside the budget.

## ON-SITE PERCEPTION COSTS

In residential construction, it is virtually impossible to find a perfectly level and square slab. If a company is making panels from drawings provided by the builder, they are almost always in for a surprise when they get to the jobsite. While problems associated with matching shop drawings and plant output are well known and usually accounted for, matching them up to the jobsite is not. Panelizers are left with the perception in the builder's mind that using panels limits flexibility.

## SO HOW DO WE OFFER A VIABLE STEEL WALL PANEL SYSTEM?

Despite the fact that only 7.7 percent of the walls in residential construction are panelized today (in any material), a combined result of the business and operating costs listed above, panelizing will take an ever increasing share of the market as labor costs increase and labor availability decreases. The key to succeeding is to dramatically lower all costs, especially the front office costs by automated software for panel drawings and production. We must produce steel wall panels at a price that makes it advantageous for the framers and builders to use them.

Automating the front office and integrating the process from design all the way through fabrication to jobsite installation helps mitigate or eliminate many barriers discussed here and opens up the possibility for steel to solve the larger problems now facing construction markets everywhere: lack of available labor and higher labor and materials costs. Steel technology can bring cost efficiencies from the plant to the jobsite; and, as they do, steel wall panelizers will be able to offer total building solutions, with trusses and floors in the package.

The market is ready for a cost-effective, whole-systems solution. Light gauge steel framing systems can offer it. Stay tuned....

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