

# economics

## BEHIND THE CURTAIN

BY JOHN CROSS, PE

The ninth SteelDay continues the tradition of enlightening designers, builders, students and others with the ins and outs of the structural steel industry—in the midst of what might be a major shift in the construction market.

**“I’VE BEEN A STRUCTURAL ENGINEER** designing buildings and bridges for over 30 years, and this is the first time I’ve ever been in a steel fabrication shop. If I had been here earlier in my career, every one of my designs would have been better.”

That’s what an experienced structural engineer said to a reporter for a local newspaper after touring a fabrication shop eight years ago on the very first SteelDay, back in 2009.

In a very real sense, those words capture the vision of SteelDay. SteelDay is an opportunity for design and construction professionals to see “behind the curtain” and come to appreciate the skill and expertise that the structural steel fabricator brings to a construction project. SteelDay is a time to recognize that fabricated structural steel is not a commodity that can be purchased “off the shelf” or is best imported from a foreign country, but rather is a highly engineered specialty product crafted by knowledgeable professionals who bring years of project-based experience, skill and understanding to every unique project.

### Our Shop is Your Shop

September 15 will mark the structural steel industry’s ninth annual celebration of SteelDay. Since its inception, tens of thousands of individuals have attended SteelDay events and participated in national webinars focused on structural steel. Hundreds of open houses and project site tours have taken place across the country.

This year, the domestic structural steel industry will once again open its doors through a series of webinars and events throughout the United States. Many structural steel fabricators will be hosting open houses and “Breakfast with a Fabricator” celebrations at their shops. These events present opportunities for designers, contractors and building owners to look behind the curtain and experience the process of detailing and fabricating structural steel.



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Project site tours are planned in several cities where signature steel structures are being erected. These events often include presentations by the project’s designers, fabricators and erectors on the decisions and approaches used for the project. Site tours are a great way of understanding how designers and fabricators approach difficult project challenges and address them with innovative steel solutions.

In addition, two national webinars will be available at no cost to engineers and architects over lunch on September 15. For engineers, a one-hour webinar addressing recent changes to the AISC *Specification for Structural Steel Buildings* (ANSI/AISC 360) the AISC *Code of Standard Practice for Steel Buildings and Bridges* (ANSI/AISC 303) and the recently released 15th Edition *Steel Construction Manual*. AISC’s vice president of engineering and research, Larry Kruth, will be delivering this interesting and informative webinar. This webinar will be offered twice nationally (12:30 p.m. and 2:30 p.m. Eastern time) and will provide one hour of continuing education credit. There is no charge for the webinar. And even better, for SteelDay, U.S. residents will be able to take advantage of a special offer that’s good for a free copy of the 2nd Edition AISC *Seismic Design Manual* when purchasing a 15th Edition *Steel Construction Manual* at the regular price (\$200 for members, \$400 for prospective members)—and shipping for both manuals will be free. (All publications mentioned above are available at [www.aisc.org/publications](http://www.aisc.org/publications).)

For architects, a distinguished panel will provide an introduction to the AISC *Code* and the value it brings to projects from an architect’s perspective. The panel, made up of representatives of the legal, structural engineering and architectural communities, will discuss the content of the *Code*, the unique role it has in the design and construction industry and why it is important for a project architect to understand its content. This free webinar will be eligible for one hour of AIA credit and will be offered at 1:00 p.m. Eastern time on September 15. Webinar participants will also receive a free PDF of the 2016 *Code*, which includes a new section on architecturally exposed structural steel (AESS).

### The Winds of Change

SteelDay 2017 comes at a particularly important time in the evolution of both the U.S. construction and fabricated structural steel industries. While the dollar amount of construction starts has surpassed the pre-recession spending levels of 2007 and 2008, the square footage represented by those projects and the actual number of projects have remained significantly below pre-recession levels. Residential construction has expanded, particularly multistory residential construction, but nonresidential building construction has remained relatively stagnant.



The recovery that has been experienced has occurred primarily in urban areas, mirroring a migration of the younger generations back into the cities where property and construction costs are higher. Suburban and rural areas have not benefited from the same level of rebound as the urban centers.

Over the past five years, multistory residential construction (five stories and above) has grown at an average rate of almost 30% per year on a square-footage basis, while the growth in nonresidential construction has averaged less than 10%. But 2017 may be marking a reversal of that trend. During the first six months of 2017 compared to the first six months of 2016, the growth in multistory residential construction was only 1% while growth in the nonresidential sector approached 18%. At the same time, construction starts on a square-footage basis declined slightly in several major metro centers, including New York, Boston and Chicago. Could 2017 be the inflection point where the growth in construction demand pivots towards nonresidential projects and away from urban centers? While six months of data does not definitively define a trend, it certainly suggests this may be occurring. Even as new projects have come on the market, vacancy rates in the multistory residential sector have been increasing. This suggests that the multistory residential portion of the market may be approaching an overbuilt condition.

### Meeting the Demand

As structural steel is the preferred material for framing systems for nonresidential construction, this increase in demand inevitably generates a several important questions:

- ▶ Are domestic structural steel mills capable of meeting this increase in demand?
- ▶ Is the domestic structural steel fabrication industry prepared to meet this increase in demand?
- ▶ How can project teams gain an advantage in an expand-

ing market with respect to schedule, cost and superior project outcomes?

Structural steel mills in the United States have the capacity to meet any anticipated increase in demand. The same is true of the domestic structural steel fabrication industry. Nonresidential building construction currently represents 35% of the demand for structural steel (industrial construction accounts for 45%, residential is 5% and other structures comprise 15%). It is estimated that both the domestic mills and the domestic fabrication industry have in excess of a 10-million-ton-per-year capacity compared to a current demand level of just over 8 million tons. Even if the nonresidential sector were to grow by 75%, equaling its all-time high achieved in 2000 (which is not anticipated to happen) know this: There is adequate mill and fabricator capacity to meet any anticipated increase in demand.

Project teams can gain an advantage in this expanding market by involving a structural steel fabricator early in the design life of the project. Early involvement of the fabricator will allow the fabricator to share specific ideas regarding how best to approach the framing system in a manner that would reduce the overall cost of the steel package while accelerating the project schedule. In addition, early involvement of the fabricator allows for open communication between the steel fabricator and other members of the project team, ensuring better project coordination and superior project outcomes.

And that brings us back to SteelDay 2017. SteelDay can provide an inside look at how beams and columns become specialized for projects and, if you design with steel, the opportunity to forge a relationship with a structural steel fabricator that can help yield better outcomes for your projects. It is your opportunity to get a head start on a changing market.

Whether you visit a fabricator's shop, tour a project site or attend a webinar, have a Happy SteelDay! ■