Most of the mid-rise office buildings going up in the Dallas area are cast-in-place concrete—with one notable exception. The Centura Office Building, which was designed by Datum Engineering, features a composite design with a concrete core and steel columns and floor members.

Why did the project's owner, MJS Realty, Inc., go with the composite system? According to a memo from the designer, it was a case of avoiding the pre-conceived notion that steel was not economical in the Dallas market.

One of the concerns with a full steel frame was the delivery times for structural steel—a situation which is now improving and should be fully rectified next year. However, the tightness of the steel market, combined with a robust construction market, has also affected the concrete market. The result is climbing prices and shortages in high-quality concrete contractors—essentially, the same market conditions that are felt in the steel industry.

Datum prepared a preliminary pricing package for three designs: concrete, steel and composite.

The composite system offered great advantages. “The economy of this system is due to the use of cast-in-place concrete where concrete is economical, i.e. walls and slabs, and the use of steel where steel is economical, i.e. beams and columns,” according to the Datum memo. In addition, it allowed the design to provide the flexibility that the owner desired: a 44’ column-free span between the core and the perimeter, 80 psf + 20 psf floor loads, the capability to allow tenants to install between floor stairs where desired, and the ability for tenants to economically strengthen floors where desired for high-density filing systems.

Somewhat extended delivery times for structural steel are being experienced in many parts of the country and is mainly the result of the continuing strength of the construction market—a condition that I’m sure we’d all agree is better than the alternative. The length of the economic expansion has diminished inventory at service centers. The situation was temporarily magnified this summer by some power outages and the usual mill shut-downs for maintenance. Now that summer maintenance work is over, the situation is beginning to improve. Also, most mills are rearranging their rolling schedules to more readily provide the shapes most in demand. The question, of course, is when will the situation be back to normal. My best guess is next year when the new TXI-Chaparral Steel plant is fully up and running and the European producers begin to have product available to ship into the U.S. market. And long-term, domestic production is expected to increase enough to handle the U.S. market requirements.

Another question on designers and fabricators minds is how the tight steel market will impact material costs. Steel prices are rising—but they’re still below the cost from a year ago.

Steel is still the right choice for your framing system. Just ask Datum.

If you have specific questions or concerns, email or fax me and I’ll pass your concerns on to the AISC Regional Engineer in your area.