

Buying In

BY GEOFF WEISENBERGER

Regardless of your feelings on global warming, green buildings make good business sense.

THE CONCEPTS OF SUSTAINABILITY and green buildings have found their way into the collective consciousness of the design and construction community. Not surprisingly, some segments of our industry were quicker to embrace these concepts than others.

And that's because the discussion continues as to whether a) global warming (or climate change) does exist, and it b) is due to a heightened concentration of greenhouse gasses in the atmosphere, with c) carbon dioxide being the main culprit, and d) the rise in CO₂ levels unequivocally being caused by humans, thanks mostly to e) our burning of fossil fuels to power our industrial, transportation, and building infrastructures.

One of my coworkers, who agrees with at least some of the above, half-joked that since we live in Chicago, a little global warming wouldn't be the worst thing in the world. But we both realize that's being selfish.

The point is that the whole global warming argument isn't something that is universally believed, despite significant support from the scientific community and substantial evidence that it is true. Some people believe some parts, some all, and some remain skeptical.

Yet the movement definitely has gained traction in the marketplace. According to McGraw-Hill Construction, \$12 billion was spent on green buildings in 2008, roughly 6% of total construction starts. That number is expected to grow to almost 33% of all construction starts by 2013. So in a span of merely five years, we could see the concept of green buildings grow from being somewhat of a novelty to encompassing one-third of all new buildings.

Interestingly, as bad as the construction market has been for the past couple of years, the green buildings movement hasn't lost a step. In fact, it's done the opposite. Between the third quarter of 2008 and the third quarter of 2009,

there has been a 45% drop in construction starts. But in that same period, building projects registering for Leadership in Energy and Environmental Design (LEED) status have jumped from approximately 60 projects per month to 160, an increase of more than 160%. That's significant.

What's also significant is the role buildings play in the whole environmental impact picture. According to the U.S. Department of Energy, buildings in the U.S. account for 39% of our total energy consumption, higher than both industry (33%) and transportation (28%). Buildings consume 65% of all electricity, making them responsible for 30% of total greenhouse gas emissions. In short, buildings have a very large impact on the environment.

Now you might be thinking that the vast majority of a building's environmental impact comes from its systems—HVAC, lighting, building controls, etc.—especially when you consider the building's entire life-span. And you'd be right. When you look at the structural contribution to a building's CO₂ emissions and general environmental impact, it remains flat throughout the life of the building, whereas the building systems' impact continues to grow, as these systems are used on a daily basis over a period of years.

The material portion's carbon impact occurs *before the building is completed*, during the material production, the design, and construction stages. However, much attention is given to reducing the impact of the building systems, because they will continue to become more and more efficient, thus reducing their environmental impact. While these systems are ostensibly separate from the structural framing of a building, it's important to note one thing: As building systems become more efficient, the relative impact of building materials will increase.

And that's very important for those of us in the steel industry to understand. We are only one part of the whole green buildings puzzle, but we are a significant part and our role will grow with time.

I'm very interested to hear how you, the readers of *MSC*, are considering sustainability in your design practices, your work processes, your shop, or your office. Feedback from those of you actively working in the construction industry gives us a better idea of what's going on in the real world—and also gives us the opportunity to promote your efforts.

The green building movement isn't new, but it's still relatively young. Like anything, it will continue to evolve and steel's role in it will evolve as well.

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