# A Long Fall

BY JOHN P. CROSS, P.E.

## The question, in terms of the economy and specifically the construction market, is *how* long?

**IF ANY PREDICTION OF THE FUTURE** can be certain, it will be that the months of September and October of 2008 will be the focus of hundreds if not thousands of books and scholarly studies over the next fifty years.

A period of eight weeks witnessed the collapse of the investment banking system, an unprecedented tightening of credit, the failure or merger of dozens of banks, over 20% of residential properties being worth less than their underlying mortgages, wholesale intervention in the financial market by the federal government, lightning-fast action by a Congress known for inaction, record losses (and gains) on Wall Street, and the acknowledgment of the long-held suspicion that the United States economy had settled into a recession—all occurring in the middle of a contentious Presidential campaign and just in the United States. Globally, the old axiom that "when the United States sneezes the whole world catches cold" still seemed to hold, with plunging commodity prices led by a 50% drop in oil prices, even larger percentage drops on global financial markets, and the economically powerful countries rushing to prop up their own financial institutions and currencies.

The experts will debate the causes and ultimate results of the "Fall 2008 Fall" for years, but the more immediate question is how these events will impact domestic business conditions and, more specifically, the construction marketplace. The simple answer is that *if the rescue plans work*, construction volumes on a square-footage basis will continue their current decline through 2009, flattening in 2010 with no significant upturn expected until 2011. It would be easy to say that the current downturn is simply the result of tightening credit and the economic shocks experienced over the past two months, but reality paints a different picture.

Domestic non-residential and multi-story residential construction volume, measured in square footage, peaked in 2006 at 1.8 billion sq. ft, with 2007 down 2% compared to 2006. That decline has steepened in 2008 with a projected decrease of 14% compared to 2007. Construction economists vary on their projections for 2009, but most predictions seem to center around an additional loss of 10%, with 2010 remaining level with 2009. This would mean that construction levels in 2009 and 2010 would be in neighborhood of 1.35 billion sq. ft, a total decline of 25% compared to 2006 levels. Some of this reduction can be traced to the impact of an overbuilt single-family residential market and the delayed impact of that overbuilt market on building types that follow new residential developments such as retail, commercial, small office space, religious facilities, and elementary schools. Also contributing to the early stages of the slowdown was a tightening of lending standards that can be traced back to early 2007 that limited the level of speculative construction activity. Clearly, the majority of the impact is a result of an overall slowing of the domestic economy.

### Short-Term Immunity

During 2007 and most of 2008 the structural steel industry seemed immune from the impact of the declining construction marketplace. Producers, service centers, and fabricators maintained active order books, attractive margins, and healthy backlogs. Several factors contributed to the overall heath of the industry, including the effectiveness of broad-based industry marketing efforts that raised the market share of structural steel by 7 points between 2000 and 2008; growth in the non-building demand for fabricated structural steel, particularly focused in the energy and process industries; and a weak dollar, discouraging imports of both mill and fabricated material.

However, the impact of the credit crisis and the continuing contraction of the construction marketplace will be felt by the structural steel industry over the coming months.  Even when increases in market share are taken into account, the demand for fabricated structural steel for non-residential and multi-story residential buildings is projected to be down 15% from 2008 levels when building type and height are taken into account. Non-building construction may offset a limited portion of this loss, but those segments of the economy are being impacted by decreasing oil prices, challenging the financial viability of some energy projects and the lack of available credit. At the same time, the current strengthening of the dollar will encourage the growth of imports of both mill products and fabricated material.

The reality of this downturn is being demonstrated in a sharp reduction in the architectural billing index, reports of layoffs at structural engineering firms, a dramatic increase in the number of projects reported by AISC member fabricators being cancelled or placed on hold, an increase in the number of competing fabricators bidding on projects, a reduction in producer and service center orders, and a continuing decrease in construction employment.

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## More than the Markets

But not all is gloom and doom. It is easy, in light of the press coverage of the current credit crisis and the loss of value of residences and investment accounts, to assume that this will be a long, deep trough and that it is the financial markets that drive construction activity. Construction activity is actually driven by a wide range of factors, and even though the lack of credit availability can temporarily choke off construction activity the demand for construction actually will help drive the economy into recovery. Several factors will drive a construction-based recovery.

Unlike the single-family residential market, non-residential construction is not in an overbuilt condition. Prior to the drying up of credit markets, there was a growing demand for non-residential construction based on declining vacancy levels and square footage rental rates increasing at a rate greater than the base level of inflation. This indicates that there will be a pent-up demand for new buildings that will accelerate the rate of recovery as the economy comes out of the recessionary period.

The fundamental relationship between population and building inventory, when taken with the average rate of building replacement, continues to indicate a long-term square-footage growth rate for construction of 3.5% between 2008 and 2030. While the construction marketplace will always experience cyclical growth cycles, the long-term prognosis is good.

## Investment in Infrastructure

There is an increasing level of discussion in government circles of an infrastructure-based financial stimulus program as opposed to the earlier consumer-based stimulus program. While this program would primarily fund non-building-based transportation projects, funds may also be made available for institutional and public building construction. Past trends indicate that an increase in infrastructure funding will have a trickle-down effect in the building market. Certainly any governmental or private sector encouragement of energy projects, whether they are renewable or fossil fuel-based, will increase demand for fabricated structural steel.

Increasing emphasis on productivity improvements involving alternative project delivery methods, sustainability, lean construction, and building information modeling (BIM) will allow an overall reduction in project cost and a better platform for managing risk. Increasing productivity, reducing project costs, controlling risks, and the desire for high-performance, green buildings and the higher lease rates they command will result in more projects being financially viable increasing construction levels. The structural steel industry is already recognized as a leader in each of these developing trends.

At the same time, the drop in commodity prices will have a direct impact on construction materials and the cost of construction projects. Over the past several years, the increase in cost for new buildings has been nearly twice the increase in the consumer price index. The result was that fewer projects were financially justifiable. As commodity prices drop, construction costs may still increase, but that increase should be less than the base inflation rate, resulting in more projects being financially viable.

## Ready, Willing, and Available

The availability of construction materials will remain high, with structural steel shapes been readily available in the marketplace either through service centers or directly from producers. Recent capacity expansions among structural steel producers will provide excellent availability of material as the market recovers.

And finally, it must be remembered that building construction is an integral part of the DNA of the United States. We are by our very nature designers, engineers, and builders. At the same time, Americans are creatures of habit. We may not build the same buildings we were building three years ago, but as a people we will continue to build. This point was driven home in a recent conversation I had with a salesperson who works in the paper bag industry. When asked how the economy was treating his business, the answer was surprising: Their sales are at record levels because sales of bags for french fries have skyrocketed. Americans are in the habit of eating out—only the places they eat out have changed. We may change what we build and even where we build it, but we will continue to build.

## The Near Future

So what does 2009 hold for the design, construction, and structural steel industries?

- A decrease in design activity of about 7% on a dollar basis through the end of 2009
- A decrease in non-residential construction starts of 10% on a square-footage basis
- A decrease in multi-story residential construction of 4% on a square-footage basis
- An increased interest in the use of structural steel, based on opportunities for productivity enhancement through early fabricator involvement, lean construction techniques, focused on off-site fabrication, and increased use of BIM
- A recovery in the design industry during the second half of 2009, slightly after a recovery in the general economy
- A recovery in construction starts in the second half of 2010, lagging the design industry by about three quarters

*Next quarter's topic (previously planned for this issue) will address the issue of achieving cost and schedule savings by implementing collaborative design methodologies.* MSC