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for the CONSTRUCTION INDUSTRY

# The 2009

## U.S. Markets Construction Overview





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SECTION

# 8

## Stakeholder Trends





**G**reen building and sustainability initiatives continue to gain momentum across the industry as demand increases and “green” is now the norm. The labor shortage continues to plague the industry as more and more baby boomers exit the workforce, creating the urgent need to identify and develop the next generation of leaders. The effects of the uncertain economy are more obvious in the residential market, but the adverse effects permeate all construction markets.

These are just a few of the significant issues confronting stakeholders within the broader construction industry. In this section, we attempt to paint a clearer picture of the current industry environment as we examine these and many more pertinent trends.

## Architects/Engineers/Constructors

Architecture and engineering firms have been experiencing a tremendous amount of change since the late 1990s (see graphic). Firms continue to be prosperous, but 2008's slow economy seems unlikely at this writing to make a turn-around before the presidential election. While most long-term projections call for huge growth in building projects worldwide for the next 25 years, this current slowdown in nonresidential construction will last through 2009.

The projected economic slowdown will offer firms a chance to focus on talent development, attraction and retention.

### The People Squeeze

While some public project dollars are expected to drop due to reduced tax income — putting pressure on firms to keep costs down — firms are under a second pressure from the inside: The shortage of qualified personnel is driving up salaries and benefits costs. Numbers confirm that fewer American students are entering engineering, architecture and the sciences. Some of those who graduate are choosing to leave the field for other careers in high tech and management consulting firms. Since new graduates can get work anywhere, many are fleeing the central states where they grew up and went to college for other regions with more attractive lifestyles, leaving their home states deprived of talented professionals.



Attempts to counter the shortage of design professionals before it worsens are surfacing. A Seattle middle school program started by women engineers seeks to interest young adults in engineering as a career. In March 2008, Harvard Business School and RMJM Architects launched a \$2 million program to stem the global shortage of architects. The RMJM program seeks to attract more architects into the profession by giving them a well-rounded skill set that integrates business management principles and advanced technologies with their design skills.

Increasing the immigration of highly qualified engineers and architects has been proposed as a possible solution to the shortfall. For nearly 10 years, an alternative to bringing workers to the United States has been to send the work overseas. The practice of offshoring has continued to grow as firms in China, India, Singapore, Russia and Mexico increase their offerings of CAD production, 3-D modeling and other technological services at a lower hourly rate than is possible within the United States.

While once only feasible for large firms, smaller firms are now benefiting from the use of outsourcing to fill gaps in employment. The cost effectiveness of such outsourcing fluctuates with the rise and fall of the exchange rate, and has sometimes been controversial, as reported by *Business Week* on June 18, 2007, which raised questions about whether the gross domestic product was being reported accurately due to incorrect accounting of work sent offshore.

Many firms are actively working to increase retention and employee commitment by offering career development and education programs, and clearly defined career paths. Firms are likely to increase education and development efforts during slower economic times to ensure their professionals will be better prepared and more competitive when the next upswing arrives. Areas of emphasis include project management, project leadership and soft skill areas that yield large benefits such as negotiations and teambuilding.

### Leadership Development and Ownership Transition

An ongoing trend for architecture and engineering firms and the construction sector is related to the shortage of qualified professionals — the impending retirement of baby boomers who launched many of today's firms during the post-WWII era. This places a high priority on identifying and developing the next generation of leaders. Future leaders and owners will need to develop the complex array of new skills that will ensure the firm's survival under vastly different conditions than when it was founded. In addition to identifying these leaders, current owners must also structure the fiscal means for these new owners to eventually buy them out. This particular trend is cited by many CEOs as the most important issue their firm faces in the near future.

### New Technologies Lead to New Project Delivery Methods

As pressures mount to keep project costs down and increase efficiency, new project tools and processes are being introduced. Building Information Modeling (BIM) is a tool in the emerging process of Integrated Project Delivery (IPD). While attempts have been made since the late 1980s to develop a fully integrated technological model coordinating a building's geometry, spatial relationships, geographic data, quantities and qualities of building materials and the entire life cycle of the building, including construction and day-to-day operations, only recently is the computer power becoming available to attempt these large and complex databases. BIM is currently being employed on all types of buildings, but the tool is still in its youth and is expected to continue to evolve.

IPD is considered to be the overall process of which BIM is a single tool. The overall process includes new methods of teaming, financing, risk sharing and risk management, partnerships and so on.

Using BIM is, at the moment, an entry point for firms into the IPD process. The question for professional design firms is when to get involved with BIM, how to implement it and how to handle the costs of maintaining an evolving technology both in capital expenses and required training.

Pressure is already on architecture and engineering firms to adapt this new tool and to do so quickly. Contractors have been taking the lead so far in using BIM. The *DesignIntelligence* newsletter reported on May 30, 2008, that if architects as a profession don't get into IPD quickly, another industry participant could jump in and take it away from them as a service. Added to that, clients who are highly educated in the design and construction process are applying pressure to make projects happen better, faster, more safely and to retain all the knowledge about a project for the future life of the building or infrastructure.

With all these factors in place, architects and engineers will be moving to gain BIM capabilities and educate themselves about the IPD process as they begin to use the new tools. One major implication for architects and engineers is that they must join with construction firms to work together cooperatively throughout a project's life cycle.

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## Public-Private Partnerships Expand

Public-private partnerships (P3) are widespread outside the United States, especially in Europe where they are used for a wide range of projects. The introduction of P3 to the United States has largely been in the highway and street segment. One advantage mentioned by P3 proponents is that completed assets are managed more efficiently by the private sector so the public sector can use P3 as a learning experience to gain better management techniques.

While America's infrastructure is deteriorating, only 10 states have passed legislation that fully enables the individual states to take advantage of public-private partnerships. This situation is likely to change as states seek monies for needed infrastructure during this period of reduced tax revenues. Firms should be prepared to educate themselves about this process and the legislation of the states in which they work, and to watch for federal initiatives. While P3 is a popular subject, not all states are clamoring to continue their use. In Texas, constituents have created a backlash against ownership of the state's roads by others; legislators are taking a step back to consider if they really want to sign away any more contracts for 50 years. Texas now has a two-year moratorium on P3 projects.

The Urban Land Institute (ULI) has recommended that the United States establish a federal infrastructure framework in order to keep up and compete in the global marketplace. The ULI estimates that a gap of \$170 billion exists between the infrastructure improvements that are needed and what the federal government is currently funding. "The status quo increasingly looks like a precarious option — relying on existing networks and systems will only hamstring future growth and compromise sustainability," the report states. "2008 seemingly marks a critical juncture in a rapidly changing economic environment where new approaches to land use, infrastructure and energy efficiency will likely determine and possibly reorder the next generation of winners and losers — countries, companies, investors and peoples." P3 is one of the factors proposed by the ULI in an array of solutions that would help fund projects and put America's infrastructure back on solid footing.

## Green Building Reaches Turning Point

The green building/sustainability movement is rapidly becoming business as usual for American architecture and engineering firms. As most firms gain certification, common abilities and longer track records in this area, it will become difficult to use LEED certification alone as a competitive advantage. Building owners, public agencies and the general public are rapidly becoming much more educated about the benefits of sustainable design, and expect to see positive action taken on projects in their communities.

FMI estimates that total nonresidential green construction will increase 32% between 2008 and 2012. The AIA reported in June on how BIM can help achieve sustainability goals by managing the life cycle of a building. The New Buildings Institute issued a study in March on energy performance in LEED certified new construction.

With green building and sustainability rapidly becoming business as usual, firms and their clients are embracing the values — and the business value — that green building represents.

## Implications for Design Firms

In order to deal with these trends, it will be necessary for firms to collaborate with their counterparts in construction, and with clients, owners and the others involved in creating our built environment. This degree of collaboration has not been common in the past, but will become a business necessity in the future as pressures mount to streamline the project process, to produce a BIM that is useful for the life of a facility or structure and to create a sustainable and environmentally responsible project.

With the support of technology and new contracts like the AIA's and others, the possibility for industry-wide collaboration is within reach, and may be the key to weathering the recession and claiming new success in the ensuing recovery.

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## ABOUT FMI

Founded in 1953 by Dr. Emol A. Fails, FMI provides management consulting and investment banking for the worldwide construction industry.

FMI delivers innovative, customized solutions to builders; trade contractors; construction materials producers; manufacturers and suppliers of building materials and construction equipment; facility owners, managers and developers; engineers, architects; surety companies and industry trade associations.

FMI's management consulting practice provides strategy development, leadership and organizational development, marketing and related research, business development and project delivery improvement. FMI's investment banking practice provides merger and acquisition advisory services, capital placement and financial advisory services.



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