

BreakingGround

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THE **BIG** PICTURE

WHICH SLICE OF THE PIE WILL CREATE THE NEW JOBS?



REGIONAL AND NATIONAL FORECASTS FOR 2010

LOOKING FOR THE
REGION'S NEXT
GAME-CHANGING INDUSTRY

ANALYZING HOW 'GREEN'
YOUR ROOF SHOULD BE

HOW TOUGH WILL IT GET
FOR COMMERCIAL PROPERTY?

LLI Engineering

100 YEARS OLD.

That's a milestone that less than one percent of businesses ever achieve. For LLI Engineering, which is wrapping up their 100th year of continuous service this year and planning their centennial celebration in 2010, the surprise was in discovering that being a 100-year old engineering firm in Pittsburgh didn't put the firm in a class of its own; but to quote Bud Phillips, "It sure doesn't take long to call roll."

When engineer E. N. Hunting and architect L. N. Davis founded their firm in 1910, the Boy Scouts of the United States were founded, the first car race at a speedway was held, the Pittsburgh Pirates went 86 – 67, and Pittsburgh was in the midst of exploding as a center of the industrial age. Hunting Davis Company had developed a design niche, using reinforced concrete as a structural system, which they wished to exploit. Their business came from a wide variety of sources, but they established a reputation with some of the burgeoning industrial companies, like Pittsburgh Plate Glass, Union Switch & Signal and Cheesbrough-Ponds.

As the firm evolved, becoming Hunting Davis & Donnells in 1930, Hunting Larsen & Donnells in 1947, and then Larsen & Ludwig in 1964, its capabilities changed, but the reputation as an industrial construction expert remained.

But the company found itself as an expert without an audience in the 1980's as many of its clients closed down, became defunct or were acquired or moved away from the area. Larsen & Ludwig became a much smaller firm. In 1988 a new ownership team, which included current managing principal John Shaginaw, took control of the firm with a plan for a new direction, but utilizing the same approach of bringing emerging technologies to the market.

The firm began to get more work with science and technology related clients, and established a niche in the 1990's in telecommunications that would lead to its explosive growth, and some of its toughest decisions.

Larsen & Ludwig had come to have regular business with A T & T, and after the forced breakup, with its ultimate successor Verizon. The demands of that client led them to develop competency at a variety of non-construction technology disciplines. The firm developed in-house web-based systems for managing work that later became a



John Shaginaw



Jamie White



Ernie Tillman

project management system used by Verizon and other clients to manage the hypergrowth of the collocation work that they did. They did website design and hosting. The focus of their business was so oriented in new technology that the firm changed its name to reflect it in 1995, becoming LLI Technologies.

At the peak of the telecom boom (which coincided more or less with the dot.com boom) LLI had over 85 employees, most working for telecommunications clients. Although they were immersed in the industry, LLI didn't see a bubble building that would pop in late 2001, creating a serious management issue for LLI.

"At the time, we thought the work had stopped because of the rebuilding after the September 11th attacks," remembers John Shaginaw. "But in hind sight it was just over saturation of the market. It wasn't until I read Thomas Freidman's *The World is Flat* that I saw the numbers of how much telecom infrastructure was built in only a few short years. Our clients added significantly to the size of their facilities, as did their competitors. And because the transmission equipment was becoming much more efficient due to fiber optics, there ended up being four times the capacity that the market could absorb, even with the cell phones and internet growth."

As the lead designer for a team of engineering and architectural firms that did billions in Verizon capital construction, LLI was suddenly looking at an empty pipeline of work from its biggest client. The decisions that followed were difficult but laid the foundation for the next stage in LLI's development.

Jamie White had been a partner for a few years by that time, and remembers how painful the business became. "After a few months we were forced to make some dramatic cuts to a great staff," he explains. "This was particularly hard for everyone. Not just because we invested so much in each individual through recruiting, training, equipment, software and real estate, but they were close friends who were soon working for competitors"

One bit of good fortune was that the company's strategic planning had identified the concentration of business in telecommunications as a potential weakness earlier, and the principals had begun pursuing a broader base of projects. Among other projects, LLI had accrued a growing backlog of work through a division of Westinghouse that served the all but dead nuclear power market. As a veteran owned small business LLI also found there were opportunities for much more work in the federal, state and local government markets. While neither of these niches created a new wave of business, each would become important to LLI's later success.

Diversifying the client base worked. By 2005 the company's business mix was sufficiently broad that they sought to reinforce their brand by changing the name of the firm to something more representative, LLI Engineering.

The previous year LLI had taken the risk of acquiring a general contracting firm, CMI Construction, with the intent of leveraging their design/build capabilities further. It proved to be a reasonably successful marriage, but by 2008 the management team of both organizations decided that each business could be more prosperous on its own. A former LLI partner and other investors now own CMI without any ties to LLI Engineering.

During that same period of time LLI formed a joint venture with architect IKM Inc. to take on a new commission from that Westinghouse division they had been quietly serving. The unbridled pace of growth in China and a new global energy crisis had given rise to new demand for nuclear reactors, and Westinghouse was growing rapidly to meet demand. In what was the largest corporate real estate deal of that year, Westinghouse selected Cranberry Woods to be its new headquarters, and the LLI/IKM joint venture began working on what would become a series of projects exceeding \$200 million in construction. One significant capability that LLI brought to the project was their experience in sustainable mechanical and electrical design. Jamie White is passionate about the subject and believes it's going to drive a big part of LLI's future business.


"LEED continues to grow and is working to become part of the building code. Successful firms will have to be able to earn LEED ratings with no additional cost to the owner," White says. "The time has passed for firms to invest in teaching their staffs how to design or build sustainably. Failure to provide these services will simply result in a lost client."

A firm that sticks around 100 years has to keep one eye on the future while it works in the present. Planning for LLI Engineering's succession has moved onto the management team's radar.

"In the next 10 years several of our senior engineers will have retired," explains Ernie Tillman. "So we are actively building a new group of young engineers and project managers to take over and manage the various departments and clients. We are continuing to add expertise in a variety of building design specialties." LLI is increasing its knowledge base in building information modeling, and Tillman anticipates that design will continue to move towards the complete integration of all of a project's design, construction, operations and maintenance information.

"I do think in 2110 someone will be looking at our electronic CAD files of the Westinghouse Complex in amazement that we spent that much time producing documents that were only printed out for someone else to fabricate and build, as opposed to integrating with the process."

"We really have been fortunate to continue to thrive and grow these many years, and we feel a responsibility to ensure that continues yet again," says John Shaginaw.

Shaginaw illustrates his sense of continuity with a story. "In our archives are plans done with ink on velum of some of Pittsburgh's great buildings. A few years ago we were pursuing a project for H.J. Heinz in Muscatine, Iowa. I happened to recall seeing something in our archives with that name. When we went back to see what we had, we discovered that LLI provided the engineering for an expansion in the 1930s. It really is amazing how much the industry has transformed over those years and how much it is still the same." 

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