Breaking Ground

THE MAGAZINE OF THE MASTER BUILDERS' ASSOCIATION OF WESTERN PENNSYLVANIA

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THE BIG PICTURE:
Solving the Workforce Challenge

2016 Forecasts

ESOPs for A/E/C Firms

What the Experts Are Watching in the Economy


GOAL Zero
SAFETY WORKS!

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Publisher's Note

BreakingGround may have started after the board of the Master Builders' approached me in 2006 but the origin of the relationship actually traces back to a phone call I got from Jack Ramage in 1997 while I was still the owner of the Pittsburgh Construction News (PCN).

I was aware of whom Jack was but I don't think we had met at that point. His cold call was to ask if I could help him research the market so that the MBA could begin to deal with a workforce problem it saw looming if the stadiums were to be built. That may seem like a reasonable request but 1997 wasn't exactly a booming year. We started PCN in late 1994 and were told by a number of people we met early on that the motto for the business was "survive 1995." That may give you some indication of my astute timing but it should also tell you that by spring of 1997, a labor shortage wasn't on the minds of many people.

That year marked the early stages of what became an extended school building boom. During the years that followed, a boom in big box retail occurred in Pittsburgh, including the construction of the entire mess that is The Pointe and The Mall at Robinson Town Centre. By the time the compromise that we call Plan B was made, there was ample employment for skilled and unskilled construction workers, regardless of whether or not they were part of a trade union. The foresight of the MBA leadership, labor and the then fledgling Builders Guild created a labor pool that could deliver PNC Park, Heinz Field and the David L. Lawrence Convention Center by 2001.

What worked in the late 1990s was an example of the way Pittsburghers solve big problems. The Builders Guild is an example of a problem-solving coalition, a confluence of disparate forces within the construction industry. Founded in 1999 to promote union construction and the building trades, the Builders Guild is made up of contractors, labor representatives, and industry associations. Over the course of history, these groups have not always been chummy and disputes over issues will probably always occur among the members of the Builders Guild's leadership. When an industry problem appears, however, the disparate members work to solve it.

That seems to be the Pittsburgh blueprint. Whether the issue was air pollution, clean rivers, lost industries or more shovel-ready sites, leaders in Pittsburgh have pulled together to solve problems. I also have the privilege of serving on the steering committee of the Pittsburgh Regional Alliance, which is the marketing arm of the Allegheny Conference on Community Development. The legacy of people like David Lawrence and Jack Heinz is taken seriously at the Conference. That legacy inspires corporate and political leaders to give time and use their Rolodexes to effect change for Pittsburgh. That sort of persistent persuasion is a big reason why things are going well in our region now. It's an ethic that can't be taken for granted in the future.

Just over two years ago, Pennsylvania's legislature passed a highway bill that was historic in its making. Pressure for Act 89 came from the kind of ad hoc coalition that I described above. Contractors' associations, politicians, CEOs, the Allegheny Conference, NAIOP, academicians and labor unions supported the bill. House and Senate leaders had to be baffled as they fielded daily calls from CEOs and union leaders who were on the same side of the issue. Not all the unions supported Act 89. Not all businesses and consumers opposed raising the gas tax. It had to be very confusing for the legislators, which is probably why the bill was dead one day and voted into law by a large margin two days later. The politicians couldn't ignore such a robust – if somewhat unholy – coalition of voices.

There is no shortage of problems that Western Pennsylvanians face. But among them, the attraction of enough qualified workers ranks highly. Leaders from all walks of life told the Allegheny Conference that workforce was their number one problem when it was putting together its 2015-2017 agenda. Within the construction industry, the ethane cracker project in Monaca has loomed as the D-Day for workforce for several years. As the kickoff for that project approaches – we hope – there are dozens of initiatives being pursued to attract and train more workers. You'll read about some of these efforts in our feature article.

None of these initiatives is going to yield a home run but many small successes have already occurred. The challenge of manning a project that will employ almost 7,500 people at its peak is a once-in-a-generation problem. We'll meet the challenge the way we've met other challenges in Pittsburgh: a little at a time and together.

Jeff Burd


Construction
Employment and Labor
Litigation
Environmental
Business Services
Energy and Natural Resources
Public Sector Services
Creditors' Rights and Insolvency

REGIONAL MARKET UPDATE

Getting a bead on the year 2016 for construction has proven to be more difficult than forecasting the past two years. Those who view the coming year as one with diminished prospects are likely overlooking the strong commercial real estate market, steady heavy and highway bidding environment and the continued strength of the residential market. Those who see 2016 with unbridled optimism are underestimating the impact of the slowing gas business on the regional construction market and expecting better economic growth than is likely.

The outlook for 2016 is one of cautious optimism that will depend on a more stable government funding environment, strength in commercial real estate, continued growth in high tech and advanced manufacturing, and the beginning of a recovery in the energy sector.

A strong third quarter and solid fourth quarter pushed non-residential activity above the $3.2 billion forecast for 2015. New housing construction was on a par with recent years, with above-average permits for apartments again and an increased number of new subdivisions opened and proposed to rejuvenate the single-family market. Estimates based on permit data through November 30 are for new single-family detached permits to hit 1,850 units, with another 825 units of single-family attached starts. Permits for new construction through December 1 totaled 2,249 units, the fourth consecutive year above 2,000 units.

Construction in the energy sector continued to be the heaviest among all nonresidential building types. Even at reduced levels, construction of billions of dollars in natural gas pipelines and processing/compressing stations got underway.

The growth engine in the energy sector for the next 12-18 months is the development of gas-fired combined cycle power plants. Activity in the gas-fired power generation segment is advancing in sites within the Pittsburgh metropolitan and tri-state footprints. In addition to the sites near Smithton, New Castle and Johnstown, EPC firms have been chosen in Moundsville WV and Lordstown OH. Chicago-based Invenergy is proposing a 500+ MW generating plant above the Youghiogheny River in Elizabeth Township in southeastern Allegheny County. An Invenergy spokesman characterized the project as "too early to evaluate" engineering procurement contractors.

Heading into the new year, commercial real estate remains the healthiest segment of the industry, especially if you include market-rate apartments in that category. Through three quarters of 2015, vacancy rates in office and industrial were still near cyclical lows. The vacant space in all offices was between six and eight percent, depending on the source of the data. Vacancy in multi-tenant offices – meaning those that aren't owner-occupied – was in the low teens. Industrial property vacancy was in the eight percent range. Absorption of both major commercial categories had slowed, with new construction turning absorption negative towards the end of the year.

Prospects for the office market in 2016 are good for new construction, especially new flex space, west and north of the city. Spec offices at RIDC Park West and the Pittsburgh International Business Park have leased up quickly and user activity is spurring more development in the Airport Corridor. Interest in Innovation Ridge and Keystone Summit in Marshall Township has increased and new buildings are planned for those parks, along with Cranberry Business Park. New buildings are planned for Abele Business Park near Bridgeville. The Downtown office market is still tight for Class A space and US Steel's decision not to build a new headquarters in the Lower Hill District will make the market 260,000 square feet tighter through 2017.

BENCHMARKS	2014	2015 (f)
Total SFD units	1,971	1,850
Total SFA/Multi-unit	2,902	3,074
Total residential $$	$972.1 million	$992.7 million
Total non-residential $$	$2.69 billion	$3.31 billion
K-12 Additions/renovations	$231.4 million	$181.1 million
Hospital construction	$173.3 million	$145.6 million
Hotel construction	$172.4 million	$134 million
Industrial construction	$347.3 million	$724.9 million
Office construction	$337.5 million	$309.6 million
Higher education	$150 million	$100.6 million
Retail	$175.2 million	$172 million

Construction of roughly one million square feet of new space will present a lease-up challenge for the industrial market that it hasn't seen in a number of years. User interest in Class A new industrial parks like Findlay Industrial Park, Westport Woods, Clinton Commerce Park and Chapman Westport is driving new building and fostering optimism about more construction in 2016. Names like GE Medical, Siemens, Kennametal and several foreign manufacturers are said to be shopping for 100,000 square foot plus facilities.

Apartments have been the property of choice for developers since the recovery from the housing crisis began in 2010 and construction of multi-family units in Pittsburgh was above average in 2015. After some softening of rents as new inventory came on line in early 2015, the average rent in metropolitan Pittsburgh rose again. The blended average rent for apartments in October was $1,048 per month, down slightly from the average of $1,100 or more that was the prevailing rate from April through September.

Some 4,400 units are in the planning pipeline as 2016 begins. Demographics remain supportive for more multi-family. More lenders continue to be skeptical of the staying power of Pittsburgh's apartment "boom", especially in light of the high volume of apartment deals happening nationally. Investors and equity partners have shown less reluctance to chase multi-family projects and if job growth in Pittsburgh ends at or above one percent – as forecasted – then the number of new apartment units in 2016 will end above 2,000 again.

A report from the Census Bureau on December 2 gave some insight as to why the apartment market has held up so well.

While the Census report shows the percentage of Americans under the age of 35 as roughly unchanged since 2010 (6.8 percent are 25-29; 6.6 percent are 30-34), the data shows that the share of Pittsburgh's population in those age ranges has jumped over the past five years. Those living in Pittsburgh who are 25-29 now make up 10.9 percent of the population, while 7.9 percent of the people living in Pittsburgh are 30-34. The same research showed an increase of .06 percent for that age group living in Allegheny County. In real numbers, that means roughly 9,000 more people of prime renting age live in metro Pittsburgh today than in 2010.

Massaro Corporation was taking bids before the holidays for the 300-unit South Hills Village apartments being developed by Dawson Massaro. Development of the $60 million Station Square apartments is on track for a contractor selection in the first quarter. The first phase of Walnut Capital's The Mill at Pittsburgh Technology Center should get underway in early 2016. Although a date for NRP Group to begin work on the $60 million, 365-unit Waterfront apartments hasn't been announced, construction is nearing completion on the preparatory work for the Strip District project.

Another property type surging in volume is senior living. Demographic support for this category of housing, especially the continuum of care concept, created a boom in the late 1990s that should have continued for a decade or more; however, recessionary pressures, changes in financing mechanisms and advancements in healthcare dampened demand and supply of senior living options.

Many had expected a mid-December green light from the energy company but developments unrelated to the cracker are apparently slowing the decision. Sources involved in the project are predicting a delay of another 90 days to six months before a decision is released.

There have been significant changes in the design and lifestyle offered in housing projects for those over 55. The average age of those entering such facilities is higher than a decade earlier. New facilities are focused more on giving the residents options to age in place at high-amenity residences. The continuum of care hierarchy of the 1990s has been replaced or redefined. Millions are being spent on updating and expanding facilities in the region and there is an uptick in the number of new projects.

Lutheran SeniorLife has added two major facilities in Zelienople over the past three years, as has the St. Johns campus in Adams Township in Butler County. In Bethel Park, four new projects are in the pipeline. The 132-unit Point Pleasant Retirement Community is under construction at the former Logan School site, while the Bethel Park Senior Residences, the 72-unit Artis Senior Living facility at 1000 Higbee Drive are in the planning stages. HarborChase Senior Living, a 140,000 square foot facility at Cool Springs on Baptist Road, was awarded to PJ Dick before the holidays. In Westmoreland's Penn Township, the 116-unit Penn Crossings senior living facility is underway and the 66-unit Hillcrest Senior Residences are being built in Carrick. Developer is looking at a parcel at McCandless Crossings for its first residence in Pittsburgh

As 2015 ended, there was news and no news on three of the stories that will impact construction in 2016 and beyond.

Continued delays in what is hoped will be a decision to proceed with the ethane cracker planned by Shell in Monaca PA added to the general sense of uncertainty about the health of the promising shale gas play. Many had expected a mid-December green light from the energy company but developments unrelated to the cracker are apparently slowing the decision. Sources involved in the project are predicting a delay of another 90 days to six months before a decision is released. In the meantime, contracts are being let and bid for portions of the work that aren't necessary unless a plant is built.

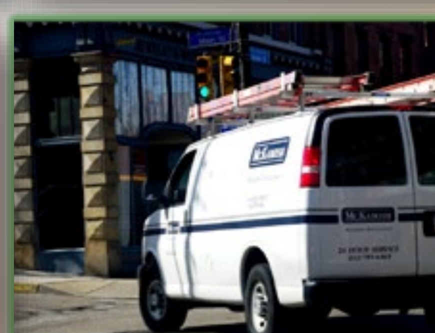
The delays aren't good news for a struggling industry. Steep declines in oil and gas prices have dampened drilling and caused significant cutbacks in staff and capital spending. The outlook for 2016 is for even less activity in the shale play, although a green light from Shell will trigger downstream development. One bit of year-end news that should help is Congress' decision to lift the ban on oil exporting that dated back to the OPEC oil crisis of the 1970s.

National attention on CMU's excellence in technology research and talent development is driving a major build by high tech companies in Pittsburgh. Construction has started on the $107 million Tepper Quad, the first building in Subra Suresh's vision of an innovation corridor stretching from Morewood Avenue to Craig Street. There should be significant announcements in 2016 concerning new or expanded technology partnerships – like Uber and Google in past years – that will lead to further development later in the decade. One bit of news in December was the presentation of a land development plan by Uber and CMU for a research facility in RIDC's City Center of Duquesne. A decision on the developer for CMU's 425,000 square foot Gateway Project was not forthcoming at the end of 2015 and isn't expected until late first quarter at the earliest.

Lastly, those working in public construction received good news on December 3 when Congress passed a five-year transportation bill. On top of Pennsylvania's Act 89 of 2013, the federal highway bill gives certainty to PennDOT about its annual funding, even though no additional funding for infrastructure was included. PennDOT's lettings in 2015 totaled $2.5 billion and will continue to rise steadily until the peak spending from Act 89 is reached in 2018. Design activity at PennDOT indicates that bidding in 2016 will return to a normal schedule, with projects out early in the year.

Prospects for public building construction are bleaker. In the "no news" category, maneuvering by PA House Republicans killed a compromise budget deal during the weekend before Christmas. Even with a budget deal in place, the incomplete reform of PA's school construction reimbursement program, PlanCon, leaves far fewer projects to move through the process to bid in 2016.

Demographics and financial needs will drive another construction boom late in the decade and into the 2020s, as consolidations and district reorganizations will create projects. With the repeal of No Child Left Behind, states and school districts will be given more control over the educational system. Like the highway bill, reform of federal mandates will give Pennsylvania more certainty over its funding of schools and school construction. Until PA's legislature can find that funding – or pass a timely budget – public construction will suffer. BG

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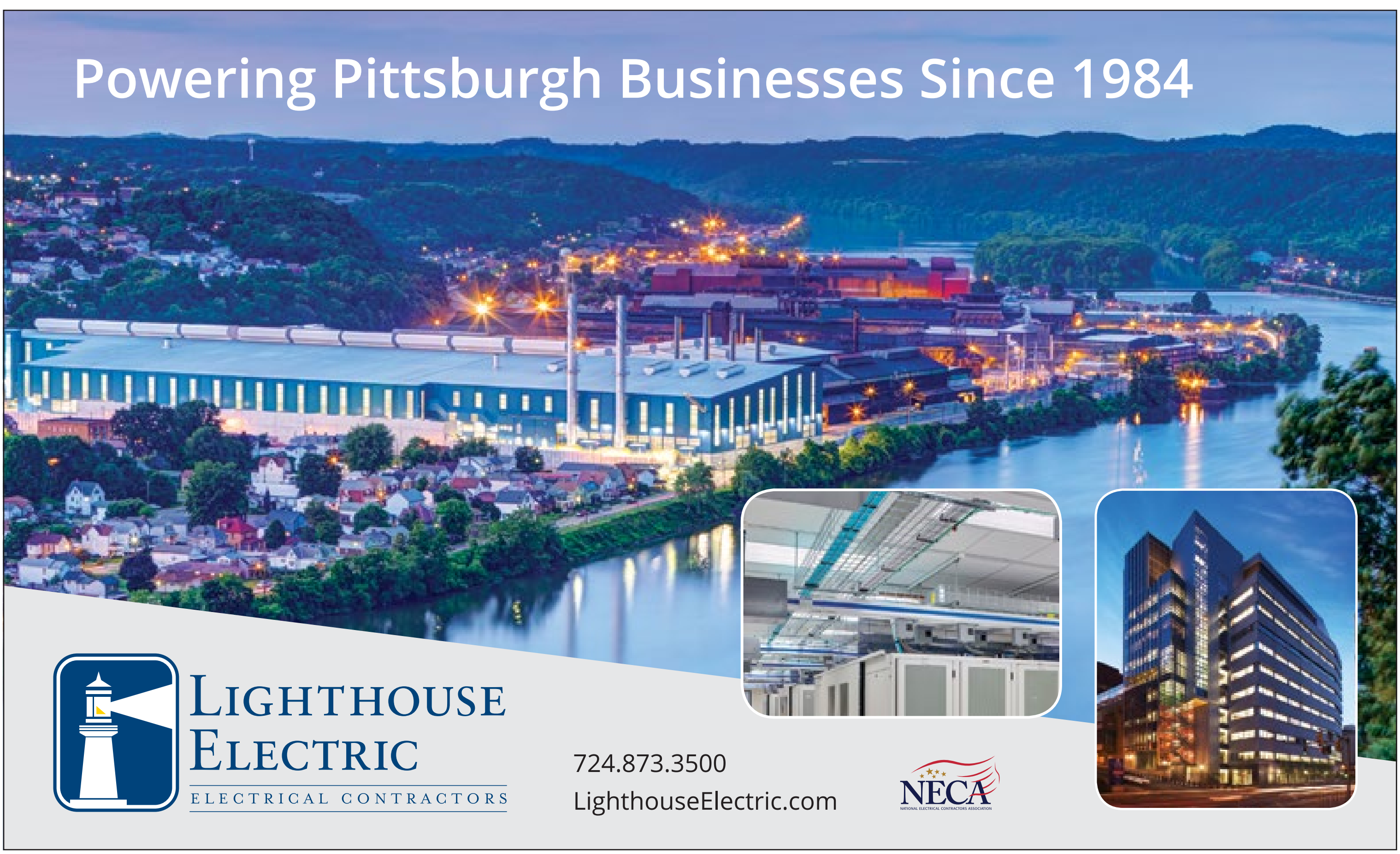
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NATIONAL MARKET UPDATE

As the seventh year of economic expansion begins in the U.S., expectations for gross domestic product (GDP) in 2016 are in line with a mature economic cycle. In a growth environment of just under three percent, however, economists forecast continued strength in hiring and for construction spending to increase at a rate that is three times the rate of GDP growth in 2016.

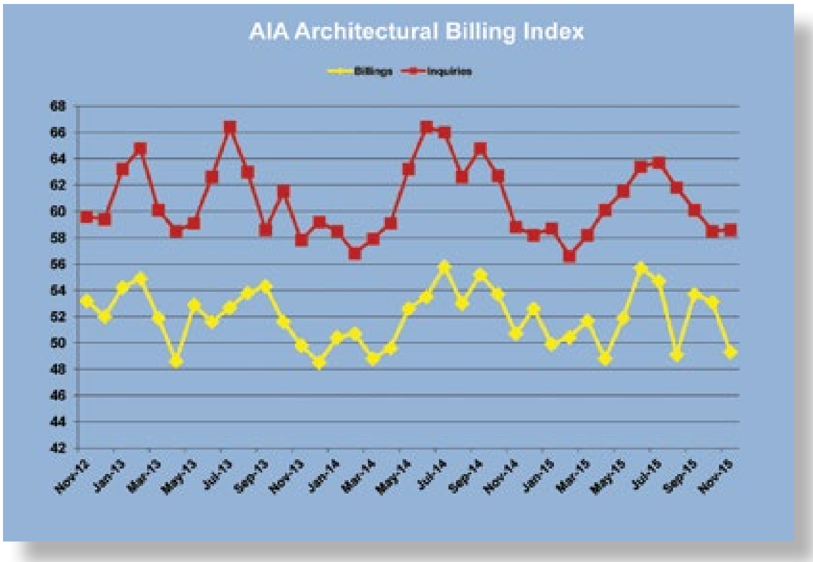
Observers whose forecasts reflect a weak outlook for the global economy are predicting GDP growth of 2.4 or 2.5 percent for the U.S. economy in 2016. Most economists see the strong employment market, more rapidly rising personal incomes and low costs of credit – even with the first interest rate increases – as factors that will encourage consumer and business spending in 2016. That school of thinking is driving the majority of forecasts to look for GDP growth of 2.7 or 2.8 percent in the U.S. And most forecasters continue to be fooled by the strength of job creation as the recovery grows long in tooth.

New hiring in October and November exceeded the expectations of virtually all economists, especially on the heels of slowing job creation in August and September. Bureau of Labor Statistics (BLS) reported on December 4 that hiring increased in November by 211,000 jobs. That report came on the heels of 298,000 new jobs in October. In addition to the higher-than-expected November number, BLS revised both October and September – which was weaker – upwards by 35,000 jobs. The improved hiring pace lifted the monthly average to 210,000 new jobs per month for the full year of 2015, a pace that is again higher than forecasted.

The strength of the job market helps to explain why construction spending is significantly higher. At a November 19 seminar held at GreenBuild in Washington, DC, economists for the Associated General Contractors (AGC) and American Institute of Architects (AIA) gave their forecasts for 2016 and 2017.

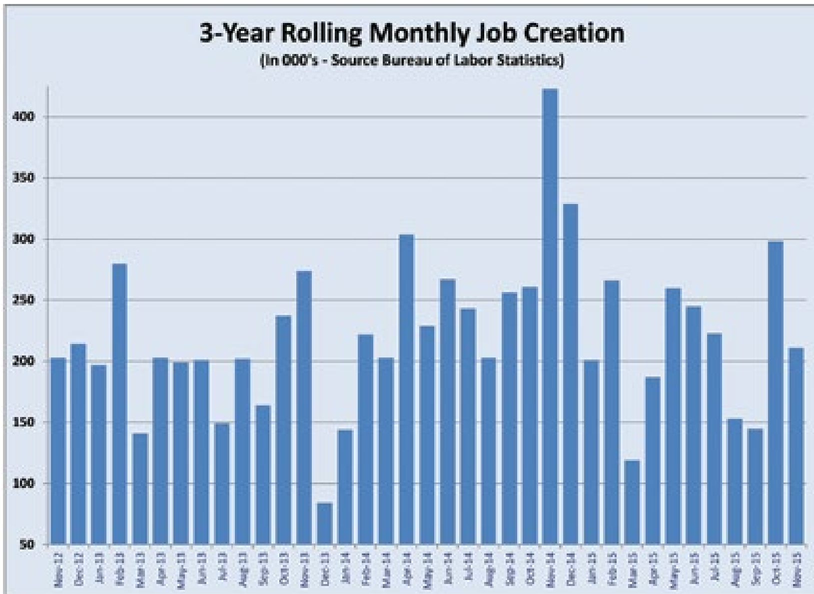
Kenneth Simonson, chief economist for the AGC, noted that construction in 2015 was significantly stronger than expected. Through that date, construction spending was up 14.1 percent year-over-year, with residential construction still very strong well into a period of recovery. Although the multi-family sector was up 27 percent and single-family was up 13 percent year-over-year, Simonson saw that trend peaking in 2015 with both segments of residential construction slowing to between five and ten percent in 2016. Simonson's forecast for 2016-2017 is for six to ten percent increases in nonresidential construction. He sees office construction as the strongest building type, with growth in construction of educational and healthcare facilities at or above five percent. Notable among the weaker sectors will be hotels and manufacturing, which Simonson predicts could decline by as much as ten percent.

AIA's Kermit Baker estimated that total nonresidential construction would end the year 2015 up 8.9 percent and forecasts that nonresidential construction would see similar growth, rising 8.2 percent, in 2016. Baker, the AIA's chief economist and senior research fellow at the Joint Center for Housing Studies of Harvard University, explained that the prevailing trend in the AIA's Architectural Billing Index (ABI) was positive. The ABI has been above 50 – meaning more firms experienced increased billing – most of 2015, including three of the past four months. Moreover, Baker noted that architectural backlogs have climbed from 4.2 months in 2011 to 5.6 months in 2015. Both of these signals indicate that construction activity should be strong through at least summer of 2016.



AIA's Architectural Billing Index remained solidly positive throughout most of 2015.

One business cohort that appears to agree with the predictions of Simonson and Baker is the so-called Middle Market. The National Center for the Middle Market (NCMM) is a research effort in collaboration with Ohio State University and GE Capital that surveys the behavior and attitude of businesses that have between $10 million and $1 billion in annual revenues. These companies comprise only three percent of the total number of businesses but employ one-third of all U.S. workers and comprise nearly one-third of U.S. GDP. As of the third quarter of 2015, the businesses in the Middle Market were experiencing steady growth at a faster pace than the U.S. overall but were feeling more cautious.



According to the NCMM's Middle Market Indicator, growth of Middle Market companies has been 7.2 percent over the past 12 months, which has spurred employment growth of 4.1 percent. As these companies look forward, however, their forecasts are for growth to slow to 4.1 percent over the next year, with employment gains slowing to 3.2 percent. Only 49 percent expect revenues to rise in the coming year, compared to 64 percent who felt revenues would rise in fall of 2014. Slightly more than one in three expects to add jobs in the next 12 months, although those planning to invest capital were still at 61 percent, down only two points from last year.

It appears that most of the caution comes from the slow overseas markets. When surveyed, the Middle Market companies showed 81 percent confidence in their local markets and 72 percent confidence in the U.S. market, but only 49 percent expressed confidence in the global markets.

Conditions in the Eurozone have strengthened, with third quarter real GDP growth at 1.7 percent. That's the best year-over-year growth since 2011; however, the real GDP growth rate for European Union nations is still weak by historical standards and is well below the pre-recession peak in 2008. With fewer headwinds and internal crises, the Eurozone is not the drag on the global economy it represented just 12 months ago. The main threat to the

U.S. economy that Europe poses is the distinct possibility that the European Central Bank will ease monetary policy further to boost growth above anemic rates, a move that will strengthen the dollar and make exporting tougher for U.S. manufacturers.

For 2016, the drag on the global economy will come from the so-called BRIC countries – Brazil, Russia, India and China – that fueled the global boom in the mid-2000s.

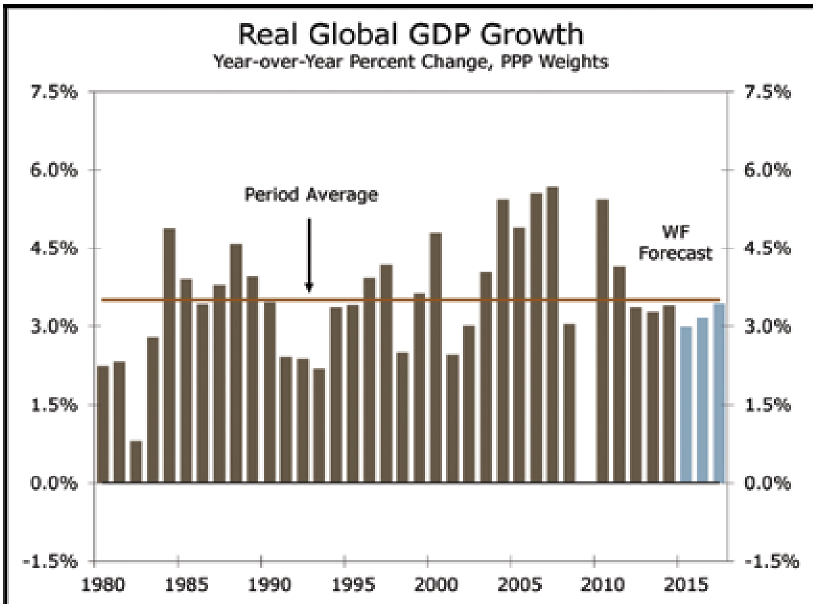
Brazil's political paralysis and poor infrastructure are outweighing its economic potential. Low oil prices are hurting Brazil and making life even more difficult for Russia, which is also struggling with Western sanctions. China's slowing growth rate looks to decline further in 2016 and the threat of major asset bubbles remains. Only India among the BRIC nations can boast continued strong economic growth, but its relative size and more limited trade ties mean India's economy won't offset the slowing Chinese growth.

Industrialization of previously underdeveloped economies has slowed, meaning that global economic growth is more likely to hover near the long-term historical average of three percent during the next few years.

The biggest negative impact on the U.S. from sluggish global economic growth continues to be on manufacturing. November's ISM manufacturing report showed that activity fell below the breakeven point for the first time in several years. Manufacturing activity rose only 1.7 percent and the ISM survey dipped to 49.6. As in recent months, declining activity was due to continued inventory depletion and weak exporting. The latter is a result of both weaker global demand and the relative strength of the U.S. dollar.

U.S. manufacturing is also hurt by the slowdown in oil and gas exploration triggered by the 50 percent price decline in Summer 2014. Lower energy costs are having a salutary effect on the consumer and on energy-dependent manufacturing, however; and the International Energy Agency (IEA) is forecasting that demand for energy will climb in 2016. The IEA predicts that markets should be more stable for energy pricing – not necessarily great news for producers. Its outlook for oil pricing is for $60/barrel conditions in the next couple years, with gradual price increases to the $80/barrel level in 2020. The IEA also makes a persuasive argument for prices to remain at $50/barrel into the 2020s.

Assuming that the five-year outlook for oil doesn't shift dramatically – never a good assumption – the forecast should mean that the U.S. economy can rely on having cheaper energy but lower contributions to GDP growth from the energy sector.



Global growth is forecast to be within the range of the long-term average rate in 2016-2017. Source: Wells Fargo Economic Services, International Monetary Fund.

For a change there was good news from Washington, where Congress and the President were able to come to an agreement on the budget and debt ceiling this past month that will allow defense and discretionary spending to rise modestly in 2016 and also push any fight over the debt ceiling past the election into 2017. With the budget deal in place, government spending is poised to rise at its strongest pace in seven years in 2016 and will likely boost real GDP growth by 0.3 percentage points.

Congress also passed the first comprehensive transportation bill since 2005. The Fixing America's Surface Transportation (FAST) Act of 2015 was signed into law on December 4, providing $305 billion over the next five years. The final bill fell short of the $400 billion that administration officials felt would be needed to avoid falling behind traffic growth but the law provides states with assurance about the federal contribution towards infrastructure repairs.

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Data on construction spending at the end of 2015 supports the optimism that economists like Ken Simonson and Kermit Baker expressed about 2016. The Census Bureau's report on October construction spending showed total activity at a record $1.107 trillion, the fifth consecutive month above $1 trillion. Private spending topped $800 billion, an increase of 15.9 percent year-over-year, with the investment split evenly between residential and nonresidential construction.

The Census Bureau reported on December 16 that housing starts in November were at a seasonally adjusted annual rate of 1,173,000. That is 10.5 percent higher than October and 16.5 percent higher than November 2014. Building permits for November were at a seasonally adjusted annual rate of 1,289,000, an 11 percent increase over October and 19.5 percent more than November 2014.

U.S. economic activity should support high single-digit construction growth in 2016. Unlike the last growth cycle, credit has not been overextended as the expansion matured. There remain fewer financing obstacles, which may encourage more investment as owners see the beginning of a rate increase cycle as a good time to borrow. Moreover, investment interest in the U.S. is likely to increase further in 2016, as emerging market economies are perceived as too risky and mature economies are viewed as too sluggish. BG

WHAT'S IT COST?

The Producer Price Index (PPI) for November revealed what most consumers and businesses were feeling at the cash register. Muted global demand and plunging oil prices are helping to keep the costs of building products and materials well in check while pressures from tighter labor supply continue to push wages higher. The opposing market forces are offsetting each other to create an environment that is mostly flat in the short term and slightly ahead over the pace of inflation overall.

What bears watching are how those dynamics will change as demand picks up for materials and labor costs continue to rise. A quick glance at the chart below reveals more red than black numbers but it's worth a closer look to see that most of the red numbers are in the columns reflecting the pricing in the last 90 days, during which oil prices tumbled almost 25 percent. That means lower fuel costs, lower prices for asphalt and other oil-derived products, and lower energy costs for manufacturing building products. Likewise, prices for steel and other metals saw another leg down in pricing since Labor Day. While there was another five-dollar decline in oil prices since December 1, the November PPI report reflects prices that likely have seen bottom. Whether those pricing levels hold for an extended period is a concern the construction industry must have.

Tight labor supply in the U.S. construction market and rising construction volumes have and will continue to push prices upward as wages and profits increase. During 2016, the likelihood is that there will be more market forces that press material prices upward than down. How fast and how far those pressures work will determine the trend in construction inflation.

IHS PEG Engineering and Construction Cost Index (ECCI) showed in November that the pace of change was faster than earlier in 2015. The overall index registered 43.7, up from 40.9 in October. (A reading greater than 50 represents upward pricing strength and a reading below 50 represents downward pricing strength.) The subcontractor labor index increased by six points to 51.1 in November, indicating that labor costs are rising. IHS economists see materials staying at the current levels in 2016 but see improving demand and tight labor supply pushing subcontractor pricing higher still. That ECCI sub-index is forecast to be 57.3 by May 2016.

One segment of the market that seems to be experiencing higher costs faster is the heavy and highway segment. Infrastructure costs have benefitted from lower diesel and asphalt prices but the supply chain for the highway segment cut capacity when construction fell off after the stimulus of 2009-2010, meaning that increases in volume will lift prices more quickly.

The National Highway Construction Cost Index, a measure of the cost of all projects awarded by states, increased 3.9 percent over the previous 12 months, according to data the Federal Highway Administration posted. The 12-month change was the steepest since September 2011. Passage of the Fixing America's Surface Transportation (FAST) Act of 2015 is expected to begin pushing costs higher, especially as FAST plays out over five years. The Portland Cement Association forecasts that FAST will add 375,000 metric tons to cement consumption in 2016, with the impact of FAST adding 1.4 million tons in 2020. BG

PERCENTAGE CHANGES IN COSTS	Nov 2015 compared to		
	1 mo.	3 mo.	1 yr.
Consumer, Producer & Construction Prices			
Consumer price index (CPI-U)	0.0	(0.3)	0.2
Producer price index (PPI) for finished goods	0.0	(1.0)	(1.1)
PPI for final demand construction	(0.3)	0.7	2.1
Costs by Construction Types/Subcontractors			
New warehouse construction	(0.1)	0.9	2.2
New school construction	0.0	0.9	2.2
New office construction	(0.6)	0.5	2.3
New industrial building construction	0.1	0.4	1.9
New health care building construction	(0.5)	1.0	1.0
Concrete contractors, nonresidential	0.1	1.8	4.0
Roofing contractors, nonresidential	0.2	0.8	1.7
Electrical contractors, nonresidential	0.1	2.4	5.8
Plumbing contractors, nonresidential	(0.2)	(0.7)	(1.1)
Construction wages and benefits	N/A	1.0	2.4
Architectural services	0.1	0.2	1.6
Costs for Specific Construction Inputs			
#2 diesel fuel	(3.5)	(11.6)	(38.2)
Asphalt paving mixtures and blocks	(0.2)	(1.5)	(5.9)
Cement	(0.1)	(0.5)	6.2
Concrete products	0.5	0.9	2.8
Brick and structural clay tile	(0.4)	(0.4)	1.5
Plastic construction products	(0.3)	(0.4)	(0.2)
Gypsum products	(1.7)	0.5	(1.1)
Lumber and plywood	1.0	(0.4)	(7.4)
Architectural coatings	0.0	(0.2)	(2.6)
Steel mill products	(3.3)	(5.7)	(18.4)
Copper and brass mill shapes	(3.0)	(4.6)	(15.6)
Aluminum mill shapes	(1.4)	(2.5)	(13.0)
Fabricated structural metal	(0.6)	(2.5)	(1.2)
Prefabricated metal buildings	(0.1)	0.4	(0.2)
Iron and steel scrap	(11.5)	(31.7)	(52.7)

Source Bureau of Labor Statistics, Updated December 11, 2015
Compiled by Ken Simonson, AGC Chief Economist

Solving the WORKFORCE Challenge

On March 15, 2012 officials from Shell and Beaver County announced that the energy giant had selected the former Horsehead Corporation site in Monaca as its preferred location for an ethane cracker in the Appalachian Basin. It was a win for Western PA, but the announcement also set in motion a multi-year effort to ensure that there would be an adequate, skilled workforce in place to build the plant.

Coupled with demographic changes that were steadily draining the construction industry of workers, the drive to meet the demand for Shell's package has resulted in a collaborative effort on the part of construction companies and labor organizations that is moving the dial. Faced with a shortage of skilled workers – like in all parts of the country - leaders from all sides of the industry are scrambling to create interest in construction and train the next generation of workers.


Tyvek
SERVICE DIVISION

Fixing the problem requires undoing years of educational and social bias towards white collar employment and college degrees. Workers must be attracted to construction from the ranks of young people joining the workforce and from experienced workers who have left the industry. Success will likely require a coordinated effort. The difficulty is that construction isn't a coordinated industry. Construction has spawned countless professional organizations but most of those trade associations operate in silos unrelated to others in the industry. The parts of the U.S. that have grown most rapidly over the past generation include right-to-work states so there isn't the cohesion that unions can bring to a solution.

In Western PA, the struggles the industry experienced from 1984 until around 2004 gave all parties to the construction process more incentive to work together. Unions had to view the employers as partners in securing work, rather than the enemy across the table. Contributions from employers created or boosted funds that increased training or helped contractors compete for work. Unions were more flexible about work rules and conditions so that owners were more receptive. The ERECT Fund was created to help finance projects for developers and put more trades to work.

At the root of all of these combined efforts was the goal of finding work for the workers. Some 30 years later, many of the same industry partners are working just as hard to find workers for the work.

The Challenge

The problem of fewer skilled workers is not a local problem; in fact, concerns are much higher for companies in many other markets. An Associated General Contractors' (AGC) survey in September found that 79 percent of contractors were having trouble finding skilled workers and 52 percent were having problems finding salaried professionals, including 55 percent who are experiencing trouble hiring supervisory professionals. That same survey found that 56 percent of employers have responded to the crisis by raising wages and 29 percent have raised bonuses and incentives. Worker shortages aren't abating as a result of these actions, however, mainly because the pool of workers hasn't grown. It's clear that other solutions must be found.

Another indicator of the tightening labor pool is the disparity between the increased construction activity and the increases in employment. Through November construction spending was up more than 14 percent but employment in construction had risen only 3.8 percent.

"That [employment increase] suggests that construction is starting to slow down but in reality it is because contractors can't find enough workers," notes Ken Simonson, the AGC's chief economist.

The sources of this shortage fall into three main categories: demographics, societal pressure and the Great Recession – and the housing bubble that led to it.

Construction employment bore the brunt of the recession, with unemployment that was double that of most professions. Cyclical as it is, construction unemployment spikes with any recession but this recession of 2008-2009 was rooted in an artificial boom in housing. Because of that boom hiring in construction and architecture was exaggerated. When the rug was pulled out from under the housing market, the decline in construction employment was that much steeper.

The housing bubble also exaggerated hiring of younger workers. When the housing industry expanded rapidly, it was new workers that were easiest to attract. By the same token, when the industry collapsed, those workers had a lesser stake in their careers and more flexibility to enter a new industry. In fact, hiring of workers aged 19-25 has declined since the bubble. Research by Hubert Janicki and Erika McEntarfer found that the share of construction workers 19-25 years old fell from 18 percent in 2006 to 13 percent in 2014, while the share of that age group in all other industries remained constant at 15 percent. Likewise, the share of construction workers under the age of 45 has fallen from 73 percent in 2000 to 63 percent today.

The study "Where Did All the Construction Workers Go?" that Janicki and McEntarfer posted with the Census Bureau on October 16 also found that one-third of construction workers laid off between 2006 and 2009 went to work in another industry.

Here in Western PA "another industry" showed up just as the economy was slowing. After early exploration of the Marcellus Shale formation in 2003 and 2004, the natural gas producers began drilling in earnest in 2009. For the next few years the gas industry boomed, adding wells, processing facilities and pipelines. The gas exploration provided a lot of construction projects for local companies and it also provided lots of direct jobs for workers with the same skills needed for construction.

"From a labor utilization standpoint, the gas industry took the place of construction in the heavy and highway industry," notes George Mezey, president of Trumbull Corporation. "It filled in a big hole."

Exploration of the Marcellus and Utica Shale formations boosted the economy in Western PA, West Virginia and Ohio. Its slowdown over the past 12 to 15 months has hurt firms serving that industry and cut construction projects dramatically. Mezey estimates that Trumbull's volume of activity from the gas industry in 2016 will be 25 percent of what it was just two years ago. But for companies looking for more welders, pipefitters, carpenters, operating engineers and laborers, the gas industry's slowdown will mean less competition for workers.

The demographic influence on the workforce has been predictable for some time. The Baby Boom produced more people than any previous generation born in America, and that generation made up its share of the construction industry. The problem is that Boomers are expected to continue to make up a large share of the workforce as they age. In fact, the fastest-growing age cohort in construction is the group over 55 years old and the largest group of construction workers is 45 to 54 years old.

That means in ten years, when the Millennial generation makes up more than half the total workforce, more construction workers will be over 55 years old than any other age group unless something is done to attract younger workers.

Since the time that the Baby Boomers were growing up, however, college education has been seen as the path to a good career. For a couple of decades the increasing share of college-bound high school graduates helped the U.S. meet the changing workforce demands as the nation grew to become a superpower and the world's largest economy. We needed more teachers, lawyers and financial professionals as U.S. corporations grew to

employ hundreds of thousands of people in increasingly more sophisticated businesses; moreover, from at least the 1980s on, goods that Americans consumed were manufactured overseas, meaning that U.S. high school students had fewer opportunities to make a living without a degree. When you add the demands of a physically-challenging career to the societal pressures to get a college education, the result was a much smaller pool of young people looking to enter the construction trades over the past generation than before.

"Parents tell their kids not to go into construction because of the lay-offs when work is slow or weather is bad," says Lisa Newhouse, cooperative education director at Eastern Westmoreland Career and Technology Center (CTC). "They tell kids that when they are 50 they won't want to still be working outside."

There is evidence that the pressure for every child to attend a four-year college is easing. The recent recession was hard on young college grads, especially those with general or liberal arts degrees. Compounding the tough job market was the reality that college costs rose rapidly in the decade before the 2008-2009 recession, leaving many students – or their parents – with steep tuition debts. With the emergence of energy and advanced manufacturing as growth industries in need of workers, there is renewed interest in technical schools and community colleges to provide vocational skills training for those not suited for a university.

Jason Fincke speaks to students at Deer Lakes High School about opportunities in the construction industry.

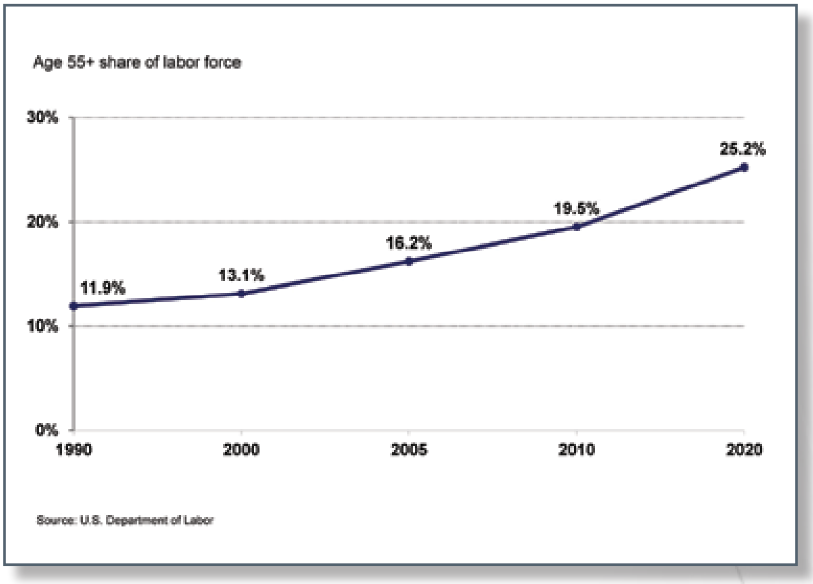
The Solution(s)

Fixing the problem of not enough workers will take time and changed minds. At the national level, there will be federal initiatives and re-education of parents about the need for post-high school education that is better aligned with the child's profile.

In Western PA, there is not the luxury of time to allow for attitudes to change about skilled labor and college as compulsory education. Even in a depressed condition, the gas industry requires a lot of workers that have construction skills. The odds still seem to be in favor of Shell, as well as others, to begin constructing a plant to crack ethane into polyethylene and other byproducts. That project is the Sword of Damocles hanging over labor's head, causing the trades to boost their efforts to recruit apprentices.

While the most obvious solution to a shortage of skilled construction workers would seem to be for the trade unions to recruit and train more apprentices, there are some barriers.

According to those involved in recruiting in the locals serving Pittsburgh, some of the measures taken during the past decades to improve the quality of the workforce and safety of the jobsite have also created unintended obstacles. Drug testing created a cleaner, safer workplace but it is a surprising barrier to entry for some young adults interested in the trades. Roughly five percent of the applicants can't pass the drug test and others simply steer clear of construction rather than fail. Another surprising barrier is the requirement for a current driver's license, which a number of applicants don't possess.



Use courtesy Associated General Contractors of America.

Union apprentices can get extensive classroom and shop training but one of the major benefits that trade unions provide apprentices and employers is paid on-the-job training.

Perhaps the highest hurdle to greatly accelerating the pace of recruitment is the limitation on opportunities for training. Union apprentices can get extensive classroom and shop training but one of the major benefits that trade unions provide apprentices and employers is paid on-the-job training. But there have not been enough construction projects in the past few years to significantly ramp up apprenticeship.

In limited trades there have been opportunities. The boom in gas exploration and subsequent passage of highway bills created high demand for operating engineers. Carpenter training has been boosted by the boom in apartment buildings, which have almost exclusively been wood or metal frame structures. But these bursts of construction haven't done much to boost the chances for mechanical or electrical craftspeople to train on the job. Some lo-

cals have adapted by changing the way they introduce apprentices to the workplace.

"We're one of the few locals that have apprentices do 17 weeks of unpaid training before they go onto a jobsite," notes Ken Broadbent, business manager for Steamfitters Local 449. "When I started in the field I was paid from day one. Today's apprentice has 17 weeks of welding, gets three random drug tests and OSHA 10 certification, all so that there are tradesmen ready when they go to work for one of our contractors."

Broadbent explains further that steamfitters receive eight weeks of 40-hour training in the welding necessary to service the HVAC and refrigeration contractors.

"That's 700 hours of training," he continues. "And we're recruiting people out of technical schools and community colleges who have experience in welding there. That means apprentices have 1,000 hours of welding experience before they go to work for one of my contractors. Many of them have three or four welding certifications before they start."

Employers also see training as a key strategy to ensuring a strong future workforce but like the trade unions, employers can be limited by the workload.

"Training is a big part of the solution. When it comes to the trades people, you have to take the time to give them as many opportunities as possible to learn more," says David McKamish, president and CEO of McKamish Inc. "The problem comes if work slows down. You can do the training but it can be pretty painful to keep workers on if there isn't work for them. If you let them go then you lose the edge that you built when you invested in training. That's the ongoing battle in the construction industry."

To combat the problems of enough applicants and enough training, labor has been spending time at the grass roots, spending time with the CTCs and high school students.

While each trade has undertaken an effort to increase its ranks, the man leading the charge for the crafts is Jason Fincke, executive director for the Builders Guild. Since taking on the position in 2006, Fincke has made dozens of visits each year to high schools and CTCs to promote the construction industry. The residual benefit from those years of promotional career presentations has been a strong relationship with the educators who are responsible for vocational training. At a time when workforce is a key strategic issue, those relationships are bearing fruit.

Fincke says that there is a change afoot at the high school level. "There's definitely a lot more interest, especially at the CTCs because there are some really good ones."

At a career fair at Deer Lakes High School in November, Fincke spoke to more than 300 students interested in both the skilled trades and white collar careers in construction. He says that the turnouts for such events are noticeably larger and thinks that there is a change in the underlying attitude of educators and students about higher education.

"I do find the school districts – particularly administrators and principals – are acknowledging that not every kid should go to college," Fincke says. "We are advocates for post-high school education but that doesn't necessarily mean a four-year college. There is a misconception that it's guidance counselors who aren't doing their jobs but they aren't talking to most of the kids. [Counselors] in many cases are spending 70 or 80 percent of their time with a handful of problem kids."

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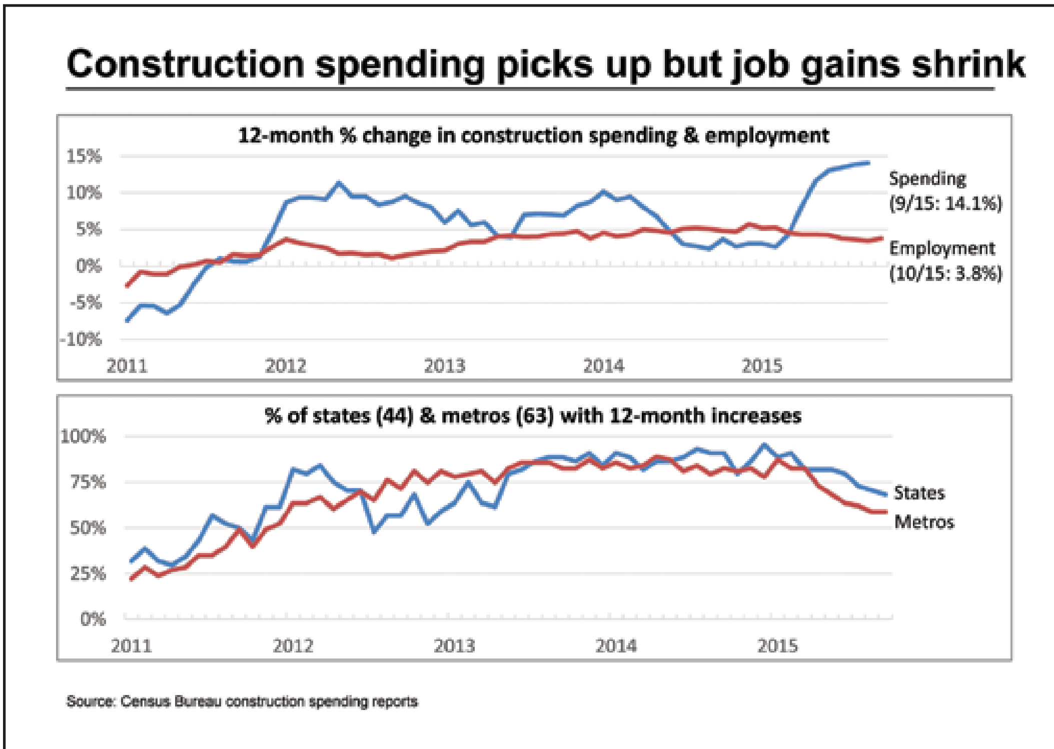
The CTCs have had relationships with construction trades for decades but both sides have benefitted from increased interaction in recent years. Training directors from the unions are on the boards of every CTC. The schools are anxious to have direction and input from the construction industry and the trades and contractors are anxious to have the chance to guide a curriculum to optimize the preparation that candidates have for future apprenticeships. Newhouse estimates that 20 percent of the three Westmoreland County CTCs graduates go into the trades. Trainers from the Sheet Metal Workers have taken a lot of apprentices from Butler County Area Vocational Technical School. Journeymen from the

"We teach carpentry, plumbing, electrical, masonry, HVAC, welding, machine technology and heavy equipment operation," Raypush says. "The teachers are dedicated to giving students an education so that they have a leg up on others when they are trying to get a job."



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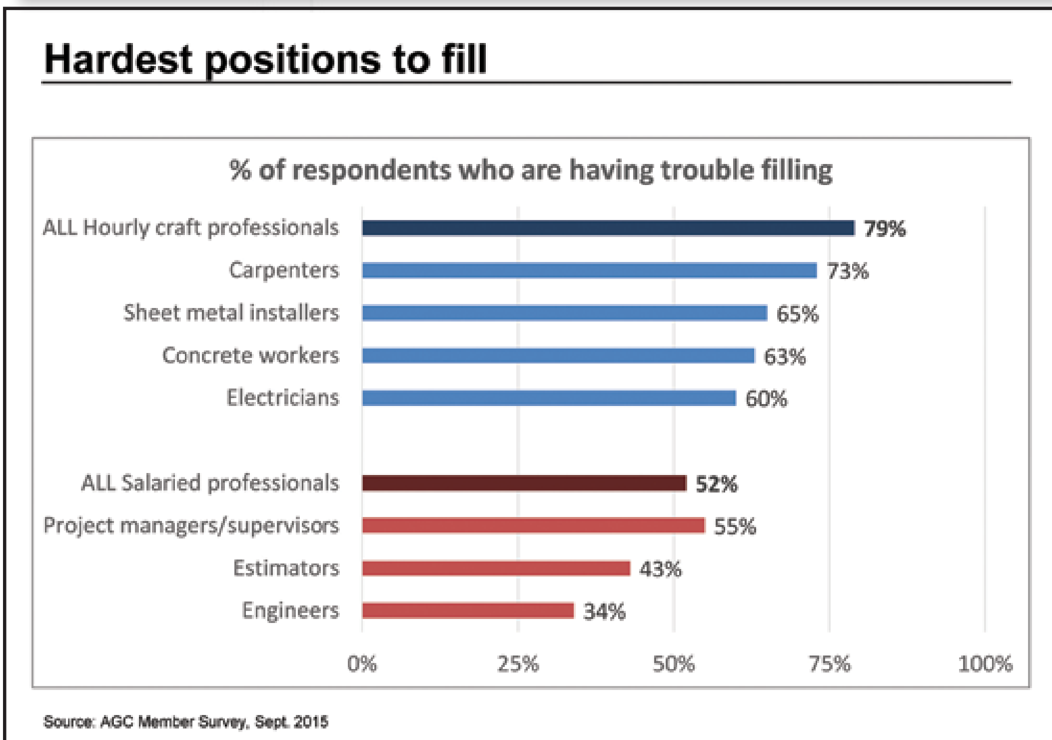

The share of the workforce over 55 has doubled since 1990.

Keystone + Mountain + Lakes Regional Council of Carpenters are instructors at a half-dozen CTCs.

Frank Raypush, who teaches construction at Butler Vo-Tech, notes that the school works with the local Nonprofit Development Corporation (NDC) on a project each year. Students build the house and NDC uses the profits from the sale of the house to fund the following year's project. Fincke also gives Butler Vo-Tech high marks for its carpentry program. Raypush explains that the vision of the school goes beyond basic training.

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Lisa Newhouse says that they take the opportunity to put students in a working environment whenever possible. In addition to the skills training, Eastern Westmoreland puts students into working co-op programs, taking advantage of the regular need contractors have for help. It's part of a program that is intentional about placing graduates in the construction industry.

"We're not pushing four-year colleges. We're pushing community college. We're pushing apprenticeship," Newhouse says. "Any time we have a field trip I take kids to see the training they can get while they are getting paid."

That strategy has had very personal results for Newhouse.

"My son is an operating engineer and that came because I took him along on a visit to their training center," she recounts. "He had a scholarship offer at the community college but opted for joining the operating engineers instead. I tell my students that I have a master's degree and my son makes more money than I do."

Beyond the CTCs work, there has been reestablishment of technical education programs at high schools throughout the region over the past few years. Pittsburgh Public Schools has reopened carpentry education programs at Carrick and Westinghouse high schools. All of this is evidence that there is a grass roots movement for vocational education, some of which will increase the pool of candidates for the trades. But, of course, the reason for such education is to prepare young people for the next step, which is apprenticeship. It's increased apprenticeship that will ultimately increase the skilled workforce. All of the locals have been focused on that strategy.

"One of the things we all have done is look at the retirement rates and made sure that we tried to match those rates," notes Ricky Okraszewski, training director for the Carpenters. "We've been ramping up our apprenticeships to take in 250 to 350 new apprentices each year. We can keep up the workforce we need at that rate."

The Carpenters are representative of how the recruitment efforts have changed over the years. Okraszewski rattles off a number of strategic partnerships that the union has forged to reach communities that it hadn't in the past.

"We're working closer with community groups like Breaking the Chains of Poverty, Hill House and the Energy Innovation Center to become ingrained in their process of recruiting. We got involved with workforce investment boards. We joined the Guidance Counselors Association and sponsored a seminar at Seven Springs to encourage a construction career as an alternative path to college," he states. "We're using Facebook and hired a communications director to try more outreach. We're creating communications and marketing positions to become more engaged."

Okraszewski has actually accepted the latter position and will become the director of marketing outreach for the Carpenters across their three-state footprint.

The linkage to the groups serving poor or minority communities has potential to solve more than one problem. Construction offers an opportunity for a career without a significant financial investment from the worker. With major projects in the hopper in the Hill District and at Almono in the Hazelwood neighborhood, there will be participation goals for minorities. Building a bench of construction workers from minority communities would allay the concerns of community groups in those areas and help build a middle class in underserved neighborhoods.

Breaking the Chains of Poverty is one of the groups working to use construction as a launching pad for careers. DeWitt Walton is the assistant to the international president of the United Steel Workers and the vice president/program director for the A. Philip Randolph Institute in Pittsburgh. Walton – who just began a term as Allegheny County Council representative – says he and Khari Mosley (now with the Blue Green Alliance) were ruminating on what changes might come with Barack Obama's election in 2008 when they came up with an idea to link the environment to construction.

"We came up with the idea of green skills training tied to construction. I went to my boss, Leo Girard, to ask for support," Walton recalls. "We've developed programs for environmental hard skills like hazardous waste operation, weatherization or mold removal."

We saw a real sincere desire in construction to include people from underserved and minority communities. We started to form relationships with Rich Stanizzo, business manager, Pittsburgh Regional Building Trades, Jason Fincke and Ricky O," he continues. "We found ways to use our relationships with the underserved to dispel [negative] notions about construction and expose them to career opportunities that they didn't know existed. It gives them hope and a vision of what a career might look like."

Since 2011, Walton says there have been 263 graduates of Breaking the Chains of Poverty, 20 percent of who have gone into the trades.

Another ambitious program is being developed at the Energy Innovation Center (EIC) to blend green building and jobs. Bill Miller, the vice president and COO of Pittsburgh Gateways, is working with the trades to leverage the training and education horsepower of the EIC to expose underserved men and women to careers in construction and other industries that are involved with sustainability.

The Elephant in the Room

While it's likely that there would be some amount of increased emphasis on workforce in the construction industry in Western PA. Right now, because of the demographics and the needs of the gas industry long-term, the heightened imperative is the result of the labor that will be demanded to build the cracker plant that Shell has proposed. Because the project is still technically just a proposal – and realistically could

Photo courtesy PNC Financial Services Group.

fail to be approved for construction – there is some reluctance on the part of those involved to sound the alarm, even though Shell has asked regional labor and civic leaders to verify and re-verify the available workforce repeatedly since the site selection was announced in March 2012.

That doesn't mean that leaders haven't responded to the perceived spike in workforce demand. Like when the gas industry first ramped up in Western PA, there will be a need to attract workers from beyond the existing regional workforce. That strategy was effective for the Operating Engineers over the past half-decade.

"We went from ten percent unemployment to over-employment in no time," recalls James Kunz, business manager for Local 66. He says that the Operating Engineers have focused part of its training on the work that will occur in Monaca. "We're pushing small hydraulics at the training center for the younger guys to meet the demand at the cracker."

The trade that will feel the greatest pressure if Shell proceeds is the Steamfitters. Engineering/procurement/construction contractor Bechtel estimates that more than 2,000 fitters will be needed at the project's peak, roughly two years into construction. In addition to the sheer human resources demand for the work, there are logistical issues that are related to the conditions of this specific jobsite that could create significant problems. Broadbent explains that his local is pushing to get ahead of those issues.

"We're being proactive. We've met with Bechtel several times and our attitude is that we can't act like this project might go; we have to prepare like it will go. If it doesn't go ahead then so be it," he says. "We've asked them to pre-test and pre-certify to the standards of the trades, and that Shell wants, so they can be organized and efficient."

What Broadbent speaks of is the need to have workers already drug-tested, safety-tested and certified for the kinds of welding that will be required at the cracker facility. Taking the typical approach to certification – doing the testing at the time the worker first comes onto the jobsite – could lead to lengthy delays in processing thousands of workers. Workers in Local 449's force are certifying in plastic fusion and stainless steel welding, in addition to normal welding certification, so that Shell's specific quality control standards are met. But getting Shell to accept this kind of preparation has been difficult since the oil giant has yet to commit completely to the project.

It's instructive to note that Broadbent is concerned about the process of staffing the cracker project as much as he is the recruitment of workers. It is the sentiment expressed by virtually all of the regional labor leaders that sufficient workers will be recruited and trained to build the largest construction project undertaken in Pittsburgh for many generations. Pulling that feat off will take continued creativity in expanding the pool of apprentices. Unions and contractors will have to continue to pull in the same direction and there will need to be continued support from civic leadership like the Allegheny Conference.

The extended benefit of the herculean effort to find workers for a project that will require almost 7,500 craft workers at its peak, is the pool of skilled workers that will be in place to replace the wave of construction labor that is retiring over the next decade. It's not likely that the industry would have moved with such urgency to build bridges to so many conduits for new workers. That such an effort coincided with what seems to be a sea change in how society at large views post-secondary education is a bonus.

Dean Mosites echoes Fincke's sentiments about the value of post-high school education that is non-traditional and has seen firsthand how the blending of trade training and traditional education can create exceptional value for a worker. The president of Mosites Construction's Building Division and past president of the Master Builders' Association says he has witnessed countless young people respond to apprenticeship training as the first time they excelled at education.

"You see the marginal high school student – that kid who was the trouble maker or couldn't sit still in class – get into the apprenticeship program, get that hands-on training and really shine," he notes.

Mosites says that it's not uncommon for that first spark of educational success to drive an appetite for further education that leads back into a college degree. Mosites says that three of his employees have a blend of both kinds of education. One entered the carpenter's apprenticeship after getting a bachelor's degree and two others earned bachelor of science degrees after becoming apprentices and working in the field.

"Those kinds of people are the real jewels of this industry," Mosites says.

That high school student who gets excited about a construction career is the one Fincke sees in his daily rounds. Those are the young people that he knows can make up for a generation's worth of disinterest in blue collar work. He also knows that the student isn't always the obstacle. He tells of a career day that raised a lot of interest from students.

"When the program was over the principal said to the kids, your job is to go home and convince your parents that it's OK not to go to college," Fincke recalls. BG

VA Medical Center Pittsburgh

Modernization of ICU Beds

Like its university neighbors, the Veterans Administration Pittsburgh Healthcare System (VAPHS) finds the Oakland section of town to be quite challenging for its logistics. Those who plan the construction project that result from its changing clinical and nursing needs must always account for the density of the VA's campus and its proximity to the University of Pittsburgh. For that reason, projects tend to have vertical design solutions.

When the VA decided to modernize and expand its intensive care unit (ICU), adding eight beds to its capacity, just such a vertical solution was required. Lacking much available land already, the VA was in the process of constructing a 65,000 square foot research office building (ROB) and its $73 million Consolidation Building while the ICU modernization was being planned. The ROB was the last of three new buildings on the University Drive campus as part of the VA's Capital Asset Realignment for Enhanced Services (CARES) program. It was also being built on the other side of an alley from the ICU facility.

VAPHS issued a request for proposals to contractors that were service-disabled veteran-owned businesses in 2011.

"WE saw it on the FedBizOpps website and it piqued our interest," says John Tobin, director of business development for RB VetCo. "It was design/build and we had just completed our first significant design/build job for the VA. It was a retaining wall you can see from the moon at the VA in Oakland for the Fisher House project. That was an almost $3 million project and it was successful."

RB VetCo was in its early years and the company was small. Owner Rocky Bleier was interested in pursuing the project if he could put the right team together. After talking to officials at the VA, he was referred to engineer H. F. Lenz Co. from Johnstown, which had significant hospital experience. Lenz had done many projects at VA medical centers around the Middle Atlantic and Northeast. Bleier says that it took one phone call with H. F. Lenz Principal Tim Earhart to get comfortable with the idea of pursuing the ICU opportunity.

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"We didn't know if they were interested or already tied up with someone else on this project.," Bleier notes. "They weren't and were very interested in working with us."

Earhart suggested that they bring on Array Health Facilities Solutions (now Array Architects) as the architect for the team. Bleier turned to general contractor Mosites Construction to act as a consultant to RB VetCo, which would bring more experience with the estimating and management of what was advertised as a $5 million to $10 million budget.

As part of the proposal process, respondents had to assemble a team that included the architect and engineering consultants and then create a solution that met the VA's programmatic needs and design intentions. RB VetCo also wanted to get the critical specialty contractors on board.

"We called a number of MEP subs and interviewed them," recalls Tobin. "We said that we would like them to be on the team then and wanted them to be on the team if we got it. That didn't mean pencils weren't going to have to be sharpened but we wanted them on the team from the beginning. We were blessed to have such responsive and responsible subs on the project."

Adding to the difficulty of the task was the fact that the funding for the project had been trimmed since the request for qualifications was issued for an 18-bed expansion. The successful team would be required to meet a similar program in 8,000 square feet, which was half the original space. According to project architect Chris Trotta, that proved to be the essential challenge of the design.

"The difficulty was just trying to fit all that was needed up there. We had half the floor but wanted to maximize the number of patients that could be treated," Trotta says. Many of the design choices were based on the need to get the most from the space they had. "We designed to maximize the visibility for the nurse's station into most of the rooms. There are

Adding to the difficulty of the task was the fact that the funding for the project had been trimmed since the request for qualifications was issued for an 18-bed expansion. The successful team would be required to meet a similar program in 8,000 square feet, which was half the original space.

decentralized nurse stations outside each pair of ICU rooms, which allows the nurses to get their work done away from the patient."

Because of the constraints imposed by the size of the space, Array and Lenz were challenged to implement as many of the best practices for healthcare design as possible. Support stations – like supply and storage units – were located down the center of the addition to optimize circulation for the nurses. Patient and family spaces were located along the outside of the building to allow exposure to light and natural views. Room was made for family nourishment and relaxation. Finishes, artwork and colors were chosen to make the ICU as attractive as possible. With an eye towards available funding in the future, all of the corridors terminate at windows to make expansion easier.

The most unusual aspect of the design was the configuration of the addition. The new ICU space is on a fifth floor that was added to an existing three-story

RB VetCo's Rocky Bleier stands outside the vertical addition (in silver panels) that his company built at the VA in Oakland.

wing, which was not structurally suitable for vertical expansion. RB VetCo and Array suggested a two-story addition with its own structure so that the mechanical equipment for the ICU could be placed one level below, meaning that the fourth floor would support the building's systems without bearing on the roof of the existing facility.

"That [design] was one of the reasons we were chosen," says Kate Barkowski, project manager for RB VetCo. "The roof structure of the existing building couldn't support any new loads and the new floor had to be built to allow for additions in the future."

An interstitial structure was constructed to support the mechanical equipment on the fourth floor, along with the new ICU beds – and any future vertical expansion – on the fifth floor. The HVAC equipment was essentially suspended below the new fifth floor. In addition to solving the structural problem, that design made operating the building much easier.

"I did a lot of work at Children's Medical Center in Washington DC and they have interstitial space on every floor. We're used to putting mechanical systems in interstitial spaces. There's a cost associated with it but it makes for more sustainable and reparable systems," notes Earhart. "The [fourth floor] was laid out so there were walkways between the equipment and the equipment is suspended so that the VA's maintenance people have easy access."

"We ran as much of the mechanical equipment as possible – ductwork, piping and VAV boxes – below the addition. Their maintenance people love it. Usually a lot of the mechanical system is jammed in above the ceiling but in this space all of the mechanical is accessible below the floor it serves," explains Barkowski. "They can get to it without disrupting the ICU."

That mechanical floor includes more than just the air-handling and distribution. The additional capacity of the expanded ICU necessitated the addition of a dedicated chiller for the new

For the steel, those were all critical lifts so we put together a critical lift plans. Century Steel Erectors were wonderful working with us in our critical lift plan," says Tobin. "It was all worst case scenarios. How far is that beam going to go if you drop it from this height?

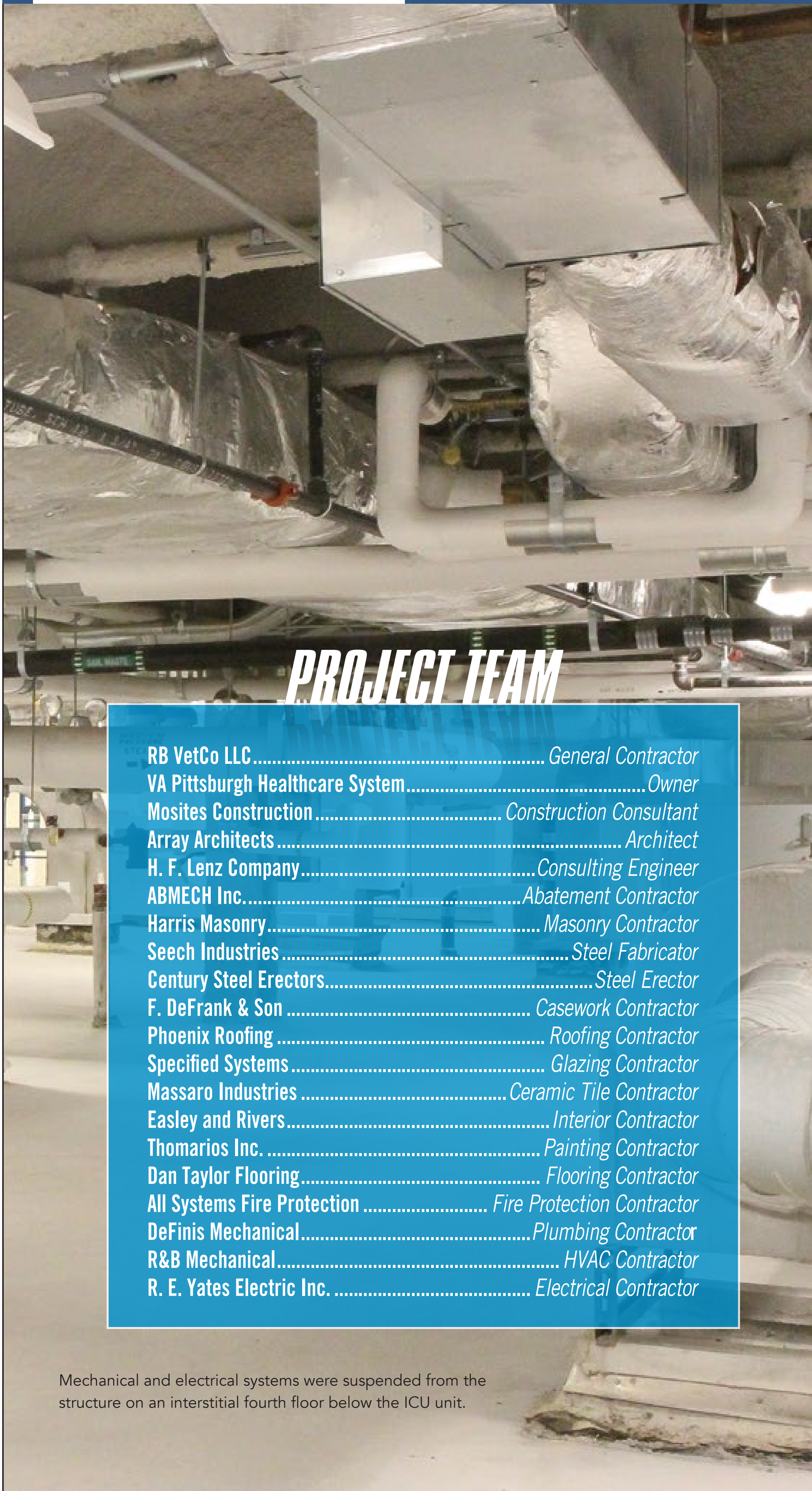
fifth floor. The existing hospital building also lacked sufficient power capacity to meet the needs of normal operations and emergencies. By code each unit is required to have alarms and lighting for three different types of emergency situations: life safety, critical emergencies and equipment emergencies. To ensure these systems would function, an emergency transfer switch was added.

"From an HVAC standpoint, the system that was selected was a standard energy-efficient VAV system," says Earhart. "We had to meet the air change frequency. ICUs have strict requirements for air change and temperature. It's always a challenge to be energy efficient while meeting those requirements."

The design of the exterior of the addition - silver-colored metal panels with spandrel glass – reflected the desires of the VA but was again colored by the need to accommodate the unique needs of the ICU program. Instead of matching the brick envelope of the existing hospital, the team was asked to mimic other vertical additions and connections that were done on the campus.

"There is a bridge connecting to the end of the nursing unit that was cantilevered and the VA wanted us to try to match that to other bridges that had been built between buildings," explains Trotta. "We took that cue but we also wanted to make a lighter structure than brick. We added a curved area at the cantilever to give it some visual interest and that also gave more room on the interior for the nursing unit."

The project was awarded in June 2011 and RB VetCo expected to begin design phase immediately but a funding issue delayed the start of design until April 2012. The delay put a pinch on RB VetCo, which had to reassign staff meant for the VA job. The $8.8 million budget was a big project for the contractor and it tied up bonding capacity that couldn't be used for projects that were going ahead. But they were able to hold the team together during the intervening ten months. By January



PROJECT TEAM

RB VetCo LLC	*General Contractor*
VA Pittsburgh Healthcare System	*Owner*
Mosites Construction	*Construction Consultant*
Array Architects	*Architect*
H. F. Lenz Company	*Consulting Engineer*
ABMECH Inc.	*Abatement Contractor*
Harris Masonry	*Masonry Contractor*
Seech Industries	*Steel Fabricator*
Century Steel Erectors	*Steel Erector*
F. DeFrank & Son	*Casework Contractor*
Phoenix Roofing	*Roofing Contractor*
Specified Systems	*Glazing Contractor*
Massaro Industries	*Ceramic Tile Contractor*
Easley and Rivers	*Interior Contractor*
Thomarios Inc.	*Painting Contractor*
Dan Taylor Flooring	*Flooring Contractor*
All Systems Fire Protection	*Fire Protection Contractor*
DeFinis Mechanical	*Plumbing Contractor*
R&B Mechanical	*HVAC Contractor*
R. E. Yates Electric Inc.	*Electrical Contractor*

Mechanical and electrical systems were suspended from the structure on an interstitial fourth floor below the ICU unit.

2013, completed construction documents were approved for the team to begin construction.

While the overall schedule was adjusted, progress on other projects further constrained access to the site. By the time construction began, RB VetCo had to share a small alley between the ICU building and the new ROB. That eliminated space for a crane and limited the time that the access could be available for bringing materials on to the site. It made site logistics one of the highest priorities.

"We had to address all of the issues for constructing over a fully-operational medical facility. For the steel, those were all critical lifts so we put together a critical lift plans. Century Steel Erectors were wonderful working with us in our critical lift plan," says Tobin. "It was all worst case scenarios. How far is that beam going to go if you drop it from this height? That whole process, lifting all the steel and getting it erected, went off without a hitch. We were lucky with the weather and we had a really good relationship with the hospital."

Logistics would remain one of the biggest challenges of the project.

"We couldn't use the existing building because we didn't punch through from the new space until the last thing," recalls Barkowski. "We had to use a boom truck and had to schedule with all the subcontractors first thing in the morning so that we got everything boomed in before regular work hours. That added complexity to every aspect of the job. We even had to boom the Porta Johns in and out."

The nature of the project made the infectious control (ICRA) plan more complicated as well. Because the ICU bed construction was new space, there wasn't as much concern for that portion of the job site but the fact that all the utilities and structure were brought to the new construction through the existing hospital complicated the plan. Part of the third floor contained functioning operating rooms. Extending the mechanical, electrical and medical systems through the floors below meant that a Class IV ICRA plan had to be formulated for every penetration.

One of those penetrations was particularly concerning. "Before starting we were up on the roof and there were a number of vent hoods marked as hazardous, so we figured out what they were and how to deal with them but there was a little pipe of about one inch just sticking up above the roof with no markings on it. People were walking around this pipe but nobody knew what it was when we asked," remembers Tobin. "They traced it down and found that it was a discharge pipe for ethylene oxide – a chemical used to sterilize medical instruments – and it is extremely toxic. We were concerned for the safety of our subs and our people so we moved the discharge far enough away that it would not impact the safety of the workers."

The new ICU was turned over to the VA in August 2014. Built as a full-service intensive care unit, the new space was designed with extra flexibility to help accommodate the hospital's needs. Throughout the year, the VA finds that its ICU patient load pales compared to its need for step-down beds, so the space is designed to allow for that level of care to be given seamlessly.

"I cannot say enough good about the design and subcontracting partners we had on this project," says Barkowski. "There is no way we would have ended up with this design without the collaboration of the subcontractors from the beginning, from schematics right through construction documents."

"To accomplish what we did there was a pretty good feat," reflects Trotta, who has since formed his own architectural firm, levelHEADS, based in Cleveland. "It shows how important real estate is on a tight campus. The VA spent the dollars wisely to get the space they needed." BG

CENTURY STEEL ERECTORS INC.

Among the more interesting dynamics in the construction industry is the relationship between employer and labor, especially if the employer is signatory with a union. There is a naturally adversarial relationship that has to be tempered in order for the contractor and the workforce to prosper. In Pittsburgh, the working relationships between the locals and their contractors are very positive, probably the byproduct of having to work closely together to recover the market after the economic decline of the early 1980s.

(Left to right) Diann Taylor, Darlaine Taylor, Donn Taylor, Pat Taylor, Debi Taylor and Dawn Taylor at the dedication of the J. R. Taylor Bridge in September 2011.

In the case of Century Steel Erectors Inc., the working relationship is such that the lines between management and labor are virtually nonexistent. The reason for those close ties is that the company's co-founder, Donn Taylor, is an ironworker who hasn't forgotten what working in the field is like and has made sure his family felt that same connection. It was a lesson that was strong enough that two succeeding generations have also been cardholding union members.

Century Steel Erectors is a specialty contractor that provides services for steel and precast erection, miscellaneous steel installation, heavy rigging and hauling, industrial maintenance, and crane rental. The company does 70 to 80 percent of its business erecting structural steel for fabricators like Sippel Steel, Moore & Morford, and Kinsley Manufacturing. But its key role in the critical path of a project means that Century Steel must have strong relationships with the general contractors on whose projects it works. Those relationships were the key to Century Steel's success from day one.

Donn Taylor started his working career as an ironworker, following in his father Bob's footsteps. In high school he worked weekends for his father and then became an apprentice in 1957, working for American Bridge until 1963. Taylor joined Penn Erection and worked his way to the field superintendent's position. During his 20 years with Penn Erection, Taylor developed close relationships with the project managers that would eventually own or run their businesses. He also became close with Chuck Smith, the chief estimator at Penn Erection.

In 1983, a deep recession following the construction of three high-rises pushed Penn Erection to close its doors. Rather than look for another employer Taylor and Smith decided to take a chance on themselves.

"The company I worked for was going out of business. I needed to do something so I decided to buy a steel erection business," recalls Taylor. "I knew everybody in this town, myself and Chuck Smith, who was with me as the estimator. We weren't in business five days and we had three or four jobs. Chuck said, 'let's give it a shot' and we've been thrashing ever since."

Taylor credits Perry Dick with helping them get started. Its past work with Dick Corp., Mellon Stuart and others provided a basis for developing new business at Century Steel. In its early years Century Steel was able to land some large projects, even though the company's resume dated back only a few years. Century erected the CNG Tower and then followed Mellon Stuart Construction to Chicago to do 35 West Wacker. It erected the steel for the UPS cargo facility at the Philadelphia airport, at that time the building with the

Those first successes helped Century Steel thrive as the steel industry was collapsing. Starting in 1983 meant that the company didn't have a big share of industrial work at the mills to replace when plants began to close. Taylor credits the team he worked with for allowing Century Steel to move forward ahead of the economic recovery that followed.

largest footprint on the east coast. In today's world of thorough pre-qualification, such opportunities may have been more difficult to pursue, but when asked how the contractors could trust a young company, Taylor says simply, "Everybody knew us from Penn Erection. We were doing that kind of stuff there. They trusted us and gave us the work."

Those first successes helped Century Steel thrive as the steel industry was collapsing. Starting in 1983 meant that the company didn't have a big share of industrial work at the mills to replace when plants began to close. Taylor credits the team he worked with for allowing Century Steel to move forward ahead of the economic recovery that followed.

"Chuck Smith was a great estimator. Then we brought Mike O'Neil along. We've just kept bidding and landing work," he says.

There have been several owners of Century Steel Erectors since its founding. In 2010, Donn Taylor bought out the remaining shares of the company and has owned it entirely since then. In 2000, Century acquired Alpha Steel and established it as the company's northern office, serving customers in the north and specializing in miscellaneous and ornamental metals. From that shop, Century provided the elaborate ornamental steel for the Renaissance Hotel and, more recently, for The Tower at PNC Plaza.

Taylor's philosophy is to be self-sufficient within his trade, controlling all the variables that could impact his business. Century Steel has two buildings for just tool storage and a large equipment repair shop on site. The company owns trucks that enable it to move whatever Century needs mobilized for its projects. "We're probably the only steel erector between New York and Chicago that has a 500-ton hydraulic crane. We have 300-ton crawler cranes, 200-ton and 165-ton hydraulic cranes," Taylor says. "We don't need anyone else to do what we need to do."

Even though business has been slower during the past year, Century Steel is still running a large crew, with 165 employees. During headier times, like during the erection of The Tower at PNC, Taylor says Century has run as many as 300 on the payroll.

At 76 years old, Donn Taylor has built a business that goes two generations beyond him. After having worked as far west as Chicago and in the major eastern cities, Century Steel Erectors is focused on projects within a 150-mile radius of Pittsburgh. It has work in Columbus and will do a $155 million bridge over the West Branch of the Susquehanna at Montoursville with Trumbull Corp. Taylor is one of the few construction professionals not looking at the potential ethane cracker as a major opportunity, preferring to stick with the niche of the business that his company serves best. He had expected to turn the business over to his son Jon R.


Taylor, known as J.R., and daughter Darlaine Taylor by now but his son's untimely passing changed that plan.

J.R. died accidentally at home in June 2004. In his honor, the family donated and raised the funds to build a steel pedestrian bridge connecting the Montour Trail over the Monongahela River. The J. R. Taylor Bridge, which cost nearly $850,000, was dedicated in September 2011. More than 11 years later, J.R. hasn't been forgotten.

"He was our face in the field. I don't think we'll ever replace that," says Darlaine. "You know, his guys still talk about him every day."

Family is a central theme in Century Steel's business. In addition to Darlaine Taylor, who is the company's vice president and handles most of the administration, Donn's daughters Debi and Diann are also involved in the business. Debi assists the estimating and safety departments and handles the company's marketing, communications and event planning. "We call her special ops," jokes Darlaine. Diann coordinates purchasing of tools and equipment and delivers them to the job sites. Diann's son Michael is a fourth generation ironworker and J.R.'s son Dakota is an operating engineer.

"This is a family affair. And within my workforce I have brothers, sons and fathers, and cousins. There are so many people with the same name here that it's crazy," notes Darlaine.

That connection to family and to the workforce comes out of empathy for the labor. The multi-generational ironworker legacy pervades the culture at Century Steel Erectors, including the emphasis on safety. Donn Taylor's brother Matt was president and business agent for Local 3, and was named the general vice president of the Ironworkers International in 1973. Donn's older brother Jack was killed on a jobsite in 1956.

"We're a safe company. I'm from the old school and I never tied off but all those guys my age, they are gone. They retired," Taylor stresses. "These young guys have come in since OSHA came in the 1980s and 1990s, so they grew up tying off. It's still something we have to stress every day. We're proud of our safety awards and our mod rate."

"Safety is the most important thing. Between insurance and safety equipment, it's the highest cost of doing business but this is my family here. We want it to be safe," echoes Darlaine.

Darlaine Taylor explains how the focus on safety means taking time that the ironworkers don't always want to take, that their instincts are to produce. She started working as a laborer for Trumbull Corporation until the late Bob Hecht convinced her to go to college. She has empathy for what drives the worker on the jobsite and says that the understanding of what the ironworker needs comes from Donn Taylor.

"We can get the work done. I think we have the best ironworkers that the city offers here working for us," Darlaine says proudly. "They come and they stay and he takes care of them. He pays them well. They get vacations. People don't get that everywhere but he did the work. One of the guys that retired recently came in and shook my dad's hand and said what I really liked about working for you was that I could talk to you about anything and you knew what I was talking about. My dad did the work." BG

Company Facts

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ESOP in Architectural, Engineering and Construction Firms

By Heath Winsheimer and Jay Powers

The largest industrial concentration of ESOPs (Employee Stock Ownership Plans) is in the architectural, engineering and construction ("AEC") sector. Approximately one-third of the largest 100 ESOP-owned businesses in the U.S. are AEC companies. This article will explore how structuring your ownership through an ESOP can be successful in these types of companies.

While each company's financial dynamics and employment base are unique, we have identified recent trends that help explain why ESOP companies are so popular in the AEC community.

Benefits to Owners

While most tend to think of an ESOP as a benefit to the employees, ESOPs can also offer many advantages to the owners. An ESOP is an arm's-length, fair market value transaction, so the selling shareholders will receive as much from an ESOP transaction as they would from a sale to a strategic or financial buyer. An ESOP also gives owners the opportunity to retain day-to-day management of the business and keep their legacy intact.

The IRC 1042 rollover, or tax deferred sale to an ESOP, is potentially the most significant advantage for owners of a C-Corporation. If the ESOP purchases at least 30 percent of the company's stock from selling shareholders, the sellers may have the opportunity to defer the capital gains taxes on the proceeds from the transaction.

Income Tax Benefits

ESOPs are the most efficient ownership structure from an income tax perspective. The most popular structure remains an S-Corporation that is owned 100 percent by an ESOP. In this format, all of the taxable income is passed through to the ESOP trust as the sole shareholder. Since the ESOP trust is a qualified retirement plan under section 401(a), the trust is tax-exempt under section 501(a). Therefore, the ESOP trust as a shareholder in an S-Corporation is not subject to federal or state income tax liability on its share of the S-Corporation taxable income. The tax advantage of retaining significant corporate income that would otherwise pay tax makes this form of ownership highly advantageous. Many AEC companies reduce their taxable income by paying bonuses to their key employees. While this does reduce the company's taxable income, it also results in the same tax outflow to the government since the key employees must pay income tax at an even higher income tax rate. By becoming an ESOP-owned S-Corporation, this type of income tax planning is no longer necessary.

Income tax benefits can also be realized by key managers of the company through deferred compensation arrangements. In non-ESOP companies, the corporation may not claim an income tax deduction in a non-qualified deferred compensation arrangement until the individual reports the compensation on their Form 1040 and pays the income tax related to the deferred compensation. A 100 percent ESOP-owned S-Corporation does not pay income tax, so it does not impact the corporation's cash flow to delay the income tax deduction related to the deferred compensation. Therefore, it is common in 100 percent owned ESOP S-Corporations that deferred compensation arrangements are established.

Ownership Objectives

The normal course of ownership in AEC companies is that key managers are provided the opportunity to buy stock in the corporation. The mechanism for funding this purchase is normally a bonus paid to the employee, which is fully taxable. The employee then uses the funds to purchase stock or pay down a loan that was provided when they purchased stock. For example, if the employee will be entitled to purchase $100,000 of stock in the company in the current year, the corporation would have to pay a bonus to them of $200,000 in order for the employee to net after-tax $100,000 so they could pay the principal on the loan or purchase the stock. This is an inefficient mechanism for granting equity ownership from an income tax perspective. Another mechanism used is restricted stock, where the employee can elect Section 83(b) treatment. If the Section 83(b) election is made, the employee must pay the income taxes when granted, so the company will have to pay a bonus to help fund the grant. If the employee does not make the Section 83(b) election, they will have to pay income tax at ordinary rates when the stock restrictions lapse.

In a 100 percent S-Corporation ESOP, equity can be granted to the employee through a deferred compensation plan such as phantom stock or stock appreciation rights. The employee is not subject to the income tax until the deferred compensation is payable, nor are they subject to the employment taxes until the grant vests. This can be at a certain date, such as five years into the future, or the plan could allow for a deferral until the employee reaches retirement age. If deferred until retirement or termination, the grant will most likely be subject to ERISA (Employee Retirement Income Security Act) and would have to meet the Top Hat exemption under ERISA.

Equity compensation plans are very popular in ESOP companies, as they provide the board of directors with a means to efficiently compensate the employees who are generating value in the company. In addition, the equity plans reload since they allow for the payouts after a specific period, and the equity does not get stale with older associates. For instance, SARs (Stock Appreciation Rights) may be granted in year one and exercisable in year five. Grants are made annually based on incentive targets. After five years, the associate holds an accumulation of SAR grants. Because the program requires that the SARs be exercised after five years, the employees cannot continue to hold the security, so the equity incentive does not grow stale with an employee as they move towards retirement. This is an evergreen provision that allows those equity units to be reissued to new and future key employees.

Another issue ESOPs address in AEC companies concerns the equity held by older associates or founders of the company. These companies are attempting to get equity to key employees who will drive the future of the company. ESOPs allow the older shareholders to realize their equity value at a fair market price by selling to the ESOP, while equity compensation arrangements efficiently allocate equity into the future.

Family-owned companies sometimes have a hard time attracting top talent because the talent understands that top executives, the CEO and president could be family members. Companies that utilize ESOP make a statement that any employee who joins the company can have the same opportunity as an heir of the founders to become president.

Leadership is Uncoupled from Ownership

In traditional AEC companies, leadership is often directly tied to the ownership. This has both positive and negative effects. One negative is that if a leader in the organization needs to be terminated, there is impact to the cash flow. In an ESOP company the leadership and management are dealt with through the compensation plans and corporate governance. The ownership is settled in a 100 percent ESOP-owned company. This can lead to more efficient corporate governance decisions for ESOP companies.

As with many AEC companies we have encountered, once employees receive stock, their mentality becomes that they should be on the board of directors and be able to run the company. This can create unwieldy board structures. It also leads to conflicts within the officer structure and appointments. An ESOP can avoid these pitfalls, providing better corporate governance by promoting the employees whom the company thinks strategically can be elected to board or officer positions.

Employee Culture

An ESOP provides a way to reinforce a culture where employees are encouraged to work as a team. The ESOP also provides a long-term compensation benefit that is paid at retirement or other termination of employment. However, the real motivating aspect of equity ownership is that the employees are provided with an annual reflection of how their efforts impact the company's value. Utilizing this motivational tool can be very effective.

Skin in the Game

Many AEC companies feel they need key employees to invest their own wealth in the company's equity. This practice can be attributed to the fact that AEC company founders and other key employees had to make a similar investment. While that process is tax efficient, it does put a strain on bringing new employees into the ownership equity sharing since they have to bring their own capital to buy stock. Allowing employees to have "skin in the game" can be achieved through grant programs such as SARS and phantom stock. Employees who have wealth tied up in the company usually have goals aligned with the company's.

Surety Perspective

It is important to get your surety involved early in the process when setting up an ESOP. The surety company will want to understand the transition and have input on the design. The company must make sure the balance sheet after the transaction can support its bonding program. "The balance sheet needs to stand on its own," said Jim Bly, Managing Director of Alliant Insurance Services, Inc. If the transaction is consummated with bank financing or with a note from the former owner, the company must still be able to meet certain working capital and equity to backlog ratios. Bly went on to say that there might be some flexibility to get a note from the former owner subordinated to the surety, hence creating additional equity. Most important is to have open communication with your surety so that it understands the impact on the financial statements after the transaction and in future years.

Competitive advantage

Many AEC companies are realizing the income tax savings, ownership motivation, flexible compensation structure, efficient corporate governance, and other benefits of being an ESOP-owned S-Corporation. This could put them at an advantage in the competitive bid process. AEC companies that are mature ESOPs have paid off their shareholder loans and are accumulating substantial amounts of money on their balance sheet. This obviously gives them an advantage over other companies. It is common that because the ESOP companies have strong cash positions on their balance sheet, the banks and bonding companies do not require key employees to provide personal guarantees.

Expansion

Since many AEC companies have such strong balance sheets, many are looking into acquisitions and expansions into additional markets. They find that they are able to bring in the talent necessary to support expansion.

Structure of a Leveraged ESOP

ESOPs can be structured multiple ways, but the most common is a leveraged ESOP. In a leveraged ESOP, an outside lender (financial institution, specialty ESOP lender, etc.) lends cash to the company. The company can use this cash to purchase the stock from the selling shareholders. If the financing from an outside lender is not enough to buy 100 percent of the stock, the difference can be made up in the form of mezzanine debt, or a seller note between the company and the selling shareholders. The company then sets up an internal loan to the ESOP, and the ESOP purchases shares over the term of the note.

Conclusion

ESOPs offer many unique advantages to business owners seeking liquidity or a path to exit. The selling shareholders benefit from receiving fair market value and retaining day-to-day control of the business. Employees, particularly those who understand the opportunities of ownership, also benefit when an employer chooses to sell to an ESOP. The employees have a stake in the success of the business, usually leading to improved morale and operating efficiency. And the company going forward can benefit from the tax advantages of the ESOP sale and the potential for enhanced cash flow. While not all companies are a good fit for an ESOP transaction, statistics show that AEC companies have taken advantage of these unique benefits many times over.

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When a Win is a Loss

By William D. Clifford, Esq.

You sit at counsel table with your intrepid attorney waiting for the judge and jury to enter the courtroom for the start of the trial that will finally resolve your company's most important construction claim in its history. You lean over to your counsel and whisper, "Whaddaya think?" He will, of course, misunderstand your question. If he is a seasoned, longtime litigator, his focus will be on the combatant's ritual that is about to unfold. He is primed for battle and excited to engage in the game only battle tested litigators love.

What you really want to know is, win or lose, how is this all going to affect my company? Were it ethical and prudent to inject your attorney with truth serum at this moment (it's not), it would not be a surprise if this frothing warrior acknowledges that, win or lose, "you've already lost." This conclusion is invariably true for all litigants that go through the entire process to jury verdict or arbitration award. Someone will lose less than someone else but everyone loses. The losses include time, focus, energy, productivity, relationships, and, of course, money.

While some cases must be tried, the vast majority of cases that go to verdict/award do not resolve earlier because of poor decisions that are based upon bad information and/or bad advice. While the list set forth below is not intended to be exhaustive, it is a list of the "usual suspects" that lead to bad decisions resulting in cases that go to trial that should have been resolved and weren't.

Bad News Does Not Travel North

Three basic construction facts are 1) concrete cracks, 2) water flows downhill, and 3) bad news does not travel north. Each of these truisms is beyond debate.

Jobs are built by superintendents and managed by project managers. Neither are usually the ultimate decision makers as to whether a case gets resolved. However, the information known only to your project manager and superintendent is critical.

As the project proceeds and progress lags with mounting budgetary "busts," you begin to investigate the causes. As with most skilled and diligent project managers and superintendents, they will explain to you in detail the various project issues ranging from owner interference, unforeseen conditions, lack of design information and/or design mistakes.

Based upon this information, you begin to tie the causes with the effects that are resulting in increased costs.

Experience tells us that when claims are developed, there is invariably a strong basis for recovery. However, what must be kept in mind at this stage, and at every stage along the way, is that there are no perfect jobs. The project manager and superintendent can be among the most loyal and capable employees in your organization. This does not change the fact that your project manager and superintendent will be reluctant to volunteer information regarding problems that are the responsibility of the contractor as well as mistakes that they have made that have, if not created, at least exacerbated the problems resulting in your claim.

To expect a free flow of unvarnished information from the field in order to evaluate the relative strengths of the claim is at best unrealistic. How you get the real "skinny" on the causes of the claim takes digging and a wary eye. Review of objective project data such as cost reports and schedule updates is a good start. Direct and straightforward communication with the owner and design professional is another. Sometimes it is not until a mediation session that you hear, for the first time, that your company has had some hand in making the project a mess that it has become.

However you close the information gap, you must recognize that it exists. You must approach all claims with skepticism and a critical eye. Your project manager and superintendent are good men and loyal employees. They are also human.

Don't Book It (… actually don't book all of it)

As your claim originates, you will begin to wrestle with an evaluation of its worth. At some point in the first year of the process, your accountant will inquire as to the reasonable and expected value of the claim. A portion of your claim that is booked by your accountant will have a direct impact on your line of credit and bonding line.

The larger the amount of your claim that you book, the larger your credit line and bonding capacity will be. As a result, you will be tempted to be overly optimistic regarding the claim's value. Given that the claim is not fully developed, the risk of overstating the claim's value is real. Making matters worse, may be counsel's overly enthusiastic approach to the claim that was one of the endearing qualities that caused you to hire him in the first place.

Once a claim's value is booked, and banking and surety commitments are made in reliance on the booked value, it is very difficult to make an accounting adjustment for a claim realization that is less than the previously booked amount. Said differently, an overly optimistic booked claim evaluation hamstrings your ability to reevaluate your claim at a lower amount after you have had an opportunity to allow your claim analysis to mature with more and more realistic information. You may well back yourself into a corner such that you cannot resolve a claim at what turns out to be a fair and reasonable amount. The result may be that you will have no choice but to pass up a reasonable settlement offer and "roll the bones" hoping for an unrealistically better result through litigation.

Conversely, if you and your legal term conservatively and realistically evaluate your claim on the front end for accounting purposes, you will be left with the flexibility to resolve the claim on its own merits best maximizing your company's return.

Joey's Not Here Anymore

If there is one constant in the construction business, it is change. This is so, particularly with regard to management. In our business, it is not unusual for project managers and superintendents to change jobs every three to five years.

Most claims that go wire to wire can take three to six years to complete. Accordingly, it is not unusual that by the time that trial commences, your project manager and/or superintendent may no longer be your employees. Even if they leave your employ on good terms, their new employer will be less than enthusiastic in supporting your effort to call their new employee as a witness or to cooperate with your development of the claim. Needless to say, the unavailability of the folks that built the job and know the claim can be a devastating blow. Worse yet, you may be forced to continue to employ less than satisfactory employee for the sole reason that you need him to support your claim.

The longer you wait to resolve a claim, the more likely it will be that you will need to deal with this situation.

Count the Cost

In evaluating whether to settle a claim, you will obviously need to understand and quantify legal fees and expert fees. If you have never litigated a claim through verdict, the amount of these costs can be surprising. Don't be afraid to demand budgets from your professionals. However, remember that, while budgets can be helpful, they are subject to change as litigation variables are encountered.

With budgets in hand, you will begin to understand the wisdom of trying versus settling the case. In this way, you can begin to evaluate the "net." Assume that you have submitted a delay claim in the amount of $600,000. You engage counsel and a scheduling expert. Your counsel provides a budget of $125,000 and a scheduling expert submits a budget of $100,000. In the development of your claim, you have incurred $20,000 in attorneys' fees and $10,000 in expert fees for a preliminary CPM analysis. Your counsel confirms that the $600,000 is your "homerun" and he believes that you have a 75 percent chance of recovery. In response to the claim, the owner suggests mediation. At the mediation session, the owner makes a last and final offer of $350,000. This is a tough one to accept given that it represents approximately a 50 percent recovery of your claim. However, if you go to trial, you will need to get an award/verdict of at least $575,000 in order to net $350,000. Essentially, you will need to recover 96 percent of your claim. Your attorney has only predicted a 75 percent chance of recovery. You must work from the "net" to properly evaluate a settlement proposal.

Count the Costs – All the Costs

While most contractors are familiar with and aware of the costs relating to attorneys and experts, a surprising number of contractors fail to even consider the human cost exacted on a company, its employees and owners by litigation.

I can say with absolute certainty that you did not get into this business to sit in a room full of attorneys and consultants hour after hour, day after day. You signed on for this business to build things and provide for your families. You are doing neither when you are spending your valuable time prosecuting your claim. During this time, you and your employees are, at best, distracted from the business of securing and building projects.

Did You Follow the Contract?

Virtually every contract has technical written claim notification requirements both in terms of timeliness and specificity. These requirements are rarely a contractor's friend for several reasons.

First, "paperwork" is rarely a contractor's strength. With focus on schedule, coordination of subcontractors and resolving daily challenges at the site, properly documenting the commencement of a claim event is far down a superintendent's list of priorities.

Second, it is only with hindsight that the commencement of a claim event can be pinpointed. When a claim event occurs, it usually takes an extended period of time before it becomes clear that a claim will result.

Third, when a claim event occurs on the front end of a job, a prudent contractor is reluctant to immediately begin "saber rattling". It is usually hoped that the issues can be quickly resolved with little or no impact to the project.

I raise this issue because contractors rarely recognize the lack of technical claim notification as a substantial "Achilles heel." In most jurisdictions, the failure to provide technical claim notification is overlooked by courts and arbitrators when the owner knew or should have been aware of the circumstances giving rise to the claim, and the owner is not prejudiced as a result of not receiving the technical notification. However, you should be aware that there are some jurisdictions, such as Ohio, that enforce technical contractual notification provisions even in the face of evidence that the owner was aware of the circumstances giving rise to the claim and was not prejudiced in any way as the result of not receiving the technical claim notification. You need to be aware of how the claim was "papered" and the attitude that the controlling jurisdiction has toward these requirements.

The World Spins Forward

The settlement process is a "game" and has specific rules that in many respects are inalterable. One of the important rules is that the world spins forward. For example, a contractor makes a demand of $300,000 to resolve a claim so long as the offer is accepted by Friday at 5:00 p.m. The deadline passes with no acceptance by the owner of the contractor's demand. Subsequently, the parties engage in mediation. The contractor makes a demand to resolve its claim of $450,000. Quite correctly, the contractor notes that it is entitled to increase its demand because its prior demand of $300,000 was conditional upon timely acceptance.

While the contractor is technically correct that it was entitled to withdraw its demand and make a higher demand at a later date, this case will not settle. The owner knows that at one time the contractor would take $300,000 to settle its claim. Thus, the owner will not offer to pay a penny more than the lowest demand made by the contractor. As a result, be careful not to back yourself into a corner with an insufficient demand.

Reasonable Unhappiness

During the course of all claim prosecutions, the contractor marches through an inevitable progression of realities. Initially, the contractor will have uneasy concerns about a project that just doesn't seem to progress in a positive way. Deadlines are missed, budgets are exceeded and good will with the owner doesn't materialize. Next, the contractor becomes educated regarding the specifics of its claim and begins to understand and quantify its claim. Soon thereafter, most contractors begin to "fall in love" with their claim. The project team begins to "cheerlead" the contractor's entitlement to relief. Any contractor that has reached this very dangerous stage must force itself to take at least one more crucial step. For purposes of making the best possible business decision, a contractor must take a step back from its claim and consider factors other than the claim itself. Did you break even or even make money on the project? What could we have done better? What do we need as a company to live to fight another day? Can a client relationship be preserved if we resolve this case now? Ultimately, if you can resolve a matter in a fashion that leaves you reasonably unhappy, it is a result you can live with.

Do You Really Want to Lose?

The items listed above are certainly not intended to be an exhaustive list of causes of claims. Whatever the reasons, more claims should resolve than do. That said, it takes two to settle. If the party sitting across the table refuses to engage in reasonable negotiations, it's probably time to strap it on and have at it. However, serious thought should be given to a timely, prudent and reasonable settlement.

Bill Clifford is a shareholder with Dickie McCamey. He concentrates his practice in the areas of commercial, construction, and surety law. Mr. Clifford is Chair of the firm's Alternate Dispute Resolution Group and Co-Chair of the Construction Law Group and Government Contracting and Compliance Group. He can be reached at wclifford@dmclaw.com. BG

MBA Master Builders' Association of Western Pennsylvania, Inc.

SAVE the DATE

The Construction Industry Evening of Excellence

is a night that celebrates the brilliant and unparalleled design and construction industry. This event unites the firms and individuals that are developing our region with a commitment of excellence in each and every construction project. This commitment to excellence will be on display during the event as the winning projects in the MBA's Building Excellence Awards program will be announced.

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5:00 to 9:00 P.M.
Heinz Field East Club

Event includes two drink tickets and strolling buffet. For ticket information, please call the Master Builders' Association at 412.922.3912, email info@mbawpa.org or visit www.mbawpa.org.

Event details to be posted first on the Evening of Excellence group on LinkedIn. To locate the group type the following in a search on LinkedIn: Evening Of Excellence.

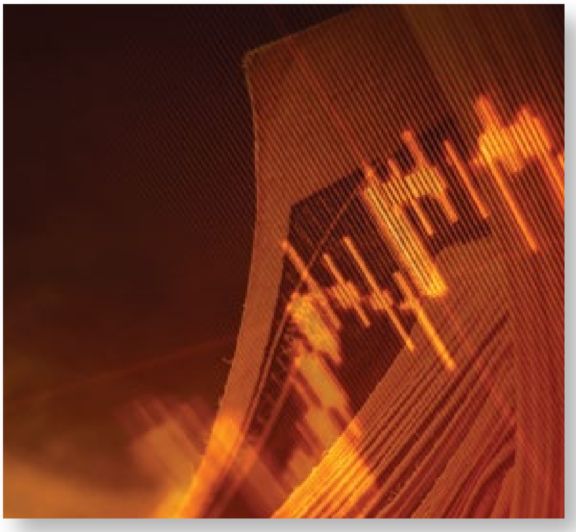
See you on February 25th at the Evening of Excellence

Management Perspective

Keeping a Watchful Eye on the Economy

In February 2009, the U.S. economy began a slow recovery from the trough of a recession that began in late 2007. This coming year marks the tenth year since the peak of the previous business cycle. If history is a guide, another downturn may not be far off; however, economic cycles don't have expiration dates. A cycle peaks and declines because of supply and demand, not the calendar. And experts looking out into 2017 or 2018 don't see anything that indicates a change in the upward trend.

Still…prudence and the experience of working through a few business cycles tells you that as a growth cycle gets long in the tooth it's a good idea to be looking for signs.



Wall Street giant J.P. Morgan delivered a December 7 report that expressed worries over the fact that credit spreads for junk bonds had widened to numbers that hadn't been seen since the crisis. Morgan analysts saw this as an ominous sign that credit was deteriorating as buyers of debt were asking for more premium, meaning they saw more risk of default. In fact, Morgan wrote that the three best leading indicators for past recessions have been credit spreads, the shape of the yield curve and profit margins, all of which are showing weakness.

Of course, you can find other investment banks that are offering equally assuring reports that the economy and the bull market have plenty of life. Wall Street benefits whenever anyone is moved to buy or sell so it doesn't really matter on which side of the table the investors sit.

"I don't pay too much attention to Wall Street. They are their own animal," asserts Jim Kunz, business manager for Operating Engineers Local 66. "What goes on in Wall Street isn't a very good predictor for what will happen in the economy. What I look at a lot is consumer spending. If people are spending money, the economy will be fine."

Kunz's observation has significant quantitative support. The share of U.S. gross domestic product that is driven by consumer spending is almost 70 percent, so paying attention to how the consumer behaves is a great idea.

One of the factors making life better for the consumer is the lower price of gasoline and heating. Those extra dollars that can be spent or saved help boost the economy but the lower prices are a bit of a mixed economic blessing.

"I look at the overall price of energy – fuel, oil and gas – as an indicator," notes David McKamish, president and CEO of McKamish Inc., one of the region's largest specialty mechanical contractors. "It's a wonderful thing to see at the gas pump or when you get your heating bill but it's too low for the economy. I don't want to see it swing to the other extreme but it would help to have prices swing back higher."

Jack Mascaro, founder and chairman of Mascaro Construction, says he's reached a point where his indicators are simpler.

"I look at the President to see if he's a supply side guy or a demand side guy," Mascaro says. "I'm all about supply side. I don't believe in Keynesian economics. I believe in entrepreneurs."

Mascaro admits to concerns that the current administration hasn't been as business-friendly or supportive of expansion as he'd like but regardless of whether or not you agree with his politics, the specter of presidential politics looms large over the economy. It's an article of faith that nothing happens during an election year. While the facts only prop up that theory some of the time, what presidential elections can bring is uncertainty about government's direction and the impact change will have on the economy. It's clear that uncertainty – or the prospect of a change – kept owners from having the confidence to build and develop in 2012. And while the 2016 election offers some of the same uncertainty, the dynamics of the economy are significantly different from those that existed as the last election loomed.

One of the most ballyhooed dynamics influencing markets has been the interest rate environment. The Federal Reserve Bank dropped rates to virtually zero to stimulate recovery in 2008 and the rebound – when and how quickly rates would rise – has been highly anticipated for most of the past two years. With the first 25 basis point bump under its belt, the Fed will be watched closely to see about the timing and trajectory of the next rate increase. Perhaps there will be another "briefcase cam" like in the late 1990s.

Back then, CNBC trained a camera on the walkway between the Federal Reserve's two buildings in Washington to observe the briefcase of Chairman Alan Greenspan. Its theory was that a full briefcase meant lots of discussion and, therefore, a rate increase. As it turned out, Fed officials routinely used a tunnel rather than the sidewalk and Greenspan got great pleasure out of spoofing CNBC.

"Greenspan had all those odd indicators, one of which was freight shipments," recalls Guhan Venkatu, vice president and senior regional officer for the Federal Reserve Bank of Cleveland's Pittsburgh office. "I actually watch those too. If you're seeing a lot of freight activity that means there's a lot of commerce going on."

"I look at new construction numbers, both for residential and commercial – the number of new units and the total dollar figures...

County Executive Rich Fitzgerald says he used a similar gauge prior to taking on his current job. "When I was in business I looked at the tonnage of steel," Fitzgerald says. "That told me how busy the mills and manufacturers were."

As county executive, Fitzgerald says he focuses more on gross regional product and some of the indicators that come from new construction.

"I look at new construction numbers, both for residential and commercial – the number of new units and the total dollar figures. I also look at the total square footage of office space that's available, particularly in certain areas like the airport, Downtown or Oakland, that are centers of activity," he notes.

"We don't look to macroeconomic signals as much as we look at what is impacting the Pittsburgh economy," says Bill Hunt, president of The Elmhurst Group. Hunt points out that pain felt during the 2008-2009 recession wasn't as intensely experienced in Pittsburgh as in the rest of the U.S. "We're long-term holders. We have plans and processes to deal with a downturn but we don't try to time the market. We will look at submarkets within Pittsburgh and might try to time a specific submarket if we see a change in supply or demand."

George Mezey, president of Trumbull Corp., also focuses on the regional economy because of the countercyclical trend in Pittsburgh's economy.

"I look at the regional rather than the national market because this region tends not to follow the national trends. Every part of the country rode the trend down in 2008 and 2009, although [Pittsburgh] filled in the bottom of that because of natural gas," he explains. "There was a lot of excitement for the gas industry. People were moving into the area. That drove housing and commercial development."

A glimpse into customers' businesses can also be enlightening for those who want to get an even closer feel for the economy.

"Typically, I'm looking at the jobs in the market for bid, how people are planning for their businesses two or three years down the road," says Jim Mall, partner at Meyer Unkovic & Scott LLP.

Mall says that he notices that market conditions are worsening by his clients' attitudes about disputes and non-payment issues. "In good times people tend to look to the next job and try to work [the problem] out there. When there's profitable work they can work out some of the problems but when there aren't profitable next jobs they don't," he says. The prevailing conditions aren't combative for the most part, Mall notes. "Where I have seen it is in oil and gas, where I have a couple companies trying to get paid for construction they have completed."

Liberty Insurance's Chris Pavone is another who looks to his clients for a more granular view of the market his company serves.

"I don't know if there's any indicator I look for. I follow the news and the economic data but I depend on what our contractors are seeing and doing for a reading on the economy," Pavone says. "They are closer to the market and the things that influence it. We ask them about what their projections are and what they are doing to adjust to the conditions."

Bill Wilson favors an approach that combines some 30,000-foot analysis with the kind of local knowledge that can only come from paying attention to how his customers are faring.

"We deal with a couple of different manufacturing companies who analyze the market. Kawneer is our biggest supplier. Alcoa is a highly analytical company. They make a lot of decisions based on a lot of data, but their data is national and it didn't stack up well in this region because of the work that came from the Marcellus Shale play," explains Wilson, president of Specified Systems Inc.

Wilson has tried to understand the market's direction throughout a career working for manufacturing, distribution and his own subcontracting business for the past 25 years. He trusts a few rules of thumb but relies heavily on what he and his staff know about specific opportunities.

"I've always looked at McGraw Hill's stats. I recall doing that for Jones Brown years ago and McGraw Hill said that the trends in the building cycle were on a five-year cycle. If you could pick out the high point in the cycle you could predict the low point," he says. "I also recall they looked at housing starts. If housing starts were down you could expect commercial construction to follow 12 to 15 months later."

But you also have to have your ear to the ground. We look at the market from the standpoint of what work our customers have. Our share of the opportunities won't grow just because the number of opportunities grow, unless our customers are getting more opportunities."

Don Smith, RIDC's CEO, looks at a wide variety of factors and tends to zero in on the data that relate to jobs and job creation.

"I do look at permits. I look at plant expansion and closing announcements, downsizing announcements," he notes. "Companies come and go, so if there is a downsizing I ask myself if this is a company going or has Pittsburgh become somehow less competitive."

"Downsizings are issues. I don't know how you argue with that," agrees Duke Kingsley, principal and managing director for Avison Young. "For 2016, the Marcellus Shale businesses are still going to be pulling back. That business is going to come back but next year there will be more companies adjusting to the market."

"In a more humorous vein, I have what I call the Burger King theory of economics. If I go to Burger King and pay with cash I measure three things," jokes Smith. "Is the order correct? How quickly did the order get filled? And can they make change? If you get the order right and in a timely manner and they have no trouble making the correct change, we're in a world of hurt."

Smith's humor has a basis in reality of course. In tough economic times, people who wouldn't otherwise work in food service find themselves doing those jobs to help make ends meet. He isn't the only one whose forecasting includes observing America's restaurants.

"What I didn't pay attention to that I noticed the last time we had a recession – and we really didn't have it so much around here – was that when I traveled in other parts of the country the restaurants were half empty," notes Jim Kunz. "I didn't see that in restaurants around Pittsburgh and we didn't fare so badly." BG

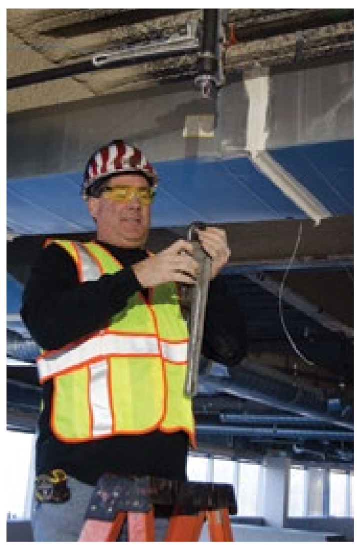
MBE/WBE Company Spotlight

What would you do in the midst of a struggle to have your business recover from a severe economic recession? Craig Bingham decided to help a friend who was unhappy with his work and as a result took on the biggest challenge of his career.

"We took a hit, a big hit, during the downturn. A number of contractors went belly up on us and it was a hefty number," recalls the ex-Steeler linebacker. "The easiest thing I could have done was to shut the doors; then I would have been relieved of all the stress with the people. That's not how I operate. It's a noble way of doing things but [it] can also kill you."

ALLSYSTEMS INC.
FIRE PROTECTION

Bingham is the owner of DCI Logistics, a concrete supply company that he founded in 1986. DCI worked on CONSOL Energy Center and kept busy landing work throughout the slowdown that followed the financial crisis. But, like many in the supply chain, the company had clients that struggled or failed as the recession dragged on. Bingham was determined to work through the difficult times. As he managed that turnaround, he was presented with an unexpected decision.



Jim Jenkins

"God is an interesting God. In the midst of all the stuff with DCI in 2011, somebody comes to me with this opportunity," Bingham says. "He was in the sprinkler business and his wife and my wife are really good friends so we hung out a lot. He had always entertained the thought of going into business for himself. He asked my thoughts on that and I said he should go ahead, that I would help him any way I could. Maybe I could help point him in the right direction and help him avoid some of the mistakes I've made in business."

Bingham's friend began his due diligence and was encouraged to look for an existing company that would consider selling. He was directed to All Systems Fire Protection in Bethel Park, whose owners were indeed interested in selling their company. At that point the opportunity was presented to Bingham, who was willing to get involved, although Bingham was also clear that his involvement would be limited to supporting his friend.

"I didn't know the first thing about fire sprinklers. Zip. Nothing," Bingham notes. "We had a few meetings back and forth with All Systems and then we came to terms on a number."

Thinking his involvement would be limited, Bingham was surprised when his friend pressed him to become the business's owner. With Bingham as majority owner, All Systems could become certified as a minority-owned business, a circumstance that might help with business development. Bingham reiterated that the role he had planned was that of a supportive friend but it became obvious that without Bingham's backing, the new company couldn't get off the ground. Then after Bingham agreed to finance the purchase of All Systems Fire Protection and signed the papers, his friend hit him with a bombshell, admitting that his circumstances had changed and he wouldn't be able to join the company after all.

"The only other thing I could do is just take this and run with it. That was 2012. It's been a ride," he jokes. "I was fortunate that there were two really good guys there – and they are still with us – that helped make All Systems what it had been before I came on board. The two men – Bob Mahon and Jim Jenkins – are such hard workers and they had almost a competition between them to see who could do the most work. That was something I really liked."

That bench strength was critical to the transition since Bingham admittedly had no experience in the sprinkler business and was still involved in running DCI Logistics. What he did have was more than 25 years experience in the construction industry and the working relationships that

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came with that. He knew he could sell work but was going to rely on the existing staff to estimate and manage the projects.

In addition to Mahon and Jenkins, Steve Kovacs manages the estimating. Bingham expanded the responsibilities of Mike Crosby, DCI's operations manager, to help with the field operations at All Systems too. Beyond the four-person office staff, All Systems has nine people in the field.

As he took over the management of the company, Bingham discovered that there were some obvious opportunities to improve the business and its sales. First, All Systems had managed to operate without most of its systems on computer. This precluded them from working for a number of contractors and created an inefficient office. Another opportunity was in service and maintenance work. All Systems Fire Protection worked almost exclusively as a subcontractor but had not leveraged its project work to pursue contracts to service the systems they installed.

"We realized that's a revenue stream that's not there so let's see how we can try to capitalize on that," recalls Bingham. "Unfortunately we couldn't focus on that right away but little by little we're moving into some of that and trying to grow that business. We've been fortunate to have been doing a lot of new work so now we have inspections and that kind of maintenance work."

Some of the new work to which Bingham refers includes the new Pitt-Ohio Express facility in Harmar Township, the North Shore Holiday Inn Express and the Uptown Flats on Fifth with Massaro Corporation; Hot Metal Flats with PJ Dick; Blind and Vision Rehabilitation Services new building Uptown with A. Martini & Co.; and All Systems is working right now with Rycon on the 3 Crossings development.

Mike Crosby (right) and Bob Mahon.

Company Facts

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Those new construction projects represent another of the opportunities for change that Bingham saw improving All Systems' business model, which had focused more on smaller work.

"If you're going to spend the same amount of time doing a $100,000 project, why not do a $400,000 project?" he asks. "You're still going to need to do some of the smaller [projects] interspersed to help with the flow of work."

Bingham is surprised that there aren't other minority-owned fire protection companies within his market footprint and expects that fact to help All Systems' sales as it grows. He is quick to point out that he is still learning much about the dynamics of the sprinkler business and is looking forward to the opportunities that will come in the next few years. DCI Logistics is still operating and Bingham is looking to add some additional trucks to keep up with the growing demand. He looks back in amazement at the decision to acquire All Systems Fire Protection at a time when he was putting out fires every day in his business.

"There I was dealing with all the downside of the recession with DCI and all of a sudden I'm buying another business? That didn't make a lot of sense," he says with a laugh. "It seemed like it made more sense to focus on DCI and get it back up and running well, but it was somewhat cathartic in the sense that it was a distraction from that stress. I had a chance to focus on growth again." BG

Trend to Watch

What We Know About Millennials is a Myth

Over the past year, several studies into the generation of young adults in the workforce have found that the so-called Millennials may not be so different from their generational predecessors. The children of the Baby Boomers, these young people were born between 1980 and 2000 and they number even more than the Boomers, which had been the largest demographic cohort born in America up to that point.

With more buying power and political clout, Millennials were viewed with great interest by businesses that wanted to attract their consumption and employ them. In the mid-2000s, as the first of this generation reached adulthood, there appeared to be striking differences between the expectations of the Millennials and those of the previous generations. Kids who grew up in the last 30 years knew only the digital world. The Internet was their encyclopedia and their entertainment medium. Sustainable living was a given. And they seemed to think that they could change the world, even at such a young age.

While there will inevitably be differences between the assumptions that people raised 30 years apart will make about the world, much of what was held up as different about the Millennial generation isn't all that different, or even all that true.

"One thing that struck me was how similar the values were across the generations," says Sabine Hoover, content manager for FMI Consulting and the co-author of Millennials in Construction: Learning to Engage a New Workforce. "Think of when you were young. You're energetic. You want to change the world. That changes as we age. Because the Millennials are so large we're just more aware of those values in them."

FMI's study was one of several that have shown that many of the preconceptions that were popularly held about 18 to 35 year olds may be misconceptions. FMI surveyed 369 people – including 201 Millennials – in the construction industry in the spring of 2015 to find out about their level of workplace engagement. What they found was that young workers are seeking the same kinds of engagement and are willing to make the same commitments as Generation X or the Baby Boomers with whom they work. If you're surprised by that result, you're not alone.

"I was very surprised. The first time I saw the results I went back to the analyst and made him run it again," laughs Hoover. "It was very encouraging. I started looking at other studies for similar results and found ours wasn't the only one."

A year earlier, IBM Institute for Business Value had conducted a study of those born between 1980 and 1993 in the workplace. Their findings were similar to FMI's and, in fact, they labeled the results "myths, exaggerations and uncomfortable truths." The five myths IBM revealed were:

- Millennials' career goals and expectations are different than those of other generations
- Millennials want constant acclaim and think everyone should get a trophy
- Millennials are digital addicts who want to do everything online.
- Millennials can't make a decision without asking everyone to weigh in.
- Millennials are more likely to jump ship if their workplace doesn't meet expectations.

The IBM study found that Millennials' goals were within one to three points of the previous generations. They valued transparency and ethics over recognition from a boss (35 percent to 29 percent). Millennials listed their top three learning preferences and all were physical rather than digital (conferences, classroom training and working alongside an experienced colleague). While 56 percent of Millennials said they would seek input before deciding, 49 percent of Boomers said the same thing and 64 percent of Gen X-ers sought input. And their top reason for leaving their job was the same as Baby Boomers, with 42 percent of each saying they would leave for more money and a more creative workplace. More than seeming like a divergent new group of workers, the younger generation sounded a lot like the Baby Boomers.

"Most of the Millennials have Boomers for parents, so it's not surprising that they would have the same values," notes Hoover.

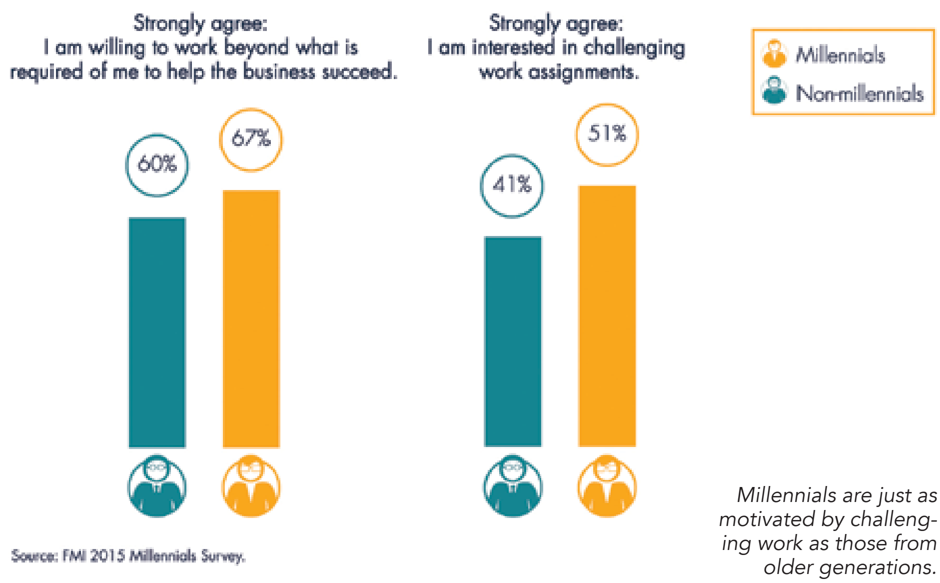
Also in 2014, global real estate service firm CBRE saw how the generational expectations were changing the workplace. In response to what was obviously a significant workplace design trend – the shift to open, collaborative plans – CBRE sought to see how much the preferences of the Millennials was driving this new way of working. Like IBM and FMI, CBRE discovered that younger workers wanted to work like their older colleagues.

CBRE found that Millennials were looking most for space to think and create, ahead of space to meet and collaborate. Millennial respondents were the most likely to seek more time to collaborate but only by a 51 to 49 margin compared to Baby Boomers. But Boomers were half as interested in more formal meetings (27 to 54 percent) and much more interested in connecting via social media than Millennials. Younger workers preferred to do more work by email than Boomers or Gen X-ers but only one in three responded that way.

Understanding how the younger generation thinks about work has taken on greater urgency. For one thing, 2015 marked the point in time when more Millennials were alive than Baby Boomers. In 2015, workers under the age of 35 made up 34 percent of the workforce; that same generation of workers will comprise more than half the workers in 2025. Moreover, attracting and retaining talent has become a higher priority issue for businesses. This is especially true for construction industry businesses, which face a bigger potential shortage in workers. What FMI concluded in its study is that Millennials offer a great opportunity to the construction industry and that engagement was the key.

Construction has a smaller share of younger workers than other industries, yet its challenges appear to be the kinds that the 18 to 35 year olds want to solve. There are some key attributes about construction that are especially attractive to Millennials: the uniqueness of one project from another, the need for creative solutions and collaboration, and the key role of communication. Millennials bring new qualities to the construction workforce, which would be of great benefit to the industry. They look to technology for solutions and expect that problems can be solved. FMI also found that the attitudes and preferences of Millennials tune well to construction's strengths. What the consultant found missing was a consistently engaging atmosphere.

The key findings of the FMI survey were that Millennials are motivated as much by financial and career security as previous generations. That's not surprising given that the financial crisis may have defined the start of their careers. Millennials also expressed a willingness to work beyond their job requirements and an interest in being challenged at work that exceeded the responses of other generations. Most striking was the fact that 92 percent of the Millennial generation responded that they expected to stay five years or more working at a place where management demonstrated a sincere interest in their well-being.



Millennials are just as motivated by challenging work as those from older generations.

FMI's key findings were:

- Having a defined and well-communicated vision is critical to engaging Millennials long term.
- Millennials are eager to be challenged and ready to go above and beyond to make their companies succeed.
- Having clear career advancement opportunities in place is the key to engaging people long term across all generations.
- Engagement starts at the top.
- For Millennials, money counts.
- Millennials in construction want to push the envelope and drive innovation.

The problem, as FMI sees it, is that construction is an industry where these kinds of engagement conversations have regularly happened. Most construction companies – be they contractors, architects or supply chain – aren't large corporations; often the companies are closely-held small businesses. Construction is a results-oriented, project-focused business. What it will take to attract and hold onto more of the younger generation is a change in the rules of engagement.

Millennials ranked a company's commitment to social responsibility low in priority but put personal development third, behind competitive pay and work/life balance. Business owners will need to have more conversations about how they see a young employee's career mapping out and how the employee can develop. Millennials won't be as motivated by the thought of working hard to become a senior project manager as they will by the opportunity to contribute to the company's success now. That means involving them in project meetings that they might not need to attend and listening if they have input. It means checking in with them and giving them feedback in a direct but positive way.

"The big takeaway for me was how important culture was," says Hoover. "Regardless of the industry, if you have a strong culture – a leader who can inspire people, who cares – it's impossible to underestimate the importance of that culture to young workers." BG

INDUSTRY & COMMUNITY NEWS

MBAYC Helps Toys for Tots and Lemieux Foundation

The MBA's Young Constructors again dedicated their holiday party to collecting toys and donations for Toys for Tots and the Mario Lemieux Foundation. The event collected 200 toys for Toys for Tots and 100 toys and $1,000 for the Lemieux Foundation.

(From left) Bridget Wilson, Olivia Mundy, Laura Bolton, Heather Bichler and the MBA's Chelsea Carr.

CliftonLarsonAllen's Gary Holt (left), Nicole Shook and John Greenling at the YC holiday event. Shook was recently named to the ACE Mentor board of directors.

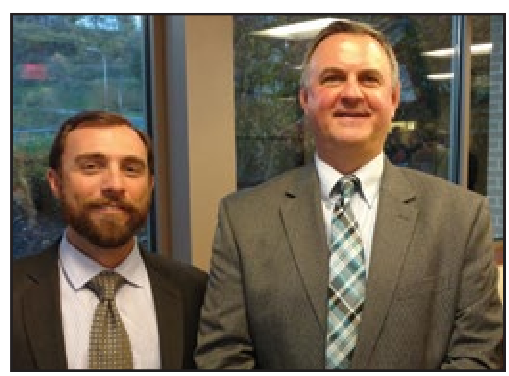
Members of the MBA YC present toys for the Austin's Playroom at UPMC Passavant Hospital. With UPMC staff are Seubert's Brian Hartman, Jennifer Landau, Jon O'Brien from the MBA, Brian Budny from PJ Dick and Wyatt's Adam Ramsey.

Neal Rivers from Easley & Rivers (left) with John Hunter from United Rentals.

Mascaro's "Giving Back" Program Raises $25,000

Mascaro was involved in several events during the months of October and November as part of its Giving Back program. These events included the Joggin' for Frogmen event, Leukemia & Lymphoma Society Light the Night Walk, the NAMI Walk, Mascaro's "Pink Day" to benefit the American Cancer Society, and Mascaro's own Celtebrity Bartender event for the Cystic Fibrosis Foundation. Over $25,000 was raised to assist these organizations in providing support to the Pittsburgh community.

John Mascaro and Nate Martin were the celebrity bartenders for a Mascaro-sponsored fundraiser for the Cystic Fibrosis Foundation.



Michael McCormack (left) and John Mroz from Facility Support Services at the MBA Excellence Awards nominees' reception.

Massaro's Jessica Ramsey (left) and Jennifer McGee at the MBA Excellence Awards reception.

Bob McCall from the MBA with Landau's Bethany Sidun and Tri-State's DJ McClary (right).

PJ Dick's Tyler Bock (left) with Dante Amato from The Blue Book Network.

Cohen & Grigsby's Bill Taxay (left) with NAIOP Pittsburgh's president Brian Walker of Millcraft Investments and Angelo Martini Jr. (right) at the NAIOP holiday party.

Lindsay Campbell from Miller Information with Jendoco's Dom Dozzi and Thomas White (right).

Representing Turner Construction at the NAIOP holiday party were Amy Konieczka, Shawn Bell and Joe Milicia (right).

Babst Calland's Matt Jameson (right) with his mother SandyJameson, Pirate great Steve Blass, sister Hayley Jameson and son Trent Napotnik (left) at the Clear Thoughts Foundation's Roll for a Reason fundraiser. Attendees raised over $100,000 for dementia research. Clear Thoughts Foundation was started by Matt and Hayley Jameson in honor of their late father Don to raise awareness and money for research to cure dementia. In addition to Babst Calland, other industry sponsors of Roll for a Reason included Burchick Construction, Seubert & Associates and Sippel Development.

Burchick's Brian Chlop (left) with Harold McDonald and Bill Waterkotte (right) from the Carpenters at the PBX Annual Banquet. Photo by Ashley Harris.

Tink Bryan award winner Bill Lugaila from Wayne Crouse with PA Builders Exchange Executive Director Del Walker. Photo by Ashley Harris.

The team from Specified Systems at the Builders Exchange Banquet included (from left) Jim Hyland, Emily Yukish, Sandy and Bill Wilson, and Rachael Ference. Photo by Ashley Harris.

Easley & Rivers' Glenn Sieber with wife Judy. Photo by Ashley Harris.

N A I O P
23rd ANNUAL BANQUET
IT'S HAPPENING
DAVID L. LAWRENCE CONVENTION CENTER
MARCH 10, 2016
NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION
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6:30 PM DINNER AND AWARDS
9:00 PM NETWORKING AFTER PARTY
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Awards & Contracts

FMS Construction was the successful bidder on the University of Pittsburgh's Alumni Hall third and fourth floor renovations. The architect for the project is RSH Architects.

Park7 Group selected Massaro Corporation as contractor for its proposed 17-story, $85 million Empire apartment in Oakland. Humphrey Partners Urban Architecture LP is the architect for the 326-unit apartment with ground floor retail, which will be built on Centre Avenue at North Craig Street.

Massaro Corporation was the successful contractor for Conemaugh Health System's new East Hills Outpatient Center in the Richland Township suburb of Johnstown. Stengle Hill Architecture designed the $30 million new facility.

Mascaro is finalizing the GMP for a weight room addition to the Steelers' training facility at the UPMC Rooney Sports Complex in the South Side. The project is expected to bid in mid-January for a February 2016 construction start. The project's architect is DLA+ Architecture & Interior Design.

Mascaro received a contract from Carnegie Mellon University for Heinz Hamburg Hall Phase 2.5 consisting of interior renovations to the historic building.

Mascaro Construction has started construction on the $18.5 million new training center for the Steamfitters in Jackson Township, Butler County. PWWG Architects designed the 75,000 square foot facility, which will act as the training center for Local #449 apprentices and journeyman from 15 Western PA counties.

Heinz Endowments awarded a preconstruction contract to Mascaro for renovation of its 31st floor office space in EQT Plaza.

Mascaro was awarded the mechanical and electrical packages for the dewatering facility at FirstEnergy's Bruce Mansfield Plant in Shippingport, PA. The project is expected to be completed by the last quarter of 2016. Mascaro is currently constructing the dewatering building at the site.

Mascaro was awarded a subcontract for the construction of the 960-car Shell Franklin Parking Garage, a three-bay, three-level parking garage.

Penn State awarded a preconstruction contact to Mascaro for renovation of the Deike Building. The project scope is for the renovation of approximately 36,000 square feet for the Department of Geosciences.

The Municipal Authority of West View awarded a $45 million general/mechanical contract to G. M. McCrossin Inc. for West View Water's new $57 million treatment plant and raw water intake in Baden. The project's engineer is Bankson Engineers. Hayes Design Group is the architectural consultant.

Rycon Construction was awarded a contract by Starwood Capital for the Jackson Lewis tenant improvements and restrooms on the tenth floor at Liberty Center. The architect for the 13,344 square foot fit-out is Desmone Architects.

Rycon's Special Projects Group is currently completing renovation work at both UPMC Presbyterian and Mercy hospitals.

In November, Rycon's Special Projects Group began a renovation at Duquesne University Rockwall Hall ground floor.

On the fifth floor at 2000 Oxford Drive in Bethel Park, Rycon's Special Projects Group is responsible for a 3,200 square foot renovation. The architect is Design 3 Architecture.

Rycon's Special Projects Group is responsible for first and second floor reconfiguration at Duquesne Light Company's Manchester office. The project is scheduled for completion late December 2015.

Volpatt Construction was awarded two contracts by St. Clair Memorial Hospital for renovations at the Outpatient Center at 2000 Oxford Drive in Bethel Park. The work involves the building entrance and renovations to the Zubritsky & Christy OB/GYN. The architect is IKM Inc.

A groundbreaking ceremony was held on November 3 in Calistoga, CA, to kick off a new five-star Four Seasons Napa Valley Resort that dck worldwide will be building. Along with extensive preconstruction services, dck has begun the mass excavation portion of the project, with plans for the resort to be open by early 2018.

dck worldwide is leading the construction of a 360,000 square foot world-class retail, dining, and entertainment destination in Honolulu, HI—The International Market Place—for the Taubman Company. In October, dck completed a major construction milestone with the lifting of its iconic fire tower during a special "topping off" ceremony.

West Virginia University awarded Facility Support Services, LLC a $1.3 million contract for Percival / Allen Hall Fire Protection and Life Safety Upgrades. The project is scheduled to complete in August 2016.

PJ Dick Inc. was selected to provide general contractor services for HaborChase of Cool Springs new Retirement Community in Bethel Park. The architect for the 140,000 square foot facility is Vessel Architecture.

PJ Dick was selected to provide CM services for the addition to and renovation of Mt. Aloysius College's Pierce Hall.

Excavation has begun on the new $107 million Tepper Quad at Carnegie Mellon University. PJ Dick Inc. is the construction manager for the 305,000 square foot School of Business. Moore Ruble Yudell Architects & Planners is the lead architect. Renaissance 3 Architects is the associate architect.

Penn State University selected Turner Construction as design/build contractor for its new $25 million, 250-bed Trippe Hall at the Erie campus. The 65,000 square foot residence hall will be designed during 2016, with construction beginning in early 2017. Turner's design team includes Ayers Saint Gross and Noelker & Hull.

TEDCO Construction was the successful contractor on the University of Pittsburgh's $2 million Gardner Steel Conference Center Innovation Institute. Dunn & Associates is the architect for the 22,894 square foot renovation.

South Fayette School District awarded a $14.9 million contract for general construction to Yarborough Development Inc. for the additions and alterations to South Fayette High School. Eckles Architecture is the architect for the $22 million project.

Autodesk, along with its representative, Jones Lang LaSalle, selected A. Martini & Co. to build its 13,772 square foot office space in Bakery Square 2.0. The project is targeting LEED Gold CI with LEED Administration and Enhanced Commissioning by A. Martini, NEXT Architecture and CJL Engineering.

A. Martini & Co. was selected as the general contractor for the renovation and upgrades of Fox Chapel Plaza Shopping Center on Freeport Road. The project, designed by SASI Inc. Architects, will consist of a new roofing system, installation of new carpentry, a rainscreen system, and a new acoustic ceiling throughout the shopping plaza. BG

Faces & New Places

Mascaro welcomes Sheila Sonnet. Sheila is a graduate of Gannon University and will support the legal, risk management, and safety departments.

Rycon has added Karen Biery as staff accountant. Karen received an accounting certificate from the Bradford School and brings over 30 years experience to the team.

Pat Ferguson joined Rycon as a safety coordinator. Pat brings five years of safety management experience to Rycon. He is a graduate of Slippery Rock University's Safety Management Program and will manage day-to-day project safety.

At Rycon Construction, Brendan Madden has been promoted from project manager to director within the Special Projects Group.

Facility Support Services, LLC recently promoted Michael McCormack, senior project manager, to vice president - operations. In his new position, Michael will oversee operations for project management, coordination and engineering.

Brenna Waterkotte joins A. Martini & Co. as the receptionist/estimating administrator. Brenna brings over three years experience in administration and preconstruction services.

Ferry Electric Company has added Kelly Paterra as assistant project manager as of July 2015.

In September 2015, Stephen J. Bruno joined Ferry Electric Company as a project manager. Bruno has 25 years of experience in the industry.

Ferry Electric Company enlisted Brian D. Donovan as project manager. Donovan has been in the industry for 26 years and with Ferry Electric Company for three years.

R. I. Lampus Co. announced that Jake Carlson has become its new Northwest regional sales manager for Lampus Direct. Carlson earned a bachelor of science in marketing from Franciscan University of Steubenville and has almost 20 years of outside sales experience. His new position will handle overall sales and profit responsibility for its northwestern territory of Erie and beyond.

Frederic Masse has been appointed the new president of Menard Group USA, which includes DGI-Menard and US Wick Drain. Masse, who previously held the position of executive vice president, has been with the company since its launch in the U.S. in 2003. He will be replacing former president, Seth Pearlman, who has been promoted to North American regional manager for Menard. Pearlman will remain the CEO of Menard Group USA.

Nicole Shook of CliftonLarsonAllen has been appointed to serve on the Board of Directors for the ACE Mentor Program of Western PA.

The Master Interior Contractors Association elected its officers for 2016. MICA officers are: President Glenn Sieber of Easley & Rivers; Vice President Fred Episcopo of Wyatt Incorporated; Treasurer David Balmert of JJ Morris & Sons; and, Secretary Daryl Pitzer of RAM Acoustical Corporation.

2016 MBA Young Constructors officers are Chairman Adam Ramsey of Wyatt Incorporated; and, Vice Chairman Jason Sigal of Rycon Construction. BG

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VEKA, Inc.
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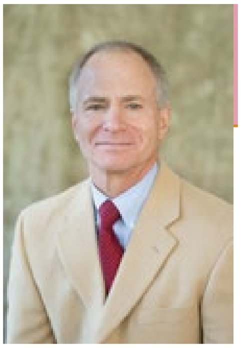
Closing Out

The Case for Apprenticeship

By M. Dean Mosites



Dean Mosites

Nationwide, to varying degrees, the construction industry needs to bolster its skilled labor resources. The Bureau of Labor Statistics predicted in a December 8 report that construction job growth will be about ten percent between now and 2024, making it one of the top job gainers. During the last Republican Presidential Debate we heard Marco Rubio express that "We need more welders and less philosophers." The time is right and the need is strong.

We, along with other industries, are competing for the attention of the under employed, the unemployed and our young people as they graduate from high school and college to look for jobs.

Our trade associations, namely The Master Builders' Association, Constructors Association of Western Pennsylvania, the Builders Guild and their respective trade unions have been actively marketing our industry at apprenticeship fairs, to high school guidance counselors and career tech schools. We've made countless presentations to community-based organizations like the Boy Scouts, done radio and TV advertising, created smartphone gaming applications and set up career links at employment websites like Imagine Pittsburgh.

This outreach is casting a broad net. We're getting more attention than ever before; but, we need to convert this interest into commitment to our industry. Most directly, we need to funnel this potential to our apprenticeship programs. A strong case can be made for trade apprenticeship as a career path.

Cost of Education: Unlike college, which might cost as much as $100,000 in after tax dollars for a four year degree, apprenticeship programs are funded by the employers. There are only minor costs to the apprentice. Join an apprenticeship program and essentially you have a scholarship. It must also be considered that the apprentice is employed, receiving health insurance, pension and possibly annuity benefits, while in training. At the end of a four-year college experience the graduate is looking for a job with an obligation, job or not, to pay off a student loan. At the end of a four-year apprenticeship the graduate is employed as a journeyman, without debt. Many of the four-year college graduates will never catch up.

Compensation: The apprentice is a wage earner in a craft union. For a journeyman the pay ranges from $37 to $62/hour depending on the trade union. This rate includes medical insurance and pension along with take-home pay.

Advancement: The primary objective of apprentice training is to achieve the skill level of journeyman. Beyond journeyman there are management levels of foreman and general foreman. Each of these levels includes increasing responsibilities with commensurate compensation improvements. Today's apprenticeship programs are housed in modern facilities with well-trained instructors. Some of the training qualifies for college credits. Apprenticeship coordinators are finding with greater regularity young persons who were average students in high school gain maturity between the ages of 17 and 21, catch fire and move on to augment their trade skills with an industry-aligned college degree. The reverse happens as well. Graduates from college often find that their initial career choices are unsatisfying possibly because they desire something that is "hands on." They can participate in apprenticeship and excel. Either way, the individual wins and so does our industry. Field experience plus education is an irresistible combination for a construction employer. Today, high paying project management, sales, estimating and company officer positions are attainable with a start in a skilled trade apprenticeship.

Job Satisfaction: There is a tangible accomplishment that is felt working in the construction trades. At the end of the day, workers take great pride in the concrete finished, steel erected, bricks laid, walls framed, tile set and fixtures installed. Each project is unique. Construction is also a shared experience. Construction projects are built with crews, a team effort. It's a challenging planning exercise with high stakes for quality work produced on time and under budget. We win and lose at this game. For those with a competitive nature it is engaging. Construction is still physical work, but, more and more trade work calls for the skills to operate high tech tools and equipment. We are assisted by lasers, GPS, robots and all varieties of computer applications to perform the work.

I was reminded of my love for this industry over a long weekend this past August. There was a critical crane lift taking place at Carnegie Mellon University. It involved a two hour shut down of Forbes Avenue, concerned neighbors, edgy school officials and interruptions to pedestrian ways and the University's normal course of business. I was on hand as the crane was built, boom pieced together and cable strung. The operation consumed the usually bustling Forbes Avenue. The boom was raised off the pavement high into the star-lit summer sky, the mammoth crane ready for the Saturday and Sunday convoy of HVAC equipment. On time, traffic was released and the bustle of CMU resumed. Ironworkers, operating engineers, carpenters, teamsters and laborers executed this plan. Their skill was a joy to watch.

I like the saying, "Find a job that you love and you'll never work another day in your life." Like many of you reading this article, very early in my life I was aware that I loved to build. Pass it on.

Dean Mosites is president of Mosites Construction Company's Building Division and immediate past president of the Master Builders' Association of Western Pennsylvania. BG