

# BreakingGround

THE MAGAZINE OF THE MASTER BUILDERS' ASSOCIATION OF WESTERN PENNSYLVANIA

JULY/AUGUST 2015

## #trending

Three trends that  
may shape the  
industry

Mid-year results

Analyzing the  
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reports

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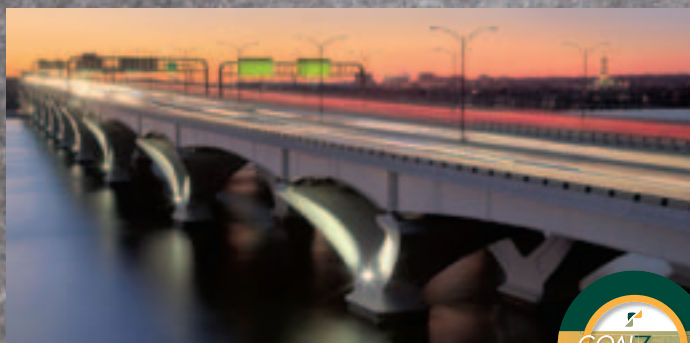
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# Publisher's Note

I like social media but that's not what the feature of this BreakingGround is all about. The cover of this edition pokes a bit of fun at the established media, which is falling all over itself to appear to be on the cutting edge. The hash tag is actually significant of nothing; there is nothing about the outfit that produces this humble journal that suggests we would even know how to monitor what is trending on social media, let alone publish it. But don't let that indicate that we spurn social media.

The use of new apps that allow individuals to have as broad a reach as a corporate communications department allows useful information to be disseminated in real time. Yes, it also allows for a lot of nonsense to be disseminated but then that was true of the early days of the Internet too. For our industry I see the day coming when bid advertisements and results are Tweeted.

No manner of staying current is necessarily all that helpful with observing what is actually trending for the long haul, however. Recent history is full of examples of everybody jumping on the band wagon just before it goes plunging off the cliff. By the time CNBC or some TV analyst hypes a company as a stock buy, the smart money is already selling. In 2006, an iconoclastic hedge fund manager named Kyle Bass was warning Wall Street that the housing market bubble was unsustainable. Wall Street ignored him and made a bunch of money for another year or so. Then the bubble popped and trillions were lost. Bass was looking at the long term trend and realized that the market had wandered off the rails. Those that ignored his warnings were enamored with what was hot at the moment, what was trending. They should have been looking out for what would change.

Looking for what might change and becoming prepared to adjust to what will change can be existential challenges for business and government. Failing to do either can lead to a failure to exist.

Pittsburgh's fortunes have been famously reversed over the past couple of decades. In many ways we have been agents of the changes that have occurred. That doesn't mean there aren't trends emerging that could undo all the hard work that has gone into the remarkable turnaround – or that might accelerate prosperity even further.

Construction has also finally recovered its footing after a difficult downturn. The economy is helping boost demand. Private investment is driving new development. Even the government is beginning to invest in its aging

infrastructure, although not yet in Pennsylvania's schools. The momentum could easily be affected by tight labor or improved technologies or a shortage of housing. Construction business owners have the opportunity to ride an extended boom or miss an enormous opportunity, depending on how they anticipate the changes that will inevitably come.

I'm proud that BreakingGround has been able to talk about some of today's trends a year or two before it was obvious that change had occurred. There isn't any guarantee that anything you'll read about in this edition will actually become a real trend by next year or next decade (although the workplace demographics are mostly a shoe-in). I like the odds that at least one thing we've identified as an emerging trend will play out but my main intention is to get you the reader to lift your gaze to the horizon. The business of construction and real estate tends to be centered on the crisis of the day, especially during the warmer weather. It takes a fair amount of discipline to periodically look beyond this year or next to see what might be coming that will change the playing field.

This kind of futuristic talk can seem unrealistic but just reflect on where things were just ten years ago to get some perspective. Ten years ago, contractors kept plans and specs for their projects out-to-bid in their office plan rooms. Now, almost no one has a plan room. Developers could finance almost anything they wanted to build (okay, maybe not in Pittsburgh but everywhere else). In 2005, you could get a mortgage for 110 percent of the value of your home. Everyone knew that people didn't want to live in Downtown Pittsburgh. The Pirates were never going to make the playoffs again. And most of the technology we take for granted today was inconceivable then.

Agree or disagree with our ideas about what might be an important trend in 2020 or 2025, but take some time to think about your vision of that future. Talk with your peers about it and make sure to include at least one big change that seems completely unrealistic. Spend a bit of time thinking about a shift that could alter your organization's fortunes and then plan for a moment how you would react. Don't ignore the change that scares you the most about the future. That's the one you'll want to be most prepared to face.



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## REGIONAL MARKET UPDATE



The economic news for the metropolitan Pittsburgh area and Southwestern PA continued to be consistently positive through the second quarter of 2015. Activity in northern West Virginia has also been upbeat, driving new construction and development from Morgantown up into the Ohio Valley. This overall upbeat climate may explain why there was an increase in the start of projects that had been either delayed or slow to start during the May-June period.

Owners seem to have moved from cautiously optimistic to optimistic about the coming few years. Developers have been increasing speculative construction activity. Users – including several in the neighborhood of 250,000 square feet or more – have been seeking additional space. With indications that wages are beginning to rise and the prospect that interest rates will as well, there appears to be a sense that the time to start construction is better now than later.

Anecdotal evidence from contractors is still mixed. Backlogs were improving significantly coming into 2015 but the harsh winter and uneven bidding in the middle of spring made it difficult to replace the work at the pace it was being burned off. Construction companies across the spectrum are generally happy with how they are set up for now and like their prospects for 2016 but a surprising number of firms are concerned about a “hole” in the late summer. Given the light bidding since early May, those holes will be hard to fill. Contractor sentiment – as tracked by the MBA’s Commercial Contractors Condition Index – is optimistic about the business climate and future conditions but remains lukewarm overall.

Data from the first five months of 2015, including Tall Timber Group’s forecast for the first half of the year, shows that contracting activity is up overall. Non-residential and multi-family construction increased by more than one-third during the first six months of 2015, while the total number of housing units was up 25 percent. Only single-family detached dwellings saw a decline, with a forecasted 820 units compared to 970 units started during the same period in 2014.

Construction of multi-family units was up more than 50 percent year-over-year, with 1,101 units started between

January and June. The total housing number for the first half of 2015 was 2,263 compared to 1,813 units during the first half of 2014. New home construction is being buoyed by growth in employment and household formation, better-than-expected increases in home prices and beneficial demographics supporting the multi-family market. May’s bump in employment by 24,000 jobs was a surprising spike after the 4,000-job decline in April. While much of May’s jump should even out because of seasonal demand, the strength of hiring since January 1 is in line with expectations that job growth for the full year should be in the range of the 1.5 percent that was forecasted by the economists at The PNC Financial Services Group.

Non-residential contracting volume for the first six months of the year was \$1.38 billion, up 35 percent from the same time in 2014. As expected, construction of commercial office, hotel and midstream gas processing plants

Submarket	Market Available Area (SF)	Vacant (SF)	Direct Vacancy Rate (%)	Class A Vacancy Rate (%)	Class B Vacancy Rate (%)	Class A Asking Rate (\$/SF/YR)	Class B Asking Rate (\$/SF/YR)	Under Construction (SF)
CBR	24,754,647	2,340,334	9.6	4.0	14.1	27.12	18.84	995,000
Corben	2,140,408	212,083	6.7	9.1	2.0	25.34	20.74	0
Downtown Fringe	10,447,831	1,142,588	10.7	3.1	15.6	24.03	22.58	72,000
East End	2,703,329	230,451	8.5	1.0	7.9	28.00	15.90	400,000
Goldens	2,372,656	47,897	2.0	0.0	2.1	24.75	20.28	195,000
Parkway East	4,697,657	1,370,444	29.2	22.1	31.1	20.28	20.58	0
Parkway North	6,330,443	311,489	4.9	1.1	5.0	24.82	17.99	18,000
Parkway West	10,710,147	1,034,535	9.7	6.3	12.9	22.70	18.77	399,850
South	4,554,779	443,005	9.7	2.1	10.0	22.50	17.86	0
Southgate	2,785,304	263,994	9.5	4.3	42.4	24.12	24.75	0
<b>Total</b>	<b>72,739,501</b>	<b>7,454,830</b>	<b>10.3</b>	<b>6.3</b>	<b>13.0</b>	<b>24.77</b>	<b>19.89</b>	<b>1,959,850</b>

Source: CBR Research, Q1 2015.

Q1 2015 CBR Research

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were the most active segments. After an early surge in bidding of schools, activity in the K-12 market fell off and publicly-owned building construction remained well below the historical norms. Hospital construction was also quite weak compared to normal volumes, although the market was roughly as weak in 2014.

The outlook for hospital construction has cooled even further since the first of the year, if predictions from the construction executives at the major hospitals hold true. The region’s largest healthcare provider, UPMC, put plans for all large construction projects on the shelf for the time being and the outlook is that only needed upgrades and renovations will take place in the second half of the year, which is the first six months of UPMC’s fiscal year. At the Allegheny Health Network, plans for a major emergency room renovation and patient room renovations at the Al-

legheny General Hospital tower have been budgeted but no schedule for bidding has been announced.

Hospitals continue to struggle with uncertainty about reimbursements and what level of staffing will ultimately be right for the "new" normal. The Supreme Court's action on the Affordable Care Act should help businesses and individuals but there is no further clarity on the law's impact on healthcare spending. For those hoping for an end to the bitter competition between UPMC and Highmark, recent comments from leadership at both organizations indicate that both intend to ride out the bumpy separation.

While the public education and institutional markets are suffering, commercial and owner-occupied offices continue to thrive. The positive employment trends and favorable interest rate environment make commercial real estate very favorable. Relative to other major cities, Pittsburgh remains a bargain for real estate investment and, with stronger fundamentals than most metropolitan areas, national and global investors continue to purchase or invest in commercial real estate in this region.

According to CBRE's first quarter data, just under two million square feet of new office space was under construction, although more than 40 percent of that was the

nearly-completed Tower at PNC Plaza. Rents increased to nearly \$25 per square foot for Class A space, with the East End commanding the highest rates at \$28 per square foot.

In early June, Jones Lang LaSalle (JLL) made headlines with its research report on the Downtown office market. While highlighting a new report format, JLL forecasted three scenarios that showed the vacancy rate rising over the next three years to somewhere between 11 and 15.7 percent. Much of the basis of the forecast was significant expected vacancy at 600 Grant Street and 525 William Penn Place.

Several media outlets seized on the forecast for a negative headline but there are two items worth noting from the "Skyline analysis." The first is that JLL's own brokers were quick to point out that the forecast – even the aggressive demand forecast – was based on current assumptions about occupants and employment. JLL can't foresee whether PNC's growth might necessitate that it renew its lease at 600 Grant Street, for example, or how much space Citizens Bank will retain at 525 William Penn Place, where it is the major tenant.

The second aspect to the vacancy forecast is that more available space could – and should – be a catalyst for a sig-



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nificant amount of tenant construction. Unusually tight conditions in the Central Business District over the past five years have been a deterrent to construction, as there were few blocks of contiguous space available over 40,000 square feet. That meant companies looking to upgrade or expand had no opportunities to do so. Moreover, the lack of space was a deterrent to growth as well. Successful businesses that were expanding and looking to stay Downtown were forced to curtail hiring there or work in tighter space than desirable. Assuming JLL is even just partially correct about increased vacancy – a likely scenario – then the potential for new office projects within the Golden Triangle should increase significantly, even without any new building construction.

Among the new office projects still in the pipeline for construction this year are the new building at Junction Hollow by Carnegie Mellon, for which JLL reportedly received as many as 20 development proposals. USSteel's new headquarters is tracking towards a fall start. Burns & Scalo Real Estate is designing at least two new buildings of 60,000 square feet at its Abele Business Park in South Fayette Township. The firm is also looking at additional spec projects of 100,000 square feet or more in the Park-

way West corridor and at its Foster Plaza site. Two parcels at RIDC's Innovation Ridge are being eyed for new construction.

Industrial space remains even tighter than the market for office space. There are several large users in the market for what would be build-to-suit space. The best-known of these, Philips Respironics, has still not made a decision on which developer would build its 260,000 square-foot facility in Westmoreland County. The appetite for smaller industrial spaces, particularly flex space, remains high. Chapman Properties is anticipating building such a product at its Westport and Southport projects. Demand for the space seems to be coming from the continued development of the natural gas play.

BENCHMARK	Jan-June 2015	Jan-June 2014 (f)
Total SFD units	820	970
Total SFA/Multi-unit	1,443	843
Total residential \$\$	\$423.1 million	\$319.4 million
Total non-residential \$\$	\$1.38 billion	\$1.11 billion
K-12 additions/renovations	\$80.5 million	\$120.1 million
Higher Ed construction	\$68.5 million	\$64.8 million
Hospital construction	\$33.1 million	\$90.2 million
Hotel construction	\$38.7 million	\$90.2 million
Industrial construction	\$364.6 million	\$50.6 million
Office construction	\$103.8 million	\$201.9 million



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The biggest investors in construction in the region in 2015 are the midstream gas developers. Companies like MarkWest and Williams have been joined by a handful of newer and smaller midstream developers to continue the build-out of pipeline and processing capacity. For the latter category, there have been significant expansions to processing capacity at the Houston and Bluestone plants in Western PA, as well as new capacity in Eastern OH. More compressor stations are planned for Washington County and Butler County, with several existing stations seeing reinvestment of \$50 million or more through replacement of compressors with new equipment of as much as double the capacity. Reports from the gas producers continue to show the number one problem isn't the low commodity price in the Marcellus as much as the inadequate processing capacity.

Another gas-related development was the selection of Pittsburgh-based Trimodal Terminal, LP for the first loan of the Power of 32 Site Development Fund. The \$2.6 million loan will be used to prepare an 80-acre brownfield site on the Ohio River in Follansbee, WV for industrial pads. The property is served by river, rail and interstate highway, making it suitable for companies looking to access the gas industry's downstream activities.

Of course the biggest story in the gas play is the project that isn't: the Shell cracker. In early June, real estate records showed that Royal Dutch Shell closed on a dozen properties that will comprise a 1,000-acre-plus site. These transactions were of little significance to the final decision to build the plant, but two other rumored events gave indication that the project is moving ahead.

The Department of Environmental Protection (DEP) confirmed on June 22 that it had approved the needed pollution control permits for the plant's operation. DEP approval has been a key piece of the final puzzle that was needed before the green light. A more subtle signal came from the news that two engineering firms working on the project had leased space – reported to be 60,000 square feet – Downtown.

The construction decision is not a sure thing, even at this juncture. Using the workforce projections for the project, however, the timing of the decision seems imminent. Those who are calculating the peak workforce demand timeline given by Bechtel are anticipating a summer decision, although activity in the early works packages has slipped by several months this year. Using the decision-making factors that Shell has supplied, the thumbs up or down should occur no later than the fourth quarter. Hundreds of workers will continue to prepare the site in the meantime, which gives hope to those looking for the multiplying effect of this massive investment. 



## NATIONAL MARKET UPDATE

As the U.S. economy struggled to recover from the financial crisis at the beginning of the decade, there were three consecutive years that appeared to be carbon copies of each other. The years 2010-2012 had slow growth that was held back by extraordinary events that derailed recovery as it was beginning to build momentum. The flash crash, European sovereign defaults, the S & P downgrading of U.S. debt and the government shut-down and sequester all blunted economic momentum.

As May's data began to trickle in, it appears the economy is in another "groundhog day" scenario and that may not be a bad thing.

Much like what happened in 2014, the unusually cold and snowy winter of 2015 put a damper on consumption and mobility that slowed gross domestic product (GDP) and output. After the second revision of first-quarter GDP growth on May 29, data showed the economy contracted 0.7 percent from January to March. This was after an initial estimate of 0.2 percent growth during the first three months. As much as the bad weather, continued strengthening of the U.S. dollar contributed significantly to the slowdown, as unfavorable exchange rates made American-made products more expensive than previously. The significant drop in oil and gas investment was another major contributing factor to the slowdown in output.

The main influence on the slowdown in activity was the U.S. consumer. Bad weather in the major population centers kept consumers out of malls and restaurants in January and February. Consumer spending rebounded in March, growing by 0.5 percent that month, but that was not enough to boost the quarter's economic activity.

On June 1, the Commerce Department reported that spending in April was flat compared to March. Moreover, data showed that consumer spending growth over the preceding 12 months had slowed. But in the data were also indications that consumers were beginning to see real increases in wages – which would be consistent with the tightening labor force – and were using those additional wages to pay down more debt and boost the savings level to 5.7 percent. That pattern of behavior

doesn't help the economy at the cash register but is more positive than not for the long-term health of the economy.

May's data on wage increases showed another slight creep in the overall wage increase to 2.3 percent year-over-year but showed a significant jump in the measure of private sector employees. The Employment Cost Index (ECI) is done quarterly and is a better measure of workforce pressures on wages since it measures wages for a sector with fewer increases fixed by contract. The ECI is more likely to reflect inflationary moves than the overall increase rate, since the overall measure includes public employees whose wages are driven less by supply and demand.

Most of the measures of economic activity thus far in 2015 have mimicked those of a year before. First quarter



*Improving employment has lifted construction of private office buildings without driving retail projects back to pre-recession levels.*

2014 GDP declined by 2.1 percent, three times the slowdown indicated by the second estimate of 2015. The Bureau of Economic Analysis' second estimate of GDP generally steepens the first estimate – whether positive or negative – because it takes a deeper look at consumer spending. The final estimate of GDP, which looks more closely at business investment, tends to moderate the second revision. This was true in 2014 and is likely to be the case when the final estimate is announced at the end of June.

The Economic Advisory Committee of the American Bankers Association (ABA) – a group of 16 bank economists, which includes PNC's Stuart Hoffman – sees the

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first quarter activity as a “soft patch” and forecasts real GDP growth of 2.8 percent for the balance of the year. The ABA economists are bullish on consumer activity due to the steadily improving job market and the impact of the significantly lower gas prices, the benefits of which the ABA feels haven’t been realized as yet. The Economic Advisory Committee also predicts that the current job creation pace of 200,000 per month will continue through 2016, bringing the nation to full employment by mid-2016. As a result the group forecasts consumer spending to increase 2.7 percent in 2015.

If U.S. consumers are taking a break from increased spending by strengthening balance sheets and stocking away more dry powder, the results for the long-term health could be very positive, particularly for the housing market and durable goods. Sales figures for automobiles and homes – including new housing starts – will be good indicators of whether or not consumers are pausing to replenish or building war chests in reserve for future slowdowns.

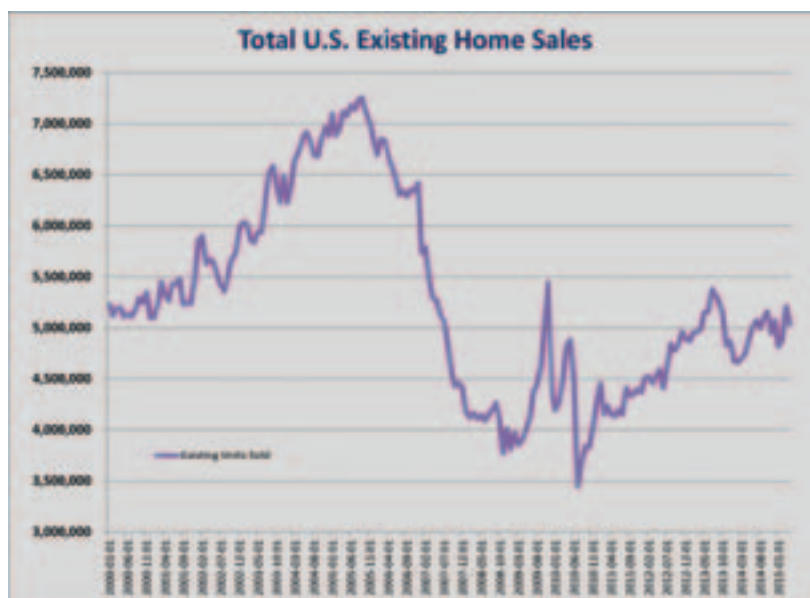
The first of those indicators – new car and light truck sales – was surprisingly strong. May’s volume of 17.79 million vehicles was up significantly from April’s 16.5 million and represented the highest rate since July 2005.

Given the trend in the labor market, it seems less likely that consumers are hoarding cash in anticipation of tougher times. Year-over-year wage growth was only 2.2 percent in April but the recent months’ growth rate has been higher. And the spread between wage growth and the 1.2 percent inflation rate leaves room for comfort. Jobless claims are at a 15-year low. The unemployment rate is 5.4 percent. Labor participation rates remain low but in the face of multiple months of stronger hiring, it may be time to credit the lower participation to increased retirement rates, or at least voluntarily reduced working hours.

The takeaway from the first quarter thus far seems to be that consumers and businesses are catching their breath following brisk growth in the mid and latter parts of 2014. Economists still expect to see GDP growth for the full year that is 2.5 percent or better, meaning that the balance of 2015 should see robust activity.

Construction activity is also uneven through five months, although the overall trend is steadily higher in non-residential and significantly higher in residential.

**If U.S. consumers are taking a break from increased spending by strengthening balance sheets and stocking away more dry powder, the results for the long-term health could be very positive ...**



Source: National Association of Realtors

Housing starts overall have stepped up to a higher pace, seemingly leaving the one million-unit mark behind for this business cycle. May’s 1,036,000 housing starts were somewhat lower than April’s level but starts in April jumped over 20 percent from March; moreover, housing activity in May was some 5.1 percent higher than May of 2014. Building permits in May showed a dramatic increase, jumping to 1,275,000 units, a year-over-year rise of 25.4 percent. It’s worth noting that apartment construction remains robust, if no longer booming, even though investor and financing appetite may finally be cooling off. Lifestyle preferences of the Millennial cohort appear to be driving demand enough to offset the demand that was coming from those who wanted to buy but could not get financing during the post-recession period.

**New home construction is getting a boost from the low inventory of homes for sale relative to the demand from buyers. Recent data shows new home sales firmly above the five million mark, but that level of activity is still below what would be expected of an economic recovery in its second or third year.**



*Commercial starts have recovered significantly since the recessionary trough while institutional projects remain depressed by funding problems.*

New home construction is getting a boost from the low inventory of homes for sale relative to the demand from buyers. Recent data shows new home sales firmly above the five million mark, but that level of activity is still below what would be expected of an economic recovery in its second or third year. Current home sales more closely match the volumes during the 2000-2001 recession. Conditions suggest that there is more upside to a housing construction recovery.

Non-residential construction volumes have been maintaining the expected six-to-eight percent growth rate

for 2015, although the activity within individual sectors has been spotty.

Commercial construction is the most interesting sector to analyze. Because of the improved labor market and troubled public sector, commercial construction volume has tracked much closer to institutional construction since mid-2013. But commercial starts still remain below the mid-2008 high of the last business cycle. Given the fact that a lot of construction was driven by financing demand during the 2006-2008 period, the current volume may seem reasonable but a comparison of construction to existing supply shows that all the major commercial segments are lagging the historical norms.

Newmark Grubb Knight Frank (NGKF) looked at the share of space under construction relative to inventory and found that new office, industrial and retail space in the pipeline made up a much lower share than in previous boom cycles. Office buildings under construction, for example, totaled only 1.7 percent of the inventory, compared to 2.7 percent in 2007, 4.6 percent in 2000

and 13.6 percent in 1986. Similar ratios exist in the industrial and retail markets.

NGKF suggests that the regulatory fallout from the financial crisis is still holding back financing for office and other commercial categories and that a more conservative attitude prevails in 2015 than in previous cycles. According to real estate company CBRE, demand for space has also been changed from previous cycles by shifts in office usage that have reduced the amount of square feet needed per worker significantly. Retail demand for space has similarly been influenced downward by a shift in consumer appetite for big box stores and the increase in online shopping.


Comparison of CMD's reporting on commercial construction shows that the category as a whole has been lifted by the gains in the job market over the past three years but that the sub-segments of commercial real estate have been impacted differently. Retail space in particular has been constrained by changing consumer habits, even as consumer spending has recovered fully. The value of retail construction was roughly 50 percent higher than the value of office construction during the last business cycle, but construction spending on both types of space has been essentially equal since the beginning of the recovery in the third quarter of 2009.



Construction spending in April totaled \$1.006 trillion, up 2.2 percent from the upwardly revised rate in March, up 4.8 percent from April 2014, and the highest rate since November 2008, the Census Bureau reported on June 3. Compared to the same four months one year ago, total spending increased 4.1 percent from the same months of 2014, private nonresidential spending increased 8.7 percent, public construction spending gained 3.1 percent and private residential construction rose 27 percent for multifamily and 10 percent for single-family. Within the market segments, manufacturing construction increased 43 percent; warehouse construction rose 42 percent and office construction was up 22 percent.

Dodge Data & Analytics (formerly McGraw Hill Construction) reported that new construction value was up 10 percent from March to April. During the first four months of 2015, total construction starts were up 24 percent, although Dodge's data was somewhat skewed by the inclusion of several unusually large industrial projects.

"The presence of unusually large projects in early 2015, particularly several liquefied natural gas [terminals and] petrochemical plants, has elevated the level of activity shown by total construction starts beyond the underly-

ing trend," stated Robert Murray, Dodge's chief economist. "It's also increased the volatility on a month-to-month basis...Despite these wide swings on a monthly basis, it's still possible to identify several aspects of how the construction expansion is proceeding in 2015. For nonresidential building, the upturn is broadening in scope, with its institutional segment continuing the upward movement established in 2014. For residential building, single-family housing has shown some improvement yet remains hesitant, while multifamily housing is generally proceeding at a healthy clip. For non-building construction, the electric power and gas plant segment has provided a substantial near-term boost that will soon recede, while public works is beginning to face constraints after surprisingly resilient activity in early 2015." 



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## WHAT'S IT COST?

Influences on the cost of construction are beginning to put upward pressure on pricing. A bounce back in oil prices since the end of winter and accelerating wages are creating month-over-month increases. Because of the deflationary pressures in the second half of 2014 as oil prices plunged, most year-over-year changes are still small or negative.

The Bureau of Labor Statistics (BLS) reported June 12 that the producer price index (PPI) for final demand increased 0.3 percent, not seasonally adjusted (0.5 percent, seasonally adjusted), in May but declined 1.1 percent over 12 months. The PPI for final demand construction rose 0.3 percent in May and 2.0 percent over 12 months. The overall PPI for new nonresidential building construction climbed 1.8 percent since May 2014.

Increases in the indexes were primarily driven by rebounds in energy costs and wages, which make up 25 percent of the index for services related to construction put-in-place. Energy costs jumped 12 percent from April to May, although the price was down 36 percent year-over-year. Excluding energy, the cost of all goods used in construction actually fell three percent compared to May 2014. Significant declines were registered for steel – down 2.0 percent from April and 11 percent for the year – and lumber and plywood – down 2.4 percent and 6.9 percent respectively. Cement prices jumped 7.5 percent year-over-year and concrete moved with it, rising 4.9 percent since May 2014.

Stepping back to look at the change in prices over more than one business cycle reveals that construction costs have been influenced significantly by dramatic increases in several key categories. Building products and materials have tracked – or slightly lagged – the overall rate of producer inflation with the exception of materials dependent upon the price of oil and those – like steel, cement and copper – which had strong demand from emerging economies. Despite the relatively constant levels of pricing (except for diesel) in recent years, the costs of construction are significantly higher than at the beginning of the last decade.

An examination of the five major building materials that drive construction costs shows that prices remained at roughly the same level as 2000 until the mid-decade recovery took off in 2005. With the exception of the price of lumber – which was severely depressed by the housing decline after 2008 – the prices for the other four of the so-called “big five” materials have risen by at least 50 percent over the 2005 level. Prices for cement

are more than 50 percent higher, while the cost of copper and steel have both more than doubled. Even with the steep decline in gasoline prices in the last half of 2014, gas remains more than twice as expensive as it was in 2005. **EG**



PERCENTAGE CHANGES IN COSTS			
	May 2015 compared to		
	1 mo.	3 mo.	1 yr.
<b>Consumer, Producer &amp; Construction Prices</b>			
Consumer price index (CPI-U)	0.2	1.2	0.2
Producer price index (PPI) for finished goods	0.3	0.5	1.1
PPI for final demand construction	0.1	0.2	1.8
<b>Costs by Construction Types/Subcontractors</b>			
New warehouse construction	0.1	0.1	1.4
New school construction	0.1	0.5	1.8
New office construction	0.0	0.2	2.2
New industrial building construction	0.2	0.0	1.8
New health care building construction	0.2	0.1	0.9
Concrete contractors, nonresidential	0.0	0.6	2.9
Roofing contractors, nonresidential	0.3	0.0	2.5
Electrical contractors, nonresidential	0.4	1.6	2.8
Plumbing contractors, nonresidential	0.3	0.5	0.2
Construction wages and benefits	N/A	0.1	2.0
Architectural services	0.1	0.4	1.8
<b>Costs for Specific Construction Inputs</b>			
#2 diesel fuel	10.9	7.8	31.2
Asphalt paving mixtures and blocks	0.1	0.2	15.0
Cement	0.0	2.5	7.5
Concrete products	0.2	1.3	4.9
Brick and structural clay tile	0.2	0.9	1.8
Plastic construction products	0.1	0.9	1.4
Gypsum products	0.0	0.5	3.3
Lumber and plywood	0.6	0.5	8.5
Architectural coatings	0.2	0.2	1.1
Steel mill products	0.2	2.1	11.0
Copper and brass mill shapes	3.7	6.4	12.1
Aluminum mill shapes	1.3	2.4	0.8
Fabricated structural metal	0.5	0.1	1.4
Prefabricated metal buildings	1.1	0.6	1.9
Iron and steel scrap	0.6	0.5	14.1

Source: Bureau of Labor Statistics, Updated June 12, 2015.  
Compiled by Ken Simonson, AGC Chief Economist

# #trending



Construction has earned a reputation as an industry that resists change. It is a human endeavor and it is human nature to resist change. It is more likely, however, that whatever resistance to change exists in the construction industry is born out of the significant liability that all the parties to a project have. With safety and durability of the finished project as paramount considerations, it's no wonder that professionals in the construction business are conservative.

Yet, construction's conservative reputation is also somewhat unfair. There may be a "if it ain't broke, don't fix it" attitude in the industry but construction is also a field where innovative solutions are conceived every day. In reality, a lot is broke within construction so a lot gets fixed.

Architects, owners and contractors are frequently searching the horizon for what will be influencing their business. Some are looking to see what trends are developing elsewhere that will help them better serve their customers or employees; others may be searching to see what else will make their business easier, or more difficult. Regardless of the motive, those in the construction industry understand that change comes, whether or not they are prepared. Those that hope to avoid change – or hope that it will somehow skip them – do so at their own peril.

There are trends in project delivery, finance, design, technology and a host of facets of the industry that bear watching. Three of these trends are emerging that could have a significant impact on the construction industry. One changes how buildings go together; a second trend takes healthy buildings up another notch; and the third trend is a potentially dramatic change in one of the bedrocks of American society: the single-family home.

## Unitized Construction

Advances in the integration of design and manufacturing technology have brought the use of prefabrication of buildings to a higher level. The concept is neither new nor complex. For a number of reasons, there are economies to be gained by assembling as much of a building as possible in a controlled manufacturing-like environment and installing the assembled components later on site. But until recently, when technology allows for near-perfect translation of design to manufacturing, users of prefabricated buildings settled for less in some critical areas to compromise for the benefits of prefabrication.

Also known as unitized or modular construction, the use of prefabricated systems helps with quality and fit, workforce demands, schedule optimization and material handling on a project. Some of Pittsburgh's most recognizable recent new buildings are constructed using significant unitized systems. And the technology is being applied by some of the largest architectural firms and end users on the planet.

**THERE ARE TRENDS IN PROJECT DELIVERY, FINANCE, DESIGN, TECHNOLOGY AND A HOST OF FACETS OF THE INDUSTRY THAT BEAR WATCHING. THREE OF THESE TRENDS ARE EMERGING THAT COULD HAVE A SIGNIFICANT IMPACT ON THE CONSTRUCTION INDUSTRY.**

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## feature

Unitized or prefabricated or modular systems have been part of the vernacular in Europe for decades but have just begun to gain real market share in the U.S. Prefab systems are gaining share in exterior and interior wall assemblies, where the clean lines and uniform appearance are popular with designers. Unitized interior walls include the stud system, insulation, electrical and mechanical fixtures (including plumbing) and the finished surface itself. Whereas in the past, manufacturers of modular interior walls leaned towards more limited choices – including some proprietary materials – modular wall manufacturers and fabricators are now open to almost any surface or configuration. Although prefabricated, most systems essentially encourage designs that are completely customized to that installation, using synthetic or natural finishes and often incorporating glass as the finished wall. And prefabrication is taking on a significantly larger share of the mechanical and electrical work.

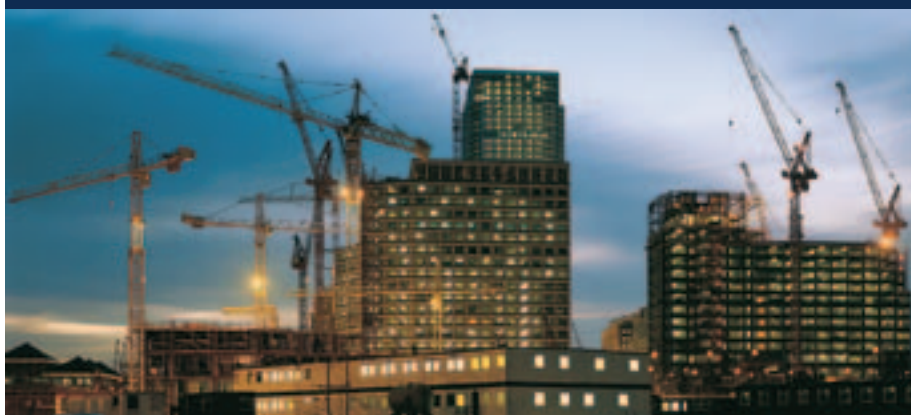
“Mechanical contractors, maybe more than anyone else, understand the value of prefabrication. We’ve been doing it for decades,” says Ray Gajski, president of Ruthrauff Sauer. “When you see us rolling into a chiller plant with a truckload of piping, there have been hundreds of hours in the shop fabricating the headers and eliminating as many field welds as possible.”

Gajski notes that his workers can perform about three times as many welded connections in the shop as in the field. Welders can set up the piping in the most comfortable position for the work and the conditions are ideal for the task.

“One of the reasons we prefab is to level out our manpower. We can take hours from the field and move them forward to the shop so we level out our peak demand,” says James J. Ferry II, president of Ferry Electric Co.

The workforce management advantages that Ferry describes are a big reason why unitized or prefabricated construction will continue to rise in popularity in the coming decade.

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The exterior wall system for UPMC East in Monroeville was a unitized glazed curtain wall. Photo by Denmark Photography. Use courtesy PJ Dick Inc.

Workforce shortages in construction are a growing problem and labor organizations are beginning to recognize the potential savings that prefabrication offers. The past president of the International Brotherhood of Electrical Workers, Edwin Hill, devoted a column in IBEW's magazine to voice support for the use of journeyman workers in prefabrication as a way to meet the coming workforce challenge.

Managing the workforce loads on a large project – like UPMC East – is a challenge that is magnified by the climate of Western PA. Virtually no building systems are installed best in wet or cold conditions. Some major portions of the project can't be built in bad conditions without risk of failure. The result is that progress on a large project can be wrecked by bad weather. A multi-year project may have more time for adjustment but at the same time a significant delay in one aspect of the project has significant impact throughout the job.

"What's nice about [unitized] is that it's not as weather-dependent. You're not out there wet glazing in cold weather," notes Mike Kuchera, principal and market leader for the Pittsburgh office of BBH Design, which was the architect for UPMC East. "There's a more flexible schedule. I think on larger projects it's a much better way to go."

The exterior curtain wall for UPMC was prefabricated, with the finished exterior metals already glazed, sealed and sorted for installation when the weather and related sequences fit best. Kuchera says that the installation done by D-M Products was on an impressive schedule.



Unitized interior wall systems are custom built with complete finishes and install below the finished ceiling and on top of the finished flooring. Photo by DIRT.



Modular headwalls and finished interiors help hospitals with ICRA concerns during construction and give flexibility to the function of the patient room. Photo by DIRT.

Unitized curtain walls are also being used in the Tower at PNC Plaza, where two other principal benefits of prefabrication are being reaped. Conventional stick built construction requires an area adjacent to the building to be used for materials to be stored before being put into place. PNC's site at Fifth, Forbes and Wood has almost no room for lay down so using unitized window systems saves space, especially since the Tower has two separate curtain walls. The other advantage of the unitized system is that the controlled manufacturing environment assures that the curtain wall will have been sealed in optimal conditions, both on the interior and exterior. For a building that is striving to be the most energy efficient in the world, that's a considerable benefit.

"There's an emphasis on high-performance envelopes and unitized systems help with that," says Kuchera. "It's fabricated in a factory so there's better quality and less chance for leaks. Owners like it because they get an efficient exterior."

The same reliability of fit and finish are reasons why there is a growing usage of prefabricated walls in building interiors. For interior designers, users and property managers there is another benefit that outweighs the others: flexibility. Unlike the demountable wall systems of the 1970s and 1980s, today's modular walls are installed on top of the finished flooring and below the finished ceilings. That means that relocating or reconfiguring the walls is done with screwdrivers in a

matter of hours. That gives dynamic companies more confidence in space planning, since changes can be made for pennies on the dollar. Dave Sauter, president of Workscape Inc. calls this "future proofing."

Sauter's company distributes and installs DIRT, the Calgary-based manufacturer of interior wall systems. Sauter sees the market share in modular interior walls gaining because the products have caught up to what designers want and the technology solves the problem of tight labor on a jobsite.

"If somebody wants a plain painted drywall office with standard seven-foot doors, that's pretty tough for us to compete," Sauter says. "Where we do best is with glass or wood, or if something is interesting going on, then that's a good fit. We see a big increase in glass. People want that transparency and light."

As for the installation, modular walls are done by the same skilled workforce that builds hard walls. There are just fewer of them at the jobsite. "Instead of 70 percent field labor, these walls are 20 percent labor," Sauter explains.

"It's nice for us because we can build that conventionally or our furniture division can provide that [modular] solution," agrees Rich Yohe, vice president for interiors contractor Easley & Rivers Inc. "The upfront costs for modular are more

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expensive but if you have a lot of churn then it's much less expensive over time."

Yohe says that Easley & Rivers furniture division has done six or more floors for UPMC at 600 Grant Street. His company works with Haworth as the manufacturer, providing UPMC with a complete office, including all the wall systems.

The Design Alliance (TDA) is UPMC's architect for its 600 Grant Street space. Shari Spoharski, ASID, is a principal/shareholder at TDA and manages the firm's interior design practice. She echoes Yohe's and Sauter's sentiments about the utility of modular interiors.

"The best use is for clients who are going to reconfigure," she says. "We do a lot of demountable partitions



*Both sets of exterior wall systems for the Tower at PNC Place are comprised of window units that are manufactured off site and installed fully-finished.*

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and have clients who have standardized them.” Spoharski says that she has used both Haworth and DIRT and enjoys the technology that the manufacturers provide for planning. “It’s definitely an advantage, especially when you can get ideas from them. You can tell them what you like and DIRT’s ICE® software can configure them and tell you how much it will cost.”

The planning assistance is useful for designers, users and contractors and it helps companies like Workscape drive sales; however, the tool is also intended to create behavior that is necessary for any use of prefabrication to succeed. Sauter says that too often the decision about prefabrication is made at the budgeting phase or even bidding. He points out that the specialty contractors’ prices at that point don’t reflect what the savings in prefabrication would bring if the process had included the modular walls from the start. Specialty contractors echo his concerns.

Ray Gajski makes the point that prefabrication is like any other approach to delivering a construction project; it doesn’t fit every situation and it requires planning.

“There is a tremendous amount of planning that has to take place in advance, probably best done in BIM, to coordinate all the trades involved. It’s a herculean effort to do this off-site,” he explains. “If you have a couple years to plan the whole project it will probably go together pretty quickly. At the same time, [prefabrication] doesn’t leave a lot of room for owner’s directives that happen every day on a construction site.”

“I will say that [prefabrication] involves much more planning than a conventional project. If you don’t plan properly it ends up costing you time and money that much is more than you can save by prefabricating the job,” agrees Jim Ferry.

Dave Sauter points to the value of planning and prefabrication on the Heinz world headquarters project, which was designed by TDA. Since the project was originally done, Heinz has been acquired and reorganized. Its spaces have been renovated to reflect more collaborative environments and the smaller head count. Because of the original design, which utilized modular walls extensively, there has been a much easier reconfiguration.

“The architect understood [Heinz] would need modularity seven years later,” he says.

**“If you have a couple years to plan the whole project it will probably go together pretty quickly. At the same time, [prefabrication] doesn’t leave a lot of room for owner’s directives that happen every day on a construction site.”**

## Salutogenic Design

Architecture has always included social values, at least to the degree that the client and the budget allowed. Pittsburgh is full of examples of buildings that were designed to celebrate or accommodate some value in society for the occupants. These include buildings that mean to acknowledge the value of the working class or the right of the poor to have decent housing, for example. During the past decade or so it seems as though there is an increase in the number of influences on design that reflect society’s values.

Green building is likely the most salient example of this, but even within the growing push for sustainability are separate social values like conservation of resources, a demand to employ more natural materials and the desire to mitigate the negative impact of the built environment on the natural environment, including the health of the people occupying buildings. This translation of social values into architecture is even affecting where people want to work. Companies that are demonstrating social awareness and more collaborative environments – which imply that the ideas and efforts of all employees are valuable – are doing better at attracting and retaining the best employees. The new Tower at PNC Plaza is the best current example of this principal.

It shouldn’t come as a surprise that the next influential trend in design has its origins in sociology instead of architecture.

Salutogenesis is a term coined by Aaron Antonovsky, a professor of medical sociology. The term describes an approach focusing on factors that support human health and well-being, rather than on factors that cause disease. Antonovsky developed the term from his studies of how people manage stress and stay well.

In his 1979 book, *Health, Stress and Coping*, Antonovsky described a variety of influences that helped people survive, adapt, and overcome in the face of even the most difficult life-stress situations. His main observation was that stress is ubiquitous but not all people have negative health outcomes in response to stress. Some people achieve health despite their exposure to potentially disabling stress factors.

Antonovsky called the continuous forces of stress generalized resource deficits (GRD) and the means needed to manage stress were called generalized resistance resources (GRR). Resources like ego, financial strength, social support and physical well being are among the GRR that enable people to cope with stress with less degradation of their health. What ulti-



mately determined the degree to which stress impacted a person was the degree to which stress violated the person's "sense of coherence."

What his research yielded was the theory that better health and well being could be predicted by enhancing the sense of coherence, which includes the resources that can be drawn from a supportive physical environment.

Making buildings "greener" has helped make for more salutogenic environments. Eliminating volatile organic compounds from paint and carpet have reduced toxins that occupants breathe. Using daylight to reduce electricity has had the serendipitous effect of increasing occupant health at the same time. There has also been an increase in incorporating wellness features in construction projects. Adding yoga or exercise rooms or bike racks to encourage non-vehicular commuting are well-meaning attempts at improving occupant health, but the ante is now being upped by the application of biological science to architecture.

For example, an understanding of how light spectrum affects human chemistry is informing building orientation and layout. Neuroscience is teaching architects that views to natural landscapes calm and restore our brains, improving focus and brain function. A deeper understanding that there are physical configurations that encourage social interaction gives designers the knowledge to create spaces that enhance collaboration rather than inhibit it.

"Research is approaching a tipping point because now there is a greater appetite from the [architectural] profession for this kind of research," says Dr. Margaret Tarampi, junior fellow at the Sage Institute for the Study of the Mind at the University of California-Santa Barbara. "There's starting to be an interest across the board. Firms like Gensler now have a research department actively pursuing agendas in this area."

Dr. Tarampi is a Carnegie Mellon graduate architect who parlayed an interest in how architecture affects quality of life into a PhD in neuroscience. She's now a researcher trying to use neuroscience to

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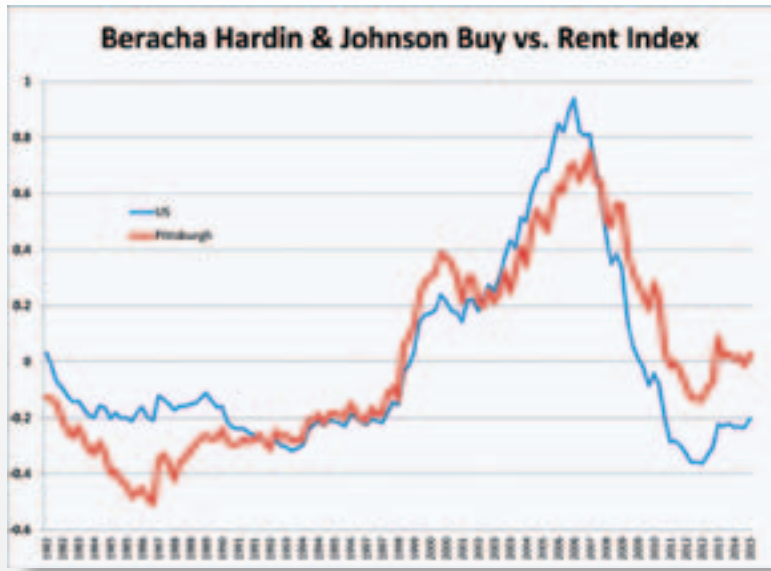
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Source, Florida Atlantic University

Salutogenic design may be moving to the forefront as part of the evolution of how architects and owners view sustainability. Green building advocates have always considered the improved health of a building's occupants as one of the goals of sustainable design.

inform architecture about how buildings can improve human well being. She notes that her field was originated by a meeting between Dr. Jonas Salk and the AIA Architectural Foundation. Salk described how his research into the polio vaccine had stagnated in his basement lab at Pitt. During a sabbatical at Assisi in Italy, Salk spent time in nature relaxing. While there, he got the idea that became the structure of the vaccine that he completed in Pittsburgh. His challenge to architects was to find the connection between environment and health and mental activity.

As organizations become more sophisticated and aware of the connection between the built environment and enhanced health and performance, architecture that promotes an improved connection between building and occupant will become a mandate from clients. In today's economy, the kinds of organizations that are recognizing that salutogenic connection are among the best in class. Architects and designers who respond to that client awareness will be able to differentiate themselves.

Further evidence that salutogenic design is moving from the well-meaning to the mandated is the fact that standards for health-promoting projects have been created.

Manhattan-based developer Delos Living LLC created the WELL Building Standard™ in 2012 as part of its development of residential properties. Based on medical research into the connection between buildings and the health of occupants, WELL is the only standard focused

exclusively on occupant health. The WELL Building Standard sets performance requirements in seven categories – air, water, nourishment, light, fitness, comfort and mind – that are relevant to occupant health in the built environment. WELL-Certified™ spaces are designed to improve the nutrition, fitness, mood, sleep patterns, and performance of its occupants.

In 2014, the Green Building Certification Institute agreed to partner with Delos by acting as the WELL verification source, integrated with GBCI's LEED certification. The Phipps Conservatory's Living Building Challenge is the first WELL-certified project in Pittsburgh.

Whether or not WELL achieves the market penetration that LEED has, the concept that how a building is designed can improve the wellness of the occupants is gaining momentum. What Delos is doing for commercial real estate is but an extension of what the healthcare market has been doing for much of the last decade. WELL simply builds upon the concepts that Dr. Roger Ulrich researched at Texas A & M University in 1984.

Now professor of architecture at the Center for Healthcare Building Research at the Chalmers University of Technology in Sweden, Ulrich studied the effect of environment on surgical patients' recovery while at Texas A & M in 1984. His research was published in an article in *Science* called "View Through a Window May Influence Recovery from Surgery."

That study found that patients who viewed nature from their rooms recovered quicker, with less need for pain mitigation, than patients with a brick wall view. Using hospital data and nurses notes, Ulrich found that patients with a natural view spent one day less in the hospital; and also noted that nurs-



es recorded nearly four times as many negative observations about the patients whose view was of the brick wall. Patients with a brick wall view took more painkilling medicine and suffered more post-surgical complications. Over the years Ulrich also researched the effects of single versus multi-bed patient rooms on infection transmission, the negative impacts of hospital noise on patients and nurses, and how nature, gardens, and art can lessen pain, stress, and healthcare costs.

"Now we're taking the work of Ulrich and others and asking questions like, does it just affect healing or does it also affect clear thinking or productivity?" says Dr. Tarampi. "That great work was done in the 1970s and it seems to be coming back around again. It's time to step back and look at the important work that we sort of discounted in the past. There is starting to be converging evidence that says there is something measurable about the effect of the environment."

John Schrott, managing partner and president at IKM Inc., is a proponent of evidence-based design and an EDAC accredited professional. Schrott sees Ulrich's work as the basis for evidence-based design. He points to the Pebble projects administered by the Center for Healthcare Design, which sets the standard of care for hospital architecture, as meeting the industry's need for collaboration between designers, healthcare providers and patients.

"We needed to move as an industry from anecdotal to empirical evidence," Schrott asserts.


Schrott explains that it was data collected from many sources that established the benefits of single-patient rooms and decentralized care, for example.

"It's all about reducing stress. In double rooms, it's not just the television or visitors that cause the stress," he says. "The patient can't really have conversations with family about his or her condition. When the doctor comes to talk about the patient's condition it isn't comfortable. There is just a less stressful environment in a single-occupant room."

Observation has led to the move to decentralize care and supply as well. "We now decentralize nurse stations to reduce noise and put nurses closer to their patients. If a nurse is close and the patient knows it they are less likely to try to get out of bed without help," Schrott notes. "The average age of a floor nurse is about 50. At that age a nurse can't be trucking another five miles a day getting supplies. It's about doing whatever you can to retain nurses. Hospitals invest a

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lot of time and money in training so the effort to retain them is important."

Schrott sees salutogenic design as an expansion of evidence-based design. "[Salutogenic design] implies a facility that promotes wellness. Evidence-based design implies an illness that needs to be healed."

Salutogenic design may be moving to the forefront as part of the evolution of how architects and owners view sustainability. Green building advocates have always considered the improved health of a building's occupants as one of the goals of sustainable design; however, it is just as likely that the competition for talent – especially young talent – is driving the demand for spaces that enhance occupant health. The average 30-year old was learning about sustainability when he or she was learning about math or literature. It was part of the curriculum of the younger generation's education and part of what was learned was that a building can have an impact on the wellness of its occupants. The expectation is that the impact will be positive.

A 2009 study by Dr. Julian Thayer and colleagues found that office workers who worked in individualized cubicles with outside natural views were healthier and more productive than those in conventional cubicle farms without views. The doctors found that workers had less circadian variation in heart rate and an improved rise in morning cortisol, both factors that would leave workers feeling more rested and more fully awake when the day began.

Employers today understand that competitive salaries alone won't assure them the best talent. Many young job-seekers have articulated that working in an inefficient building or a traditional atmosphere is a deal breaker when choosing an employer. Workers now understand that there are environments that can boost their focus and energy, making their workplace as physically rewarding as the other aspects of their lives. On the other side of the coin, research has shown that an environment that promotes occupant health enhances focus and productivity.

Creating a salutogenic work environment demonstrates caring for the employees. That's part of a retention strategy that works. The bonus is that those cared-for employees also do a better job.

Housing Starts Since 2004	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Single-family Detached	3,135	3,044	2,698	2,522	2,006	1,517	1,927	1,670	1,936	2,164	1,971
Single-family Attached	1,987	1,687	2,218	1,640	1,342	1,290	851	1,202	1,643	3,838	2,902
Total Units	5,123	4,731	4,916	4,162	3,348	2,807	2,778	2,872	3,579	6,002	4,873

Traditional single-family detached housing starts remain roughly 60% of the ten-year average prior to the recession.  
Source Pittsburgh Homebuilding Report.

## The Impending Housing Shortage

The dominant market force influencing housing since 2008 has been the mortgage crisis and the response to it. Fallout from the crisis pushed buyers into renting. Financial market conditions drove investors to push development of new apartments. New Urbanism drove demand for denser residential communities. Younger people demonstrated a greater aversion to home ownership than previous generations. For all these reasons, the hot topic in housing has been apartment construction since 2010.

Although on a much smaller scale, Pittsburgh has participated in the move to build new apartments. At mid-year 2015, there is some evidence that concerns about saturation have surfaced.

"We're starting to see bankers looking at the Pittsburgh market, seeing the supply coming on line and saying let's see how they do before we go ahead with new projects," says Nick Matt, senior managing director at mortgage broker HFF. Matt thinks concerns are exaggerated for the time being. "Winter was bad from an occupancy standpoint. It was worse than in recent years but I can also tell you that this spring it came roaring back. If you talk to Walnut Capital or Jeremy Leventhal from Faros Properties, they are full."

As of June 1 there were 3,871 multi-family units in the planning pipeline, meaning proposed but not under construction. If completed, these projects would bring the total number of apartments added to the building stock during a three-year period to roughly 10,000. During the same period, only 8,000 new single-family units were built. That's a complete reversal of the historical norm.

In metropolitan Pittsburgh, during the time period that the Great Recession impacted the housing market most (2008-2012), there was an average of 1,811 new single-family detached permits per year and an average of 1,266 attached or multi-family units. Traditional single-family construction made up 58.8 percent of the starts, which was roughly comparable to the 63.7 percent share for single-family during the years 2000-2005. But the boom in apartments since 2012 has changed the market share dramatically. In 2013, only 36 percent of all dwelling units started were single-family detached and last year the share only grew slightly, to 40.4 percent. Through

the first half of 2015, the share of single-family has declined again to 33.5 percent.

Could this be attributed to the shifting demographic trend that is apparently bringing more young people to the area than during the previous quarter century? Certainly some of the demand for apartments is coming from the younger cohort, the so-called



## feature

Millennials. That generation came of age during the mortgage crisis and does not possess the same investment mentality about home ownership that other generations have. But it's also clear that some of the growth in multi-family and other attached housing products is due to the supply problem, only part of which can be traced to pent-up demand from previous under-building. What used to work for the traditional single-family development simply won't work today.

One significant impediment to development that is not related to the market is the topography of Western PA. As you might expect, builders develop flat land first and work with more challenging sites as flat land is exhausted. In a mature city like Pittsburgh, suburban sprawl has long since overtaken most farms within a half-hour commute and growth of new construction over the past two decades has absorbed most of what we describe as "Pittsburgh flat." That leaves steep sites that are difficult to develop; leave a lower ratio of usable land for lots; and drive the cost of what's built higher.

This reality has created a higher premium for new construction than the market is accustomed to seeing and has made new construction for first-time buyers untenable. Topography is also dictating higher density for suburban development, meaning townhomes. That's another trend that Pittsburgh buyers haven't yet embraced in large numbers.

Another factor influencing development has been the merger of Heartland Homes with NVR Inc. The marriage of the region's two largest builders created an entity that attracts more than 40 percent of the new home buyers and is a selling machine. That makes the NVR companies more attractive to residential developers, who logically prefer creating a community that might be sold out in two years or less instead of one that may take five-to-seven years.

Then too, the makeup of the residential development community in Pittsburgh has had a slowing influence. Scott Blodgett, CEO of Infinity Homes, was head of operations for Heartland until early 2013. He has hustled to find land and available lots as he has built Infinity



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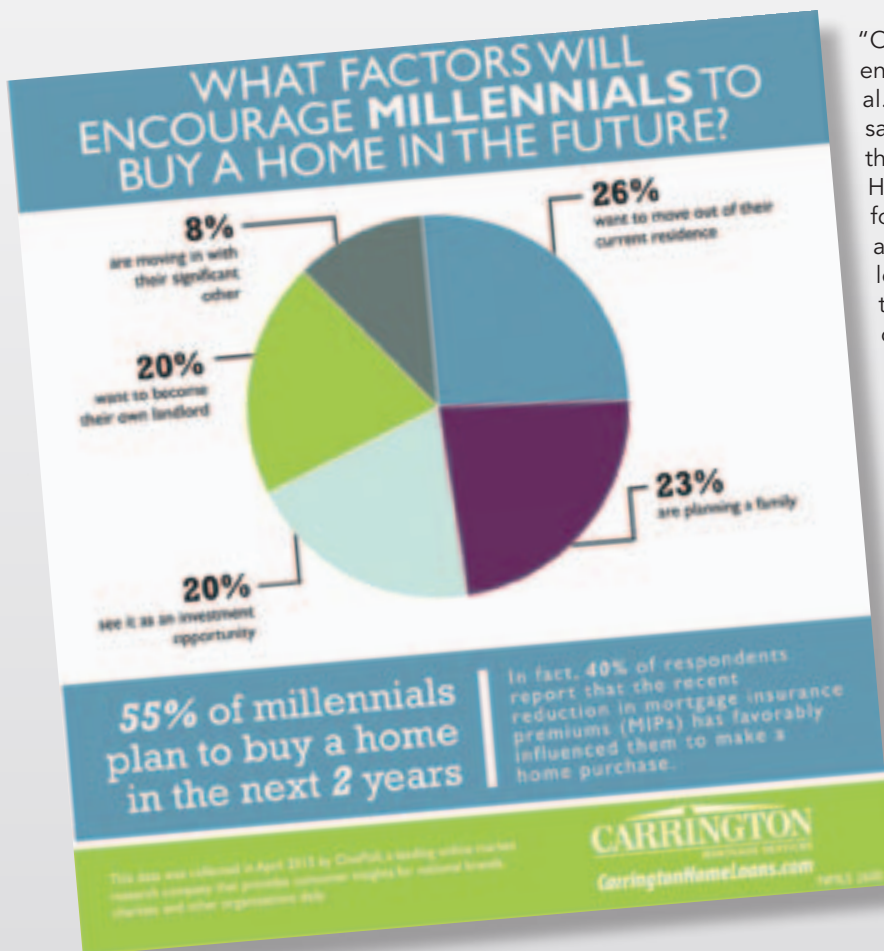
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## Millennials have been a big source of demand for New Urbanism. As that generation enters its child-rearing years – albeit later than previous generations – a move back to the suburbs and school districts with which Millennials are more familiar seems very likely.

over the past two years. Blodgett sees the reluctance to develop multi-builder custom home communities as a risk-averse business strategy.

"A lot of the bigger developers from back in the day have become more conservative," Blodgett notes. "When they were younger, they were more willing to take a risk to make a profit. Now they are closer to retirement and not willing to take as much risk."

For those developers willing to take the risk of undertaking a residential project, there has been a much less friendly borrowing environment. While rates have been historically low, most banks have had to work a few – or more than a few – bad residential developments off their balance sheets since the mortgage crisis. While those deals are all essentially gone, the regulations that followed the crisis have made it unappealing for lenders to do residential development. It's one more impediment to new housing projects.



Millennials cited several factors that would push them to home ownership in the next several years. Source, Carrington Real Estate Services.

"On the lending side, I feel things are loosening up for mortgages but that is anecdotal. I haven't seen that show up in the data," says Howard "Hoddy" Hanna III, CEO of the region's largest real estate company. Hanna also sits on the Board of Directors for the Federal Reserve Bank of Cleveland and notes that post-crisis regulations have left residential development stuck in neutral. "If a community bank lends to a new development, they are put in a penalty box."

Absent new development and with a strong, stable economy, the Pittsburgh region is facing a serious supply problem for housing. The economy isn't forcing existing homeowners into relocation and new residents are finding little options for home ownership.

"Inventories go down almost every month from the previous month. Part of that is that when homes come on the market they sell so quickly," says Hanna. "In almost every market we serve, it's the same. Remarkably, it's across every price range."

While the single-family versus multi-family share has undergone a shift that could reflect changes in both culture and infrastructure, the more interesting change has been in the total amount of new housing entering the supply. And while the causes of the shift in housing types are the same for Pittsburgh



and the rest of the country, the decline in housing creation is very different.

At the national level, home construction was dramatically overbuilt during the middle of the last decade because of demand for mortgage origination rather than genuine housing demand. The peak year of construction saw almost 2.1 million units built in 2005 compared to a historical norm of between 1.2 and 1.5 million. That peak was followed by a precipitous decline to less than 600,000 units, which remained the level of construction for several years. New construction peaked in Pittsburgh in 2004, when 5,123 units were started, but the activity had declined to 4,162 by 2007 and bottomed out at 2,778 units in 2010. It wasn't until 2013, when the construction of over 3,000 apartments drove the market to 6,002 units started, that new construction topped the 2007 level again.

Aside from the difference in trend, the market conditions between the U.S. market and Pittsburgh were dramatically different. First, there was no overbuilding surge prior to the crash in 2008; in fact, new construction peaked in Pittsburgh three years before the mortgage crisis was even identified. Moreover, job losses were milder and recovery quicker in Pittsburgh, with employment reaching all-time highs as early as 2013. By all that is right and logical in housing, this macroeconomic reality should have caused a housing spike by 2013 but inventory remains low. This trend is leading the Pittsburgh market to a place that would have been scarcely imaginable ten years ago: a housing shortage.

The existing housing stock in metropolitan Pittsburgh correlates one-to-one with the number of jobs, at around 1.07 million. It's actually pretty logical that one job would result in one new household. With that metric understood, the 11,000 new jobs in 2014 should demand 11,000 new dwelling units, a figure that is more than twice the 4,873 units started. There isn't a one-to-one relationship of jobs and housing starts in any given year, of course, but over the course of five years or so, the correlation should appear. Instead of that being the reality, there is a significant lag of new housing for the jobs created.

What does the market look like if a housing shortage occurs? For homeowners, the value of their homes will rise more sharply every year. For apartment owners, the lack of single-family inventory will mean continued occupancy and higher rents. For renters, a shortage means higher rents and fewer lifestyle options. This upward cycle will make new construction more affordable at some point but until that happens, a shortage of housing will erode one of Pittsburgh's principal lifestyle advantages: its affordable housing.

There is evidence that the cycle has heated up already. "For the first five months our average sales price is up eight percent. That's the highest jump I can recall for that period of time," notes Hanna. "If that continues, it might

push buyers to new construction. There's definitely more demand."

Whatever the current level of demand is, there is likely to be a boost in the number of people wanting to buy new homes over the next three to five years. There is demographic support from the Millennial generation and the lifestyle choices of that generation as its members mature will set the table for a boomerang to the suburbs. Millennials have been a big source of demand for New Urbanism. As that generation enters its child-rearing years – albeit later than previous generations – a move back to the suburbs and school districts with which Millennials are more familiar seems very likely.

At the regional level, there appear to be financial incentives for buying, irrespective of the supply. The Florida Atlantic University School of Business conducts a survey of the buying versus renting conditions in the U.S. and compares the advantages in major metropolitan markets. After the first quarter of 2015, Pittsburgh was one of seven cities in the country where the difference between buying and renting was virtually nonexistent. Comparing the wealth accumulated through renting and investing with the wealth accumulated through home equity, the Bera-cha, Hardin and Johnson Index found that while the conditions shifted towards buying in the U.S. in general, conditions weren't compelling in either direction in Pittsburgh. This will likely change if rents continue to rise at the recent pace or interest rates begin to climb but, for the time being, the lack of supply is a greater influence over home ownership than any perceived financial incentives.

Of course, should job creation increase dramatically over the next three to five years, the tight housing supply will dwindle even further. There is a push from civic leaders to attract more population to the region so that there is sufficient workforce to replace the 140,000 more Baby Boomers who will retire over the next ten years. Success in that effort will add more strain to the supply imbalance.

What can be done? The market forces ultimately will create opportunities that developers and builders will exploit. But unlike a scarcity of some consumer item, a housing shortage isn't quickly remedied. Municipal entitlement, state approvals and environmental regulations make the development of land for housing a two-year process. Steps to incent development and streamline approvals should probably begin now, but absent a real crisis there won't be any changes to the processes. This shortage is a problem we can see coming from a mile away but are somewhat powerless to avoid. [BG](#)



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Photo by Dennis Marsico.

## College of General Studies/McCarl Center for Non-Traditional Student Success

**J**im McCarl had been given a second chance by the University of Pittsburgh back in the early 1970s. McCarl's social life during three years at the University of Virginia resulted in poor grades that led to his being asked to leave. McCarl returned to work at his father's mechanical contracting business, McCarl's Inc. With a few years of working and maturity under his belt, Jim McCarl decided he wanted to finish his degree. Pitt offered him a chance to complete his education at its College of General Studies (CGS), a program that offered working people a way to get a degree in the evenings. McCarl graduated from CGS in 1973 and spent a quarter-century at the helm of McCarl's Inc. until its sale to PP&L in 1999.

The value of the education was never lost on McCarl, nor was the opportunity he received from the University of Pittsburgh. In 2002, McCarl and wife Carol made a gift

to endow the College of General Studies with a resource center for the nontraditional student like himself 30 years before. A dozen years later, Pitt's strategic plan made it necessary to relocate the McCarl Center and the rest of CGS from the Cathedral of Learning to a new home in Posvar Hall.

When the McCarl Center for Nontraditional Student Success was established, Pitt hired Strada Architecture LLC to design its offices on the fourth floor of the Cathedral of Learning. While the address was prestigious, the location was at cross purposes with the aim of the McCarl Center. Designed as a resource center and refuge for the university's nontraditional student population, its positioning was less than accessible.

"It was cloistered on the fourth floor and it wasn't visible, not only to the regular student population but also to the

College of General Studies itself. It was very difficult for the nontraditional student to even find it," notes Canard Grigsby, senior project manager for the university. "The provost thought it was almost a clandestine operation."

It was decided in 2013 to relocate the 12,000 square-foot College of General Studies during the summer break in 2014. To accomplish the goal of bringing CGS into the university's campus circulation patterns, Pitt chose the first floor of the Oakland campus's largest academic facility, Wesley W. Posvar Hall. While the location of CGS and the McCarl Center were not desirable, the cruciform style of its layout worked very well for the students and administration. The university commissioned Strada again to take advantage of the lessons learned during the first project about department adjacencies and interaction, and the peer-to-peer relationships.

According to Alan Cuteri, the Strada partner who oversaw the project, the principal challenges of the relocation were not programmatic but aesthetic. Posvar Hall – which was originally named Forbes Quadrangle – was designed by Johnstone Newcomer & Valentour (now VEBH Architects) in the mid-1970s in what Cuteri calls a "brutalist concrete" style. The massive structure is comprised of waffle slabs and modular brick walls. The

structure made for some head-scratching during the mechanical and electrical design.

"The ductwork lies within the four-foot waffle grid recesses. There is an alternating pattern of air supply or return and lighting," says Cuteri. "We had to align the ceiling grid with the waffle pattern above and below. That had to be considered when doing the layout."

For the CGS/McCarl Center relocation the design included opening up the massive ground floor lobby to allow natural light to flood the new space and provide line of sight and access through Posvar Hall to the plaza that connects the building to Hillman Library and Roberto Clemente Drive beyond. Another major objective was to provide visual cues that told students and visitors that they were approaching CGS by using finishes and materials from within the space in the Posvar lobby.

"Opening the interior to the lobby was a big challenge. We used windows and glass doors and a glass wall in the lobby to make a place for students to sit and congregate," says Cuteri. "It's very visible. We looked at it as a place you would want to go."

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Grigsby says that Strada expanded on its “Main Street” design at Posvar, creating two “side streets” that led to the individual programs and people within CGS, connecting people to people and then people to functions.

“What was also strategic was the design of the piazza that connects from one side of Posvar to the other side. There is no other space in Posvar Hall that does that,” Grigsby says. “It allows you to see from the building exterior all the way through CGS to the courtyard between Posvar and Hillman Library, all the way out to Clemente Drive.

Replacing the concrete interior wall with glass was not an easy undertaking. Although the glass wall didn’t need to be structural, Pitt insisted on higher-than necessary structural performance. The project’s security consultant also balked at the idea of using aluminum doors. To make matters worse, the existing floor sloped three inches from front-to-back, an unforeseen condition discovered after construction was underway.

FMS Construction was the successful bidder on the \$1.2 million renovation. Vince Holman, project manager for FMS, explains what it took to open up the new space into the Posvar Hall lobby.

“It was a fire-rated, radius glass entrance. We had to punch through the concrete to create the space,” Holman recalls. “Our superintendent [Todd Yodonis] had to lay out the radius on the floor and Pitt wanted the radius to be strong enough to support a person standing on it.”

**“What was also strategic was the design of the piazza that connects from one side of Posvar to the other side. There is no other space in Posvar Hall that does that,” Grigsby says.**

Resolving the sloping floor issue couldn’t be done by altering the existing floor throughout so a hybrid leveling solution was developed in the field. “The glass wall heads had to match up so we shimmed up the frames and DTI

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*The massive stone sign for the McCarl Center (left of the entrance) was removed from the Cathedral of Learning and reinstalled in Posvar Hall. Photo by Dennis Marsico.*

pumped in Ardex, which we feathered out from the wall," he continues.

Holman viewed the schedule as the biggest challenge of the project. Work started on the project on March 25, 2014 and completion was set for June 30 to allow the Pitt employees to take occupancy before the students arrived. The unforeseen conditions and surprises would not have been an obstacle to completion of the project, but an unforeseen problem with a subcontractor proved a greater challenge.

"The big challenge was getting the casework. We had used that subcontractor in the past but at that time I think they just bit off more than they could chew," Holman explains. "The owner didn't try to make any excuses so we just stuck with them." Holman says that the subcontractor also didn't

take any shortcuts to expedite delivery. "No, everything was great quality. It was just late. It was just one of those things. We have used them again since then without any problems."



*Photo by Dennis Marsico.*

The layout and design of the space within Posvar was important to Pitt as the space is not really academic but needs to function to support students within an academic setting. Strada was asked to create a palette of colors and materials that would set the tone for the way the CGS space is used.

"The College of General Studies serves the non-traditional student population as a unit within the university," continues Grigsby. "Within CGS there are three programmatic components – Osher Lifelong Learning Institute, Veteran's Affairs and





the McCarl Center. Of the three, McCarl has more student-related activities. There is no separate academic unit for the McCarl Center. When you step into McCarl you are entering its lounge and conference rooms. It's a support center for non-traditional students."

The finishes and colors extend into the corridor to act as visual cues that the student has arrived some place different. The home plate from Forbes Field was incorporated into the space, which gives it another attraction. Grigsby explains that the intention of these elements is to acknowledge what sets the non-traditional student apart from the main student population.



Photo by Dennis Marsico.

"Time and effort were expended searching for the right colors and fixtures so the non-traditional student didn't feel like they were walking into a dorm lobby or a freshman student lounge," Grigsby continues. "We recognize that the non-traditional student is a professional and we wanted the finishes to show there is more sophistication. It was all part of a grand design to show that we understood what kind of student the non-traditional student is." BG

## PROJECT TEAM

Owner.....	University of Pittsburgh
General Contractor .....	FMS Construction Inc.
Architect.....	Strada Architecture LLC
HVAC .....	Ruthrauff Sauer Inc.
Plumbing.....	Phoenix Plumbing
Electrical .....	TJR Enterprises
Casework .....	Hoff Enterprises
Painting.....	A. J. Vater & Co.
Fire Protection .....	Simplex Grinnell
Misc. Metals .....	Keystone Metals
Masonry.....	Franco Masonry
Doors.....	Davis-Fetch Corp.
Glazing .....	River City Glass
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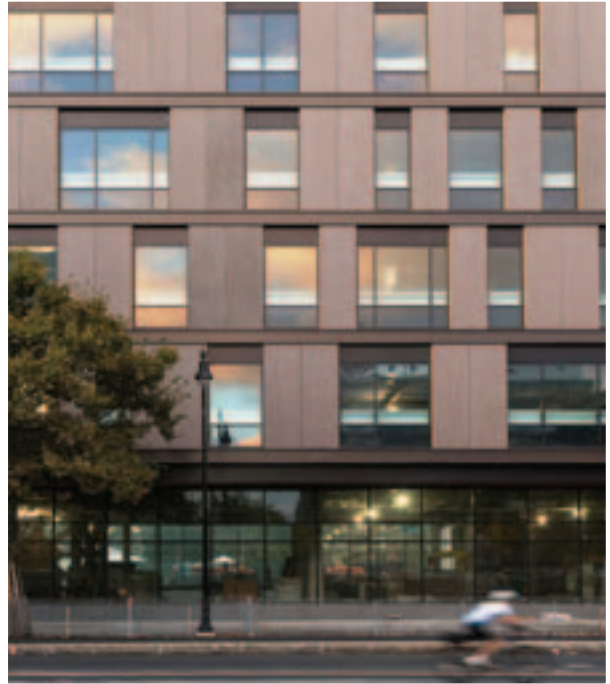




# TAKTL®

## TAKTL, LLC

"Stories about startup companies usually focus on the founders and that's not what this company's story is about," states Lauren Flannery, who with husband Roger is one of TAKTL LLC's managing principals. "Our success has been a result of the talented team we have been able to assemble."



*Panels on the 75-125 Binney Street building in Boston used the profile (inset) with custom color to create a unique architectural façade. Design by Payette Architects.*

The Flannery's have almost 40 years of experience making architectural products, usually combining new technologies in manufacturing or materials to differentiate what they made from their competition. Whether with Cornelius Architectural Products (now Cornelius Signage) or its eventual parent company Forms+Surfaces, Roger and Lauren sought to provide solutions to architectural design problems.

It was that striving to push the envelope with materials that led to the family's current business making architectural products of ultra high-performance concrete (UHPC).

Lauren says that her son Jason did the work that sparked TAKTL's founding while he was the head of design for Forms+Surfaces. "He is very materials- and process-oriented and made continued research in those areas an integral part of the design agenda at Forms+Surfaces, taking materials and technologies from other industries

and exploring potential applications for our market," she notes. "His original attraction to UHPC was the possibilities it would afford designers to achieve geometries and profiles not possible with concrete or stone."

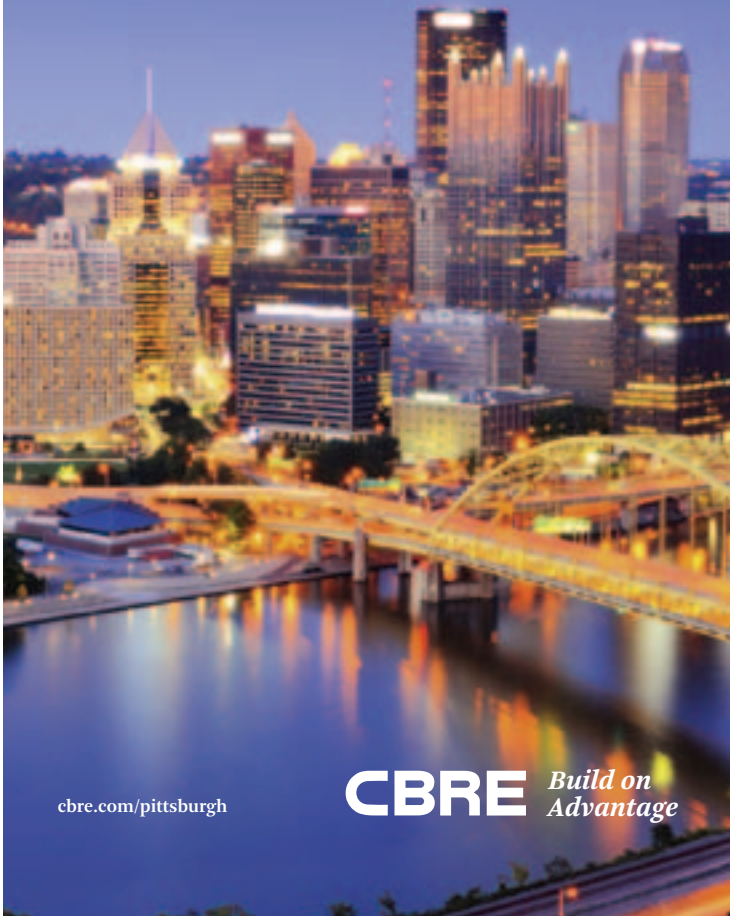
"I started researching UHPC years ago when we were doing urban furniture," recalls Jason. "You have to consider durability and there is a price point you have to hit. That limits you to wood or metals. I was attracted to UHPC because of the curves and shapes you could design. I'm sure you could do the same with metals but it would be cost-prohibitive."

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TAKTL panels were selected by Continuum Architects for the University of Wisconsin's School of Freshwater Sciences.

**“We’ve gone to market in a very unique way. We have no traditional sales force,” notes Lauren. “When someone calls here everyone in that room is capable of answering technical design questions to a very high level.”**

Whereas standard concrete has a compressive strength of roughly 4,000 pounds per square inch (psi) for commercial construction (and can be pushed as high as 10,000 psi in limited conditions), UHPC has compressive strength of 29,000 psi and flexural strength of up to 7,000 psi. The flexural strength of standard commercial or highway concrete is usually less than 1,000 psi. UHPC is mixed of the same basic materials as standard concrete. The qualities of additional strength and resistance to environment come from how the elements are mixed, controlling the particle size of the ingredients and how carefully that is weighed and mixed, along with how carefully it is cured.

“If you think about basketballs all packed together, that’s normal concrete and if you think about very small spheres, down to BB size, all packed in so there are no voids, that’s ultra high-performance concrete,” explains Lauren. “It



creates really strong molecular bonds. It eliminates pores that water can get through. So it has really great durability. It doesn't succumb to freeze/thaw cycles and is very resistant to salt."

These structural properties were attractive to the team at Forms+Surfaces but the opportunities for design were even more exciting. UHPC could be used to create a variety of panels and three-dimensional shapes that could have application across the globe. Attempts to reach an agreement with the German patent-holders proved fruitless but in the effort to do so, Forms+Surfaces came across a German formulation company that worked in UHPC. The PhD's at this second German company had earlier in their careers learned how to formulate ultra-high performance concrete with sufficient differences that there was no patent infringement. One of the scientists was also a structural engineer who was equally excited that there was interest in UHPC from a U.S. company that specialized in architectural products. They offered to help Forms+Surfaces with formulations using Forms+Surfaces existing molds.

"Initial experimentation led quickly to the range of beautiful surface textures, and from there the path into façade elements and developing the manufacturing process for casting thin, decorative panels with UHPC became obvious," Laurens says. "Not easy, but obvious."

Forms+Surfaces began to show the prototype castings to architects like HOK and Gensler at building products shows and receptions. The architects were generally familiar with what UHPC could do but had never had access to the material in any product form. From the meetings the manufacturer gained a lot of confidence that if they could create products, architects would use them.

Roger and Lauren Flannery had by that time spent 30 years with Forms+Surfaces and had a plan for succession in place. They decided to put that plan in place and committed fully to creating a new company that would use UHPC technology to develop architectural products. They assessed that there was an existing market for flat wall panels because of the use of glass fiber-reinforced concrete and fiber cement products. ASTM standards for lightweight composite concrete panels existed. They had a framework for developing the panels for the market.

The newly-formed TAKTL was able to get certification for its products and its manufacturing process. The Flannery's were living and working in California but decided that starting full-scale operations would require a move.

"We decided that if we're going to do this, we're going back to Pittsburgh because that's where you can get the

talent we need," recalls Lauren. "So in March 2010 we luckily found this empty plant that hadn't seen a tenant for a little while and we recruited industrial designers out of Carnegie Mellon's architectural school. We said if you want hands-on, we've got a startup. Come on board and you can help design this process because no one was doing it."

What Flannery had in mind was a highly-automated manufacturing process that could control the many variables, tight tolerances and a lot of experimentation in product development. Those first industrial designers managed to design such a process in the pilot plant on Route 8 in Shaler Township, a plant which quickly became a fully-operational manufacturing facility. While TAKTL has continued to work at developing new shapes, geometries and textures, the company experienced the kind of problem all startups dream of having: their product took off.

As the team had hoped, architects who designed exterior facades were thrilled with the chance to use a new material. By focusing so intently on creating good wall panels, TAKTL gained acceptance to the point that it struggles to think about new applications.

"We can't advance fast enough for a lot of designers, when it comes to shapes or applications that go beyond the fairly straight-forward," notes Kevin Gannon, director of project management and business development for TAKTL. "So far I would say close to 50 percent of the work we've done has been from an architect coming with their idea of the surface because we've become real experts at the molding. We collaborate with them and design a mold that is specific to their project."

The critical legacy that came over from Forms+Surfaces to TAKTL was the expertise in mold design and technology. The mold technology is a critical piece of the puzzle because the tolerances for the material are very tight and UHPC lends itself to small details and reveals. There is a significant amount of counseling that must occur between the architects and the manufacturer about what is possible versus what is practical. TAKTL spends time communicating what works and what doesn't with its architectural clients and has invested in that process by hiring only architects and industrial designers to interact with their clients.

"We've gone to market in a very unique way. We have no traditional sales force," notes Lauren. "When someone calls here everyone in that room is capable of answering technical design questions to a very high level."

Technical support is critical because TAKTL is vertically-integrated, controlling everything from mold design to the mix design to the manufacturing process of finished products. TAKTL can provide guidance to the designer and effectively give a "go or no go" determination on the feasibility of a creative design. The team at TAKTL is



fiercely protective of the value of UHPC and is willing to pass on opportunities if they feel the fit is poor.

"It's not unusual to have a first meeting with a designer and ask what is it that's bringing you to us?" say Gannon. "It's a fair question a lot of times. We want to know what they're after, what the priorities are because sometimes it's not the right fit and we'll tell them so. When it's a good fit there are a lot of things that you can do with the material."

Most of the applications for TAKTL panels have been in rain screen designs. The products have been installed by masons, glazers, curtain wall contractors and the relatively new and specialized field of façade contractors. Like with architects, TAKTL expects to have to educate the contractors, since there is a good chance the installer has not worked with UHPC before.

Despite the learning curve in the market, TAKTL found it had a hit within its first six months. Its products were being used on high-profile projects, designed by high-profile architects all over the country. The wall panels are being used in university, government, sports arena and commercial buildings. After three months in business, TAKTL received an R & D commendation from Architect Magazine, and the company won research and development and design awards in 2012 and 2015. TAKTL panels are currently being used in the construction of the National Museum of African-American History and Culture at the National Mall in Washington DC and the McMurtry Building for the Department of Art and Art History at Stanford University. The rapid acceptance led to some interesting problems.

One of TAKTL's headaches is that it has outgrown its space. In five years, the company has grown to 95 employees and that number would be growing faster were the market for engineering and administrative talent less tight. TAKTL recently agreed to add capacity by leasing 115,000 square feet of space at the RIDC Keystone Commons in Turtle Creek, choosing to expand in Pittsburgh instead of taking incentives to locate in Nevada. It has also taken a different tack to solving its workforce shortage concerns.

TAKTL has found that hiring and training workers with no previous experience has been more successful than trying to find applicable experience in candidates.

"The interesting thing is that there are not many career paths through vocational training for people who want to work with


their hands. Vocational training has swung very heavily towards technicians," observes Lauren. "What we are increasingly finding successful [is recruiting] mechanical engineers who actually like hands-on involvement with building things; industrial designers who don't want to just sit at a computer all day but want to get out and visit suppliers and track down materials and actually get involved, so that how we're positioning recruiting."

On the production floor, TAKTL has recruited a very diverse workforce. They make use of a project called "Get Paid," which is an out-placement program for inmates preparing to be released. TAKTL trains the potential worker prior to the end of his or her incarceration and if the training is successful, the ex-inmate is hired.

"The program is really great," says Lauren. "And it's been a great program for us."

For all the growth that has come from early success, there is a certain level of restraint shown by TAKTL's management. The team has great enthusiasm for its products and the potential for future development but at the same time you sense that the emphasis is more on getting it right and building a foundation than driving high growth. Perhaps because the owners have experienced growing a mature global manufacturing concern before, the motivation at TAKTL seems as much pioneering as commercial.

"We stand for something. We're all doing this because we think it's really an amazing material and it's an opportunity to bring something completely different to the field of architecture. We aren't motivated by being a world player or bigness for bigness sake," Lauren asserts. "By going up to the next level of production and having the orders come through the pipeline to support that, we will be able to drive a whole new generation of applications because we'll have more versatility at our fingertips. That also drives further cost reductions. We also can continue to make our production line have lower environmental impact. Really the way this has to grow is through regional geographic presence."

"The challenge for us will be to truly push the material and its ultimate applications to the appropriate level, which is high and broad," concludes Roger Flannery. 

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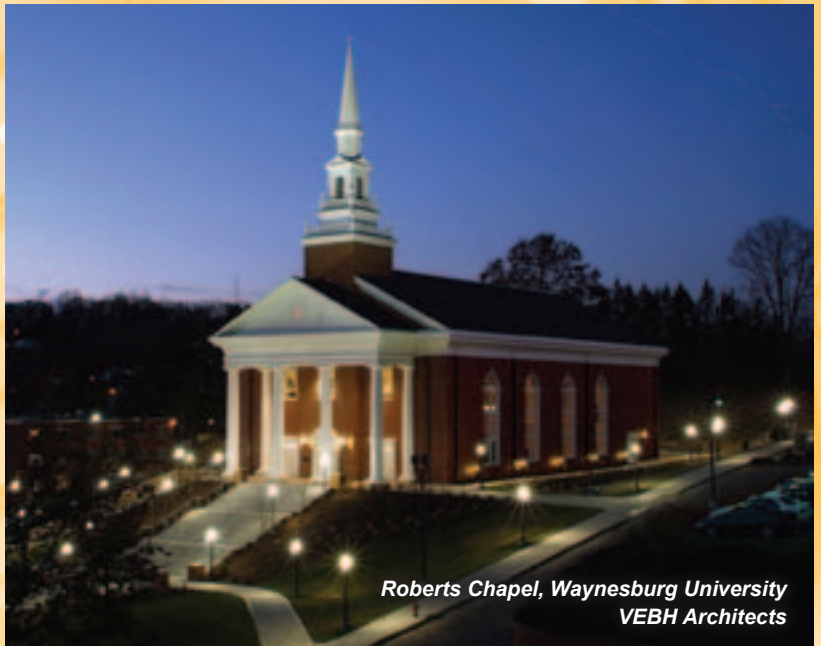
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# Financial Perspective

## Succession Planning: Managing the Transition

By Mike Shaw

You've not only been building structures, you've been building a business. And no matter how you plan to leave it – sell it, have a son or daughter take over, or even if you intend to die in the saddle – you need a succession plan. Every business should have one, but the construction business has its own unique set of requirements to have such a plan in place. Customers or project owners, sureties, bonding agents, the company's banks, anyone or any business that is a stakeholder in your projects wants to know what will happen if or when you are no longer in charge.

But the most important reasons to have a succession plan are, like any business owner, to ensure that you are rewarded for the work you have done over the course of your life, the work that has produced a business of value, and that you will be the one to decide how that business will continue when you are no longer at the controls.

According to Richard E. Spence of HBK CPAs and Consultants, a financial services firm with a specialty in advising construction companies, "a succession plan is a lot like a will. It's a little uncomfortable to consider not being around any more. So people have a tendency to put it off."

While a catastrophic plan – that is, what happens in case of an unexpected death or other circumstance that prevents you from continuing to operate the business – is part of succession planning, there are many more considerations. A long list of issues must be addressed to ensure that the business is passed along in the most financially advantageous way and will continue to operate stably and profitably. Those matters involve financial tools and decisions, but also people and their personal as well as business goals.

According to Mr. Spence, the goals of the owner in planning for succession typically fall into four categories:

- to control the transition, both in terms of timing and method of departure
- to assure his or her financial security and independence
- to maximize the value of the firm and mini-

mize the risk associated with succession

- to ensure as much as possible the continued success of the business

"Succession planning is a process that takes time and commitment," Mr. Spence noted. "People often mistakenly think of it as a financial transaction, the buying and selling of the company ownership. But just as important is managing the transition, ensuring the next generation management possesses the skills required to run the company."

### Building the team

"There are a lot of pieces in developing a plan," Mr. Spence argues, "and the first step in the process is assembling a team who will help develop then monitor the plan over time to ensure it remains current, making adjustments for such factors as economic conditions, tax law changes and changes in the business itself."

The team is likely to include the owner or owners and top management participants, particularly if the plan is to move ownership to people currently working in the firm. The company's lawyer, insurance agent, and accountant and tax advisor should also be on the team.

The issues the team must address are many and varied. Mr. Spence suggests the team consists of advisors familiar with the construction industry.

For example, a tax accounting team member should be familiar enough with the various tax methods unique to the construction industry to advise and forecast the impact of various alternatives on taxes and future cash flows.

Estate planning issues also weigh heavily in the development of a succession plan, and the estate planning professional member of the team should be able to advise on the impact of a stock versus asset sale, how an installment sale should be structured, and in the case of a sale to a family member, how much should be gifted versus sold. Potential estate tax problems should be



addressed as should the method for funding a buy-sell agreement, such as with life or disability insurance.

The cornerstone of the financial arrangement is the value of the business, that is, what it is worth. Valuing a construction business is a complex process combining science and market savvy. The team member responsible for valuation will help the owner determine the most beneficial of three approaches to valuation:

- Income approach, which focuses on operations and cash flows to determine the present value of future returns;
- Market approach, which considers similar industry transactions and uses the data to determine a required rate of return and a value multiple en route to determining current value; and
- Asset-based approach, which considers the balance sheet and the market value of assets vs. debt.

"Your advisors need to understand the industry nuances in order to properly complete this process," Mr. Spence summarizes.

### Goals, skills and timelines

The first job of the succession team is to discuss and establish goals for the succession plan, both personal and business. Options and challenges need to be identified and addressed.

The development of goals also involves multiple considerations: the owner's own goals and those of his or her family, both financial and professional, and not least in importance, his or her legacy, how the owner's stamp on the business will be recognized, honored, maintained. Goals for the business must consider several factors: the value of the firm, its financial capacity, how to structure it for success under the new management, and an understanding of its market strategy, its place and importance in its markets. An orderly transition plan will also identify the critical management skills and industry expertise a next manager will need, as well as the business relationships that must be maintained for the business to continue operating profitably.

The plan must also assess the goals of the potential successor manager or managers. It should document their commitment and abilities, skills and experience, and identify skills that still need to be developed. An honest evaluation must consider whether or not the identified successors have the ability and motivation to learn these skills. If not, the plan must accommodate bringing those skills in from the outside.

### Perhaps most critical to the plan is the timeline.

"Following through on the departure as scheduled by the timeline can be the hardest part for the owner," Mr. Spence offers. "A detailed action plan and agreed-upon timeline will go a long way to preventing such problems. The successor managers should participate in the decision-making process. They should also be gradually introduced into the relationships that have been key to the company's success, and as they become ready, take over those relationships. When the time for the transition comes, the successors not only will be equipped to step in and take over, but will have the confidence to do so."

### Honest, objective, dynamic

"These can be thorny issues, and they can be quite emotional," Mr. Spence warns. "They require the team leader, a trusted advisor, to ensure the issues are addressed in a timely manner and evaluations made with honesty and objectivity."

"As well, the plan has to be dynamic," he emphasizes. "It should be periodically revisited and updated to reflect changes in tax laws, the industry, the economy, and owners' and successors' economic and family matters. Succession planning must involve not only upfront decisions on the financial arrangements and transition process, but the commitment to make changes along the way as they are needed to ensure the spirit and intention of the plan is carried out."

For more information or questions contact Richard (Dick) Spence, CPA, CVA, CCIFP at 724/934-5300 or [rspence@hbkcpa.com](mailto:rspence@hbkcpa.com).

Mike Shaw is a free lance writer based in Atlanta, GA. 

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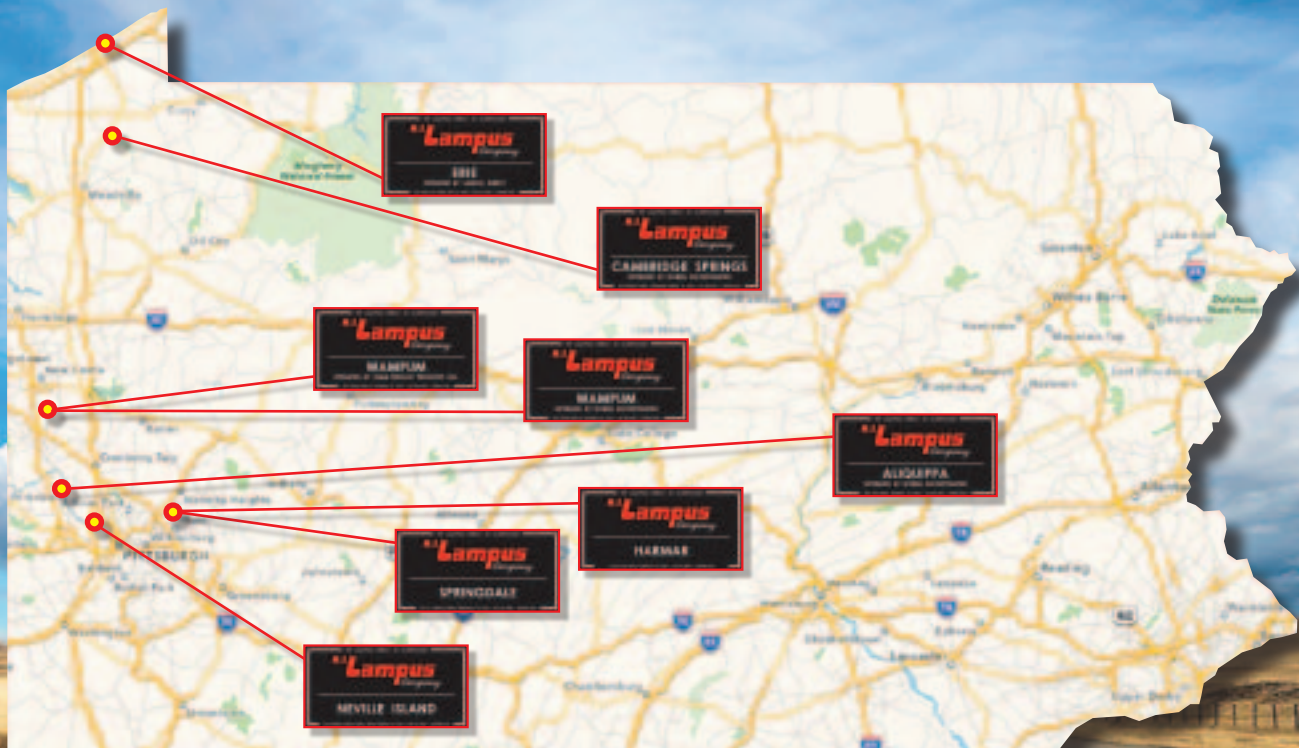
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# Management Perspective

## The New Landscape of the Construction Reporting Services

For decades when an architect started his or her own practice, there were two tools necessary to function: a drawing table (later a PC) and a set of Sweet's Catalogs. In the same way, a contractor starting a construction business needed Dodge Reports to feel like he or she was in business. Changes in technology and the markets had made these truisms obsolete for the past couple of decades but changes in the construction information business over the past 12 months have turned that industry on its ear, and made it more difficult for the construction industry to figure out who's on first in the information game.

McGraw-Hill's two venerable businesses operated as a virtual monopoly for nearly a century before competitors began nipping at their market share. While it's likely that the company lost its dominant market position years ago, there were still few in the construction industry that didn't know exactly what a Dodge Report was, even if the service in question wasn't Dodge's. Like Kleenex, Dodge Reports came to mean any lead on a construction project. So perhaps it should not be a surprise that it was McGraw-Hill that triggered the turmoil in that business.

"What is driving all this change is Terry McGraw decided to retire," Bill Black says succinctly. Black is CEO of CDC Publishing, which publishes Construction Data News and the CDCNews website. "He had teed up, through Evercore, a potential sale or reinvestment in McGraw-Hill Construction (MHC). It was the smallest of their companies and after Terry retired, the new CEO decided that they would sell rather than reinvest."

Harold "Terry" McGraw III had overseen his company's change from a book and magazine publishing business that had some of the marquis labels in American industry – Engineering News Record (ENR), Business Week, Aviation Week, Standard & Poor's to name a few – to a global financial information business. Selling McGraw-Hill Construction was one of the last steps that remained in eliminating the non-core businesses of what is now called McGraw Hill Financial. When McGraw-Hill Construction was put up for sale in February of 2014 the reaction rippled through the industry.

"It set off a chain reaction of events. It was very clear that Reed wasn't going to buy it because everyone would complain about anti-trust, so they became a seller not a buyer," explains Black. Reed Business Information owned

the second largest construction report, Reed Construction Data, which it quickly sold to Warburg Pincus in July 2014. "McGraw-Hill Construction had lost 30 percent of its revenues and a lot of its profits so it was hard to sell to a board [of directors] and not interesting to strategic buyers. That gave private equity the clear field to acquire it."

The sale of Dodge, Sweet's, ENR and Architectural Record attracted more than its fair share of interest, however. After the unit was offered to the market, roughly 20 companies submitted proposals. Saying that the response was too overwhelming to evaluate, McGraw Hill Financial reissued the request for buyers in July of 2014, at a higher price. In September, private equity firm Symphony Technology Group purchased the group for \$320 million, more than ten times MHC's earnings before interest, taxes, depreciation and amortization. Symphony has since put ENR and Architectural Record on the market.

That chain reaction Bill Black spoke of continued a month later. Genstar Capital, another private equity firm, acquired and combined iSqFt – a software tools and bid document service – and Bid Clerk in October of 2014. In January of this year, Genstar bought Black's CDC Publishing as part of a strategy to assemble mid-sized companies to create a larger competitor in the business. Within six months all of the national construction information services had changed hands.

A year before all the acquisition activity, another retirement had an impact that has created more competition and change the landscape in Western PA. Jim O'Malley, the founder of the Blue Book Network, retired by selling Blue Book to his employees. Blue Book was a national service that connected general contractors to the sub-contractors and supply chain through a directory and a limited bid management service called BB Bid. New CEO Richard Johnson has brought a number of ex-Dodge managers and is looking at construction bidding information as a growth opportunity, one that brought the Blue Book Network's online service to Pittsburgh in Fall 2014.

"Blue Book had the vast majority of general contractors, subs, suppliers and manufacturers indexed in the Blue Book nationally. The strategy was how to expand without having to print books," says Doug Bevill, business analyst at Blue Book Network and one of the ex-Dodge employees on Blue Book's management team. "Pittsburgh was close to our Philadelphia operation and manager Joe Corson was familiar with the market. It became our first Internet-only book."

The upheaval in the construction information industry has



even reached into Pennsylvania. The Pittsburgh Builders Exchange (PBX) has served as the plan room and construction report for Western PA since 1886, some five years before Frederick Dodge started his report in Boston. The PBX has been expanding and modernizing its services regularly during the past two decades under Del Walker's leadership but had been a model of stability in the chaotic industry, at least until this past March 27. On that date, the Mid-Atlantic Builders Exchange (MABX) unexpectedly shut its doors in Harrisburg, leaving 600 members without service. One month later, Walker and his board of directors decided to fill the void left in Central PA and expanded, hiring most of the staff of the MABX and re-branding itself as the Pennsylvania Builders Exchange.

Walker was reluctant to discuss the circumstances of the MABX closing but says that expansion plans may have been a distraction from the Builders Exchange's mission.

"The feedback we got from the Harrisburg members was that they threw the baby out with the bath water when they closed," says Walker. "With their invitation to bid services we got the sense that it was accomplishing what the Builders Exchange does. We thought closing was an overreaction."

The PBX is still in the early stages of reaching out to former members of the MABX and extending trial services to assure them of the information quality. Walker figures it will be a few months before the transition shakes out but says the early returns are that there is a void to fill. "The feedback we're getting is, thank Heaven - I still need a service," he says.

Del Walker's point underscores the dilemma that faces the players in the construction information business. New technology has made it easier for information to be shared, which adds to the competition for what were once proprietary services. Information services can now be highly customized and searched. Plans and specs are virtually all digital and most general contractors share them on their own website plan rooms. That has created competition of sorts for the information services that provided plan room services but the underlying need for information has actually increased the size of the market. In fact, the dollars being spent on construction information services in total has increased significantly since more competitors have gotten into the industry, even though the cost of most individual services has decreased.

"Technology alone makes the business grow. Having better information creates demand for more information," asserts Black. "Customers want speed. They want it now and if they can't find it at your website they want to be able to call someone to get it right now. There will be an increasing demand for information and for more services."

What has troubled the information providers is the response to the changes in the construction industry as a whole. An industry that relied on blueprints for hundreds of years has moved relatively quickly to smart phones. For information providers, rapid change in technology creates great opportunity but also great risk, since investing in the wrong emerging technology can backfire. This happened when Dodge invested in automation in the late 1980s. Automation costs went well over budget and the result was a system that caused service disruptions and cost 20 percent more to produce. Technology can also be a distraction from the real change that is occurring.


"The industry changed in a significant way but what hasn't changed is subs still need to know what general contractors are on the job," notes Bevell. "What has changed is the traditional design-bid-build model is no longer being used in many places. Subs still have to quote to the general contractor; they just don't have to quote 20 of them."

"There is still value in construction reporting, the ability to track projects, especially when it comes to subs and suppliers," says Walker. "I think the collection of data still has high value to the second and third layers of the supply chain. Accuracy, thoroughness and doing a good job at it are still important."

With the acquisitions there will likely be both cost-cutting and reinvestment. Dodge and CMD were part of large parent corporations and had bloated staffs that private equity will look to trim back. At the same time, all of the private equity owners also own technology businesses or other complementary construction information businesses and will look to leverage their new assets to grow their holdings. It should bring change to an industry that hasn't had much meaningful change in a while.

"The big companies haven't changed the way they do business for decades and this industry is changing drastically," Bevell says.

Bill Black believes the changes at the top of the food chain will ultimately help those companies and drive innovation for his customers. The two big players had institutionalized their inertia and customer needs did not always get a high priority. New ownership should change that he says.

"What's going to come out of this is that by freeing up the biggest players from their legacy companies it will be an exciting place to be over the next three-to-five years." 

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# Legal Perspective

## Do Owners Have A Legal Obligation To Disclose All They Know About Their Project Sites?

By Thomas J. Madigan, Esq.

Unanticipated subsurface conditions can greatly increase the time and cost of construction. When faced with such conditions, contractors understandably look to place responsibility for the additional costs on the owner. Owners, however, are not eager to assume such responsibility and often utilize contract disclaimers intended to avoid such risk.

Historically, Pennsylvania law favored the owner. Early decisions held that "a contractor is presumed, in the absence of an express provision to the contrary, to have assumed the risk of unforeseen contingencies arising during the course of the work." *O'Neill Constr. Co. v. Philadelphia*, 6 A.2d 525, 526-27 (Pa. 1939), citing *Cramp & Co. v. Cent. Realty Corp.*, 268 Pa. 14, 20 (Pa. 1920). Owners had no duty to provide or disclose information, *O'Neill*, 6 A.2d at 529, and contractual disclaimers warning contractors not to rely on any information that was provided were strictly enforced. *O'Neill*, 6 A.2d at 528; *Mundy Paving & Constr. Co. v. Delaware Cnty.*, 299 Pa. 225 (Pa. 1930).

Over time, Pennsylvania followed the lead of other jurisdictions and softened its position. In *Pennsylvania Turnpike Commission v. Smith*, 39 A.2d 139 (Pa. 1944), the Pennsylvania Supreme Court held that the government committed "constructive fraud" by publishing subsurface information it knew to be inaccurate. According to the court, this "constructive fraud" rendered the contract disclaimers invalid and shifted the risk of unforeseen conditions to the government. Since *Smith*, Pennsylvania courts have steadily chipped away at the earlier rulings to the point where their continued vitality is in question. In *Acchione & Canuso, Inc. v. PennDOT*, 461 A.2d 765 (Pa. 1983), the Pennsylvania Supreme Court reaffirmed *Smith* and extended it to misrepresentations that were made "innocently," i.e., without actual knowledge that they were false. In answer to a pre-bid question, PennDOT instructed bidders to assume that 50 percent of existing in-ground conduit could be reused. Subsequent testing proved that a substantial amount of the conduit could not be reused. Although there was no evidence to suggest that PennDOT knew that the conduit was not reusable,



the court found that the direction to assume that it was reusable "amounted to" a misrepresentation because it was made carelessly.

But what of the situation where the owner made no statement; where the documents were silent about something of which the owner was, or should have been, aware? In the absence of some statement or representation, was the mere failure to disclose what the owner knew a basis for holding it liable?

Until fairly recently, the answer appeared to be no. Because constructive fraud required a "positive representation," the absence of any representation would preclude its application. For example, in *Black Top Paving Co. v. Pennsylvania Department of Transportation*, 466 A.2d 774 (Pa. Commw. Ct. 1983), the bid documents included no information regarding the existing base course. In the absence of any information, the contractor assumed that the base course would be of "typical" make up and consistency. As it turned out, the existing base course was "soft and spongy." The contractor claimed that PennDOT committed constructive fraud because it was aware of the poor condition of the base course and failed to disclose it. The court denied the contractor's claim, holding that, in the absence of a positive representation regarding the base course, "any assumptions as to [its] quality, density or firmness were the contractor's alone."

In the ensuing years, however, several courts have employed an expansive definition of “positive representation” and perhaps signaled a willingness to hold the owner liable for simply failing to provide pertinent information in its possession. The first of these cases was *A.G. Cullen Construction, Inc. v. State System of Higher Education*, 898 A.2d 1145 (Pa. Commw. Ct. 2006), in which the government was held liable for additional costs due to the presence of lead paint in a building that was more than 100 years old. Prior to construction, the existing windows (which were to be replaced) were tested and found to contain lead paint. Due to simple inadvertence, however, the test results were not included in the bid documents. In denying liability, the government argued that the presence of lead paint in a 100-year-old building was neither unusual nor unforeseeable, and it had made no representations regarding the presence, or absence, of lead-containing materials. The Board of Claims rejected this argument and found that a statement in the instructions to bidders that “any lead containing materials affected by the project would be addressed” was tantamount to a misrepresentation that none was known to exist. On appeal, the Commonwealth Court affirmed.

In *Department of General Services v. Pittsburgh Building Co.*, 920 A.2d 973 (Pa. Commw. Ct. 2007), the Department of General Services (DGS) issued a report indicating that the project site was “balanced,” such that soil from cut operations could be used for fill without the need to import or export soil. The report further indicated that all soil on the site was suitable for use as fill. At the time the report was provided to bidders, however, DGS had an internal memo calling into question whether the site materials were suitable for fill during winter months. As it turned out, site work ended up being performed during the winter, and the soils proved to be too wet for use as fill. As a result, the contractor had to import a substantial amount of dirt. The court found that the failure to disclose the internal memo was significant because it contradicted, or at least called into question, the information provided to bidders. The court further found that, in light of the internal memo, the statements regarding the suitability of the fill were made with the knowledge that they might be inaccurate, which, under the rationale of *Acchione*, “amounted to” a misrepresentation.

Although both courts clearly disapproved of the failure to provide what they considered relevant information, neither case held that the failure to provide the information by itself constituted constructive fraud. To the contrary, in both cases, the court found that positive representations had been made — that no lead-containing materials were known to exist (through the statement that they would be addressed if found) in *A.G. Cullen* and that the soils were suitable for fill in *Pittsburgh Building*. However, these cases — and, in particular, a single sentence in the *Pittsburgh Building* decision — have subsequently been cited for the much broader proposition that a positive representa-

tion is no longer required and the mere failure to provide information may constitute “constructive fraud.”

In *Pennsylvania State System of Higher Education v. Lyons Construction Services, Inc.*, No. 3916, 2013 PA Bd. Claims LEXIS 1 (Pa. Bd. Claims Jan. 18, 2013), the Board of Claims (Board) accepted this argument and found that the government committed constructive fraud when it failed to warn that accurately described subsurface conditions were prone to drilling-induced sinkhole formation. In so holding, the Board cited to *Pittsburgh Building* for the proposition that “constructive fraud can be found in cases where the government has not made an ‘affirmative representation’ but [has] failed to disclose relevant information which was at odds with documents provided to bidders.” Although the phrase “at odds with documents provided” implies that the System of Higher Education (System) made some sort of statement or representation contrary to the information it failed to disclose, this was not the case. Instead, the Board found that the failure to warn of the risk of sinkholes created the impression that there was no risk. According to the Board, because the System knew that there was a risk, this impression was misleading.


The project site was located within a geologic formation known to be prone to sinkhole formation, particularly during construction activities. The geotechnical report given to bidders accurately identified the area’s geology, as well as the specific rock, soil and groundwater conditions underlying the site. The report made no mention, however, that this geology was susceptible to sinkhole formation. The contractor acknowledged it was generally aware of the risk of drilling-induced sinkholes in the type of geology described. It argued, however, that it was the practice and standard in the geotechnical industry to specifically warn of this risk and to provide mitigation measures in the specifications. According to the contractor, it interpreted the absence of any warning as an indication that the System had determined that there was no risk of subsidence. The Board accepted this argument, holding that the absence of a warning “constituted an affirmative representation that significant sinkhole development was not expected on the Project site (which later proved to be false and misleading as substantial sinkhole activity developed on the site.)” The Board further found that the failure to disclose the occurrence of sinkholes during the construction of other buildings on campus contradicted the impression conveyed by the lack of warning and thus “amounted to” a material misrepresentation.

Because the Board found in favor of the System on the balance of the issues in dispute and the case then settled on appeal, the Commonwealth Court did not review the Board’s reasoning. Thus, to what extent the Board’s rationale will prevail in subsequent cases is not known. At least one Court of Common Pleas would appear to be inclined to disagree with the Board. In *Mar-Paul Co. v. Jim Thorpe Area School District*, 7 Pa. D. & C. 5th 387, 404 (Pa. Com.

Pl. Ct. 2008), the Court of Common Pleas of Carbon County expressed skepticism of a contractor's argument that the failure to disclose information, by itself, was sufficient to support a claim of constructive fraud. In a lengthy footnote, the court opined :

While the court in Pittsburgh Building Co., held that an affirmative representation is not required for constructive fraud to exist [and] that a representation which is misleading in light of other information known and withheld by the government agency is sufficient — whether the representation is false or misleading is a separate question from whether there has been a positive representation which the contractor has the right to rely upon. [citation omitted] *Acchione*, as well as the Supreme Court precedents on which it is based, requires that a positive misrepresentation be made to support a claim of constructive fraud. . . . Standing alone, and absent any representations to the contrary, there appears to be no separate and affirmative duty on a government agency to disclose to prospective bidders adverse subsurface conditions of which it is aware.

To what extent the Commonwealth Court would endorse the Board's expansive reading of *Acchione* is yet to be seen. Moreover, whether the failure to disclose relevant information, in and of itself, can constitute constructive fraud will ultimately have to be decided by the Pennsylvania Supreme Court, which has not addressed the subject since it issued its opinion in *Acchione* more than 30 years ago.

*About the author: Thomas J. Madigan is a partner with Pepper Hamilton LLP, resident in the Pittsburgh office. He is a member of the firm's Construction and Government Contracts Practice Groups. Mr. Madigan practices in commercial litigation, with an emphasis on construction-related claims. He can be reached at 412.454.5883 or madigant@pepperlaw.com.* 

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The Associated General Contractors of America has selected Pittsburgh to hold its 2015 Construction Leadership Development Conference. This conference will be co-hosted by the MBA Young Constructors and the Constructors Association of Western PA Construction Leadership Council. This three-day event unites emerging construction leaders from across the country in various construction sectors to network, learn, and share. The MBA and CAWP worked hard to create a unique program on how to improve your performance in the industry, while also showcasing the City of Pittsburgh. Key highlights from the conference include:

- Keynote Address by Rocky Bleier, a war Veteran, four-time Super Bowl champion with the Pittsburgh Steelers and construction entrepreneur.
- Duquesne University Business Ethics Department will demonstrate ways to think critically through the decision-making process as well as how to manage and lead employees to do the same.
- How to use technology to promote careers in construction.
- Building Tour: Carnegie Mellon University Scott Hall, a complicated 100,000 SF cantilever structure that will be home for the university's new home for nanofabrication, energy and biomedical engineering.
- Opening Reception held at the world's only convention center with two LEED certifications (GOLD in new construction and PLATINUM in existing building). Closing Reception held aboard the Gateway Clipper to enjoy the sights of Pittsburgh while enjoying live music.
- Plus many other exciting events are on the agenda.

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# MBE/WBE Company Spotlight

## MARVIN MILLER ARCHITECT

Marvin Miller is a quiet sole practitioner whose experiences run the gamut from designing spent nuclear fuel cell storage facilities in Idaho Falls to working with General Motors to renovating houses in Homewood. He tackles his profession with a practicality that is focused on solving the problems his clients present today.

"When you're an architect and you get into your 50s – and now I'm in my early 60s – you develop a skill set that says this is a problem, how do we solve it? With certain owners, they need an architect to use his mind to solve a problem," he explains. "For bigger projects, you need a team of architects to come up with a design and put it together but for smaller projects, some clients just want to solve a specific problem and I was able to do that and continue to do that."

Miller grew up in Homewood Brushton. While at Westinghouse High School, Miller heard Walter Roberts speak about architecture and became interested in the profession. He took a pre-architecture class at Carnegie Mellon University and began to research colleges with architectural programs, eventually choosing Hampton University in Hampton VA.

He started his career working for the Pittsburgh Public Schools, doing drafting for the facilities department in 1977. At that time there was a program of window replacements at Pittsburgh schools and Miller got to know two architects – Mike Chirigos and Mike Ignelzi – who were partners and had been commissioned to do a few projects. Chirigos and Ignelzi liked working with Miller and asked him to join their firm as a graduate architect.

Miller gained experience working on a variety of commercial projects for Chirigos and Ignelzi before

leaving for several other small firms, eventually spending a few years working for the City of Pittsburgh. It was while he was working at the city that Miller received an offer to join one of Pittsburgh's largest engineering firms, Peter F. Loftus Engineers, which was part of the Eichleay Corporation.



Marvin Miller

Computer aided drafting (CAD) was emerging as a new technology when Miller started with Loftus. His aptitude with CAD and his multi-state registration gained him experience working on large projects for NASA, Bettis Atomic Lab and General Motors and got the opportunity to see some of the research facilities where GM was developing new materials and technologies. Some of those were at GM's proving grounds in Milford, MI, where Miller got to see new models being test-driven during the late 1990s. He recalls that the vehicles were shrouded to keep them secret. Among the models was the ill-fated Pontiac Aztek.

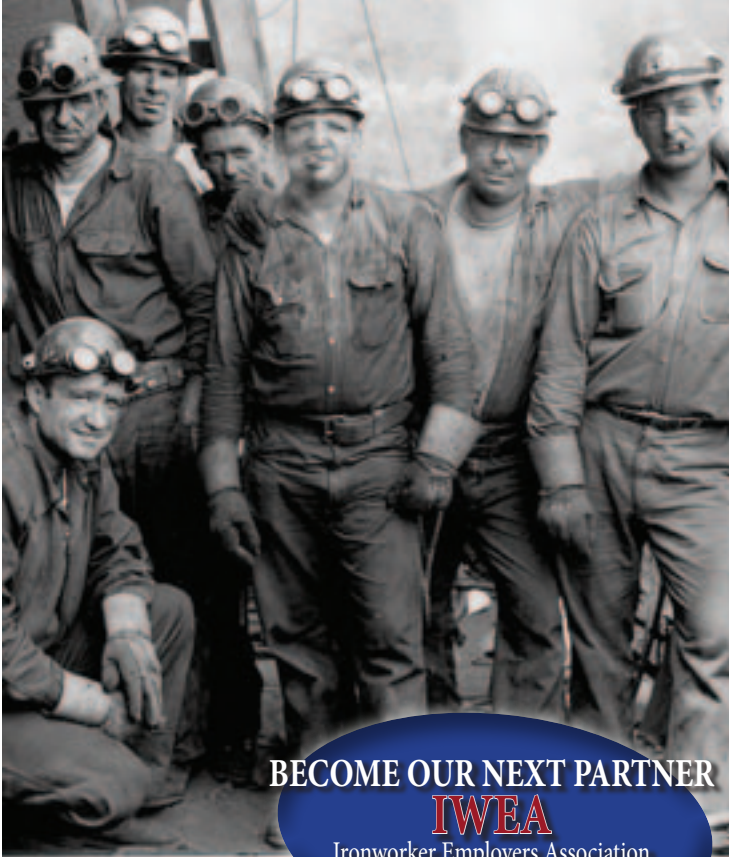
**"For bigger projects, you need a team of architects to come up with a design and put it together but for smaller projects, some clients just want to solve a specific problem and I was able to do that and continue to do that."**

"Some of them they should have left the shrouds on," he laughs. "They might have done better that way."

During the nine years he worked at Loftus and Eichleay, Miller gained broad experience, working on clean



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rooms in Silicon Valley, for example, and helping to make the Carnegie and Scaife Art Gallery become more energy efficient. But in August 2002, Eichleay went into receivership as a result of financial troubles. The company's employees were scattered around the city. After a short time at Astorino, working on the design of the new Children's Hospital, Miller decided to pursue an opportunity to start his own practice.

Duquesne University had partnered with the state to create an entrepreneurship program, providing an advisor who could give practical tips for day-to-day operations while participants took classes at the Lee Iacocca Business School. Miller had been doing side projects while employed at the larger firms but the entrepreneurship program gave him the insight that he would need to commit fully to self-employment.

"I realized that if I wanted to do this full-time, I had to think about it full-time," he recalls. The Duquesne program was an eight-week program that met bi-weekly and gave Miller the tools to launch his practice confidently. Like many small practices, Miller set up an office at his home to keep his overhead down. Because of advances in technology his space demands weren't great.

"At that point you needed a PC, a printer and a drafting board to lay your drawings out," he says. "My late wife was working at FedEx so we still had income. I hit the ground running, making contacts at local agencies and doing some residential and light commercial. It just grew from there."

Although his client base grew, Miller chose to remain a sole practitioner, using technology to get production help from a former colleague when work is busy. His daughter, an interior designer, also pitches in when Miller needs the extra hands.

*New homes designed for  
the URA in Homewood.*






"There's a niche for single-person firms to do things," he asserts. "I work for the school board. They call me consistently, almost like a lawyer, to ask me to take a look at a building or do some small project because they have downsized. They need something done right away and they don't need an entourage. I design something and then work with the contractor after it bids to get it done."

Miller is also working for Action Housing Inc. designing some of the new homes that it is developing in communities like Wilksburg, where he was the architect for townhouses on Peebles Street. The variety of challenges he gets from his clients have him satisfied with his place in the industry.

"I'm in the driver's seat at this time in my career. I like what I do. I continue to service clients ethically; get the work done; give them good design and help them make good decisions."

To give back to the industry and the community, Miller serves the National Organization of Minority Architects to attract minority professionals to Pittsburgh. The organization provides minority architects with the practical experience of seasoned architects like Miller to help them ease the transition from graduate architect to a value-adding designer.

"It takes a lot of experience to become an architect. You can pass the test but you have to have the confidence to make sure you follow the code, that you're not doing something that a contractor cannot understand, that your drawings can pass inspection," he says. "It's like young lawyers, young doctors have to gain that experience over time and you have to work with other colleagues who have that experience. There are no short cuts." 



## COMPANY FACTS

**Marvin Miller**  
**Architect**

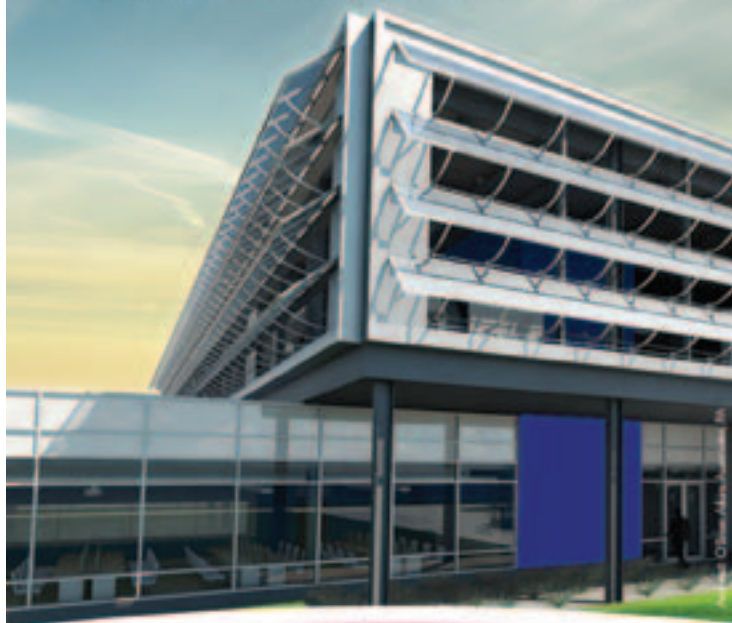
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# Trend to Watch



## Construction Demographics Add to the Workforce Problem

Like most industries in most cities, attracting and retaining a skilled workforce has overtaken most other problems for the American business owner. For a variety of reasons this trend is more exaggerated in construction than in most other industries.

Two major influences have put the construction industry in a position of scarcity. One is the impact of the recession of 2007-2009. The precipitous nature of the crash led to steeper and swifter payroll cuts than in other recent downturns. In architecture, for example, the recession cost nearly 40 percent of the pre-recession employment by 2010. As the economy recovered many architects put their training to work in pursuits other than designing construction projects. The same trend has surfaced with craft workers. This was especially true in markets that had previously overheated, like Las Vegas or Central Florida, which have not rebounded to earlier construction volumes.

John Sadosky is executive vice president at A & J Concrete in Las Vegas. After more than a decade working as an estimator and project manager in Pittsburgh, Sadosky relocated to Las Vegas in 2004, at the height of that city's construction boom prior to the financial crisis. Having seen hundreds of resumes during the downturn, Sadosky now finds his biggest challenge is recruiting, especially for his company's Southwestern office in Houston. Even offering premium salaries isn't boosting the number of candidates and his experience with college recruiting is no better.

"We hired a young man from Clemson and a young woman from Arizona State this spring," Sadosky reports. "We also interviewed and made offers at UNLV, Texas A&M, Kansas State and University of Florida. We planned to bring in five graduates. We got two."

Construction was not an industry that parents and counselors advised young people to pursue over the past generation. Baby Boomers were the first American generation that had more college grads than not. Boomers made college attendance almost mandatory for their children. This societal trend was exaggerated by government

policies that encouraged college education, including the policies that remain from the No Child Left Behind initiative. Those policies use metrics to measure – and fund – school districts. One of those metrics is the percentage of college attendees a school produces. Since encouraging students to pursue trades rather than college could decrease federal funding, public schools have a strong incentive to steer its students away from learning a trade.

Undoing a generation or more of social pressure is difficult but not impossible. In areas desperately short of workers, technical trades have redoubled efforts to market their industries. While there are solutions that can be used to attract trained workers back to the construction industry, the second factor influencing the skilled workforce size isn't so easy to fix: the changing demographics.

Baby Boomers are aging, and they are working longer. Between 1992 and 2012, the civilian labor force over 55 more than doubled. The U.S. Department of Labor projects it will grow a further 29 percent by 2022. At the same time, the number of workers between 16 and 24 is shrinking – by about 1 percent between 1992 and 2012, but falling by an expected 13 percent by 2022.

That demographic dilemma is very similar to the one that faces metropolitan Pittsburgh as the city tries to attract people and workers. The goal isn't to grow as much as it is to simply replace those that are leaving. In the case of Pittsburgh's population, the problem is that the mid-1980s Diaspora left a hole in the population. Older residents stayed while younger ones moved to chase jobs. That means more Pittsburghers are dying than are being born every day. Young people are moving to the region in greater numbers but there are so many more workers over the age of 55 that by 2025, there will be 140,000 jobs to replace for which there are no replacements at the moment.

The stigma of blue collar work described above helped create the hole in construction's demographics but the industry's issue is the same as Pittsburgh's. The two largest demographic cohorts in the construction industry are the workers over the age of 45 and the age of 35, but the cohort that is growing fastest is that between the ages of 55 and 64. Because of that, roughly one in three of today's workers will be over the age of 65 in 2025. Unlike the majority of the workforce, construction workers are less

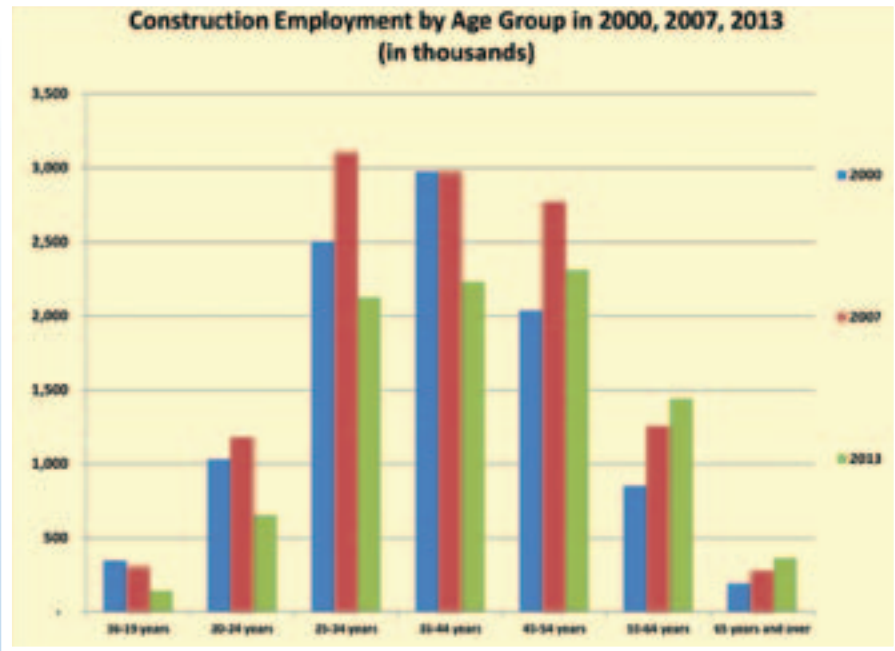
likely to extend their careers beyond 65 because of the physical demands.

If there is an upside to this problem, it is that the trend didn't sneak up on the industry. Demographics are easy to observe. All people age at the same rate so that huge group of workers over the age of 55 was apparent ten years ago when the workers were 45. And there is some evidence that efforts to attract younger people to the industry are working.

Insurance market researcher Advisen conducted a survey in November 2014 of construction-related businesses, asking which demographic group had increased or declined since 2009. The survey responses showed 20 percent of the companies said that the workforce under 30 was higher, while the largest cohort was the workers between the ages of 30 and 49. Only 21 percent of the companies reported that its percentage of workers over 50 was higher. Only 13 percent responded that its share of workers over 50 and under 30 had both increased.

That survey was disproportionately weighted towards large companies, however. Of those surveyed, 92 percent had payrolls of 100 or more employees and 57 percent had 500 or more. In Western PA, companies with 100 or more make up a smaller percentage of the total universe and there are less than a handful of construction companies with 500 or more employees. But the trends observed nationally are prevalent locally.

The Master Builders' Association conducted a similar survey of its general contractor members. Although two-thirds of those firms have less than 100 employees, 28 percent reported that their largest cohort of workers was under the age of 30 and the next largest cohort was over the age of 50. Only one in six responded that the makeup of their organization hadn't changed during the past five years.



*The share of aging construction workers has grown while the number of younger workers has declined.*

**If companies aren't working to get younger today, the demographics present a future problem too. The peak of the Baby Boom was in 1955.**

If companies aren't working to get younger today, the demographics present a future problem too. The peak of the Baby Boom was in 1955. Because many in that generation delayed having children, the peak of the next generation was roughly 1985. That means that the largest share of the Millennials are already in the workforce and beyond the age to influence career paths, or at least first career paths.

Kenneth Simonson, chief economist for the Associated General Contractors of America, points out the simple math of the demographic situation.

"If there is a higher percentage of older workers over the age of, fill in the blank, that would suggest that we will have to replace a higher share of workers than in other cohorts," Simonson notes. "It's also interesting that the cohort of new workers that would replace older workers, say 18- to 21-year-olds, is no longer growing. The number of immigrants – whether it's gross immigration or net – is also declining."

The scenario Simonson describes suggests that America's demographics have left the cupboard empty at a time when the need is greatest. As the largest generation ever born (now second largest) begins to move out of the



workplace, its children have already moved into the workplace over the past decade, and they haven't moved into construction. The demographic support for the next wave of construction workers will come from the much smaller group of post-Echo Boomers.

Business owners have time to mitigate the negative effects of the changing demographics on their organiza-

tions, but the challenge requires a different management focus.

Mark Breslin is a business strategist, author and speaker who specializes in helping companies manage change. He writes about dealing with what he calls the coming "great crew change" in his Breslin Strategies Report. He lays out a five-point strategy that calls for identifying the retire-

ment timelines for key staff and implementing (or strengthening) mentoring and training programs so that there is a prepared next generation of leaders. His definition of leaders may surprise you. Breslin urges special emphasis on mentoring and training front line field supervision and even entry level hires and apprentices. Future profits depend on their ability to produce and bill.

Breslin's approach to the first point is especially interesting. He suggests plotting the retirement curve of all key employees by doing a demographic analysis. This should give owners an indication of all the managers who are eligible to leave. Understanding how many of them are going to retire with the next five-to-seven years will give ownership an understanding of just how urgent the problem is for the organization.

If your company is actively working a plan to replace the aging Boomers in your office, you are in the minority. Breslin estimates that only one in four is in that category, while half the companies are aware and talking about the problem. The remaining 25 percent are ignoring the problem, risking being a victim of demographics that can't be ignored. **BG**



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# INDUSTRY & COMMUNITY NEWS

## ACE Mentor Celebrates Graduates

The Western PA chapter of ACE Mentor held its annual gala celebrating its mentors and students on May 20 at the Renaissance Hotel. The Celebrate Ace: 2015 recognized the pro-

grams volunteers, mentors and students. ACE also awarded scholarships to three of its students.



ACE lead mentors Bethany Yoder from Cannon Design/ASTORINO (left) and Anastasia Herk from IBACOS at the Celebrate ACE gala.



ACE Mentor Program Western PA Chair Mike Barnard from Oxford Development with scholarship winners Isabel Sund, Max Magera and Grace Manning.



The team of ACE Mentors for 2014-2015.



Celebrate Ace: 2015 event chair George Halkias of Stantec welcomes the attendees.

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## March of Dimes Honors Dunleavy, Regional Construction Projects

The March of Dimes held its fifth annual Transportation, Building & Construction awards luncheon on June 17 at the Westin. IBEW #5 Business Manager Mike Dunleavy was honored as Labor Leader of the Year. The projects recognized were the AHN Health & Wellness Pavilion, the Route 28/ East Ohio Street Reconstruction and the Shale Development at the Pittsburgh International Airport.

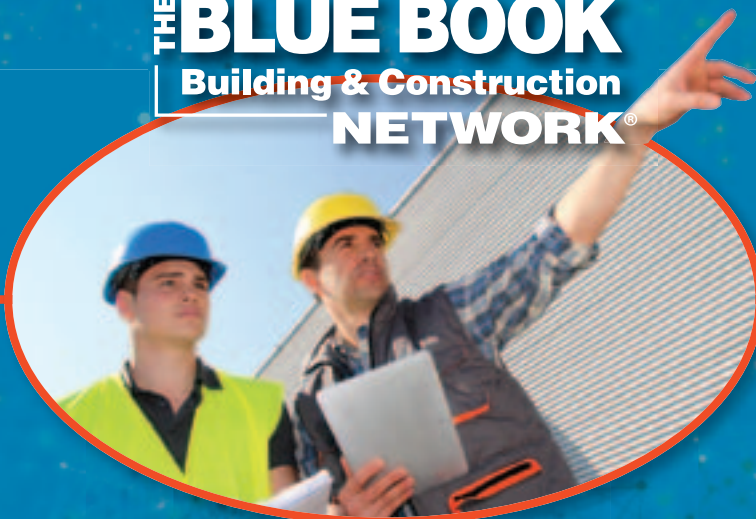


Sherie Parrish and Nick Gann from Sippel Steel, with PJ Dick's Walter Czekaj and PNC's John Robinson.

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(From left) Sargent Electric's Jack Powell with Highmark's John Norbut and Jim Gloeckler from Hatzel & Buehler.



NECA Executive Director Chad Jones (left) with Jeff Queen from Central Data Systems and Lighthouse Electric's Anton Mikec (right).





Doug Durbin (left) and John Mroz from Facility Support Services with Cohen Seglias' Lisa Wampler and Lori Azzara (right).



(From left) Pat Perry from Mosites Construction, Jason Mead from RJ Bridges, Mosites' Dean Beresford and Brad Bridges.



(From left) Burchick's Joe Scaramuzzo, Mike Werthele from Whitney Bailey Cox & Magnani with Burchick's Dave Meuschke and Brian Chlop.



Representing the winning team for the 6th Annual YC Golf Outing were Steve Greene of Kalkreuth Roofing (left) with Sam Felicetti and Bobby Butler of The Blue Book Network.

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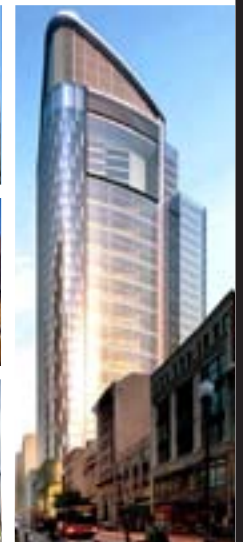


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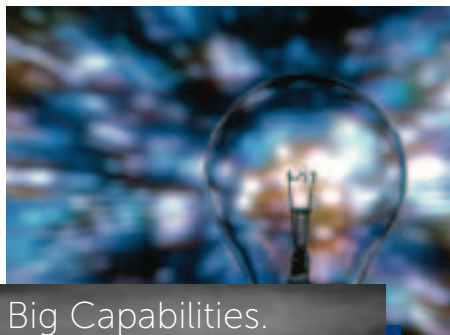
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(From left) George Dobbs from AIM Construction, UPMC's Aaron Burnett, AIM's Tim Belanger, and Chris Jaeger from UPMC.



(From left) Oxford Development's Mike Barnard, Gary Stiles from Keystone Spring, and Clark Hill's Danny Cerrone and Sam Hornak.



MBA Executive Director Jack Ramage (left) with Ray Vogel, Joe Beck and George Ehringer (right).



(From left) Paul Messineo Jr. from Allen & Shariff, Craig Stevenson from James Construction, Todd Palcic and Rob Pfaffmann at the GBA' 2030 District update at the PPG Wintergarden.



Representing A. Martini & Company at the CREW golf outing at Allegheny Country Club were (left-to-right) John Fetsko, Angelo Martini Jr., Anthony Martini and Zach Roberts.



RB VetCo's Rocky Bleier (left) with Dana and Duffy Hanna at the Gridiron Gold event June 6.



The MBA's Chelsea Carr (back left) and Jon O'Brien (center) with three of the winners of the MBA Kids Construction Art Contest. The winners were Hayden Maher from Jefferson Elementary School, Mt. Lebanon School District; Timmy Conlan from Paynter Elementary School, Baldwin-Whitehall School District; Mackenzie Hirt from Paynter Elementary School, Baldwin-Whitehall School District; Sophia Gonzalez from Jefferson Elementary School, Mt. Lebanon School District; and Jayson Erol from Paynter Elementary School, Baldwin-Whitehall School District.



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# AWARDS & CONTRACTS

**Rycon Construction** was the successful contractor on the narthex expansion and new parking lot for St. Sebastian Catholic Church in Ross Township. Brenenborg Brown Group is the architect.

**FMS Construction** was awarded several projects by the University of Pittsburgh for completion during the summer break. FMS Construction was successful on the Litchfield Towers C Restroom Renovations, Fitzgerald Field House Locker Rooms and Amos Hall Ground Floor Retail.

**FMS Construction** was selected to do the tenant improvements for Kuhn's Market at the Allison Park Shopping Center in Hampton Township. Ralph Murovich & Associates is the architect for the \$2.5 million renovation to 24,000 square feet of space.

Robert Morris University selected **Mosites Construction** to do façade and interior renovations to the Patrick Henry Library at its Moon Township campus. Ross Bianco, Architect designed the \$2.5 million project.

**Mosites Construction** was awarded the concrete package for the \$40 million Milan Puskar Stadium Renovations at West Virginia University in Morgantown. The architect for the project is Heery International, Inc. The construction manager is PJ Dick Inc./Hunt Construction.

**Nello Construction Co.** is renovating the exterior and interior of 313-317 Main Street in the West End for Miller Processing and The Proud Company. Pfaffmann & Associates is the architect for the \$1.5 million project.

The Village Theater Co. selected **A. Martini & Co.** as contractor for its new 11,800 square-foot theater in Sewickley. The project's architect is Balog Steines Hendricks & Manchester Architects.

**A. Martini & Co.** was the successful contractor for the \$1.8 million third phase of additions and renovations to St. Ferdinand Roman Catholic Church in Cranberry Township. Ralph Sterzinger from RSSC Architects is the architect. The 11,390 square foot project will consist of additions to the school and interior renovations to the church.

**A. Martini & Co.** was recently awarded the contract for the renovation and expansion of the Riverview Children's Center in Verona. Groundbreaking is set for August. The architect is Riverside Architecture.

**Facility Support Services, LLC (FSS)** was recently awarded a \$5.9 million contract for the Wallops Island Fire Station project located at NASA's Wallops Flight Facility, Wallops Island, Virginia. The project is for the new construction of a 16,900 square-foot Fire Station designed to Leadership in Energy & Environmental Design (LEED) Silver standards.

**FSS** was recently awarded a contract for multiple classroom renovations at the University of Pittsburgh's David Lawrence Hall and the Cathedral of Learning. This project has a quick turnaround to ensure occupancy by August 2015. Currently, FSS is on site at David Lawrence Hall completing the interior renovation of the auditorium.

Duquesne University has awarded three interior renovation projects to **FSS**. These projects include the Laval House improvements, 4th Floor Ball Room at the Union Building and the College Hall Office Suite renovations. All three projects are scheduled to be completed by July 2015.

**Volpatt Construction** was awarded a contract from the Roman Catholic Diocese of Pittsburgh for renovations to the diocesan offices and pastoral center in downtown Pittsburgh. LGA partners is the architect.

University of Pittsburgh awarded **Volpatt Construction** a contract for the Sennott Square Third Floor Psychiatric Renovation. Volpatt was also the successful contractor on Pitt's Vault Recording Studio. Yanchar Design & Consulting Group is the architect on the \$500,000 Vault Studio.

**Volpatt Construction** has started work on Phase 5 of the Stewart Hall Science Center at Waynesburg University. The \$2.65 million phase was designed by VEBH Architects.

**dck worldwide** was recently awarded a contract for a new condominium project in downtown Phoenix, Arizona, by Sencorp. This 59,000 square-foot, 49-unit complex was designed for the live/work lifestyle and will be located near an expansive 32-acre park and Roosevelt Row, a nationally renowned arts district. The project, scheduled to begin construction in mid-July, is the first phase of a possible four-phase project.

**Rycon Construction** was the low bidder on the \$12.2 million renovation of the West Virginia University School of Law

building. Designed by Strada, the 142,000 sq. ft. project is scheduled for completion before the start of the 2016 fall semester.

**Rycon's Building Group** is preparing a building pad for future retail development as well as a new Dick's Sporting Goods at Greenwood Plaza in Butler at a total cost of nearly \$5 million.

In Cambridge, MA, **Rycon's Special Projects Group** will begin renovations at Panda Express within Cambridgeside Galleria. The \$450,000, 800 sq. ft. project will be completed in 2.5 months.

**Rycon's Special Projects Group** was selected to complete another fit-out of a luxury condo within the new 3 PNC Plaza known as "The Residences." The unit will encompass the entire 19th floor at 5,500 sq. ft. at a cost of nearly \$1 million.

After the completion of an elevator addition at Saint Sebastian Parish in the North Hills, Rycon's Special Projects Group was chosen to complete the remaining renovations as well as a new parking area at a total cost of \$700,000. Brenborg Brown Group is the designer.

**Rycon Construction** continues to improve its rank on Engineering News-Record's (ENR) annual Top 400 Contractors List by jumping 30 spots to #350. Every May, ENR magazine lists the top 400 general contractors in the U.S. The list ranks the contractors based on gross revenue from the previous year developed by a range of construction services performed.

**Landau Building Company** has completed renovations to Treesdale Country Club in Gibsonia, PA. The interior renovations for the "Clubhouse Reinvention" are focused on the first and second floors, including the main entry lobby, main dining room, and Arnie's Tavern Bar. This project was delivered in three months using a GMP process to fast track the completion date.

**Landau Building Company** began renovations to Allegheny College Reis Hall in Meadville, PA. This is a design-build project that will allow multiple student services departments to be centralized and combined into Reis Hall. The project is currently in the schematic design phase, and Phase 1 will be completed by September 2015.

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**Landau Building Company** is renovating Allegheny Country Club in Sewickley, PA. Phase one of the project includes major mechanical and electrical work and relocations. Renovations will also relocate the Pro Shop, several exercise rooms, and locker rooms/bathrooms, as well as install an elevator to a new wine cellar. All renovations are internal and will modernize the building.

**Landau Building Company** was awarded the construction management contract for the 50,000 square foot additions and renovations of E.A. Fischione Instruments, located in Export, PA. A completion date of February 2016 is anticipated.

**PJ Dick Inc.** was selected as the construction manager for the Google expansion project at Bakery Square 2.0. Perkins Eastman is the architect for the 66,000 square foot build-out.


**PJ Dick** will provide CM Agency services for the \$16 million South Park Middle School Additions and Renovations project. The architect is HHSDR Architects & Engineers.

The Watson Institute selected **PJ Dick Inc.** as construction manager for its new 50,000 square foot, \$15 million new school in South Fayette Township. The architect is McLean Architects.

Johnstown Heart and Vascular Center selected **Johnstown Construction Services** as the construction manager for its new 30,000 square foot complex at the corner of Eisenhower Boulevard and Theatre Drive in Richland Township, Cambia County. The project's architect is Frank Dachille Architects, AIA.

**Massaro CM Services** was awarded a contract for construction management services by Ringgold Area School District for its new \$32 million middle school in Carroll Township, Washington County. HHSDR Architects & Engineers is the architect.

**Jendoco Construction Co.** was the successful contractor on the Libermann Hall Fourth Floor Biomedical Engineering project at Duquesne University. The project was designed by DLA+ Architecture & Interior Design.

**Burchick Construction** has started work on The Stables at Hartwood, a 12,000 square foot retail development on Harts Run Road in Indiana Township. The architect is RSH Architects. 



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# FACES & NEW PLACES

Rebuilding Together Pittsburgh announced the appointment of **Bob McCall** to serve on its Board of Directors. McCall is the director of safety for the **Master Builders' Association of Western Pennsylvania**. He has held this position for 19 years.

**Landau Building Company** welcomed **Mike Bartoldi** back to the company as project engineer. Mike previously worked for Landau from 2012 to March 2014. He graduated from Penn State University in 2012 with a B.S. in Structural Design and Construction Engineering Technology.

**Landau Building Company** hired **Randy Moberg** as project manager. Randy was previously Vice President of Operations for FireDex Butler, Inc., in Cranberry Township for 22 years. He was also a Senior Estimator at American Industrial Contracting, Inc. for ten years.

**Katie Stern** joined **A. Martini & Co.** as director of marketing. In this role, she will oversee and contribute to the proposal process, manage its social media presence, implement a brand strategy and CRM tools, and assist in the development of market plans to competitively position the firm's regional presence. Stern is also actively involved, and on the board, with the Society for Marketing Professional Services (SMPS), Pittsburgh Chapter.

**Michael Larson-Edwards** joined **A. Martini & Co.** as a project manager. Mike brings over eight years of construction experience in the region in project management and estimating.

**Dan Sterling** joined **PJ Dick Inc.** as a director of field operations. Kevin Ludwick joined PJ Dick Inc. as a project manager.

**Volpatt Construction** hired **Michael Seagraves** as summer intern. Seagraves is an environmental science major at North Carolina State University.

**Marshall Davis** joined the **Rycon Special Projects** estimating team as a project engineer. He earned a bachelor's degree from the University of Pittsburgh in civil engineering.

**Rycon** has added **Courtney Dekker** as staff accountant. Courtney received a bachelor's degree in business administration from the University of Pittsburgh and brings four years experience to the team.

**Shawna Foyle** joined **Rycon** as the marketing and executive assistant. She received a bachelor's degree in integrated marketing communication from Duquesne University.

**Andrew Renckly** has been hired as a project engineer/MEP coordinator in **Rycon's Building Group**. He majored in mechanical engineering from Case Western Reserve University and brings over three years experience to the team.

**Rycon's Building Group** also recently added project engineer **Chris Rombold**, a graduate of West Virginia University's civil engineering program. Chris brings four years experience to the team and is part of the \$60 million Yards at 3 Crossings team.

**Tim Smith**, project engineer in **Rycon's Building Group**, was hired to assist the SouthSide Works City Apartments construction. Tim received a bachelor's degree in construction management from Bowling Green State University and has 11 years of construction industry experience.

**Pat Stone**, LEED AP, is now a part of **Rycon's Building Group** Morrow Park City Apartments team as senior project manager. He is a graduate of Gannon University with over 30 years of relevant experience.


**Steve Stribling**, graduate of New Mexico State University, has been hired as an estimator with the **Rycon Special Projects Group**. He brings 10 years experience to the team.

Rycon's Casework & Millwork Division has added project manager **Pat Hvozdk** and project/estimating assistant **Rob Kiehl**. Pat has seven years of experience and received a bachelor's degree in industrial design from Carnegie Mellon University and Rob received an associate's degree in architectural drafting and design from Butler County Community College.

Alliant Insurance Services announced that **Jim Bly** has joined Alliant as managing director of its Construction Services Group. Bly will be responsible for subcontractor default insurance and surety analytics, as well as all construction operations in Pittsburgh. Bly has 34 years experience serving contractors in the Pittsburgh area.

**Bryan Metzler**, a civil engineering department manager for **Merrick & Company's** infrastructure engineering group, was recently elected president of the American Council of Engineering Companies Greater Pittsburgh (ACEC/PA) Chapter during its May membership meeting. His term will run from July 2015 through June 2016. Metzler is also an active member of ACEC's national environment & energy committee.

**Cohen Seglias Pallas Greenhall & Furman PC**, a law firm that represents corporate clients and mid-sized privately held businesses, has announced a merger with Washington, DC-based Thaler Liebler LLP, effective June 29, 2015. Thaler Liebler partner, **Paul S. Thaler**, will become the managing partner of the Cohen Seglias office in DC.

The Rhodes Group welcomed **Joseph Seasoltz** and **Bedant Bhutia** as project consultants. Seasoltz joined The Rhodes Group after nearly a decade of working in the legal industry, most recently as a senior paralegal in a construction and commercial litigation practice. Bhutia, a LEED Green Associate, recently graduated from the University of Michigan with a Master's of Science in Construction Engineering and Management. The Rhodes Group also welcomed two interns for the summer, **Ian Smith** and **Sean McCarthy**. 

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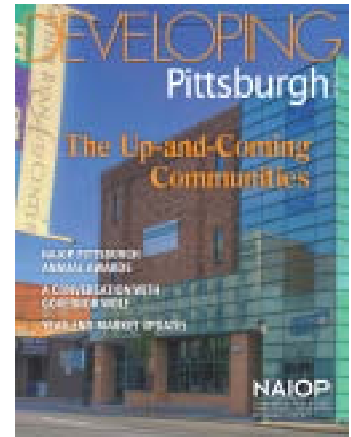
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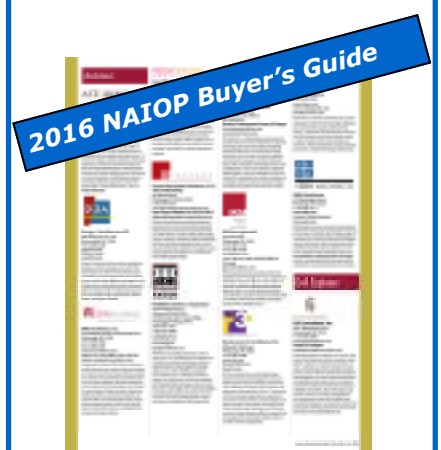


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# Closing Out

By Audrey Russo

Living and working in the city of Pittsburgh certainly has more than its share of benefits, but watching the growth of restaurants, residential apartments and condos erupting—from the East End to Lawrenceville, the Strip and into downtown—I am filled with glee that we are noticeably morphing into a series of lively, refreshed neighborhoods.

I will not simplify the growth by explaining it with a tidy regression analysis, where the attributes are neatly dissected into a factored equation. We all wish we had THAT statistical design in our pockets. I just stick to my sentiments that Pittsburgh and the metro area has been on a dogged journey filled with visionaries, leaders, black sheep, universities and healthcare institutions that, as of today, result in a concoction like nowhere else. A housing boom and bust never occurred here. However, long-quiet yet powerful companies employ maestros of tech and innovation here.

In Pittsburgh, we see a rapid fire of urban housing activity on the rise. We also see that venture capital investment last year grew, one measure of entrepreneurial activity. For more, refer to our Venture Investment report in the State of the Industry Report at [www.pghtech.org](http://www.pghtech.org). Google is expanding in Bakery Square, furthering its tentacles into the city; Apple shows up by taking out space in the Strip; Autodesk aggregates its teams in the East End; and Washington County continues to attract new growth in energy and tech with an incubator created by Indiana University of Pennsylvania.

It's a powerful return, or so it seems. Prices are strong and office occupancy in class A and B space has resulted in new buildings! Hotels, including trendier niche establishments, have flags planted firmly in the city and region. People who have stepped away for a year and return to visit are amazed at the changes. Even I took pride in knowing all the restaurants and available venues are no longer able to keep up with demand. The choices, which once were not present five years ago, are here today.

At the same time, a lot has changed in our world. The way we shop for products is completely different now. We have Amazon Prime accounts. We shop sitting in our cars on our mobile devices. We make purchases on our phones and return merchandise the very same way. We use these same devices for biometric measures and continuous access to music.

We require speed and authenticity. And yet we embrace slow cooking and fast connections. These are not paradoxes; they're the new mores of our times. As a result, we have changing approaches about how we work, how we build businesses, and our livelihoods.

Who would have thought that Pittsburgh is the home to such apps that eliminate a wait at a restaurant or help you learn a

language on your own terms at your own pace on a Smartphone? Would you have believed two years ago that Uber would join Pittsburgh's quest for personalized robotics and self-driving vehicles? Or that Carnegie Mellon, UPMC and Pitt would partner to use big data to change how healthcare is delivered around the globe?

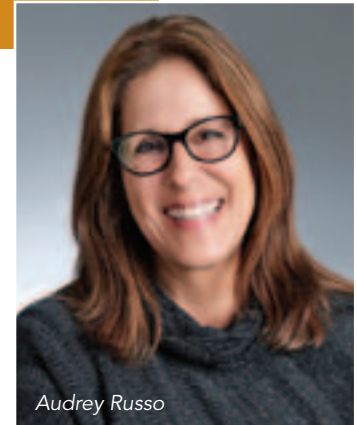
At the Council, we have been trying to understand these changes in the workforce, in particular the freelancing community: A burgeoning population of people who provide services to companies of all sizes, but are individuals and more often are focused on the creative engagements ranging, but not limited to, marketing, web design, tech support, strategy, content development and project management. This emergent cohort fosters an alternative work style, placing high value on autonomy and flexibility.

Our findings are preliminary, we know that this part of our working ecosystem contributes to yet another demand; where and how people work collaboratively. The emergence of flexible workspace, shared office space and "hoteling" has added not only a new dimension to the region, but also to the creation of alternative space to facilitate business development.

The story of how high tech has grown teaches us that its path won't be a straight line. Many startups intend to be acquired as an end strategy. Today's hot technology often becomes tomorrow's punch line (anyone played Atari or used their Palm Pilot lately?). After a generation of encouraging new technology in Pittsburgh, however, we know that the net result of a high-tech economy is more jobs, more space and a better place to live.

While we have been working to figure out methods to ensure Pittsburgh's prosperity in tech and innovation, a brick and mortar Pittsburgh has emerged. Sensibilities about design and preservation abound, though often they are conflicted. But in Pittsburgh, after a deeply embedded impression of a decimated history less than 30 years ago—which many proclaim would be apocalyptic - we see that the demand for space, people, companies, incubators, research and development, and design centers, further reinforces that no matter how we continue to evolve virtually, we still require physical collaboration to perpetuate our growth. We know that we are just at the onset of a very new Pittsburgh!

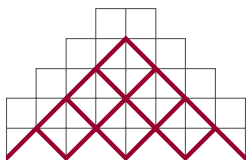
Audrey Russo is CEO of the Pittsburgh Technology Council.







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