Breaking Ground

THE MAGAZINE OF THE MASTER BUILDERS' ASSOCIATION OF WESTERN PENNSYLVANIA

JANUARY/FEBRUARY 2019

THE BIG PICTURE: PITTSBURGH BY THE NUMBERS



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ittsburgh will not be home to Amazon HQ2. The news that Amazon was going to split its new east coast headquarters between two major cities sort of dribbled out, first with a rumor that the online retailer had narrowed the field to two, and then, within 24 hours, that Amazon had selected Queens in New York City and the Crystal City section of Arlington, VA as co-headquarters locations.

Reactions to the news in Pittsburgh were almost universally appropriate. The civic leaders that are most associated with big economic news – County Executive Rich Fitzgerald, Mayor Bill Peduto and Stefani Pashman, CEO of the Allegheny Conference – held a press conference and said exactly the right things. So many people in public life say the dumbest things these days, so it was that much more satisfying to watch as Pittsburgh's leaders acknowledged the effort put into the Amazon proposal and talked of how beneficial the response to the request for proposals was for the region. To be certain, landing on the list of 20 finalists was one more bit of recognition about Pittsburgh's attributes. I expect in time we'll find out that there are quite a few consolation prizes that come from being a finalist.

From the private citizens there were expressions of relief by many Tweeters, plenty of whom issued "I knew they would never pick Pittsburgh" proclamations. There were few statements of regret, although one stood out to me. Brandon Mendoza, executive director of NAIOP Pittsburgh, tweeted disbelief that people were celebrating the loss of new jobs and development. That comment made me think twice about my own feelings.

I've had the privilege of serving as a partner to the Pittsburgh Regional Alliance (PRA) and sat on the PRA's Steering Committee for several years. That experience provides insight into what the region's strengths and weaknesses are for business attraction. And for all the pride associated with the PGHHQ2 response (and one exceptional video), there was certainly recognition about the strengths and weaknesses of the region as the site of Amazon's second headquarters.

My own enthusiasm about Pittsburgh's chances was definitely tempered by my opinion that there were some distinct risks associated with winning. Amazon wasn't likely to literally hire 50,000 new employees, and those that were going to be hired would probably come from the tech companies that were already here and growing. Some observers believed that the arrival of Amazon would have meant the departure of some of the names that Pittsburgh's leaders have become proud to boast about – like Google, Uber or Duolingo. Amazon would have also tied up some prime real estate that may have a better use or utility to the region than as a corporate campus. The influx of people had the potential to put more pressure on an already tight housing market, pushing prices higher. And Seattle's relative relief at Amazon's decision not to expand in their home town suggests that it's hard to be a good neighbor when you're the 800-pound gorilla in the neighborhood. There would have been some collateral damage.

It may seem that landing Amazon would have been the perfect analog to the exodus of the steel industry and heavy manufacturing 30 years ago, or perhaps the ultimate recognition of Pittsburgh's economic transformation. In isolation, the addition of \$5 billion in capital investment and 50,000 new employees (plus their families) would have been a smashing gain for a region treading demographic water. Amazon's selection of Pittsburgh would not have happened in isolation, however, and the collateral damage from landing HQ2 may have outweighed the gains by the time 2030 rolled around.

We won't know what we're missing – for better or worse – and watching how the decision impacts Arlington or Queens won't help us figure that out. Let's face it; if Amazon really wanted a big city, Pittsburgh was never going to win the contest. I can't imagine many Pittsburghers wishing that the city would become the size of metropolitan New York or Washington, with all that entails. Trying to imagine Amazon in Hazelwood or the Hill is fruitless, sort of like trying to imagine what you would do with a billion dollars simply because you bought a Powerball ticket.

This edition of BreakingGround is our "Big Picture" edition, and this year we take a look at Pittsburgh's much-ballyhooed transformation by the numbers. The feature article is written by Guhan Venkatu, the group vice president for the Federal Reserve Bank of Cleveland (which is responsible for Pittsburgh). It's a clear-eyed look at the data that describes the fall and rise of Pittsburgh's economy. It's also something of a road map to what has worked and what needs to work better in Pittsburgh.

Pittsburgh took its shot and put its best foot forward. From what the economic development leaders have said, the effort was worth almost as much as winning. If preparing to become home to a whale makes Pittsburgh

better equipped to catch more fish, we all may be better off in ten years. Let's get back to fishing again.

Jeff Burd

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REGIONAL MARKET UPDATE



t has been more than a generation since the prospects for the Pittsburgh construction market have been limited by anything other than the demand for construction services. That will change in 2019-2020, as the demand for construction will exceed the capacity of the market to design and construct.

Much of the capacity for construction services is being consumed by the unusual number of large projects in the pipeline; however, the broad strength of the Pittsburgh economy is creating record numbers of projects that will cost tens of millions, even if few will make headlines. Regional construction and labor leaders have been aware of the coming stress on the workforce since Shell Chemicals made its final decision about building its Franklin petrochemical complex in June 2016. The subsequent announcements of major projects at Pittsburgh International Airport, UPMC, University of Pittsburgh and Allegheny Health Network made the industry aware that the heightened demand would persist for years. What wasn't on the radar was the number of projects between \$10 million and \$50 million that were about to come into the marketplace.

Currently, the Tall Timber Group has tracked 36 projects of at least \$30 million that are under construction and will be under construction in 2019. The cumulative

volume of those projects is \$6.4 billion, which does not include estimates of the 2020-2021 volume of activity at Shell's Franklin project. Put in perspective, the volume of those 36 projects exceeds the volume of all construction started in 2014-2015. And none of the UPMC hospitals, or the airport, is included in the 36 projects.

Based upon the size of the pipeline and the pace with which the backlog is normally consumed, Tall Timber Group forecasted that demand would push construction activity to \$5.4 billion in 2018, with volume exceeding \$6 billion in 2019 and 2020. Barring any unexpected dramatic increase in the workforce, however, it is apparent that the capacity of the construction industry in Pittsburgh will limit the amount of construction in 2019 and 2020 to roughly \$5.5 billion.

The list below includes 18 projects over \$100

million under construction or scheduled to start by 2020. Eight of those projects are under construction, including five that are located in Western PA but outside the Pittsburgh metropolitan statistical area (MSA). Of the ten projects not yet started, only one – the \$150 million new Children's Hospital for WVU Medicine – is located outside the MSA. The construction costs of the remaining nine projects in the pipeline, plus the construction forecasted to be put in place at the Shell Franklin plant, is \$6.8 billion.

Two points should be emphasized by this analysis of major project construction. First is that the limitations of capacity will mean that the length of this boom market will be extended another year or more beyond what was expected based upon the announced schedules of the project owners. The second point is that the timing of the boom should ensure that the construction industry in Pittsburgh will shrug off any national economic slowdown that might occur in the next two or three years.

The impact of this impending capacity limit and, to a greater extent, the impact of the mid-2018 spike in prices has trimmed some of the construction volume in 2018 also.

The total volume of non-residential and commercial construction started through November 30 was \$4.78



Source: Pittsburgh Homebuilding Report

billion in the seven-county metropolitan Pittsburgh area. Based upon that total and the remaining pipeline of starts and permits issued, construction should finish just over \$5 billion for the full year of 2018. The impact of the unexpected jump in construction costs, which became apparent in bids received from May through the remainder of the year, delayed projects enough to reduce the volume of construction anticipated by about ten percent.

Residential construction activity finished 2018 higher for single-family traditional homes but off significantly for multi-family construction. Permits for new singlefamily detached homes rose 6.9 percent to 2,107 units, according to the Pittsburgh Homebuilding Report. Townhouse construction fell by 31.4 percent to 710 units. Construction of apartments plummeted in 2018, with 1,164 units of new multi-family construction started compared to 2,368 in 2017. The multi-family volume was the lowest since 2012, which was also the last year that there were less than 5,000 total units of new construction started. The total dollar volume of new residential construction fell only 10.5 percent, to \$1.05 billion.

While the magnitude of the apartment construction decline was surprising, it was anticipated that the addition of new units in 2018 would be closer to historical norms, as the absorption of more than 12,000

new units built since 2013 was starting to slow. The pipeline of apartment projects has actually become fuller, as the main drivers of multi-family remain very strong. Roughly 1,500 units are planned for construction start in the first six months of 2019, with developers from other markets exploring sites in both urban and suburban locations. From all indications, the lending environment for multi-family is not likely to improve in 2019 but investor appetite remains strong.

Pittsburgh's Downtown residential market softened slightly since the second quarter but the December update from the Pittsburgh Downtown Partnership reported that occupancy in Downtown units remains high at 93 percent. Occupancy also increased in Downtown hotels year-over-year by 7.3 percent, an unexpectedly large jump given the recent additions to inventory. The more closely-watched hospitality metric, revenue per available room, jumped 8.1 percent from October-to-October.

The commercial real estate market is strong heading into 2019. This sector of the construction market tends to project more optimism than other sectors, as the developers of competing projects present rosy outlooks to the marketplace; however, the fundamental metrics of the rental property market are supportive of more development.

Commercial real estate is driven by employment gains

ASA WPA

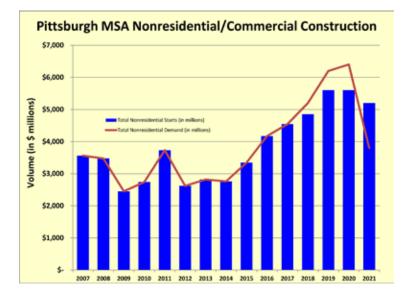
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Construction volume in 2019-2021 is likely to be limited by the production capacity rather than demand.

more than anything else, which means that Pittsburgh's anemic job growth should be cause for concern. Yearover-year job growth slowed as 2018 unfolded and the final estimate for employment growth was under one percent. At the micro level, the stagnant employment situation does not seem to be a drag on office leasing or development. Most of the new office projects coming online have been aimed at emerging technology companies, either through the choice of location or by the design of the building. Thus far, those projects have fared well, often leasing up before construction of the core and shell is completed. A significant amount of new office space is being added to the inventory in Oakland in 2019 but, by all reports, none of the new inventory will hit the market. With occupancy levels above 95 percent in Oakland, spec development there virtually functions as built-to-suit for the universities or UPMC.

Even buildings for which there was significant concern about vacant space, like 525 William Penn Place or the Union Trust Building, are seeing user traffic and leasing deals done. The amount of space available for sublease is still high for Pittsburgh's central business district and buildings that will be losing large tenants in the

coming year or two will bear watching as a gauge of absorption.

Industrial construction is similarly robust, particularly in the fulfillment sector and in the warehousing related to the energy sector in the Airport Corridor. The potential demand for industrial space is growing as the petrochemical and energy infrastructure continues to



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- APV Renaissance Energy Center, Hatfield's Ferry*
- Pitt Student Rec Center
- Pitt Center for Human Performance
- Bakery Square 3.0*
- Pitt Academic Building
- Shell Franklin Plant Monaca*

build. Construction on the Shell Franklin cracker has passed the halfway point. Investment in the ethane distribution and storage system remains high, and that interconnected network should be ready to meet Shell's demands before the 2021 startup. A final investment decision is expected by PTT in the coming calendar year, although that was the expectation about 2018 also. Interest in development of facilities for industries that will support the polyethylene production, or the downstream manufacturing should begin to accelerate in 2019, particularly in the second half of the year.

Commercial real estate will be the most sensitive to perceptions of an economic slowdown. If more observers look for a downturn in 2020, developers will likely put plans on hold until there is more certainty. While Pittsburgh's economic outlook seems to be brighter than that of the macroeconomy, there will be opportunities to judge how well speculative commercial projects are being absorbed by late 2019.

Because 2018 was a gubernatorial election year, there was relative peace on the budget front in Harrisburg; however, the Commonwealth's long-term structural fiscal issues were not addressed in 2018. The coming year brings little change to the dynamics. A comfortably-elected Democrat governor will work with a Republican majority in the legislature that is still strong. Until the defining issues of revenues and spending are

resolved, there will not be an increase in statefunded construction. That also means that Pennsylvania's crippled PlanCon system will remain in limbo.

January will bring some relief for the K-12 market in Western PA. Two similar elementary school programs, for Franklin Regional and North Allegheny, will be out to bid in January. At Franklin Regional School District, a \$20 million addition and alterations to Sloan Elementary and a new \$35 million K-3 school will bid. North Allegheny School District will take bids on addition and alterations to Franklin Elementary School (\$30-\$33 million) the McKnight and Elementary School (\$20-\$23 million).

The outlook for higher education is much

brighter. Major projects – those valued at \$50 million or more – are being procured at Duquesne University, Carnegie Mellon, University of Pittsburgh, and West Virginia University. Projects that are between \$20 and \$30 million are in the pipeline at smaller colleges, like Grove City, Washington & Jefferson and St. Vincent, throughout the region.

By the third quarter of 2019, an unprecedented level of construction will be underway in Western PA. Uncertainty in the global economy is unlikely to have a dampening effect on the regional economy and certainly no impact on the construction market in Pittsburgh. Shell is forecasting that its workforce, which now stands at 2,500, will double by July. Commercial and institutional owners are signaling more construction next year. Demand for construction services in 2019 will be stronger than at any time since the 1960s. The amount of construction put in place will depend upon the industry's capacity to produce.

n November 26, General Motors made an announcement of plant closings and planned layoffs that could have been a cold splash of water on the economic fire. The stock market responded by jumping almost 400 points. The GM announcement was consistent with how U.S. car companies are expected to respond to the massive changes in the automotive industry, and it was also likely a political reply to the tariffs that have added \$700 million to the carmaker's costs. Other manufacturers are expected to follow suit to some degree.

Although GM's plans aren't a response to a slowing economy, the closings and layoffs are another small crack in the veneer of the U.S. economy. As business investment slows, the stock market appears to have peaked, and the stimulus from the Tax Cuts and Jobs Act wears off, there are more challenges to the economy in 2019 than in a decade. Even the bullish Federal Reserve Bank has begun to have discussions of dialing back its quarterly rate increases in the second half of next year.

As 2018 ended, however, there was little evidence that the U.S. economy was limping into the coming year.

The broadest measure of the economy, gross domestic product growth (GDP), came in at 3.5 percent higher in the third quarter, according to the Bureau of Economic Analysis (BEA) final estimate on November 28. That GDP growth followed a 4.2 percent jump from the first to second quarter of 2018. The forecast by the BEA and the Fed for the full year is for GDP to be 3.1 percent higher in 2018 than in 2017. Even with expectations of a slowing economy built into its 2019 forecast, the Fed is expecting GDP growth in 2019 to be 2.8 percent.

Thus far, the potential for growth in the U.S. economy remains stronger than the potential for the tight labor supply to slow output. Reports on inflation by the Bureau of Labor Statistics (BLS) have shown a more persistent increase in wages year-over-year in the second half of 2018, with wages for the average worker rising 3.1 percent in the most recent month to \$27.30 per hour. Construction wages were more than ten percent higher, rising to \$30.21 per hour in October.

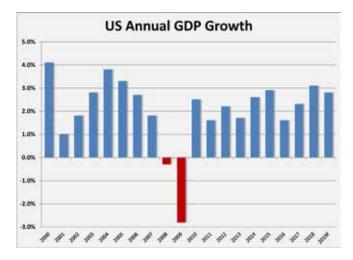
November's Employment Situation Summary by the Bureau of Labor Statistics, issued on December 7, showed that the U.S. labor market remains unusually strong. While the headline of 155,000 jobs was off from what economists were expecting, the overall data on the employment situation was positive. In addition to the growing wages, workers saw a slight decrease in hours. Workforce participation and total unemployed was even with October's data. Unemployment was steady at 3.7 percent. Taken in concert with the November Job Openings and Labor Turnover Survey, the number of open positions still exceeds those looking for work by one million.

Economists expect that the pace of hiring will slow significantly in 2019, with estimates of between 120,000 and 140,000 new jobs monthly. Those levels of hiring would essentially maintain employment equilibrium, meaning that unemployment would not increase or decline. That forecast makes sense given the length of the economic expansion that has unfolded; however, it's worth noting that the same economists expected hiring to be roughly 20 percent lower in 2018. Regardless of the strength of the economy, the most recent Beige Book from the Fed suggests that the exhaustion of the labor pool will limit hiring in 2019. Nearly three times as many employers cited the lack of skilled labor (62 percent) as a constraint on hiring than either cost cutting or rising/uncertain healthcare expense.

The trend for job openings remains troubling and should increase the upward pressure on wages in 2019. The number of job openings rose by more than one million during the course of 2018, topping more than 7.2 million in October. That number remains larger than the number of unemployed persons. The number of job openings in construction was 227,000 in October. That is lower than the 352,000 unemployed construction workers; however, the



Source: World Bank, Federal Reserve Bank of St. Louis



Source: Bureau of Economic Analysis

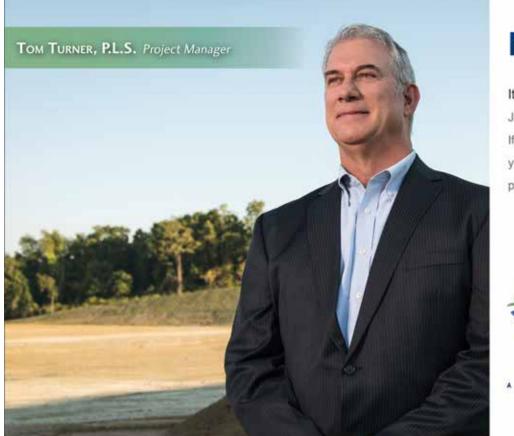
universe of unemployed construction workers includes all workers with construction experience and does not account for those in that cohort who have left the construction industry. This disparity helps explain why the percentage of construction company owners who said they were unable to find qualified workers topped 80 percent.

Construction activity remained high for non-residential construction into the fourth quarter. The value of all

starts was \$1.309 trillion in October, with non-residential construction at \$459.7 billion. The increase in yearover-year spending for non-residential construction was 6.4 percent. Housing construction has slowed since the fall, however, with starts declining 2.9 percent year-over-year in October. Construction of single-family dwelling was 5.5 percent higher year-over-year, while multi-family units were off 4.5 percent. Multi-family starts have increased 5.7 percent year-to-date. While demand for homes has been slowed by higher mortgage rates and concerns over affordability, growth in construction of all types is being constrained by a workforce at full capacity.

Construction activity will not be a source of relief for the workforce shortage in 2019. Economists serving the construction industry expect that there will be volume similar to 2018 in the coming year. Several observers see the total amount of square footage declining slightly in 2019, but also see higher construction inflation offsetting that decline. The forecast of less demand for new space is a function of the assumption that 2019 will bring a slowdown in economic activity and job creation.

Dodge Data and Analytics' chief economist, Robert Murray, predicted at its October 25 market outlook presentation that residential construction would slip two percent in 2019, while non-residential construction



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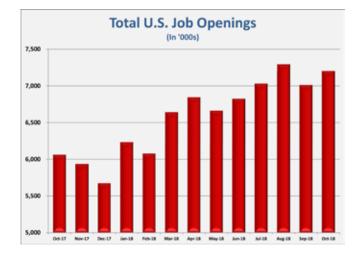


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remained unchanged. Dodge forecasts that nonbuilding construction will grow by three percent and that overall spending will be flat following a three percent increase in 2018.

ConstructionConnect's economist, Alex Carrick, focused on the potential economic impact of the Democratic majority in the House of Representatives in his November 15 presentation with the American Institute of Architects' (AIA) Kermit Baker and the Associated General Contractors' Kenneth Simonson. Carrick saw opportunity for agreement on infrastructure spending between the White House and Congress that could lead to long overdue increases in federal investment in highways and bridges. He also noted that an agreement on a middle-class tax cut could support strong consumer spending in 2019. Carrick was cautious about the prospects for either of these developments in light of the deficit spending and the expected difficulty in reconciling a federal budget.

AlA's Baker forecasted that total non-residential construction would be four percent higher in 2019, with gains in institutional and industrial buildings offsetting weaker growth in commercial construction activity. Like Carrick, Baker warned of the political difficulties in passage of the new U.S./Mexico/Canada trade agreement and budget stalemates that could potentially shut down the government for a time. He

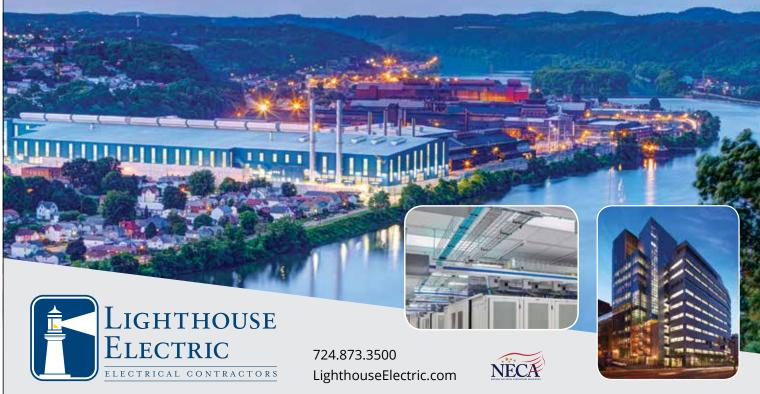


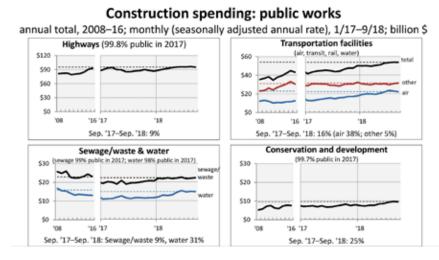
Source: Bureau of Labor Statistics

also cautioned that architects were beginning to see growth in billings flatten out after two years of nearly continuous growth.

Simonson predicted that non-residential spending would rise between two and five percent in 2019. Unlike his colleagues, Simonson sees the majority of the increased spending coming from infrastructure, transportation facilities, and increased investment in power and energy. He pointed out that the

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Source: Bureau of Labor Statistics, AGC of America

coming investment in 5G technology could boost telecommunications construction. Simonson expressed concern that U.S. trade policies would push costs higher and dampen demand, and that rising interest rates could do the same (especially for housing and commercial properties). He shared the AGC's worry that a shortage of skilled construction workers would hinder contractors' ability to put construction in place.

While the U.S. economy may be showing fatigue ten years into a growth cycle, the outlook for many of the global markets in 2019 is for a reversal of growth trends that have been much shorter in duration.

It has been several years since U.S. companies had to plan for operating in a declining global marketplace. The fiscal stress caused by the financial crisis lingered for years in Europe after the U.S. had recovered, but European and Asian countries had contributed to global GDP growth for the past five years. That trend is beginning to erode. In the third quarter, the German economy contracted for the first time since the 2009 recession trough. China's growth has begun to tick higher again but most emerging economies have seen markets become more challenging. With slower economies, the fiscal woes of Italy and Greece have resurfaced. And the growing political chaos in Great Britain has raised concerns that its exit from the European Union (EU) next spring will spark a severe recession.

Negotiations for a smooth Brexit hit a crisis point in late November, causing the governor of the Bank of England, Mark Carney, to express concerns that a no-deal exit from the EU would bring a supply-side recession similar to the 1970s. The lack of a trade agreement for Britain's exiting the EU would leave countless British businesses floundering for raw materials and inventory. As of Thanksgiving week, many British multi-national companies were pre-purchasing large inventories to enable them to maintain output in the event that their current sources were put beyond reach in the event no exit deal is reached. If pre-purchasing continues, there will be an echo of lost demand for EU suppliers in 2019. Moreover, adding to inventories well ahead of demand will distort the financial condition of British companies, straining cash flow and deploying working capital that might be better used elsewhere.

With roughly 13 cents on the dollar sold overseas by U.S. companies, a disruption to the trade conditions in Europe – with its compounding impact on Asia – will make 2019 rockier than necessary. For companies already struggling with U.S. tariffs, the loss of more demand from around the world

presents an additional hurdle.

The first quarter of 2019 will mark a full decade since the bottom of the 2007-2009 recession cycle. The U.S. economy continues to fire on all cylinders, fueled by strong consumer spending, increased business investment, virtually full employment, and a businessfriendly environment. The headwinds created by tariffs, trade wars with partners, weakening global demand, growing inflation, and political uncertainty will test the power of the economic engine in 2019. There are also troubling signals in the investment markets, like the meteoric rise of defensive stocks and steep decline of economically-sensitive stocks since May 2018, or the ballooning growth in leveraged corporate and sovereign debt.

Corporate debt has risen precipitously in the years since the Great Recession because extremely low borrowing costs encouraged companies to fuel expansion with new debt. The total of outstanding corporate bonds now stands at \$9 trillion, which is nearly double the amount that was outstanding in 2008. More troubling is the amount of that debt, some \$2.5 trillion, which is rated BBB. In part, that's because some of America's steadiest blue chip companies - including IBM, General Electric and AT&T – have seen their credit ratings downgraded to BBB. Should a further downgrade occur, to junk status, these companies would see a marked increase in borrowing costs and a significant decline in the buyers of their bonds. If the economy slows and erodes corporate profits, the chances of default would also increase.

These challenges have prompted some economists to forecast a slowdown by early 2020. A survey of economists published by the Wall Street Journal on November 21, for example, found that half expected a recession by 2020 and 70 percent responded that there was a greater risk that growth would fall below forecasts in 2019. Such forecasts can be bellwethers, as the prospect of a slowdown can become a self-fulfilling prophecy for business.

WHAT'S IT COST?

ata from the Bureau of Labor Statistics on construction industry inflation show that contractors have begun to fully register and pass on the higher costs of building. Heretofore, the inflation of material costs and inputs to construction, which jumped to three times the rate of overall the producer price index (PPI) in May, had not appeared in the PPI for individual building types. Likewise, the more accelerated increase in construction wages – about 30 percent faster than inflation in all wages – had primarily been absorbed by contractors. These trends change significantly in the fourth quarter of 2018, as the PPI for specialty contractors jumped to as high as 6.1 percent higher year-over-year.

Contractors' associations, like the Associated General Contractors (AGC), had voiced concerns that project costs were creating a squeeze on contractors as input prices rose in recent months. The change in trend suggests that construction companies are factoring the higher inputs into their construction put in place. Given the lead/lag relationship between construction pricing and contracting, and construction put in place, it's likely that contractors had begun passing on the higher pricing when the announcements of tariffs spiked inflation in May 2018.

Another indicator of this adoption of higher pricing is the narrowing of the gap between the PPI for construction goods and the PPI for the major construction categories. PPI for construction goods continued to rise towards eight percent in the fall, after moderating closer to six percent in July and August. The PPI for residential, non-residential and all construction industries moved higher and varied between 6.4 and 6.6 percent.

Several workforce data providers reported estimates for the year-over-year increases in wages for the construction industry. PAS, Inc. reported in its Contractor Compensation Quarterly that hourly wages would increase 3.2 percent in 2018 – a slight decline from the 3.4 percent increase in 2107 – among the contractors it surveyed. WorldatWork projects slightly higher increases, an average of 3.6 percent for nonexempt hourly workers. These estimates are consistent with the BLS reports throughout the year, which pegged construction wages at roughly half a point higher than the average wages for all hourly workers.

Wages and benefits that are rising add to the inflated cost of construction, but the more significant upward force may be the decline in productivity that is the result of the nationwide construction workforce shortage. As of October, 227,000 construction jobs remained unfilled.

Data on the inflation of materials and building products also showed persistent year-over-year increases. IHS Markit and the Procurement Executives Group (PEG) reported that its indexes rose for the 23rd straight month in November, with prices rising in 11 of the 12 subcomponents of the procurement index. Rider Levett Bucknall reported on November 2 that its Comparative Cost Index rose 4.7 percent from July 2017 to July 2018. The Federal Highway Administration reported that the National Highway Construction Cost Index increased 4.4 percent in June from March and 3.8 percent from June 2017. Both increases were accelerations from the previous quarter and year.

The data in the December 11 Producer Price Index report from the BLS saw prices edge lower in November from October, aided primarily by a near double-digit drop in energy costs.

Steep declines in the price of fuel lead energy costs lower from month to month. Year-over-year change in PPI for diesel fuel fell from 27 percent higher in October to 19.5 percent higher in November, with the price dropping 1.4 percent in the month. Change in PPI for inputs of all goods for construction fell from 7.9 percent in October to 5.3 percent in November. No other major category of inputs experienced increases of more than two or three percent in November. This provides some level of hope that the tariff-driven price spikes from mid-year have leveled off. With global demand softening for many construction materials, upward pressure on inputs should abate in 2019. The expiration of the 90-day "truce" called between U.S. and China tariff increases will mark the next potential turning point for building products and materials.

PERCENTAGE CHANGES IN COSTS	Nov 2018 compared to			
	<u>1 mo.</u>	<u>3 mo.</u>	<u>1 yr.</u>	
Consumer, Producer & Construction Prices				
Consumer price index (CPI-U)	0.2	0.3	2.5	
Producer price index (PPI) for final demand	(0.3)	0.5	2.5	
PPI for final demand construction	0.2	2.2	5.1	
Costs by Construction Types/Subcontractors				
New warehouse construction	0.8	2.4	4.7	
New school construction	0.0	2.7	5.5	
New office construction	0.6	2.1	5.6	
New industrial building construction	0.4	3.3	6.4	
New health care building construction	(0.2)	1.3	4.1	
Concrete contractors, nonresidential	0.3	2.9	6.3	
Roofing contractors, nonresidential	0.1	(0.2)	0.8	
Electrical contractors, nonresidential	0.6	2.0	5.1	
Plumbing contractors, nonresidential	0.1	2.4	5.1	
Construction wages and benefits	N/A	0.7	3.0	
Architectural services	(0.5)	(0.6)	(1.7)	
Costs for Specific Construction Inputs				
#2 diesel fuel	(1.4)	5.7	19.5	
Asphalt paving mixtures and blocks	(1.8)	(0.6)	8.8	
Cement	(0.4)	0.0	2.6	
Concrete products	0.0	(0.1)	3.1	
Brick and structural clay tile	0.0	(0.1)	1.0	
Plastic construction products	0.2	0.6	2.5	
Flat glass	(0.1)	0.0	2.2	
Gypsum products	(3.2)	(5.8)	2.0	
Lumber and plywood	(2.6)	(8.6)	(5.1)	
Architectural coatings	3.4	3.8	7.8	
Steel mill products	0.5	(0.2)	19.8	
Copper and brass mill shapes	(2.1)	(1.3)	(9.5)	
Aluminum mill shapes	(1.5)	(2.2)	5.9	
Fabricated structural metal	(0.2)	0.0	12.0	
Iron and steel scrap	8.4	0.6	22.8	
Source Bureau of Labor Statistics, Updated Decen	nber 11, 20	18		
Compiled by Ken Simonson, AGC Chief Economis				

RENEWAL A PITTSBURGH RETROSPECTIVE BY GUHAN VENKATU



According to the United States Department of Labor, "the 1980s was a period of tremendous structural change for US manufacturing. The two recessions at the beginning of the period dislocated thousands of factory workers and underscored the economy's transition away from the goods-producing sector."¹



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ittsburgh and places like it—heavily invested in the manufacturing sector-bore the brunt of these adjustments. The Pittsburgh MSA² was especially hard hit given its importance to national steel production: Industrial activity associated with blast furnaces and basic steel products^{3, 4} experienced one of the sharpest employment declines in absolute terms during the decade, shedding approximately 300,000 workers nationally, or more than half the industry's total workforce, many of whom were employed in the Pittsburgh MSA. One response to this event was a substantial outmigration of individuals from the Pittsburgh MSA, leading to the MSA's recording the steepest decline in population during the decade among the nation's 50 largest MSAs. But accounts also suggest that the area attempted to respond proactively to the emerging new reality in a way that would welcome other industries and set the stage for future growth. Recent headlines speak to the remarkable transformation the area has undergone since these events. Having shaken off its Rust Belt roots, the Pittsburgh MSA can now lay claim to being an emerging energy center and hightechnology hub. This report explores how the MSA's economy has evolved since the economic events of a generation ago in comparison to and in contrast with the changes that have occurred both nationally and in a set of similarly affected manufacturing-intensive metro areas that this report collectively terms the "industrial heartland."⁵

The Pittsburgh MSA's Economic Performance Since the 1970s

The 1970s and early 1980s were a difficult time economically for the United States and Pittsburgh. Nationally, the 1970s were bookended by oil price shocks; in 1973 and 1974 and again in 1979, crude oil prices more than doubled. In both cases, relatively severe recessions followed. The recession that took place between 1973 and 1975 was, at 16 months in duration, the longest recession in the post-World War II period to that point, and only two months shorter than the duration of the Great Recession. This length was tied in the second of the twin recessions that occurred in the early 1980s,⁶ in which the national unemployment rate reached its highest point since the Great Depression—a record that still stands—at more than 11 percent.⁷

As difficult a period as this was for the nation, employment declines were many times more severe in the Pittsburgh MSA. In the November 1973 to March 1975 recession, for instance, national employment declined 1.6 percent, but employment in the Pittsburgh MSA fell 3.4 percent. During the twin recessions of the early 1980s, national employment declined 2.2 percent, but Pittsburgh MSA employment fell 8.5 percent. Worse still, while the nation enjoyed sizeable employment gains during the 1970s and 1980s despite these periodic interruptions in growth, the same cannot be said for the Pittsburgh MSA. During that two-decade period, the nation's employment expanded by more than 50 percent, while the Pittsburgh MSA's employment expanded by only four percent.

These differences underscore the significance of the structural changes that took place in the Pittsburgh MSA and many other manufacturing-oriented areas across the nation during this period. According to a Brookings-Wharton paper, "In the decade between 1977 and 1987 the United States shed about 500,000 jobs in the auto industry and 350,000 jobs in the steel industry, far outstripping any other job losses [to that point] in recent US history."8 During the first five years of this period, Allegheny County—the central county in the Pittsburgh MSA—lost nearly 16,000 steel-related jobs, or close to 3 percent of its overall employment. Other large, outlying counties in the metro area suffered similar fates: Washington County to the southwest lost nearly 2,000 steel-related jobs, or about 2 percent of its overall employment, while Beaver County to the northwest lost nearly 5,000 steel-related jobs, or a staggering six percent of its overall employment.

While the manufacturing sector's employment declines were particularly pronounced during this period from the 1970s through the early 1980s, manufacturing's importance as a provider of employment in the US economy had been diminishing for decades. At the end of the 1950s, about one in every 3.5 American jobs was associated with the manufacturing sector. Two decades later, this ratio had fallen to around one in every five jobs, and after the adjustments of the late 1970s and early 1980s, the ratio fell further by the turn of the millennium to about one in every eight jobs.

Prior to these adjustments, the Pittsburgh MSA had been above average in terms of both manufacturing employment and earnings. In 1970, almost one-third of the Pittsburgh MSA's employment was attributable to the manufacturing sector, about four percentage points higher than for the nation as a whole. However, by 1990, the reverse was true: Manufacturing employment in the MSA as a share of overall employment was about four percentage points lower than the national average and was a much smaller fraction of overall employment in the MSA, at approximately 14 percent.

By 2010, this share had fallen further to about seven percent in the MSA. Manufacturing earnings as a share of overall earnings followed a similar trajectory, accounting for nearly 40 percent of overall earnings for the area in 1970—just over six percentage points more



than the sector's contribution to the nation's metro area earnings at the time—but constituting less than nine percent of overall earnings in the Pittsburgh MSA by 2016 (figure 1).⁹

Other areas in the industrial heartland struggled through these same structural adjustments, though the consequences varied. For example, metro area employment declines concentrated in the auto and steel industries in the five years from 1977 to 1982 ranged from around 3,000 jobs lost in the St. Louis area to nearly 19,000 jobs lost in the Cleveland area to more than 75,000 jobs lost in the Detroit area.¹⁰ The Pittsburgh MSA's employment declines during this period, primarily related to the steel industry, amounted to about 23,000 jobs. Manufacturing's contributions to total earnings also diminished much more rapidly in the Pittsburgh MSA than was the case for many of the industrial heartland areas, highlighting how severe a shock the steel industry's collapse was to western Pennsylvania.

Employment Trends

The events of the 1970s and early 1980s have cast a long shadow over an MSA whose central city many still refer to as the "Steel City." Pittsburgh emerged as

an important center of steel production in the 1870s, roughly a century prior to these events. According to one account that traces the early development of the steel industry, "By the turn of the [twentieth] century, Pittsburgh would account for more than half of all of the iron and steel made in the United States, and twice as much as was then made in all of England."¹¹ The area's share of steel production would diminish over time, however, Data from the American Iron and Steel Institute show that Pennsylvania—with production occurring largely in the western third of the statesaw its share of domestic raw steel production fall from more than 40 percent in 1920 to less than 25 percent by 1960. By 1980, the state still accounted for about 20 percent of domestic steel production, but within the next five years, the state's share would decline further, to less than 15 percent.

These adjustments, and the associated deep employment declines of the early 1980s recessions, gave way to regional employment growth during the ensuing expansion (November 1982 to July 1990) that was about half as strong as what was experienced nationally, according to the Bureau of Labor Statistics; job growth in the Pittsburgh MSA amounted to about ten percent during this period compared to nearly 24 percent for the nation as a whole.





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#1 Cochran Audi Dealership Interior contractor: RAM Acoustical Corporation Another high quality MICA project Photo by Rombout Photography Because the job losses were so severe in the preceding recession (July 1981 to November 1982) as the steel industry confronted its challenges, cumulative employment gains for the area during the entire recession-recovery period, which lasted nine years, amounted to about two percent, while the nation experienced growth of about 20 percent. Even metro areas in the industrial heartland fared better as a whole than did the Pittsburgh MSA. During the 1980s, this group of metro areas experienced employment growth of about ten percent, less than half as strong as the gains seen nationally but well above the slight decline in employment posted by the Pittsburgh MSA during the decade.¹²

The area's relative underperformance in employment growth continued during the three subsequent business cycles. The recession in the early 1990s (July 1990 to March 1991) was far milder than those that occurred about a decade earlier. For both the Pittsburgh MSA and the nation, cumulative job losses reached just more than one percent before employment began to recover. The expansion that followed (March 1991 to March 2001) remains the longest expansion the nation has enjoyed and created more jobs—24.2 million than any other American expansion during the post-World War II period. The nation's employment expanded by about 22 percent, and after accounting for the losses sustained during the recession, it grew by about 21 percent for the entire recession–recovery episode. By contrast, Pittsburgh MSA employment growth approached about nine percent for the full recession–recovery period.

Job gains have been even harder to come by in the new millennium according to annual data from the Bureau of Economic Analysis. National employment expanded by 34 percent from 1985 to 2000 but just 15 percent from 2000 to 2015.¹³ The comparable figures for the Pittsburgh MSA are about 21 percent from 1985 to 2000 and less than six percent from 2000 to 2015. Interestingly, while industrial heartland MSAs saw stronger gains than the Pittsburgh MSA in the earlier period—with employment expanding 28 percent—they collectively experienced weaker employment growth of just more than three percent in the new millennium, a situation which largely reflects the Pittsburgh MSA's milder experience during the Great Recession (figure 2).¹⁴

The 2000s began with a recession that, like the one about a decade earlier, was fairly mild. In fact, revisions suggest that GDP grew slightly during this period.¹⁵ As a result, cumulative job losses during the

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March 2001 to November 2001 recession were also relatively mild-just more than one percent in both the Pittsburgh MSA and the nation, according to data from the Bureau of Labor Statistics- but employment declines persisted well past the official end of the recession. Cumulative job declines ultimately approached around three percent in the Pittsburgh MSA and two percent nationally. The slow pace of job gains throughout the early expansion meant that it took the nation nearly four years from the time the recession started in March 2001 to return to the same prerecession employment level; this process typically had taken less than two years in post-World War II recession-recovery episodes. For the Pittsburgh MSA, however, the jobs lost during the 2001 recession were never recovered in the ensuing expansion. Instead, the area ended the expansion employing about as many people as when the recession ended and about one percent fewer than when the recession began.

The Great Recession, however, was a different story. Though it produced the sharpest declines in employment that the nation has sustained since the Great Depression— with cumulative national employment declines exceeding five percent as of the official end of the recession in June 2009 and six percent ultimately—employment declines in the Pittsburgh MSA were about half as severe. For context, the Pittsburgh MSA lost about 78,000 jobs during the twin recessions of the early 1980s, or 8.5 percent of its overall employment. By contrast, the Pittsburgh MSA lost close to 30,000 jobs (2.6 percent of overall employment) during the Great Recession itself and close to 40,000 jobs ultimately (3.3 percent of overall employment)—still severe, but far less severe than the nation's experience at the time or the Pittsburgh MSA's experience of 25 years earlier. Indeed, among major American metro areas, the Pittsburgh MSA was one of the first to recover the jobs it lost during the Great Recession. It took the area about 3.75 years to return to the employment level it achieved in December 2007, the month the nation entered the Great Recession; it took the nation almost 6.5 years to achieve the same milestone. Despite this comparatively rapid recovery, employment gains ever since have been modest. At the end of 2016, for example, employment in the Pittsburgh MSA was about 1.5 percent greater than it had been nine years earlier when the Great Recession began; the nation's employment, on the other hand, was about five percent greater.

Unemployment rates

As one might expect, the relatively severe recessions of the early 1980s and the coincident structural adjustments affecting the manufacturing sector had sizeable impacts on unemployment rates. As noted above, the nation's unemployment rate surpassed 11 percent in January 1983, the highest rate recorded nationally in the post-Great Depression era.¹⁶ In the Pittsburgh MSA—and in other places heavily invested in the manufacturing sector— unemployment rates

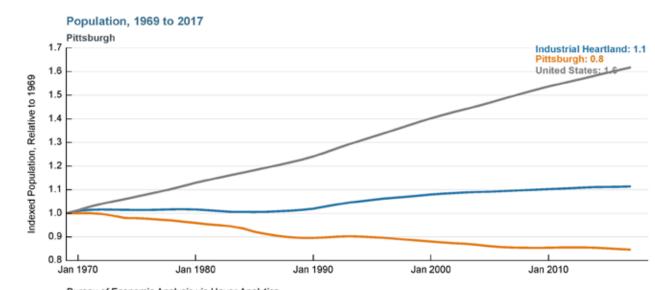


Figure 4 Population Growth, 1969-2017

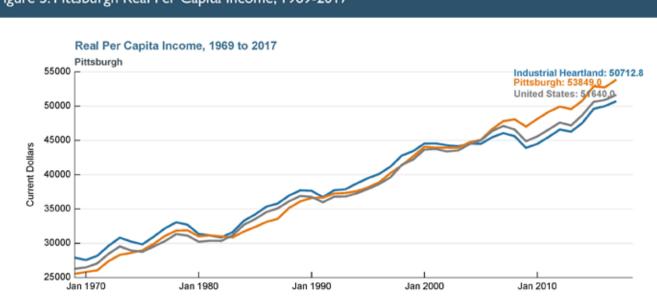
Bureau of Economic Analysis via Haver Analytics Last data point: 2017.

reached even greater heights. In the industrial heartland MSAs, for instance, unemployment rates approached 12 percent around this time. The Pittsburgh MSA's peak unemployment rate in January 1983 exceeded 17 percent (figure 3 shows annual rates). This average, however, masks what were often worse conditions in individual counties across the area. The unemployment rate in the area's central county (Allegheny), at just less than 14 percent, was notably lower than the metro area's average, but unemployment rates reached as high as 27 percent in Beaver County, nearly 25 percent in Fayette County, and 23 percent in Somerset and Cambria Counties.¹⁷ Moreover, among the 50 most-populous metro areas in 1980, the Pittsburgh MSA's annual unemployment rate in 1983—which was 15.7 percent—was exceeded by only one other MSA's: Detroit's, at 17 percent.

Nevertheless, despite being almost six percentage points greater than the national average at the beginning of 1983, the Pittsburgh MSA's unemployment rate converged almost completely with the national average within about four years: The average monthly gap between the two rates was 0.5 percentage points in 1987. Perhaps even more remarkable is the fact that the area's unemployment rate generally remained below the national average for a period of about four years from 1989 through 1992, only a decade after the debilitating economic downturn the area had sustained.

Researchers examining this episode in American economic history find a "very rapid recovery in unemployment rates in Rust Belt cities and counties" such that "[w]ithin five years, unemployment rates in Rust Belt areas returned to the US average."18 According to this analysis, these unemployment rate reductions in Rust Belt areas were accomplished largely "through out-migration of people rather than in-migration of jobs." This conclusion is corroborated by an account in the Pittsburgh Post-Gazette, which included the following in a 2012 review of these events from a generation ago: "The unemployment rate came down after January 1983-slowly, painfully, not because people were returning to work here but because the young and able-bodied left the region, and thus its labor force."¹⁹ Changes to the Pittsburgh MSA's population during the 1980s are consistent with these explanations. While the area's population has fallen steadily since at least 1970— from roughly 2.75 million to 2.35 million-the declines during the 1980s were the steepest by far. During the decade, population in the metro area fell by close to 200,000, or about seven percent. For context, this represented the steepest decline in population among the nation's 50 largest metro areas during that decade.

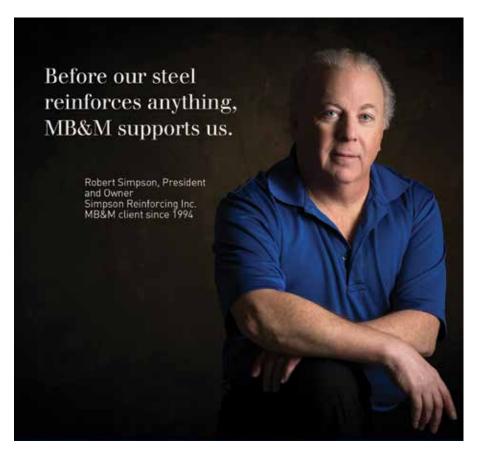
Following the travails of the 1980s—and for the 15 years prior to the Great Recession, from 1993 to 2007—the area's unemployment rate hewed closely to the national average, with an average monthly difference during this period of just 0.1 percentage



Bureau of Economic Analysis and Bureau of Labor Statistics via Haver Analytics Last data point: 2017. Group averages are weighted by population.

Figure 5. Pittsburgh Real Per Capita Income, 1969-2017

points. Thereafter, however, the two rates would diverge again for about five years (2008 to 2012) before converging. While the nation's unemployment rate would come close to matching the peak it achieved in the early 1980s—reaching 10.6 percent in January 2010— Pittsburgh's unemployment rate exceeded nine percent only briefly in the first two months of 2010. Industrial heartland MSAs also saw their unemployment rates rise sharply during this period, though the population-weighted average unemployment rate for the group also remained below its early 1980s peak.²⁰ In some sense, this period from 2008 to 2012 was the opposite of what Pittsburgh experienced early in the 1980s, with the metro area's unemployment rate remaining well below the national average throughout this episode: on average about 1.3 percentage points below the nation's average during the five years from 2008 through 2012 and more than 2 percentage points below the nation's unemployment rate peak in late 2009. Indeed, this reversal of fortune is illustrated by how the Pittsburgh MSA's unemployment rate compared to those of other



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trate compared to those of other major MSAs during this period. In 2009, its unemployment rate was among the ten lowest for the 50 most-populous metro areas,²¹ while Detroit's was the worst once again, just as it had been back in 1983.

Population and Real Per Capita Personal Income

adjustments The structural affecting the manufacturing sector had a profound impact on the Pittsburgh MSA's income growth through the subsequent decades. In the 30-year period from 1980 to 2010, personal income in the nation rose by roughly 440 percent. By contrast, personal income in the Pittsburgh MSA during the same period rose a far more modest 265 percent, just three-fifths of the increase in income enjoyed by the nation. What accounts for the disparity in these income trends? The variance, it turns out, can be almost entirely accounted for by differences in the two areas' population growth.

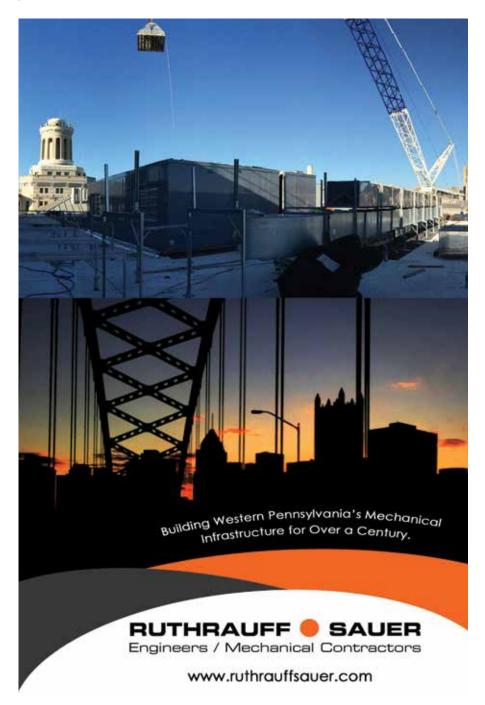
During this 30-year period, the nation's population grew at an annual rate of 1.0 percent, while the population in the Pittsburgh MSA fell by 0.4 percent per year, a growth differential of 1.4 percentage points. Even the industrial heartland MSAs saw positive population growth during this period, with annual increases averaging about 0.3 percent. Though the Pittsburgh MSA's population declines intensified in the 1980s, they continued unabated in the subsequent two decades (figure 4). During the same 30-year period, personal income grew at an annual rate of 5.8 percent in the nation, but only 4.4 percent in the Pittsburgh MSA—also a growth differential of 1.4 percentage points. The implication is clear, though it might seem surprising: Growth in income per capita during these 30 years in the two areas was almost identical, roughly 4.8 percent per year, before any adjustments are made for inflation. That's because growth in an area's personal income

can come from just two sources: growth in population and growth in income per person. Essentially, an area can add to its total income by adding more people who are working, by improving the incomes of those already there, or both.

It isn't that per capita incomes and the associated growth rates can't differ across metro areas and the nation. They certainly can and did in the Pittsburgh MSA throughout the 1980s. Indeed, after the economic shock sustained by the Pittsburgh MSA in the early 1980s, its income per capita fell from being 2.6 percent higher than the national average in 1980 to being 4.4 percent lower than the national average toward the end of the decade. This decline was consistent with the experience of other metro areas in the industrial heartland. In a Brookings-Wharton paper, James Donald Feyrer and his colleagues note that "the loss of thousands of high-paying (union) jobs [during this period] removed the Rust Belt's income advantage."²² But this divergence did not persist for the Pittsburgh MSA or other Rust Belt MSAs. In fact, for the Pittsburgh MSA, the divergence between its income per capita and that of the nation was erased entirely by the early 1990s. Throughout the 1990s, the Pittsburgh MSA's per capita income was on average about 1 percent higher than the national average, but that difference, too,

would be eroded over time until the Pittsburgh MSA's per capita income came to equal the national average by the mid-2000s (figure 5).

Incomes per capita tend to converge over time across states and metro areas. One study, which examined US states during slightly more than a century beginning in the late 1800s, found that per capita incomes tended to converge at a rate of about two percent per year during this period.²³ If factors of production such as labor and capital are mobile, then over time



they should migrate to the areas in which they can command the greatest returns. In a place such as Pittsburgh, after the severe shock of the early 1980s, this logic suggests that some combination of the following took place: Either firms moved to the region to take advantage of a newly available pool of labor at lower wages or the newly available workers migrated elsewhere in search of other opportunities. As a result, wage rates would be bid back up regardless, either because of an increase in the demand for labor or a decrease in the supply of labor.

Indeed, both an increase in labor demand and a decrease in labor supply appear to have taken place in the Pittsburgh MSA. As mentioned earlier, the area's population declined sharply during the 1980s, suggesting that some of the adjustment occurred through the outmigration of workers. But accounts also suggest that the area attempted to respond to the emerging new reality in a way that would welcome other industries and set the stage for future growth. Writing in the early 1990s, economist Elizabeth Hoffman observed the following:

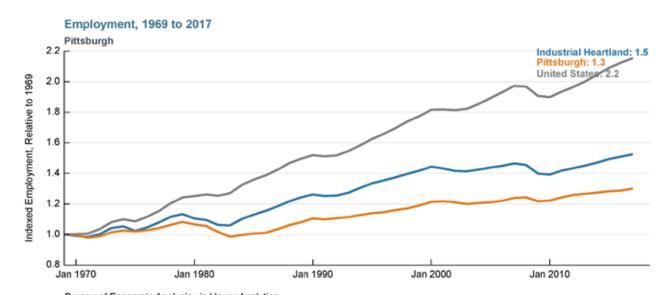
[Pittsburgh] responded by mobilizing to create a new way of life. Strict pollution control laws were enacted and enforced, turning a city that only steelworkers could love into a beautiful place in which to live. Light manufacturing, service, and banking establishments relocated to Pittsburgh to take advantage of the labor force. The growth of high-tech industries led to an

Figure 2 Employment Growth, 1969-2017

increase in opportunities for college graduates with training in engineering, computer, and health care skills.²⁴

According to Hoffman, this collective regional response was so successful that it attracted attention from around the world: "Pittsburgh had become a model for other former steel towns; representatives from outmoded factory districts as far away as Germany and France came to Pittsburgh to study the way the city had successfully made the switch."²⁵

Still, factors both natural and human-made can limit the degree to which complete income convergence takes place. For instance, there may be fixed, nonmobile factors, such as an important natural resource, that confer upon an area some sort of economic advantage. The opposite could be true, too; natural disadvantagesfor instance, an area's remoteness, which might make that area more costly to trade with-would tend to keep such an area's per capita income lower than the national average. Regarding human-made factors, the existence of meaningful policy differences across areas is another element that could keep complete income convergence from occurring. In fact, recent scholarship from the Brookings Institution suggests that stricter land-use regulations in some areas since 1980 have made it either more costly or otherwise more difficult for these areas to grow their respective housing stocks.²⁶ The result has been an increase in home prices that exceeds wage growth, a situation that



Bureau of Economic Analysis via Haver Analytics Last data point: 2017.

has limited labor mobility for some groups and thereby limited one of the mechanisms that would have driven income convergence.

In the Pittsburgh MSA, the emergence of an important natural resource midway through the last decade seems to have driven its divergence in income per capita relative to the national average since then. In 2005, the area's per capita income was essentially equal to the national average, but by 2010, the Pittsburgh MSA's per capita income was about six percent higher than the national and remained average four percent higher than the national average in 2016. The timing of this divergence coincides with the shale boom in Pennsylvania and the state's emergence as an



Source: Bureau of Economic Analysis.

Notes: Dashed vertical lines show years in which recessions began. Group averages are weighted by population. The solid vertical line indicates the shift in industry coding from Standard Industrial Codes (SIC) to the North American Industry Classification System (NAICS).

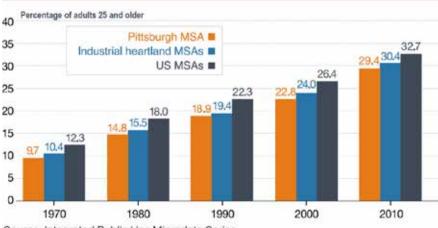
important producer of domestic natural gas.

By 2005, drilling began to take place in a number of Pennsylvania counties.²⁷ The rapid rise of the industry in the state has been striking. Almost half of Pennsylvania's 67 counties had some form of oil and gas activity from 2014 through 2016, just a decade after the first unconventional wells were drilled. Moreover, the Marcellus Shale, which is centered in Pennsylvania, had by then become the most productive shale "play" for natural gas in the nation, accounting for about 40 percent of shalerelated domestic gas production and propelling

Pennsylvania to the status of producer second-largest of domestic natural gas, behind Texas. By 2016, Pennsylvania's natural gas production was more than 30 times higher than that of a decade earlier in 2006, increasing from 176 billion cubic feet to 5,313 billion cubic feet.²⁸ Much of this activity occurred in the northeastern and southwestern parts of Pennsylvania. Indeed, Washington County, which is in the state's southwestern corner and is part of the Pittsburgh MSA, had the highest number of active wells in the state as of December 2016.

Whether the shale boom is primarily

responsible for the increase in the area's per capita income relative to the national average or the timing is merely a coincidence is difficult to determine. One imperfect way to attempt to make this determination is to use employment and earnings data, since labor earnings are typically the largest component of personal income.^{29, 30} For this exercise, we would begin by assuming that Pittsburgh MSA employment and earnings for a given industry grew at the same rate as occurred nationally from the mid-2000s-when per capita personal income was roughly equal in the two geographies-to 2016. We would then compare these (naïve) projections with what happened, an exercise that would allow us to see which industries



Source: Integrated Public Use Microdata Series.

Figure 6. Percentage of Adults with a Bachelor's Degree or Higher, 1970-2010



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CLARK HILL clarkhill.com | 412.394.2428 saw stronger or weaker earnings and employment gains than projected and, accordingly, which industries were driving income growth beyond what might have been expected based on national trends.

According to this exercise, the mining industry was a clear outlier, contributing almost two-and-ahalf times more income to the area than would have been projected based on national developments alone. Some of this difference can be accounted for by the industry's wages being more than 20 percent higher in the Pittsburgh area by 2016 than this exercise projected; but most of the increase is a result of the considerable expansion in employment in the industry, employment which grew to be twice as large by 2016 as projected. No other major industry in Pittsburgh saw as substantial a deviation from its projected contribution to personal income in the area as mining, which contributed 130 percent more to the area's personal income than projected. After mining, the two industries that saw the strongest overperformance were management and arts, entertainment, and recreation, each adding about 20 percent more to the area's personal income than projected. Professional, scientific, and technical services—a category that includes activities such as software design and development and scientific research servicesadded about what would be based expected on national developments, while sectors such as healthcare and education contributed less to the area's total income than projected.

The Changing Composition of the Pittsburgh MSA's Economy and its Future Prospects

The Pittsburgh MSA has undergone a considerable transformation in the last generation. The opening of offices in recent years by major technology companies Google, Apple, and Uber has helped to cement the notion that the Pittsburgh MSA has become a bona fide hightechnology hub. At roughly the same time, the area has emerged as an important energy center. In these developments, Pittsburgh has moved beyond its relatively recent Rust Belt past. The Pittsburgh MSA went from having an above-average share of manufacturing employment prior to the developments of a generation ago to having a belowaverage share by the end of the 1980s. The latter status remains true today, and one can see it in the industry's location quotient, a statistic that measures an area's industrial specialization.³¹ To calculate such a statistic, we divide the Pittsburgh MSA's share of employment in an industry by that same industry's share of national employment. Location quotients greater than 1.0 suggest specialization, while those less than 1.0 indicate the opposite. As recently as 2016, the Pittsburgh MSA's location quotient for manufacturing was 0.9.

If manufacturing is, in general, no longer a source of specialization in the region, what industry or industries have moved to take its place? There are several answers. The management of companies and enterprises, very often in offices that serve as headquarters, remains an important source of specialization in the area (table 1). The Pittsburgh MSA hosts the headquarters of six Fortune 500 companies, including US Steel, PNC Financial Services, and PPG Industries. In addition, although they are relatively small employers, both mining and utilities—driven by developments in shale gas-also have above-average representation in the region, with local employment shares at least 35 percent higher than national employment shares. Finally, education and healthcare are also sources of specialization. In 2016, area employment in education was almost twice the share as in

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the nation, and healthcare had an employment share that was about 30 percent higher than in the nation. By one estimate, the Pittsburgh MSA is home to the sixth-largest concentration of college students in the country,³² while the University of Pittsburgh Medical Center (UPMC), one of the 20 largest nonprofit hospital systems in the country, is Pennsylvania's largest private employer.33

How specialized the Pittsburgh MSA is in high technology, however, is more difficult to determine, as a "high- technology industry" is not defined in the government's classification industrial system. Instead, activities that one might think of as related to emerging or advanced technologies or their development can be found across industries.³⁴ One way to address this lack of definition is to focus on the activities themselves and attempt to determine the extent to which they are occurring in different industries. The Labor Department has done this by taking science, technology, engineering, and mathematics (STEM) occupations as a proxy for high- technology activities and determining the share of these jobs in each industry. Industries with the highest shares of these workers are classified as high-technology industries.

Applying this methodology to the Pittsburgh MSA suggests that the share of workers employed in a high-technology industry grew in Pittsburgh relative to other large metro areas from 2007 through the early part of the recovery in 2011; from 2011 through 2015, the most recent period for which we have data, the Pittsburgh MSA's share of employment in these industries stabilized near the median value for the 50 most-populous metro areas, at around 5.5 percent.

This approach also highlights that the Pittsburgh MSA has become more specialized in certain high-technology industries between 2007 and 2015. The most dramatic growth came from medical technology, particularly electromedical and electrotherapeutic apparatus manufacturing, a field that approximately doubled in employment during the period. Rapid growth also occurred in research and development in the physical, engineering, and life sciences, an industry that is around one-and-a-half times the size it was in 2007. Two other high-technology industries that grew substantially during the period include computer systems design and related services and engineering services. These two industries added more than 2,000 jobs each to the local economy during this period.³⁵

In addition, a 2017 report from the Brookings Institution discusses the region's increasing importance as a high- technology center, noting that "Pittsburgh possesses significant innovation assets."³⁶ The report indicates that the Pittsburgh

Table 1. Location Quotients and Employment by Major Industry Groups, Pittsburgh MSA, 2016						
NAICS industry	Location quotient	Employment	Average weekly wage (\$)			
Agriculture, forestry, fishing, and hunting	0.1	1,059	520			
Mining, quarrying, and oil and gas extraction	1.7	8,231	1,868			
Utilities	1.4	5,767	1,994			
Construction	1.0	51,258	1,149			
Manufacturing	0.9	85,273	1,164			
Wholesale trade	0.8	37,079	1,296			
Retail trade	1.0	125,187	532			
Transportation and warehousing	1.0	35,765	876			
Information	0.8	16,540	1,496			
Finance and insurance	1.2	54,349	1,528			
Real estate and rental and leasing	0.8	13,764	1,135			
Professional, scientific, and technical services	1.1	78,130	1,587			
Management of companies and enterprises	2.2	37,969	2,387			
Administrative and waste services	0.8	51,893	671			
Educational services	1.8	37,711	1,070			
Health care and social assistance	1.3	189,348	945			
Arts, entertainment, and recreation	1.2	20,922	828			
Accommodation and food services	0.9	96,666	330			
Other services, except public administration	1.2	39,034	592			

Source: Bureau of Labor Statistics' Quarterly Census of Employment and Wages.

Note: Industries are defined at the 2-digit North American Industry Classification System (NAICS) level.

MSA supports substantial research activity in a number of industries associated with advanced technologies, among them robotics, pharmaceutical and medicine manufacturing, software engineering, and artificial intelligence-all industries in which the Pittsburgh MSA hosts at least twice as much research activity as the national average. Nevertheless, these industries also tend to have a smaller share of employment locally than the national average, a situation which Brookings identifies as an opportunity for policymakers and public officials. Capitalizing on this concentration of research activity in a number of next-generation industries could bring broader economic benefits to the region and its residents. To that end, the report suggests trying to strengthen and support a few promising industries—specifically, robotics and advanced manufacturing, life sciences, and autonomous systems-and tying the research occurring in these industries more closely to other industries in the region. The report also suggests strengthening workforce development efforts

strengthening workforce development efforts so that the economic benefits of these advances can be shared more broadly.

While work remains, as the Brookings study suggests, the transformation in the Pittsburgh MSA's economy during the last generation has been considerable as the area has moved from rust to renewal, and attracted national attention in the process. In recent years, various headlines have noted the transformation, both economic and aesthetic. With respect to the region's economy, a New York Times story was headlined "Pittsburgh Thrives after Casting Steel Aside,"37 while a piece from NPR was titled "From Steel to Tech, Pittsburgh Transforms Itself."³⁸ Others have taken note of how the area's amenities have improved. The Economist in 2014 called Pittsburgh the most livable location in the continental United States,³⁹ while The Atlantic has reported on how the arts and green riverfronts have helped to revitalize the region.⁴⁰ The result of this transformation has been the attraction of young, educated workers who are likely to propel the Pittsburgh MSA's economy now and into the future⁴¹ given research indicating that, in the United States since 1980, the proportion of well-educated workers in a metro area has been positively correlated with the area's economic performance.42

While the Pittsburgh MSA's overall college completion rates are about average (figure 6) among the 100 largest metro areas in the nation, according to data from the 2010 Census, the Pittsburgh MSA was in the top quintile in terms of its proportion of 25- to 35-year-olds with a bachelor's or advanced degree. This is a stark contrast from the situation 30 years earlier, when the young and able-bodied were leaving the area in droves, and a hopeful sign of the region's renewed economic vitality and promising future prospects.

¹ Lois M. Plunkett, "The 1980s—A Decade of Job Growth and Industry Shifts." Monthly Labor Review 113(9): 3–16 (September 1990).

² The Pittsburgh MSA comprises Allegheny, Armstrong, Beaver, Butler, Fayette, Washington, and Westmoreland Counties in Pennsylvania.

³ Plunkett (1990).

⁴ Standard Industrial Classification (SIC) 331, Steel Works, Blast Furnaces, and Rolling and Finishing Mills.

⁵ This area includes MSAs that were part of a concentration of manufacturing activity along the Great Lakes and the Ohio River from upstate New York in the east to Wisconsin and Illinois in the west. For more information on the included MSAs and the economic performance of the region on the whole, see Mark E. Schweitzer. "Manufacturing Employment Losses and the Economic Performance of the Industrial Heartland," Federal Reserve Bank of Cleveland Working Paper no. 17-12 (2017). https://doi.org/10.26509/frbc-wp-201712.

⁶ The two recessions in the early 1980s are commonly called "twin recessions" because of how close together they occurred.

⁷ Data are not seasonally adjusted.

⁸ James Donald Feyrer, Bruce Sacerdote, and Ariel Dora Stern, "Did the Rust Belt Become Shiny? A Study of Cities and Counties That Lost Steel and Auto Jobs in the 1980s." Brookings-Wharton Papers on Urban Affairs 2007: 41–89 (2007).

⁹ The notable break in the manufacturing share of MSA earnings that occurred in 2001 is the result of reorganizing industries from the Standard Industrial Classification (SIC) to the North American Industry Classification System (NAICS).

¹⁰ Feyrer, Sacerdote, and Stern (2007).

¹¹ Les Standiford, Meet You in Hell: Andrew Carnegie, Henry Clay Frick, and the Bitter Partnership That Transformed America. New York: Crown (2005).

¹² Because the current time series on Pittsburgh MSA employment begins in 1990, the calculations in this section specific to the Pittsburgh MSA use archived data from the Bureau of Labor Statistics, accessed through Haver Analytics, which also seasonally adjusts these data. There is a discontinuity in this time series at the end of 1987. This is addressed by assuming that employment growth between December 1987 and January 1988 was equal to the average percent change in monthly employment throughout the previous 12 months and then by applying the monthly percent changes in the post-1988 time series to the new time series thereafter. This process eliminates the discontinuity and essentially splices together the pre- and post-1988 employment data for the MSA.

¹³ Based on data from the Bureau of Economic Analysis.

¹⁴ Across all geographies, the differences between the two periods are not primarily a consequence of the Great Recession, but, rather, are rooted more fundamentally in demographic changes.

¹⁵ Sudeep Reddy, "GDP Revisions: Deeper 2008–09 Contraction, Milder 2001 Recession," Wall Street Journal, July 31, 2009.

¹⁶ This figure and all monthly unemployment rates referred to in this section are not seasonally adjusted.

¹⁷ Bill Toland, "In Desperate 1983, There Was Nowhere for Pittsburgh's Economy to Go but Up." Pittsburgh Post- Gazette, December 23, 2012. http://www.post-gazette.com/ business/businessnews/2012/12/23/In-desperate-1983- there-was-nowhere-for-Pittsburgh-s-economy-to-go-but-up/ stories/201212230258

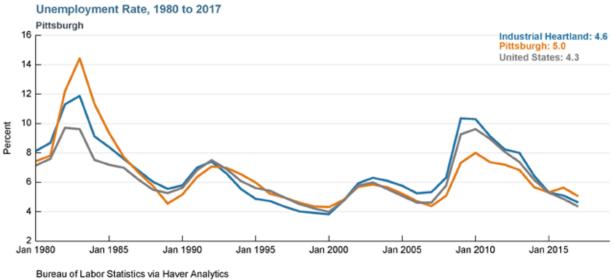
¹⁸ Feyrer, Sacerdote, and Stern (2007).

¹⁹ Toland (2012).

²⁰ In many cases, the highest unemployment rates during this time could be found in places severely affected by the housing crisis such as the Las Vegas metro area in Nevada, the River- side and Sacramento metro areas in California, and the Miami, Orlando, and Tampa metro areas in Florida.

²¹ Based on 2010 decennial census data.

Figure 3. Unemployment Rate, 1980-2017



Last data point: 2017. Group averages are weighted by population.

²² Feyrer, Sacerdote, and Stern (2007).

²³ Robert J. Barro and Xavier Sala-I-Martin. "Convergence across States and Regions." Brookings Papers on Economic Activity 1991(1): 107– 158 (1991).

²⁴ Elizabeth Hoffman, "How Can Displaced Workers Find Better Jobs?" in D. McCloskey (ed.), Second Thoughts: Myths and Morals of Economic History. New York: Oxford University Press (1993).

²⁵ Hoffman (1993).

²⁶ Peter Ganong and Daniel Shoag, "Why Has Regional Income Convergence Declined?" Hutchins Center on Fiscal and Monetary Policy at Brookings, Working Paper no. 21 (July 2016).

²⁷ Mark Partridge and Amanda L. Weinstein, "The Economic Value of Shale Natural Gas in Ohio." Swank Program in Rural-Urban Policy, December 2011.

²⁸ Based on data from the US Energy Information Administration.

²⁹ According to the Bureau of Economic Analysis, wages and salaries accounted for 50.8 percent of national personal income in 2016. https://www.bea.gov/regional/pdf/lapi2016.pdf

³⁰ Outside of labor earnings, the shale boom also could have affected the area's personal income through rent and royalty payments to certain landowners. According to the Bureau of Economic Analysis, total rental income (which includes royalties from rights to natural resources) accounted for 4.4 percent of national personal income in 2016.

³¹ "Frequently Asked Questions: What are location quotients (LQs)?" Bureau of Economic Analysis. Last modified Jan. 11, 2008. https:// www.bea.gov/faq/index.cfm?faq_id=478

³³ John Marchese. "One City in Pennsylvania Is Poised to Crush the 21st Century..." Philadelphia, April 29, 2017.

³³ Eric Bricker. "Healthcare Fast Facts – Top 30 Largest Hospital Systems in America." Compass. Last modified June 2013, 2016.

³⁴ Daniel E. Hecker, "High-Technology Employment: A NAICS-Based Update." Monthly Labor Review 128(7): 57–72 (July 2005),

³⁵ Based on data from the Census Bureau's County Business Patterns.

³⁶ Scott Andes, Mitch Horowitz, Ryan Helwig, and Bruce Katz. "Capturing the Next Economy: Pittsburgh's Rise as a Global Innovation City." Brookings Institution, September 13, 2017.

³⁷ David Streitfeld, "For Pittsburgh, There's Life after Steel." New York Times, Jan. 7, 2009.

³⁸ Dan Bobkoff, "From Steel to Tech, Pittsburgh Transforms Itself." NPR, Dec. 16, 2010.

³⁹ Deb Smit, "The Economist Names Pittsburgh the Most Livable City (On the Mainland) Again." NEXT Pittsburgh, August 25, 2014.

⁴⁰ John Tierney, "How Green Riverfronts Transformed Pittsburgh." The Atlantic, Nov. 20, 2014

⁴¹ Claire Cain Miller, "Where Young College Graduates Are Choosing to Live." New York Times, Oct. 20, 2014.

⁴² See Enrico Moretti, The New Geography of Jobs. Boston: Mariner, 2013; and Edward L. Glaeser and Albert Saiz, "The Rise of the Skilled City." Brookings-Wharton Papers on Urban Affairs 2004: 47–94 (2004).

Guhan Venkatu is a group vice president in the Research Department of the Federal Reserve Bank of Cleveland. The views expressed in this report are his and not necessarily those of the Federal Reserve Bank of Cleveland or the Board of Governors of the Federal Reserve System.



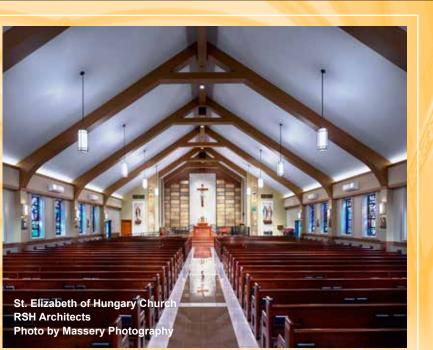
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project profile



PROJECT PROFILE

WEST VIRGINIA UNIVERSITY MEDICINE MRI-GUIDED HIGH INTENSITY FOCUSED ULTRASOUND

onstruction projects are disruptive and stressful affairs. Too often the stress and disruption of the process distracts the owner, architect and construction team from the purpose of the project, the reason for tolerating all the stress and disruption. In the case of the high intensity focused ultrasound project done at West Virginia University Medicine (WVUM) in the late summer, the purpose of the project was the primary motivation for the team, and it drove the project's success, even through the stress and disruption.

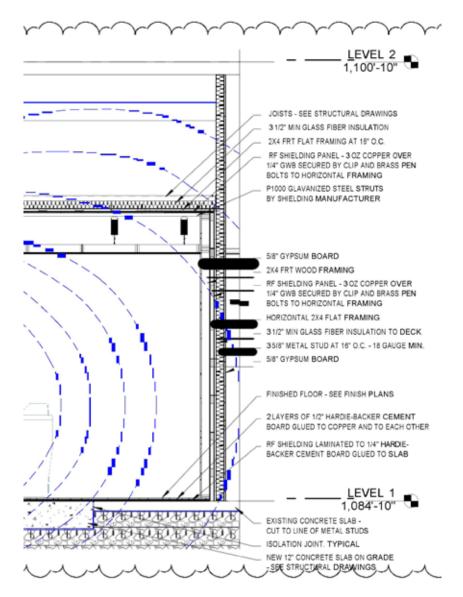
High intensity focused ultrasound (HIFU) can be used to treat a variety of ailments, including as an alternative noninvasive surgical procedure for certain tumors and cancers. It was first used for the treatment of Alzheimer's disease in Toronto in May 2017. The MRI-guided ultrasound was focused on a portion of the frontal lobe to determine the feasibility and effectiveness of opening the blood brain barrier. HIFU stimulates the body's immune system to increase the consumption of proteins that are linked to Alzheimer's.

The project at WVUM was a key part of the health system's

race to become the first U.S. institution to successfully deploy MRI-guided focused ultrasound in Alzheimer's treatment. Its competitors were Stanford University and Harvard University, two institutions that you wouldn't expect to go head-to-head with WVU unless it was an NCAA tournament bracket. The change in competitive landscape came with the recruitment of a preeminent neurologist, Dr. Ali Rezai.

"We had been recruiting Dr. Rezai, since the summer of 2017. He had been in discussions with our senior leadership about joining our group from Ohio State," explains Scott Bierer, director of facilities for WVUM. "He specifically requested a high-intensity ultrasound MRI and a low-intensity ultrasound MRI here. We talked about the various applications for each of these throughout the design process. The high-intensity MRI was intended to go into the Rockefeller Neuroscience Institute."

With a late September target for performing the first procedure, the schedule for fitting out the new MRI suite in a building under construction was going to be tight. When asked about the compressed schedule, John



The enclosure for the MRI is a multi-layered assembly of steel studs, drywall, insulation and copper shielding, which had to be soldered on site.

Schrott, president of IKM Inc., said it was something the architects were aware of from the beginning and tried to accommodate.

"Pretty much right from day one, when we were engaged in the project, they notified us that they wanted to be the first institution in the country to perform this procedure and told us when that would need to be," he recalls.

The problem was that the project that IKM was hurrying to design was being moved from the Neuroscience Institute, which was under construction, to the Physicians Office Center because of a problem with the manufacturer. Israelbased INSIGHTEC Ltd. had made a commitment to build and deliver the focused ultrasound unit in time for WVUM to perform the first procedure, but the manufacturer of the MRI, Siemens, did not have FDA approval for the HIFU unit on its equipment and wasn't expecting it until late 2018. General Electric's MRI was FDA-approved but its equipment was of a different size and configuration than what was designed. When the documents went out to bid in June, however, the decision to change locations wasn't fully reflected.

"When we learned that there would be a compressed schedule with special programming needs, we were under the impression that the construction manager [for the Neuroscience Institute] was going to do the project," says Dan Dillow, project architect for IKM Inc. "We produced documents for a CM-at-risk. There were drawing conventions and specifications that carried over from the Neuroscience project. We found out about the [change in location] when we were called into a scope review because bidders had questions."

The decisions about equipment and location were happening while the project was at the bidding stage. Bids were taken on June 6 and Volpatt Construction was the low bidder. Bierer had worked with Volpatt on many occasions and expressed relief that they were low, knowing that there were some major challenges ahead.

"We had worked with Ray Jr, and Ray Sr. going back about ten years but this was the first time they were successful recently. I had known them for 30 years, since Ray Sr. started the company," Bierer says. "I was pleased because I thought Volpatt had a crew that would remove all obstacles and get the project completed."

The team at Volpatt Construction wasn't quite as confident as Scott Bierer, at least initially, especially since the news that the schedule needed to be compressed was delivered at the first preconstruction meeting on July 12, at the contract was awarded

five days after the contract was awarded.

"We went down for the initial construction meeting expecting this to be just a standard gut and remodel, and you can't do that in a hospital in much less than three or four months," recalls Ray Volpatt Jr. "At that meeting we were told we had seven weeks to complete the project so that they could perform the procedure by mid-October. Mike's response was to tell them that they were crazy."

"Heck, you lose a month just awarding contracts and doing submittals," laughs Mike Uhren, Volpatt's most senior project manager. "The biggest problem was that the shielding company needs four to six weeks just to build the enclosure for the MRI."

It was a coincidence that Volpatt had assigned an



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CaseSabatini.com 412.881.4411 O V in G experienced project manager in Uhren, and superintendent Billy Helmich to the job. After the initial meeting, the Volpatt team talked through the feasibility of persuading a subcontracting team that had bid a four-month job to commit to a seven-week job, especially when they had other projects to complete. Their conclusion was that the task was not feasible.

"Then we got a call from Scott, who explained what this equipment and project meant to WVU," says Volpatt. "I told Scott that he would have to give Mike and I some time to prepare a schedule. I asked if there were any cost or other limitations. We needed carte blanche to go through and get this thing done. The first thing they needed to do was to trust that we would get this thing done; and second was they had to be prepared pay for what it would take, because we couldn't have subcontractors worried about fighting to get paid for change orders or work we directed them to do. The answer I got from Scott was 'whatever it takes'."

"I was prepared for it and I had alerted our senior leadership that if we intended to do this, there would be premium costs involved," says Bierer. "They were prepared for it and there was no push back. That is extraordinary in health care."

The schedule solution involved working ten-hour days continuously for seven weeks. The project was split into two phases, isolating the areas necessary for WVUM to operate the HIFU for completion in those seven weeks. In addition to the efforts of the construction team, General Electric and INSIGHTEC compressed their installation and testing time by four days each. It was a schedule that would work but it literally had no contingency for any hiccup or delay.

It's worth noting that the process of analyzing the schedule, contacting and persuading the subcontractors, and negotiating with WVUM was accomplished in several days, not weeks. Volpatt committed to the revised schedule and mobilized on July 17, the Tuesday following the Thursday preconstruction meeting. That would be remarkable in any circumstances, but it was especially so in light of the problem of shielding the equipment.

MRIs require an environment that is shielded from frequency



interference and shields those outside the environment from radiation. The equipment is enclosed in a multi-layered wall assembly. Standard drywall and metal stud framing is backed with steel shielding where necessary and sandwiched by plywood and wood framing. The copper shielding is the next layer. Drywall and the finish surface are then laminated to the copper or steel.

Gaven Industries was the specialty contractor Volpatt intended to use, but Gaven bid the project under the original schedule and had too many obligations elsewhere to agree to the compressed schedule. To solve the problem, Volpatt suggested that WVU compensate one of Gaven's other clients to get access to the crew needed for the HIFU installation. That client declined. Volpatt then contacted other shielding contractors. Uhren wasn't confident that any of them had the talent available to meet the project's needs when the team had an epiphany.

"We were on the verge of having a solution with a different shielding company when I asked Mike how hard it could be to put this box together," says Volpatt. "It's carpenters who do this work. If Gaven didn't have a crew, we could give them a crew. We could send Billy and Mike and the crew to Gaven's shop to train how to fabricate the box and get Gaven to send one of their people down to supervise it. At first the owner of Gaven was reluctant but that became our solution."

The big risk of this approach was that Volpatt's carpenters could not afford to have a learning curve after their training.

"We didn't have the luxury of making a mistake. If we had to take something out and redo it, we were done," says Mike. "This was the most important MRI installation in America for the past ten years and we have five or ten guys that just learned how to do it one Thursday."

"It didn't concern me because I have known Billy for a fairly long time and I've known Mike and Ray. I know their dedication. I knew that once

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they committed to it, they were going to go above and beyond to get it done," says Bierer. "The one thing that I noticed about Ray early on was that he seemed to take this on as a challenge. Installing an MRI and ultra sound unit in 60 days, I have never been around one that was done so quickly. Ray seemed to be really psyched by this challenge. He wanted to have Volpatt's name associated with this project."

A project like this one, which was less than 2,000 square feet and centered on the ground-breaking technology, might seem to be more about production than design for the architects, but Schrott says the patients that were to be treated in the space required a thoughtful response.

"These patients are not anesthetized. To create a positive patient experience is incredibly valuable," he explains. "We always look at the pathway that the patient takes, understanding that they're going to be in this space and it can be a scary space. How do you make it less intimidating? How do you soften the edges? How do you address the ceiling plane because the patient is lying on his back for awhile? The challenge is a lot of these patients are in the early stages of Alzheimer's. Some of these patients could be a little confused and you have to keep that in mind when you are choosing colors. You want to make sure that the patterns on the walls and the floors are not going to be confusing or disturbing to a patient. It is a small but very important design project."

IKM also had to commit to be an active partner in the construction. The schedule and methods that were employed were unconventional. In a critical path with zero tolerance, routine tasks like processing submittals become potential problems.

"The submittal process was pretty standard, but we made sure nothing sat on someone's desk," notes Dillow. "There were some long lead time items that we figured out what could be substituted. We made a lot of effort to ensure that the products we chose were available. There was constant teamwork and creative thinking on everyone's part. Obviously, the shielding issue was Volpatt's but IKM did whatever it could to support the solution."

There were other challenges that were unusual for a small project. The equipment had to be brought in through a curtain wall that was disassembled and reassembled on the Sunday before Labor Day. Volpatt had to maintain infection control for all the areas that weren't part of the first phase throughout, including the MRI control room, which was used throughout the duration of the project to operate a second, existing MRI unit.

Construction was completed, including the full installation of the MRI and HIFU, on September 30, three weeks after Volpatt was completed and one day shy of ten weeks after



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the first ten-hour day. On October 16, the first treatment of an Alzheimer's patient in the U.S. was done at the WVUM facility.

The project team was motivated by that outcome. In completing a "crazy" project, they took stock of what it took to accomplish a seemingly impossible task.

"One of the things we all found out was if you are going to rely on someone you should rely on yourself," reflects Uhren. "You're unsure when you're relying on someone else, but you can rely on yourself. It was our own people who installed that shielding and that made the difference."

"It took an owner who was committed to allowing us to do what it takes," says Volpatt. "It took a lot of innovative thinking. It took commitment from the workers in the field to work seven days a week, ten hours a day. It took a superintendent who pushed the subs to get done what they needed to get done and pushed the owner to give us what we needed in the field. I give Billy a lot of credit. He really put himself out there.

"It mattered to us and I think that was the biggest thing. It mattered to us that it was important to our client."

"It's really exciting from our perspective to be involved in something that's groundbreaking and can help contribute to the advancement of care. That stimulates a certain kind of energy and desire to drop everything and focus on the project," says Schrott. "We don't just take work for the sake of putting lines on a piece of paper. We embrace the role that we have in this process. If we can get this up and running so that a dozen Alzheimer's patients can have their care [at WVUM] instead of waiting a few more months, then we've contributed to health care." By December, the first patient had received three successful treatments. The outcome of this groundbreaking research is still to be seen but WVUM has become a leader in this new treatment option for a devastating disease. That accomplishment was, in part, due to the success of the construction project.

"The pay back on this is what Dr. Rezai is doing for patients," says Bierer. "This area is underserved and we are a beacon of hope for West Virginia. They come to us when there is nowhere else to go. In a state that has continuous health problems, the hope he is offering is the feel good side of this project."



PROJECT TEAM

General Contractor
Owner
Architect
Mechanical/Electrical Engineer
Structural Engineer
Interior Contractor
Fire Protection
Doors & Hardware
Mechanical Contractor
Electrical Contractor
Flooring Contractor
Painting Contractor
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FIRM PROFILE

ABMECH ACQUISITIONS LLC



In February 2018, ABMECH was acquired by the ownership team of Bud Norton and Ben Ditson, who were also the owners of Matthews Wall Anchor & Waterproofing Services. The hazardous remediation and thermal insulation contractor was renamed ABMECH Acquisitions and positioned on a path for growth that has proven successful in less than one year. Led by its chief operating officer, James Smith, ABMECH has taken a different approach to its customers and staff that is yielding results.

In ten months, ABMECH has doubled its sales from the previous full year, and its backlog ensures that it will keep more than two dozen workers busy through the winter. That's an important goal to the new management team.

"The challenge is to have our core workers employed all year round. I take that very seriously," says Ditson. "For

everyone that works here we impact three other lives, usually a spouse and two children. This is an asset business, no different from banking. Our assets are the people that get it done every day. If we have to send them home I've failed. How do we train and keep great employees? The outcome of being successful at that is we get the sales number that we want."

"I've been here 15 years and I don't think we've ever had more than six people working at this time of year between October and December. This year we have 27 people working and they have not stopped since February," Smith notes.

Ditson spent the first 17 years of his career in commercial banking. He met Norton through a mutual interest in cars and struck up a friendship. Over the next few years, Norton would periodically call with business problems that he thought Ditson could help solve. It turned out that Norton was conducting a four-year job interview in search of a coowner. After Matthews had a difficult year in 2016, Norton came to an agreement that brought Ditson to the company in April 2017. Ditson discovered in the first few months that the company needed to make a strategic acquisition.

"About three months in it was apparent to me that the infrastructure wasn't big enough at Matthews to thrive and grow. We needed to buy a company," he recalls. "I knew that ABMECH was for sale when I left banking. ABMECH was a good fit because Matthews is heavily residential and we needed a specialty contractor that is heavy on the commercial side to create efficiencies and referrals. We were interested in finding a match with another specialty contractor. Staying within the specialty contractor ranks allows us to bounce in and out of multitudes of jobs with multitudes of partners."

ABMECH was in its 30th year in business when the sale occurred. Paul Stricko founded ABMECH in 1988. An insulator by trade, Stricko began to see in the mid 1980s an emerging niche in asbestos abatement. He began estimating projects in the evenings and, when successful, performed the work when his day job as insulator ended. Within a few years he had built a foundation of repeat clients that allowed him to start ABMECH. Jim Smith worked in the field as a laborer and foreman for five years before starting his own abatement business in the early 2000s. He joined ABMECH in 2005 as an estimator/ project manager.

Starting as a three-person company, ABMECH grew steadily over the years but remained relatively small, maintaining a crew of between six and eight. Stricko was interested in retiring and offered to sell the company to the employees, but the two sides couldn't reach agreement. The deal with Ditson and Norton allowed Stricko to exit the business.

While the business had been strong in 2017, the new management team saw opportunities for improvement. The two new owners, who came from outside, sought to create a new environment and culture both internally and with customers. The new culture was greeted with enthusiasm by their workers, with almost no turnover. With customers they found that resetting the business relationship was viewed as a positive step.

"After many years of rowing and coaching crew, I learned that the boat does not go down the river with just one person," says Ditson. "You have to have all oars moving as one. We act as a team. No one person is greater than the other and we've all walked in each other's boots."

"That's the biggest change between then and now," agrees Smith. "Everybody works together now. It's not a competition and it was before."

As a work category, asbestos abatement has only been part of the construction industry since the early 1980s and was expected to have a limited life cycle, since all of the asbestos-containing materials could be eliminated at some point. Companies like Abmech obviously look at other opportunities if they want to grow over the long haul. "There is an estimated backlog of 20 to 25 years of asbestos abatement in the markets we serve but asbestos isn't the only hazardous material out there," says Ditson."There's the notion of silicosis that's out there right now. There are other airborne hazards out there, like lead and mold, that are permeating where we are. We want to be able to deal with those hazardous materials that are airborne that we can build our containments around because we are good at it."

In addition to looking for more project opportunities, ABMECH's management has begun challenging the staff to look for more opportunities with the same customers. One example of this has been the addition of finishing services. Workers and managers were sent to floor finishing school to get certification for underlayment and topping applications. Now ABMECH can offer its clients the option of finishing a surface after tearing out hazardous flooring, rather than leaving the floor as a problem for another contractor to solve.

Another strategy has been to encourage the project managers to be proactive in developing relationships with their existing clients. Ditson believed that by getting the project managers to make outbound calls they would learn about projects that were coming and perhaps pick up on opportunities that they could land before going out to bid.

"It's not going to be 100 percent successful but if it can be 15 or 25 percent, that's a significant increase," notes Ditson. "My sales management training at banks taught me that a collaborative team approach drives sales and growth. If your behaviors are correct then the outcomes will be the ones you desire because you'll be empowered to represent the company the right way. That is really what has changed. All the rest has just been outcomes. Our belief is the behaviors and the power to act on those behaviors drives the outcomes."

ABMECH's projects usually start with selective interior demolition to access the hazardous material. Following demolition, ABMECH cleans and exposes the area to be remediated. They will then build the containment area (although sometimes containment precedes demolition), remove the hazardous material, clean and encapsulate the area. Final air quality sampling is then done and the health department inspects the contained area. In areas where the health department doesn't regulate the work, a third party may test and monitor the air quality or ABMECH may do the testing and provide their clients with certified documentation that the hazardous situation has been remediated. After the air quality has been certified as clean, ABMECH tears down the containment, bags all of the material and disposes of it in hazardous material dumps.

"You have to follow the rules and we do. They are not negotiable," says Ditson. "We follow the Army Corps of Engineers regulations. If a worker walks into containment without all of the equipment on, they are pretty much gone that day. Disposal is done correctly. There is no joking around with that, period."

"A lot of the work is in occupied spaces as well," says Smith. "In a hospital there is a patient ten feet away so everything has to be done perfectly."

There's also a strong emphasis on safety. In an industry segment that is especially dangerous, ABMECH has an experience modification rate (EMR) of .732 (and are proud enough to include the EMR in the email signature).

"We're proud of our safety record. We have won numerous awards from the Master Builders' Association and the state of Pennsylvania for our safety record," says Smith. "I don't know many companies our size that have a full-time safety officer monitoring the job sites. It's priority number one that everybody goes home safe at night."

The emphasis on the welfare of the workers is something that ABMECH's management comes back to often. ABMECH is signed with Laborer's Local 373 and has taken steps to enhance the working relationship with the union, and to go beyond its obligations for its workers.

"The hall has been very good to us. We would not be where we are right now without them," says Ditson. "We have a different take on retention tools than the union. They have been nothing but good to us but I am a financial guy. Part of my responsibility as an owner is to make sure that our workers have a retirement to go to. I'm not sure that there's enough available to them by way of the current retirement plan, so we are looking at augmenting that through the addition of a secondary 401K as a retention tool. It's a creative approach to retain good people because when they're good at it their efficiency is crazy good. The union has given us the right kind of talent to achieve that and I don't want to lose them. We don't want to train workers and then put them back out on the street because the hard part is getting them back."

ABMECH Acquisitions LLC

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LEGAL PERSPECTIVE

BID PROTESTS ON PUBLIC PROJECTS WHERE PRICE IS NOT THE DECIDING FACTOR ARE AN UPHILL BATTLE

BY EDGAR ALDEN DUNHAM IV, ESQ.

Traditionally, public construction projects typically followed a set path. The public owner hired an architect or engineer who prepared plans and specifications, and then released those plans and specifications out for bidding. The project was then awarded to the qualified bidder who provided the lowest responsive bid.

A contractor protesting a bid in those cases had to show that the lowest bid was either from a non-qualified bidder or was not responsive in some fashion. While that can be difficult in a specific case, conceptually, it is relatively simple.

Over the past 20 years or so, public entities have increasingly strayed from the traditional model. Fasttrack projects, which are not based on complete plans and specifications, public-private partnerships, and projects in which the price is simply one of the factors to be considered have become increasingly popular.

Public projects where price is simply one of the factors tend to be projects where time is an issue. The public entity will typically set broad parameters for the design, a tight schedule for completion, and other particulars it wants in the project.

Because the award of public projects is not supposed to be done on the basis of favoritism, and because the bidding of such projects is supposed to be open to all, the public entity will establish ostensibly objective criteria for determining the winning proposal. This typically takes the form of a number of categories of different criteria in which each bidder is ranked. To determine the winning bid, the public entity compiles the total scores of each bidder based on the rankings in each category. The proposal with the best score receives the award. While the mathematics of determining the winning bidder by compiling the various proposals' rankings in each category is objective and presumably fair, the assigning of rank to each bidder is frequently much more subjective.

Accordingly, attacks on awards in such cases usually center on attacking the individual rankings in each category, arguing that the various rankings by the public entity were incorrect or arbitrary. Unfortunately, for those protesting bidders, however, courts rarely substitute their knowledge and expertise for that of the publicly entity and generally defer to the entity's ranking choices.

A recent example is the 2018 Court of Claims case of Kiewit Infrastructure Ins. Co. v. United States. There the Army Corps of Engineers awarded a contract for a dam repair project to the second-lowest bidder, Flatiron/Dragados/Sukut joint venture (FDS). Kiewit Infrastructure West Co. (Kiewit), the lowest bidder, challenged the award. The bid proposals were to be evaluated on the basis of the "best-value tradeoff process" set forth in section 15.101-1 of the Federal Acquisition Regulations. That process permits a tradeoff between price and non-price factors and allows awards other than the lowest-priced one.

The Corps had a number of non-price factors that were more important than the price for the project. Ratings for each factor ranged from unacceptable to outstanding.

Ultimately, the two highest-ranked bidders were FDS and Kiewit. FDS had a higher technical ranking, and Kiewit had a lower price. Kiewit's technical ranking was "good," the second-highest ranking.

The justification for FDS's higher ranking was subjective. The Corps said that FDS "demonstrated a better understanding of the existing site conditions and project requirements," and that "FDS's exceptional approach . . . resulted in a lower risk of unsuccessful performance." The Corps also noted that FDS had "a superior understanding of the geologic and hydrogeological site conditions."

The court, in ruling on Kiewit's protest, found that the award was not arbitrary, largely because the Corps followed the process set forth in the solicitation for making the award. Regarding Kiewit's detailed arguments on the rankings, the Court said that while there must be more than conclusory statements in the record to support a selection under the Federal Acquisition Regulations, "technical rating decisions are the minutiae of the procurement process . . . which involve discretionary determinations of procurement officials that a Court will not second-guess."

Not surprisingly, Kiewit did not prevail.

Cases like the Kiewit case are not anomalies. As Kiewit illustrates, it is difficult for a disappointed bidder on these projects to protest the award. Generally, the only argument disappointed bidders will have is that the public entity made a mistake in its technical review. But the courts will generally not engage in the type of detailed technical analysis necessary for those arguments, under the theory that to do so would be to second-guess the determination of procurement officials.

Besides making it difficult for disappointed bidders, it is easy for public officials to make subjective determinations in these cases that can result in conscious or unconscious favoritism—something our bidding laws are designed to prevent.

None of this means that contractors should avoid these types of projects. It simply means that when bidding on a project like this, a bidder should fully explain what it is proposing and what it intends to do, and realize that if it is not awarded the project, any attempt to protest the bid will be an uphill battle.

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A PRIMER ON TRADEMARKS FOR THE CONSTRUCTION INDUSTRY

BY CANDACE LYNN BELL

Construction companies, engineering firms, and contractors of all types often work with different types of intellectual property assets in their day to day business—the copyright in a set of blueprints or plans or a patented piece of equipment, tool or process. But what about trademarks and service marks? What about a construction company's, engineering firm's, or contractor's own marks or brands?

What is and is not a trademark?

A trademark is a word, phrase, symbol, and/or design that identifies and distinguishes the source of a good, while a service mark is a word, phrase, symbol, and/ or design that identifies and distinguishes the source of a service. For the rest of this article, trademark or mark will mean both. The name on your company's certificate of incorporation or certificate of formation, for example, ABC, Inc. or ABC LLC, may not necessarily be your company's mark. A company's assumed name, d/b/a, or trade name also may not necessarily be the company's mark. Nor is a company's domain name its trademark; it is just the web address for the company's website. But all of these can include your company's mark. It is important to understand this difference, because if your company's legal name or domain name infringes on another company's mark, despite a state's approval of the company's formation or the registration of a particular domain name, you may have to change your name or give up your domain name.

So what makes a mark? Use of the mark on or in association with the company's goods and services for example, ABC hammers when ABC appears stamped on the hammer's handle or ABC commercial construction services when ABC appears in a brochure advertising the commercial construction services.

Why is a trademark valuable?

At its core, a mark is a symbol of the goodwill associated with a company's goods and/or services. As a construction firm or a contractor, each and every day and on each and every project, you work on building your company's reputation. You know how hard it is to build a good solid reputation, and you know how easy



it is to lose it. Your mark is the symbol of your company's reputation and goodwill. As a result, your mark may be one of the most valuable assets of your company. If you are just starting out on a new venture, you want to choose a mark that does not infringe on someone else's mark, so the goodwill that accrues as a result of your hard work stays with your company. If your mark is already established, you also want to be able to stop someone else who tries to use your mark or another mark that is so close to yours that your customers are likely to be confused about whether it represents your company or a competitor.

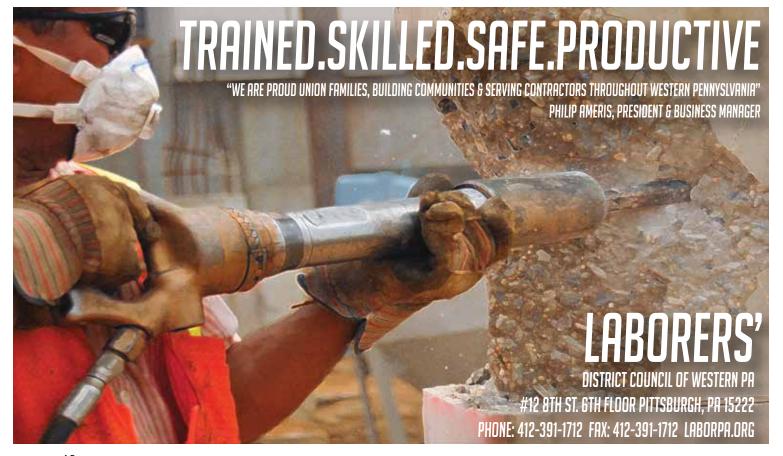
How do you protect your valuable trademark?

One of the best ways to protect your mark is to apply for and obtain a trademark registration. In the United States, rights in your mark are based on and created by using your mark in commerce, "common law" rights, but such rights exist only in the specific areas of the country where you used your mark. A state trademark registration only provides rights in that particular state. By obtaining a U.S. federal trademark registration on the Principal Register, you can obtain nationwide rights for your mark. A U.S. federal trademark registration has a number of other advantages and benefits over common law rights and state trademark registration. Your federal registration will be listed in the United States Patent and Trademark Office (USPTO) database, and your registration can be cited by the USPTO as a basis for refusing registration of someone else's pending application if the USPTO determines the mark of the pending application is likely to cause confusion with your registered mark.

The test for whether or not there is a likelihood of confusion looks at a number of factors, but the two factors often given the most weight are how similar the marks are and how closely related are the goods and services. Sometimes a refusal to register is enough to cause the other party to abandon the applied-for mark. Recent studies have also shown a positive link between various company economic performance indicators, such as revenue growth, and the registration of a company's trademarks. A U.S. registration can also provide a basis for obtaining trademark registrations in foreign countries. If you perform work or sell product in countries outside the United States, you may or may not have created rights in your mark. Many foreign countries only recognize trademark rights if you have a trademark registration in that particular country.

Taking the proper steps to choose and use your mark, combined with seeking trademark registrations for your mark, will enable your company to "build" on one of its most valuable assets. And after all, isn't that what construction is all about?

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FINANCIAL PERSPECTIVE

THE TAX CUTS AND JOBS ACT: ONE YEAR LATER BY MARK ULISHNEY, CPA

The Tax Cuts and Jobs Act (TCJA) became effective January 1, 2018, with a few exceptions for special date enactments and fiscal year-end taxpayers. The TCJA will affect virtually all taxpaying and non-taxpaying entities; however, the focus of this article will be those provisions experienced by most businesses that predominately operate as tax flow-through entities (specifically construction-related businesses).

The TCJA provisions are quite expansive, and the ones which are most impactful are summarized below.

- Accounting Methods Under TCJA, \$25 million in gross receipts is the new threshold safe harbor limitation applied consistently across several areas. If a taxpayer has less than \$25 million (now indexed with inflation) average annual gross receipts for the three previous tax years, it can continue to avail itself of several more simplest and usually tax saving accounting methods. These include:
 - Cash method of accounting as long as it clearly reflects income.
 - Inventory can be treated as materials and supplies
 - If inventory is recorded, there is no requirement to apply 263A cost capitalization rules
 - For small construction contracts no requirement to report under the percentage of completion method (except for AMT).
- Bonus depreciation There is now available a 100 percent depreciation deduction for qualified property acquired. Besides expanding the write-off to 100 percent, the type of property that qualifies has also been expanded. Property with a recovery period of 20 years or less, which includes the normal machinery, equipment, vehicles, plus most land improvements qualify as well; used property also now qualifies as long as it is first use (i.e., not leased items then purchased).
- Listed property, which for the most part is automobiles (excludes SUVs) – Generous depreciation deductions are now available for listed property as much as \$10,000 in year one and \$16,000 in year two, with higher amounts for subsequent years than was the case previously.
- Section 179 This provision of the TCJA allows for the expensing of capital items purchased if certain criteria are met. The criteria have been expanded to allow for a higher deduction, cover more types of items and increase the maximum permitted total purchases

before a taxpayer is phased out of the Section 179 rules. The maximum Section 179 amount is now \$1 million. The purchase phase-out amount was increased to \$2.5 million. Besides tangible personal property, Section 179 is now applicable to improvement property such as roofs, HVAC units, fire protection, and alarm systems and other improvement type property. Additionally, the dollar limitations under this provision have now been indexed with inflation.

- Business Interest The deduction for business interest is now limited to 30 percent of adjusted taxable income for business with gross receipts in excess of \$25 million (indexed with inflation).
- Entertainment Expenses for entertainment including sporting tickets is now the same as club dues and no longer deductible. Business meals retain their 50 percent deductibility with company function expenses (i.e., Christmas party) still being fully deductible.
- Deduction for Qualified Business Income (QBI) Most all construction-related business will qualify for the newly created 20 percent deduction off of the taxable flow-through income (LLC's, Sub-S, Partnership) of their construction operations. This new deduction replaces the current DPAD (9 percent) deduction and is known as Section 199A. Certain limitations apply. The deduction will have limitations based off of the individual's taxable income, 50 percent of wages paid by the business, and if the business is a specified trade or business, which construction companies generally are not. Be aware real estate developers have other limitations that may apply; however, they still qualify for QBI. As one can imagine, there are several rules for this deduction regarding qualification and deductible amounts. Unfortunately, temporary regulations issued in August left many unanswered questions. To date, only some regulations have been provided, so questions remain, and the logistics of the deduction are not clear. Nevertheless, a 20 percent deduction is welcomed.
- TCJA put into law many new tax favorable provisions; however, there is also the expiration of some existing provisions. The domestic production activities deduction (a 9 percent deduction off of net income) utilized by many has been eliminated effective January 1, 2018. Like-kind exchanges – except for real estate – is no longer available. This means that on trades of personal property, the trade-in values assigned will be the deemed sales price and applicable gain must be recognized not deferred. The tax effects of this gain,

however, can be minimized by other TCJA provisions.

- Tax Planning The tenants of tax planning remain the same, however, under TCJA, the actions and means to do so have changed somewhat:
 - use the available means to report lower taxable income,
 - where applicable maximize deductions and credits available,
 - defer tax payments as much as possible,
 - pay the least amount of overall tax.

Generally, it is wise tax planning to keep income consistent year to year, or in other words flat, instead of having spikes and valleys year to year. This enables a taxpayer to fully utilize the lower tax brackets of the graduated Federal income tax tables. This is especially true under the new TCJA tax tables where the top tax bracket has gone from 39.6 percent to 37 percent and is now realized for income above \$600,000 of taxable income for married filing joint, where previously the top bracket was reached at \$470,700. All of the lower brackets have wider spreads, thereby allowing more income to be taxed at lower rates.

Effective tax planning involves maximizing deductions and converting what would otherwise be a personal expense into a business deduction. Unfortunately, some of this has been taken away by TCJA. These include:

- the loss of entertainment deductions,
- employee award programs for service and safety,
- employee parking and commuting allowances, although still not taxable to the employee,
- further denial of deductions for certain fines, penalties, and other amounts, among other things.
- However, company-wide events, i.e., Christmas party, are still 100 percent deductible.

To counter these lost deductions, there are some newly created items such as:

- The expansion and clarification of all events tests – which provides that for accrual-based taxpayers all events need to occur before the income is required to be reported. Therefore, deferral of a recognition event can defer the revenue reported for that contract.
- The transaction price on a multiple performance contract for tax purposes can be allocated according to the financial statement reporting, which is usually more conservative as to when and the amount of revenue recognized.
- Expansion of the rehabilitation credit (generally not for contractors but for contractors' customers) and newly created family and medical leave credit.

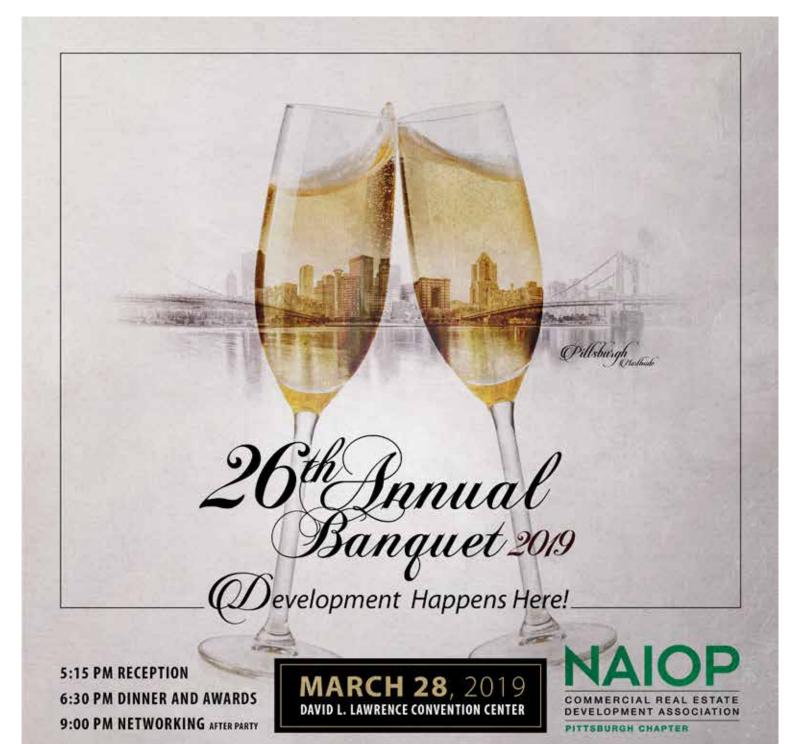
Another area of tax planning is to either accelerate or defer income or deductions depending on year to year facts and circumstances. This type of planning evolves from the idea of avoiding peaks and valleys year to year for taxable income in order to maximize the lower tax brackets. In a year of poor performance, assuming the subsequent year will rebound to be a higher income year, one would want to accelerate income and defer deductions. Given a year of higher than normal income, the opposite would be true. This type of planning is much easier for a cash basis taxpayer, however, even accrual basis entities can accomplish this through:

- the all events test discussed above,
- inventory reporting and calculations discussed above,
- bonus depreciation taken,
- section 179 elections made,
- contract percentage of completion calculations,
- potential segregation or combination of contracts,
- de minimis elections,
- bunching of itemized deductions, especially charitable contributions, year to year may be advisable as well,
- as well as many other available planning tools.

The final tax planning item to be discussed here is the deduction for qualified business income. The calculation in and of itself is purely mechanical, however, due to limitations applied to income and wages, planning is advised. For instance, if an income limitation applies, steps should be taken to mitigate that impact. Alternatively, if there is expected to be a limitation based upon wages, an acceleration of wages or bonuses would allow for a larger QBI deduction. The goal is to maximize the QBI deduction year by year. This is much like planning to keep taxable income steady year to year with minimal spike years. The QBI deduction calculation should strive to avoid a lost deduction due to spike years or insufficient wages. As a final note on QBI, it is important to remember that a business owner receives the QBI deduction on flow-thru income, not on the wages that the S-Corp pays him. Thereby, taking excessive wages in place of dividend distribution would generally tend to reduce the QBI deduction and increase taxes due.

There are many other provisions of the TCJA concerning deductions, tax credits, accounting methods, AMT tax, tax elections and much more all too expansive to include herein. A conversation with your tax professional is well advised in light of the expansiveness of the TCJA legislation.

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MBE / WBE COMPANY SPOTLIGHT

JADELL MINNIEFIELD CONSTRUCTION SERVICES, INC.



Two brothers with very different personalities and approaches to business have blended those approaches into a thriving specialty contracting enterprise. Jadell Minniefield and Odell Minniefield Jr. have managed Jadell Minniefield Construction Services, Inc. together for nearly 20 years, although the partnership goes back quite a way further than that.

The company was started in 1997 as a sole proprietorship by Jadell, with a truck that he purchased from his father. Odell Minniefield Sr. was in the demolition business and helped his son get started. Beginning with that single tri-axle, working from his grandmother's house, Jadell began picking up small demolition projects and working as a partner with his father's company. Odell Jr. remained with his father's business for a few more years, joining Jadell and incorporating the business in 2001. Jadell's branching off was not a move to work separately from his father but rather an opportunity for him to stretch his own entrepreneurial legs and grow a business.

"My father still had his business at that point – he worked right up until he passed in 2015 - but the companies did not compete," says Odell Jr. "We worked together. There really wasn't any competition."

The brothers had worked for their father since they were old enough to sit in a truck and visit job sites with him.

"Construction was ingrained in us. We have been doing it since we came home from the hospital. Our first stop was on a job site," Odell jokes. "We started out cleaning brick when we were little. We would ride around all day with my dad delivering brick and going to job sites. We would be on his lap while he was running machines. I don't know what you would call that today, maybe child abuse!"

Odell admits that, for better or worse, construction is a way of life for him. Jadell's wife, Olivia, notes that her husband is equally consumed by the business.

"Jadell is the same way, "she says. "I think he still gets excited by the work, seeing things get accomplished every day. I think he likes the headaches; he likes to work under pressure."

"I can do without the headaches," laughs Odell.

Jadell Minniefield Construction Services is very much a family affair. Even as it has grown, the company remains lean, with Jadell, Odell, Olivia and Rhonda Minniefield, Odell's wife, managing the business. Jadell runs the field operations. Most days he will still spend some time on a piece of equipment. Odell manages the operations in the office. Their office has been on Second Avenue, directly across from the Hazelwood branch of the Carnegie library since 2006. The company maintains a shop in the Hays neighborhood of Pittsburgh, just across the Glenwood Bridge.

Born and raised in Hazelwood, the Minniefield brothers have kept their business in the community and have recently worked on the Hazelwood Green development. They look forward to watching that project develop and seeing the opportunities that will grow from it in Hazelwood.

The majority of their work is still demolition, although the company has begun to expand its trucking and hauling operations. They purchased six trucks recently and are growing that portion of the business. With the expansion into trucking and hauling, the field crew for Jadell Minniefield Construction Services has grown to 25 people. Odell acknowledges there are growing pains and says that the biggest challenge right now is finding good employees.

"We have been doing the same type of work all along as we are doing today but it is at a greater scale now," says Odell. "We have a high turnover rate. One person



comes in and if they're not performing, they are gone, and we bring the next person in."

Olivia thinks that the hiring challenge is changing their perception of what is normal for the current generation.

"The younger people seem to move around a lot more than we did. I think we wanted to find a job and have a home somewhere," she ssys. "Now people seem to move around a lot more. That is something that I might think is a red flag, but it's really becoming the norm."

Asked about their succession plan Odell shrugs his shoulders. He said that he and his brother didn't really have a choice about joining the business, but his children are showing no interest in the construction industry. Odell's oldest child, a daughter, works in another industry. He has a son at Tuskegee Institute who has been accepted at the University of Pittsburgh medical school and another who is a freshman engineering student at Clarion University.

"My kids are 17 and 12 and they know how to run the machines," says Jadell. "But they are not too interested in the business. There is not enough excitement for them I guess."

Transitioning the business is not an urgent concern for the brothers, who don't expect to slow down any time soon. With the work that is in the construction pipeline in Western PA, they are more focused on sustaining growth.

"I would like to keep the progression of the way the company is going right now. I want to see everything keep moving forward," Odell says. "The work that is coming up on the horizon is definitely an opportunity for us and I want to get into those areas where there will be a need for our services. We've signed on with Local 66 and the Teamsters with the hope of being



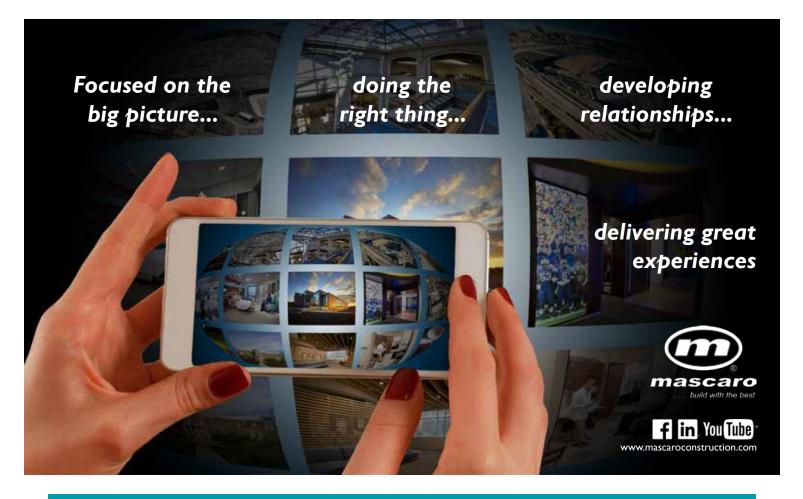
able to get exposed to those projects. That's one important step that we think can help us."

The two brothers, who joke that they didn't know that they had a choice about getting into the construction industry, are running Jadell Minniefield Construction Services in its 22nd year of operation. Their own work experience goes back almost another 20 years, working for a father who showed them what a day's work looked like. Odell Minniefield Jr. thinks that those first 20 years may have been as important as the last 20.

"If I had to say why we succeeded, I would say just our character of work," says Odell. "We try to be honest with everyone and be up front. We just work hard to get the job done. It's hard to say what our philosophy is, but honesty is the key. Doing what you promise people you would do. That's always been our key. My dad stressed that all the time."

Jadell Minniefield Construction Services, Inc.

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The Demand for Homeownership is Shifting

Homeownership is an integral part of the American dream. For decades, the biggest investment that most Americans made was in the single-family home in which they lived. It is a truism of personal finance that you should pay yourself (or your bank) instead of your landlord. There is increasing evidence that this attitude about residential real estate is not as pervasive as it once was, and it's not the Millennials' fault.

The year 2018 marked a shift in the housing market. Ten years after the housing bubble burst and the world's financial systems nearly choked to death on a diet of toxic mortgages, the trends in the U.S. housing market changed. Data showed that home sales and home construction were deviating from the previous trend. Homeownership rates leveled off after several years of rebounding. More surprising was a change in sentiment that might represent a long-term change in how Americans find shelter.

Government sponsored enterprise Freddie Mac conducts a semiannual survey of renters across the full demographic spectrum that is called "Profile of Today's Renter." The 2018 report, which was released on October 17, included some surprising – and conflicting – results that help explain both the resilience of the U.S. apartment market and the sluggishness of the housing market.

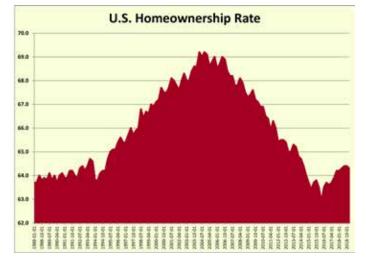
The report's headline conclusion was that the perception of the affordability of renting had risen sharply from February. According to Freddie Mac's survey, 78 percent of renters believed renting was more affordable than owning. That was an 11-point jump from six months earlier. While multifamily observers tend to credit the lifestyle choices of the younger generation with the boom in apartment living, the Freddie Mac report showed that more respondents from all three major demographic cohorts said that renting was more affordable than owning.

Millennial renters reported the largest jump in the perception of affordability, going from 61 percent to 75 percent, but 77 percent of renters who are of the Gen X demographic group saw renting as more affordable than owning (up 11 points). And 88 percent of Baby Boomer renters held that renting made more sense than owning.

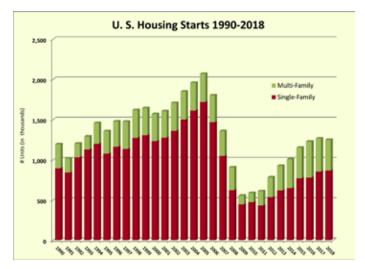
The confounding result of the "Profile of Today's Renter" was the increase in the number of renters who said they were experiencing problems making their rent payments. Two in three renters reported having trouble meeting their rent in the past two years, significantly more than the 43 percent of home owners who admitted to the same problem with their mortgage.

Digging into the details of this data finds that the increasing difficulty in making rent was dramatically higher for renters in rural areas, where 77 percent said that rising rents had impacted their decisions about buying essential items, like food or medical care. Also, the hardship was highest – an overwhelming 88 percent – among workers in so-called essential industries, like education and healthcare. Workers in this group of respondents also reported that the difficulty with higher rents forced them to live further from their workplace than they wanted.

These results point to some of the structural problems facing the demand side of the housing industry. Structural problems with supply are some of the reasons why rents have risen, and so much new apartment building has occurred. Now, as lenders have become gun-shy about



Source: Federal Reserve Bank of St. Louis



Source: U.S. Census Bureau



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Twin Towers 4955 Steubenville Pike Suite 219 Pittsburgh, PA 15205 apartments and rent growth has slowed, it's clear that demand for apartments will remain steady at worst. A third, equally conflicting, result of the Freddie Mac survey points to support for demand going forward.

Satisfaction with the experience of renting remained steady, with 63 percent expressing satisfaction with apartment living. Fewer renters believed that it would be more affordable to buy in the coming 12 months (41 percent now versus 46 percent in February). And, despite the growing problems with meeting rent payments, the number of renters who said they expected to rent again in their next residence also jumped 11 points, to 66 percent.

The government's November 20 reading on the housing market validated this change in trend and the underlying concerns. While the Department of Commerce reported that housing starts had risen 1.5 percent to 1.228 million units (seasonally-adjusted), the increase was driven by a stronger multi-family market. Construction of single-family units fell again in October for the second consecutive month, declining to 865,000 units. Of greater concern was the fact that the year-over-year trend was 8.8 percent lower. The start of 948,000 single-family units in November 2017 remains the high water mark of the current business cycle, which began in 2009.

For most of the past two years, the housing market has been constrained by supply problems that stem from land availability and regulatory changes that make residential development less attractive. Land and labor shortages have led to tighter inventories, higher prices, and fewer new home starts than expected. Now the rising costs of borrowing are adding to the structural supply problems. The 30-year fixed mortgage rate hovers near five percent, a seven-year high. Wage growth has picked up, but remains more than two percent lower than house price inflation.

If the demand for homeownership

hadn't picked up before 2018, the trends in affordability and supply aren't likely to reverse the decline.

More of than twenty years government intervention and tinkering with the mortgage market across three U.S. administrations from both sides of the aisle - have wrecked the norms for the housing market. It was reasonably assumed after the mortgage crisis that began in early 2007 that there would have to be an extended period of readjustment for the housing market to respond to the housing bubble and excess inventory that followed. Dire forecasts at the time suggested that the housing market might remain depressed until 2014. It turned out those expectations were on the money, but this current trend goes well beyond an equal and opposite reaction to the mortgage crisis.

The U.S. housing market has always been subject to the rhythms of the economy and demographics. That made the housing market predictable. There were still cycles of overbuilding and retrenchment, but those resulted from too much optimism, poor judgment, government intervention, or a combination of the three. The basic understanding of housing demand hadn't changed since World War II. Some 70 years later, the foundation of the housing market may have shifted.

Of the major forces constraining the housing market, rising interest rates are the most immediate concern, and also likely the most temporary. Borrowing costs are significantly higher than two years ago, but they also dramatically lower than in recent U.S. history. As rents push higher, the short-term difference between paying rent and mortgage will disappear. Low inventories and shrinking workforce present tougher challenges to growing supply, which would help ease the rate of home price appreciation and improve affordability. All of these conditions will change at some point. The unresolved question is whether improvements in affordability will improve demand.

Data from October suggests that many markets are continuing to see higher-than-normal appreciation but some of the biggest housing markets, Dallas in particular, have begun to see prices flatten and market indicators like days on the market and multiple offers – cool off.

Thus far, the Trump Administration has shown little interest in the housing market but it has yet to face a slowdown in the economy. Its zeal to tear down regulations has eased some of the constraints that Dodd Frank placed on residential financing, but many of the restrictions remain and lenders have expressed little interest in rushing back into residential development. Perhaps a downturn will move the government to stimulate demand but, until such a turn of events, demand for homeownership seems unlikely to grow. A November 27 decision to allow Freddie Mac and Fannie Mae to increase the maximum dollar amount of the mortgages they issue by about \$30,000 may be an indication that the government is seeing affordability as an impediment to demand.

The cycle of the U.S. housing market relies upon demand from a younger generation replacing the fading demand from the aging generation. Young people marry and start families, which is a major factor that pushes renters into buying. Perhaps the Millennials and the emerging Generation Z will revert to form and begin to buy homes as the Boomers fade further in the 2020s, but the ever-declining birth rates suggest that this is not a given.

It seems as likely as not that the U.S. is seeing the beginning of a shift in the mix of housing that its households demand. Such a shift occurred after World War II, when U.S. population boomed and the move to the suburbs ensued. The conditions of the housing market today are occurring against a backdrop of social factors, like New Urbanism and sustainability, which are slowing population growth and suburban expansion. Expect the demand for homeownership to slow as well. 🚳

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RISK MANAGEMENT FOR OWNERS: NINE STRATEGIES FOR EXCELLENCE IN THE CURRENT CONSTRUCTION CLIMATE

BY CHAD A. WISSINGER, ESQ., BRIAN P. MALONEY, P.E., ESQ., AND JULIE A. PATTER, ESQ.

Background:

Virtually every sector of Western Pennsylvania's economy is under construction. Whether it is new highways, infrastructure upgrades, office space, medical facilities, educational buildings, massive commercial/industrial plants, or housing, Pittsburgh is in the middle of a five-year trend line for total construction dollars where each successive year is the single biggest year on record. Jeff Burd noted in this magazine one year ago that virtually every union trade in Western Pennsylvania was operating at full employment, with several using travelers. Since that time, more projects have been announced than the four-plus billion dollars' worth Jeff predicted last January. Dollar Bank confirmed as much in the November/December 2018 issue of Breaking Ground when it concluded that Western Pennsylvania will have completed \$5 billion worth of construction projects in 2018 – a number that has never been done before.

Historically, when a building boom strikes one region, travelers fill the void. But for anyone paying attention to the national economy, the solutions this time are not so simple. Going back to their 2016 surveys, The Associated General Contractors of America (AGC) raised a host of interlocking issues that should put owners on notice. The AGC wrote that skilled craft labor shortages will continue for the foreseeable future, and are occurring in virtually every region of the country. In addition, the AGC found that knowledgeable, experienced, life-long craftspeople are retiring at paces that require massive recruiting of young employees into work that takes years to master.

The AGC summarizes nicely:

"Our study findings show that the current construction risk environment is vastly different compared to just five years ago. Owners are putting more pressure on project costs and schedules while modifying contract terms to place greater risk on all contractor levels. At the same time, contractors are winning more work and staffing projects with less skilled labor and fewer experienced field supervisors. Combined, all of these factors are adding unprecedented risk to field productivity, work quality, safety, and working capital."

In addition to labor woes, owners will receive less favorable pricing through 2019. Contractors will be more selective pursuing work, and fewer contractors will pursue any individual project. Accordingly to Archinect.com, steel tariffs will add between a 0.5 and 1.0 percent price increase to virtually any new project on structural elements alone, with short-term supply bottlenecks leading to increasingly long lead times on already long lead time items. The tariffs on aluminum and steel will also have adverse cost impacts on everything from duct work to roof top chillers for those same projects, though the full impact is wholly unknown at this point.

So, what's an owner to do? Spend time planning/pricing/programming:

Owners understandably are anxious to turn the first shovels of dirt on any new project. Once property and funding are secured, it seems as if demolition, site work, and foundations should immediately follow. The need for rent rolls, condominium sales, or new students drives the schedule. Unfortunately, the biggest claims we see are caused by failures in the early stages of a project, when the owner, more than any other party, is making critical decisions. Although not exhaustive, examples include the failure to adequately explore project site conditions and plan construction schedules accordingly; the failure of setting budgets too early in the design phase, and the failure to clearly, and timely, define the project's program.

Collaboration reduces risk:

Collaboration by all project stakeholders from the earliest possible stages through project completion is strongly encouraged. If the construction manager and/or general contractor can be identified during the programming phase, their input could prove valuable in terms of managing costs and avoiding mistakes. The simple act of scheduling regular meetings, and requiring key personnel to attend, can result in ongoing conflict avoidance on issues an owner might not have even considered.

Have a clear contract, but be fair, or pay:

On this point, the authors are liable to get a little pushback from owners. Conventional legal wisdom usually dictates that the party with the most influence, usually the owner holding the funds, dictates the most stringent contract possible. That goal can have adverse consequences though, particularly if the terms being demanded are "over the top." For one, many trades will build in buffers to all pricing as a defense mechanism. It might be better to incentivize key project stakeholders through sharing the leftover funds of a contingency, rather than attempting to craft an impossibly one-sided document coming out of the gate.

Excellent Scheduling with Interim Milestones:

By way of example, the standard AIA form contract between an owner and Designer provides dates only for the anticipated start and completion of construction. Much like the new college student able to put off his or her entire semester's work until two weeks before the final, using the "full credit at the end" system serves no one's best interest in construction. By including crucial milestones in the schedule, all sides are kept honest, including the owner. Moreover, these milestones should tie both to time and expenditure of funds. If coordination is key, and mandatory meetings force coordination, then working toward interim milestones further serves to focus the group toward the next most important goal. It also sets up an owner's defense against future total cost or total time styled claims, by forcing all parties to admit that milestones were met, or explain early and often exactly why any particular milestone was missed.

Go out of your way to insure quality supervision:

Given the labor issues discussed above, it is not enough to simply hire an experienced CM, or a well-reputed general contractor. The actual personnel those entities put on a project matters much, much more than owners frequently realize. It is of little help to an owner who goes out of his way to hire an independent scheduling firm if it turns out that the person doing 90 percent of the work has never worked on a large project before nor has any experience corralling the sometimes challenging personalities in this business. Clients will often tell you in the legal world that they hire lawyers, not law firms. Many owners fail to take the same approach when it comes to personnel on their projects.

Safety Matters:

According to the OSHA Fact Book, construction jobs account for seven percent of the U.S. economy, but 21 percent of work place fatalities. According to the National Institute of Occupational Safety and Health, "(c)onstruction workers already suffer the highest number of fatalities in any U.S. industry. But the death rate among construction workers 55 years and older was nearly 80 percent higher than that of construction workers under 35 in 2007. And like the rest of the workforce, the average age of a construction worker is rising." Not surprisingly, immediately after older construction workers, the most likely segment of people to be injured on a construction site according to the Bureau of Labor Statistics are workers with less than one year's experience. Those individuals cause 34.9 percent of serious construction industry injuries. When you put the demographics of the Western Pennsylvania construction force together, a large portion falls into the two most dangerous categories for workplace accidents, at a time when literally every member of every trade will be actively employed.

Chuck Yorio, a safety expert and Principal at EPIC Insurance, says that the more time all parties involved spend planning to avoid safety issues, the better off everyone on the project will be. Although many owners tend to think of jobsite safety as not their issue because ultimately they may not hold specific responsibility, Chuck reports that the fallout from any incident can cause significant potentially negative press, schedule delays, and significant time in litigation, just to name a few adverse consequences. As such, while it is always important to evaluate why something happened after the fact, owners would be well-served by making sure their partner contractors front load effort to ensure that all risks are minimized.

Engage in exhaustive ticking and tying:

The act of ticking and tying, or "truing up" inventory to purchase orders, for example, is accounting 101. But for owners, particularly ones without significant construction experience, ticking and tying documents may seem not worth the time. Unfortunately, after a default notice is drafted, it is too late to confirm if a subcontractor had executed its contract, provided appropriate proof of third-party insurance coverage, etc. Kurt Karstens, Chuck's colleague on the insurance side at EPIC noted that, depending on the project duration, many if not all designers, contractors, and subcontractors will go through at least one insurance renewal period during a large project. Appropriate updated information is almost never obtained at this juncture.

Comprehensive insurance program:

Every owner should engage in a thorough insurance analysis well in advance of the start of construction. Not only can such an analysis help an owner determine what levels of coverage should be requested of each player for a project, but Kurt Karstens also noted that frontloading the insurance analysis will allow owners, on larger projects, to timely consider comprehensive insurance remedies like Owner Controlled Insurance Programs (OCIP). OCIPs will protect against any potential individual insurance lapses on a project, can be very cost-effective, and permit centralized claims control, among other benefits.

Be vigilant:

As we dissect the "what went wrong" on project after project, it becomes clear in every complex series of relationships that everyone's attitude is positive at the beginning. Owners often permit this fact to lull them into a false sense of security. The reality is very different. If an owner does not actively work to maintain a team mentality, and is not in constant communication with all the key stakeholders, any number of small issues can grow large enough to derail a project. On the most contentious projects we see, rarely is there a single issue that creates litigation, but death by a thousand cuts is the norm.

Owners should not simply entrust their designer to review and sign off on pay applications. The designer can be a key component to review, but a vigilant owner should not be afraid to make clear early on a project, by withholding some portion of a payment pending completion of a recovery schedule, for example, that scheduling milestones are to be met. It is also critical to insure that lien and claim waivers are executed monthly, and by all contractors, subcontractors, and suppliers.

Parting shot:

Western Pennsylvania has a relatively tight knit and somewhat collegial construction industry, across many trades and professions. Owners are well-served to capitalize on this in an effort to actively steer their project to final completion. The worst thing an owner can do is turn over the keys at groundbreaking, and hope for timely completion.

Chad Wissinger, Brian Maloney and Julie Patter are attorneys with Cohen and Grigsbsy, P.C.



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Members of the Landau family and Landau Building Company were honored by the UPMC Passavant Hospital Foundation for their fundraising efforts over the past 28 years. To date, Landau has raised \$52,460 for the foundation. From left are Jeff Landau, Steve Bishop, Ruth Landau, Dave Curry, Roy Landau, Mike Nehnevajsa, Sharon Landau and Jen Landau.



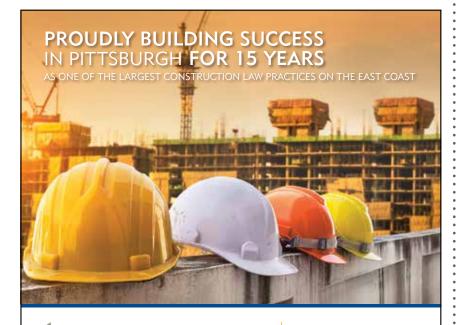
Jendoco Construction Corp. was one of the sponsors of the Cystic Fibrosis Passion for Wine event, which raised \$270,000. Pictured are Jendoco's Pierre Brun (left), Dan Then (right) and Verizon's Dave Salicce.



(From left) Mascaro's Alyssa Kunselman, Autumn Harris from Rose Finance and Cecilia Cagni from the Allegheny Conference at the NAIOP Pittsburgh holiday party.



John Mascaro (left) and retired United States Steel CEO John Surma at the Allegheny Conference on Community Development's annual meeting at the Carnegie Museum.







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The MBA's Young Constructors held their annual holiday party benefitting Toys for Tots and the Marion Lemieux Foundation on December 5 at the Buckhead Saloon. The event collected more than 100 toys and raised \$7,000 for the Mario Lemieux Foundation. Pictured from left are the MBA's Eric Starkowicz, Eilsa Elias and Carly Anton from the Penguins, YC chair Brian Budny from PJ Dick, and Drew Parish from the Mario Lemieux Foundation.



Clifton Larson Allen's Hillary Hambleton (left) and Jenna Kopay flank Burchick's Dave Meuschke.



(From left) Jennifer Pavlik from DLA+, V. O. George's Kate Schuster, Lauren Pataky from Mannington Floors and Mascaro's Bill Charles.





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(From left) Jesse DeMinno and Tim Chesleigh from the KML Carpenters, with Angela Barbaro from FMS Construction.



(From left) Rycon's Stephany DelSignore, Kim Cleckley and Kenya Finn.



Andrew Ellsworth from Doors Unhinged (left) with Brittany Coscia and Jeff Braum from Dick Building Co.



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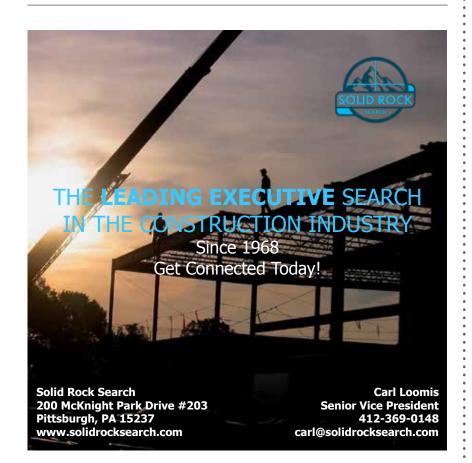


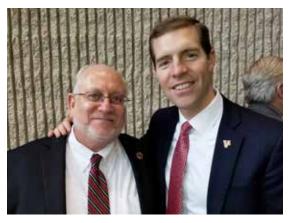




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Lee Manges from the Keystone Mountain Lakes Regional Council of Carpenters (left) with Rep. Conor Lamb.



Cohen Seglias Pallas Greenhall & Furman celebrated its 30th anniversary with a party and donation of \$5,000 to the Greater Pittsburgh Community Food Bank. Pictured are Lisa Wampler (left), managing partner for Cohen Seglias' Pittsburgh office, founder Roy Cohen, and Kate Laubacher, community fundraiser coordinator with the Food Bank.



On Wednesday, November 14, Mascaro held its 11th Annual Get Together for a Cause at McFaddens to benefit the Cystic Fibrosis Foundation. Mascaro employees and guests, raised a record \$11,438 in four hours! Pictured are John Mascaro (left) and Nate Martin thanking the crowd for their support for the Cystic Fibrosis event.

COTHMAN

Attorneys



(From left) McKamish's Bob Ward and Naley McKamish with Stantec's George Halkias.



(From left) Bruce and Nancy Bartholomew, Jammie Christy and Jesse Pasko.



Scott Harris from Harris Masonry with Marsa Masonry's David Neuhaus.



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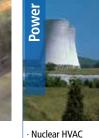
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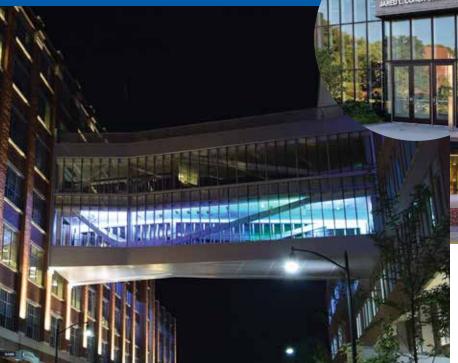
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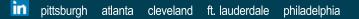


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AWARDS & CONTRACTS

F. J. Busse Company was awarded the general trades package for the Warner Hall renovations at Carnegie Mellon University. Landau Building Co. is the construction manager for the \$3.5 million project. The architect is PWWG Architects.

Forest City Enterprises awarded a contract to **F. J. Busse** Company for the window replacement at the Freight House Shops. The architect for the \$2.2 million package is RDL Architects.

Penn Health Group selected **Allegheny Construction Group** to build its 60,000 square foot grower-processor facility in Lemont Furnace, Fayette County, PA. The project was designed by R. W. Sleighter & Associates.

Allegheny Construction Group has begun work on the \$15 million second phase of The Highline for McKnight Realty. The project involves the renovation of the 868,000 square foot former terminal building and Riverwalk Corporate Center into office and commercial space. Indovina Associates Architects is the architect.

AIM Construction was the successful contractor on University of Pittsburgh Bioscience Tower 3 Center for Vaccine Research. The architect is Desmone Architects.

UPMC selected **AIM Construction** for the \$3.8 million UPMC Mercy Pharmacy renovation. The architect is Clare Patterson Lee Architects.

UPMC also awarded **AIM Construction** a \$5.2 million contract for the UPMC Montefiore Orthopedic operating rooms renovation. The project architect is Cannon Design.

Heritage Valley Health System awarded AIM Construction a contract for the Heritage Valley Beaver Pulmonology renovation. Radelett McCarthy Poletta Architects is the architect.

Massaro CM Services is the construction manager for the North Allegheny School District expansion and renovation program at Franklin Elementary School and McKnight Elementary School. The architect for the \$50-to-\$55 million program is VEBH Architects.

A.Martini & Co. was awarded an interior renovation/ fitout project at 300 Cherrington Court. This 7,000 square foot Building Amenities Center includes a conference area. The architect is Desmone Architects.

Allegheny Health Network recently selected **A. Martini & Co.** to build out the West View Community Primary Care Center. The fast track project involves multiple exam rooms. This is a fast track project. The architect is AE7 Architects. **A. Martini & Co.** was awarded the new PNC branch bank to be located at the Waterfront. The project includes renovation of an existing building, site work, as well as a new ATM and VAT. Gensler is the architect.

Hunter & Associates selected **Jendoco Construction** to build out its new space on the 27th floor of the Koppers Building. Moss Architects designed the 7,500 square foot office.

DiMarco Construction started work on its new 29,000 square foot headquarters office and warehouse in Elizabeth, PA. Midland Architecture is the architect.

DiMarco Construction was the successful contractor for the \$3 million Salvation Army North Boroughs facility in Avalon. RSSC Architecture is the architect for the project, which involves 13,200 square feet of new construction.

Spartan Construction Services was the successful contractor on the \$4.2 million Wayfinding Renovations at the VA Pittsburgh Health System. The architect is Earl Swennson Associates.

West Virginia University selected **PJ Dick** as construction manager for its \$95 million Reynolds Hall. The new facility will be the home of the College of Business & Economics. Strada Architecture LLC is the architect.

Allegheny County Airport Authority selected **Turner Construction** as construction manager-agency for the landside projects portion of the Terminal Modernization Program at Pittsburgh International Airport. The \$250 million program includes a 3,500-car garage, new Ground Transportation Center and Quick Turnaround center for automobile rentals.

Turner Construction has started construction on two \$2.5 million renovation projects at University of Pittsburgh Scaife Hall: renovation of the lobby and conversion of escalators to stairs. Moshier Studio is the architect.

Oxford Development Company selected **Rycon Construction** as general contractor for its new \$13.5 million, 110,000 square foot Stacks at 3 Crossings office building. Perkins Eastman Architects is the project's architect.

Rycon's Special Projects Group is the CM at-risk responsible for the \$2.6 million office renovation for SAE International. LGA Partners is the architect on this 20,000 square foot project, which is expected to last eight months.

Recently underway by **Rycon's** Special Projects Group is a renovation on Pittsburgh's North Shore for Jones

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commercial real estate women pittsburgh, pennsylvania Lang LaSalle and an online financing tech startup. The 4,200 square foot project will be complete mid-January.

Service Systems Associates awarded **Rycon's** Special Projects Group with a \$424,000 food service renovation at the Atlanta Zoo. The 10week project is expected to wrap up late February 2019.

In February 2019, **Rycon's** Special Projects Group is slated to begin a \$1 million renovation of a pathology lab within a Pittsburgh hospital. Stantec is the architect.

In Miami, **Rycon** is involved in work consisting of two exhibits, entry walkway, and pavilion at the Miami Children's Museum.

SITE Centers (formerly DDR Corp.) chose **Rycon** to renovate a Bealls shell in Naples, FL. The project is 8,500 square feet and is on track to finish late January 2019.

Rycon was selected to complete a retrofit for Ross Dress for Less in downtown Miami, FL.

In January 2019, **Rycon** will kick off \$790,000 of renovation work for Humana in Pembroke Pines, FL. The 6,200 square foot space is a guidance center receiving upgrades.

Rycon wrapped up construction on a new \$7.2 million Progressive Regional Claims Office in Miramar, FL. Progressive Casualty recently chose Rycon again to complete a \$450,000 fit-out to the lobby within the new space. Richard L. Bowen & Associates is the architect.

PNC Bank recently selected **Rycon** to renovate an existing 5,800 square foot bank at Midway Mall in suburban Cleveland.

Hometown Urgent Care & Occupational Health recently awarded **Rycon** two simultaneous medical clinic renovations totaling approximately \$700,000 in Massillon and Zanesville, OH. Both projects anticipate a late February 2019 completion.

Rycon was recently awarded phase one of an industrial addition for Kennametal in Orwell, OH. This \$8 million, 100,000 square foot project has a seven-month duration with a completion set for mid-June 2019.

In Lawrenceville, GA, 30 miles northeast of Atlanta, a new \$1.3 million National Tire & Battery is under construction by **Rycon**. The project is slated for completion mid-March 2019.

Rycon is responsible for a \$140,000 renovation to a For Eyes location in Peachtree Corners, GA.

FACES & NEW PLACES

Dick Building Company recently announced that **Jeff Braum** has joined the firm as director of operations. In this new role, he will be responsible for all construction activities in the Pittsburgh region. The company is headquartered in Pittsburgh and has a regional office in Deerfield Beach, FL. Braum has a BS in Civil Engineering with a specialty in construction management as well as a BS in Mathematics from the University of Pittsburgh.

Mosites Construction announced that **Audrey Miller** was hired as preconstruction associate in November 2018. Audrey is a University of Pittsburgh graduate with a degree in Architectural Studies, with a minor in Studio Art. She will be working on Mosites' preconstruction team.

Erin Bell joined **Mosites Development Company** in October as leasing manager.

Burchick Construction announced the hiring of **Richard Lucke** as a project engineer. Richard is a recent graduate of the University of Missouri with a Bachelor of Science in Civil Engineering. He will be working in the Burchick Estimating Department.

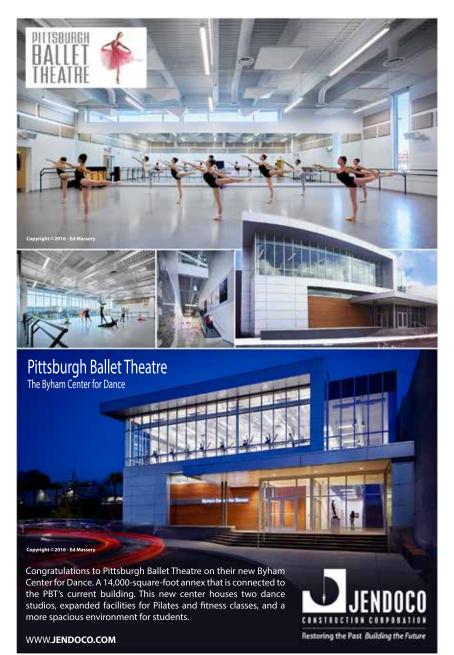
Landau Building Company hired Lindsey Grasinger as project engineer. Lindsey attended Penn State Harrisburg and graduated with a B.S. in Structural Design and Construction Engineering Technology.

Dennis Walton joined **Mascaro** on December 10 as a project manager for the client services division. During his 20-plus years in construction, Dennis has managed commercial and heavy construction projects throughout the U.S.

Chris Konopka became a member of the Mascaro team on October 22 as a project manager and estimator. Chris brings over 30 years of experience to the heavy / industrial group that includes gas and energy, roadways, and railway projects

Mascaro welcomed **Tom Uram** on October 22 as a project manager. An experienced project manager, Tom has worked on a wide range of projects in the commercial, power, industrial, and highway markets for the past 30 years.

Doug Depena was hired as scheduling & logistics manager at **Rycon**. He obtained a degree in Construction Management from the Polytechnic Institute of NYU and brings more than 33 years' experience to the Building Group.



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Quality You Can Stand On



Rycon's Ft. Lauderdale office recently hired two experienced staff accountants: **Patricia Morales** and **Stephany Roseme**.

Rycon's Philadelphia office added **Tim Sismour** as a project engineer. He earned a degree in Civil & Environmental Engineering with a concentration in construction management from the University of Pittsburgh. Tim brings three years' experience to the team.

Colin Treadwell joined **Rycon's** Atlanta office as a project manager. He holds an architecture and construction management degree and has been in the construction industry for 35 years.

Mauricio Valencia has been added to **Rycon's** Ft. Lauderdale office as a project manager. He is a graduate of Universidad Industrial de Santander in Colombia.

In **Rycon's Building Group**, **Jule McDaniel** and **Cody Scagline** were both promoted to assistant project managers.

PJ Dick announced that **Brett Pitcairn** has been promoted to the newly created role of chief marketing officer. Over the past 16 years he has served as a project engineer, estimator, and manager. He is currently the president of the Special Projects Group and will maintain that role.

Bernie Kobosky has been promoted to vice president at PJ Dick. Kobosky has been with the PJ Dick family of companies for 30 years, most recently as director of business development.

John Robinson has been promoted to the role of executive director of business development at PJ Dick. Robinson joined the firm in 2015 as director of design-build and development.

PJ Dick announced that **Clifford Rowe III** will assume the role director of business development. Over the past five years, he has worked as an estimator and safety manager for PJ Dick.

Jessica McKinney has been promoted to director of marketing at PJ Dick. Over the past five years, McKinney has worked as proposal manager and managed the companies' marketing communications.

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CLOSING OUT

BY THOMAS OSHA



Over the past decade, the City of Pittsburgh has become renowned for successfully transitioning from an industrial economy to a knowledgebased one that leverages the region's intellectual capital, innovation, and infrastructure, especially in healthcare, robotics, energy, and advanced manufacturing.

Thomas Osha

This focus has also resulted in the emergence

of several districts where these activities have tended to congregate, such as: Oakland, Bakery Square, Second Avenue, the Strip, Bloomfield, Shadyside, and Hazelwood Green, to name a few.

But while a considerable amount has been accomplished, and civic, business, education, government, foundation, and community leaders have much to be proud of, there are also looming economic and demographic trends that will impact Pittsburgh and require continued cooperation among these groups to effectively maintain the region's recent gains and continue to position it as an attractive location for businesses and residents alike.

The Centrality of Live, Work, Play Environments

Today's younger working generations – Millennials and Generation Z – are looking for a different work-life balance than their parents endured. Instead of time spent in a car commuting to work or to shop or to take in a game or show, this demographic seeks to live, work, and play within a tight spatial geography; often about a $\frac{1}{2}$ mile radius.

This will mean a continued emphasis on the creation of mixed-use developments that combine these uses; sometimes even in the same building.

Moreover, with historical low levels of people ages 16-25 holding drivers licenses or owning automobiles, public and shared transportation and last mile solutions such as bikes, scooters, and shuttles will take on increased importance. Not only will this open up more transit-oriented development opportunities, but it will also cause municipal leaders and real estate developers to reexamine parking ratios and mobility needs in these environments.

The Affordability Predicament

As today's young workers begin to hit their childrearing years, their hierarchy of needs are changing, with quality schools and home ownership taking a higher priority. This is becoming most apparent on the coasts where home ownership is seen as largely unattainable, especially in cities like Boston, San Francisco, and New York. Pittsburgh and other midwestern cities stand to gain from this trend as talented workers look for places that not only provide good job opportunities, but also offer a high quality of life, and one that is affordable and accessible.

This is playing out as a resurgence of interest in city neighborhoods and inner ring suburbs; especially ones that feature some form of street-level amenities and are within walking distance to well-regarded public schools. We expect to see some easing of zoning restrictions to allow limited commercial lab/ office development in these neighborhoods to extend the live-work-play dynamic further. Equally, we also expect to see some urban amenities and density to make its way to the suburbs as well.

Not surprisingly, ensuring strong transit connections across the region, to connect these dynamic centers of activity will separate leading cities from those who fall short. Furthermore, investing in and/or maintaining strong public school systems will continue to play an outsized role in success. Talent is the currency of today's innovation economy, and as we have seen with Apple, Amazon, Norfolk Southern and others, companies factor that strongly into their location decisions.

Ensuring Social and Economic Inclusion

One of the unintended consequences of the renewed development in urban cores and nearby neighborhoods, is the potential for displacement of lower income residents as neighborhoods become renovated and home values and rents rise. This is a quandary on the minds of most city and community leaders and one that will require creative and collaborative problem solving.

One way to offset the cost escalation in these renewed areas is to increase incomes by creating opportunities for communities adjacent to these innovation districts to participate in the jobs they generate. In fact, in many of these districts, 25 to 40 percent of the jobs do not require a four-year degree and finding enough of these middle-skill jobs is critical to facilitating companies' growth.

In cities such as Baltimore and Philadelphia, the university, community college, and local school system all work in concert to establish programs that link together and create pathways ways to good paying, permanent, middle-skilled jobs.

Continuing to focus on creating a sense of place for talent, innovation, and knowledge-led economic development should enable Pittsburgh to maximize the public and private investments that have been made over the past decade and remain as a leading example of how to reinvent an economy, revitalize a city, and renew opportunity for its citizens.

Tom Osha is Managing Director, Innovation and Economic Development for Wexford Science and Technology. He can be reached at Thomas.Osha@WexfordSciTech.com

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