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MAY/JUNE 2018

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PUBLISHER'S NOTE

Does anybody remember the "Summer of the Shark?" After an eight-year-old boy lost an arm to a shark in July 2001, the nation's media began covering subsequent shark attacks as though there were an epidemic of shark attacks on the world's beaches. Time magazine devoted a cover to the story on July 30 of that year. Lost in the media frenzy was the fact that there were a dozen fewer shark incidents worldwide in 2001 than in 2000, and four deaths, compared to the 13 deaths in 2000.

Reporting on the death of retail feels a bit like "Summer of the Shark." For certain, there are real challenges for retailers, some of which have big impacts on what gets built in the retail construction sector. The retail sector has been disrupted by online shopping or e-commerce in ways that won't be reversed, but the underlying support for retailing – consumer spending – has not been disrupted. In China, 85 percent of shoppers buy in stores. In the U.S., 90 percent of the retail dollar is spent shopping in some way other than online. People have not stopped shopping. Nor have they stopped spending more this year than last. It will likely take another recession before that trend reverses.

Perhaps the Millennial generation will continue to value experiences over accumulation. Their collective disdain for my generation's excesses (a disdain that is not undeserved) may mean that discretionary consumption will decline as Baby Boomers die and Millennials take their places. We'll see what happens on that front once the younger generation gets money. Regardless of whether the next generation mimics or rejects the behavior of the Boomers, however, the result will be a gradual declining trend. Such a trend won't be as disruptive as the impact of using the Internet instead of the store.

I sympathize with retail professionals, especially those with lots of experience. A lot changed in a short time. The industry that someone served in 1970 or even 1990 no longer exists in the same form. That's also true for those in the retail construction sector. Retail construction has attracted specialists, whether in architecture or construction. As you might expect, firms feeding at the retail trough for the past 30 years have found fewer scraps to eat over the past decade.

Before we lose too much energy and emotion over the decline of retail due to e-commerce, remember that retailing has been disrupted before, and not that long ago. A lot was written 20 years ago about the loss of small towns due to the phenomenon that was WalMart's expansion. Until well into the 1990s, Sam Walton purposely opened his hundreds of stores every year in small towns, rather than big cities. By that time, another disruption was occurring. Power centers – the assembly of a group of large national retailers – overtook America's suburbs. That trend was followed quickly behind by town centers, power centers on steroids that included hotels, offices and apartments. Big boxes got bigger. And then…

Yes, Internet shopping is responsible for the latest shift in shopping, pulling the rug out from under the whole big box/power center trend. I'm not sure that's something I want to mourn but, if we're going to reminisce about those good old days of the early 2000s, please understand that something else was going to kill the power center eventually. Don't forget that the rise of the big box shopping experience was going to be the demise of the suburban indoor mall.

Retailing is the art of purchasing consumer goods and selling them at a higher price to shoppers. It's also the art of trying to anticipate what America's fickle shopper wants to buy and presenting those goods in a way that makes shoppers feel they want to buy them. That job was not easy in the days when America had three TV channels and broadcast a test pattern at midnight. I cannot imagine how difficult it is today to divine what communication channel is going to influence the next consumer trend, let alone figure out what that trend will be. The point is, retailing is a disruptive art form at its core.

The death of the mom and pop store was being mourned when America moved to the suburbs and indoor malls became a thing in the 1950s and 1960s. Fifty years later, urban centers in cities across America (including Pittsburgh) are getting the highest rent and heaviest shopping traffic; and the concept that is most attractive are the farm-to-table, artisan, small-batch, locally-sourced, etc., mom and pop shops.

Don't misunderstand, it's a tough time for bricks-and-mortar retailers and those that make a living building stores. Technology will not roll back. The trend of online shopping is not reversing any time soon. But the online giants are building more warehouses and fulfillment centers to meet our shopping needs and also aggressively pursuing strategies to grow offline stores to support online purchasing. The smartest traditional retailers will innovate and thrive in a different shopping paradigm. There will come a time when people don't need to leave their homes to get the same shopping experience as they get in a store. Technology almost assures that. Until then, there will still be stores and warehouses. Now get out of your chair and get to the mall.

Jeff Burd

REGIONAL MARKET UPDATE

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After four years of little or no job growth, Pittsburgh's employers hired at a faster pace than the overall economy in 2017. The Bureau of Labor Statistics (BLS) final report on job growth showed a 1.64 percent gain over 2016. The April report drew a collective sigh of relief from regional civic leaders, as the similar year-end gains over the past few years had been erased when the government's final data emerged.

Data on March hiring from BLS reinforced the trend. Pittsburgh employers added 14,700 jobs in March, an increase of 1.3 percent over March of 2017.

The employment drivers didn't change from 2016 to 2017 (or from 2013 to 2017 for that matter) but the difference in 2017 was that all of the dynamic categories were positive. Beginning in mid-2014, the high-flying energy sector had been a drag on the Pittsburgh economy, essentially wiping out gains in other sectors. The steadily rising price of oil and the growing infrastructure for natural gas paved the way for companies in those sectors to begin hiring again. Likewise, the slow manufacturing sector remained static instead of draining employment from the region. Continued expansion of emerging technology companies, healthcare, and education were the positive growth engines. Job growth in hospitality positions remained steady.

Demographics and population flow remain challenges that may have held back further job growth in 2017, as employers in the growing sectors continued to complain of an inability to attract more talent for open positions. Pittsburgh's workforce declined again slightly, which did help drive unemployment levels lower.

According to February's data from the Pennsylvania Department of Labor's Center for Workforce Information & Analysis, the unemployment rate in metropolitan Pittsburgh (MSA) declined one point to 4.8 percent. Job creation in 2017 helped push the unemployment rate lower but the decline in workforce also outpaced the decline in unemployed people, 4,900 to 4,700. The powerful demographic trend of retiring Baby Boomers will continue to keep the workforce tight until a stronger wave of in-migration of workers replaces it.

The disparity from county to county remains about the same as a year ago. The urban and suburban counties of Allegheny and Butler (driven mainly by Cranberry and Adams Township) have seen unemployment drop below the level of the MSA overall, while the outlying counties, particularly Armstrong and Fayette remain above the overall level. Those two counties saw the biggest declines in unemployment, however, falling 0.6 and 0.8 percentage points respectively. Beaver County also saw a 0.6 point decline.

February Rate of Unemployment, Pittsburgh MSA

County	2017	2018	Change
Allegheny	4.9%	4.6%	-0.3%
Armstrong	6.6%	6.0%	-0.6%
Beaver	5.9%	5.3%	-0.6%
Butler	4.8%	4.6%	-0.2%
Fayette	7.3%	6.5%	-0.8%
Washington	5.5%	5.0%	-0.5%
Westmoreland	5.3%	5.0%	-0.3%

Unemployment in the seven-county metropolitan region fell from 5.2 percent to 4.8 percent year-over-year in February.

Strength in the local economy, especially growing strength in emerging employment sectors, helped construction to a solid first quarter of 2018, with a burgeoning pipeline of work moving closer to fruition.

One measure of the regional construction economy, the Master

Builders' Association's (MBA) Commercial Contractors Condition Index (C3), jumped significantly during the first quarter of 2018. The C3 index is a survey of the general contractor members of the MBA and has languished in the average-to-below average range since its inception in 2011. The overall C3 Index jumped from 2.21 to 2.82 out of a possible 4.0, a B average for the first time in its brief history. The increase was driven by marked improvements in the contractors' sentiments about the future projections for their companies (2.85 to 3.1) and in bidding activity (1.67 to 3.0).

Because the latter of these measures is based on a more objective measure of the market – contractors can generally apply a capture rate to their bidding activity – the current C3 Index is a reliable predictor of 2018 sales.

Data from the first quarter supports the optimism shown by contractors. Contracting for the first quarter (which includes permits issued) was at $1.025 billion for commercial and non-residential construction. That's $251 million higher than for the first three months of 2017. As was expected, the largest share of the first quarter activity came from healthcare and office projects, although none of the large hospital projects in the pipeline contributed to that total.

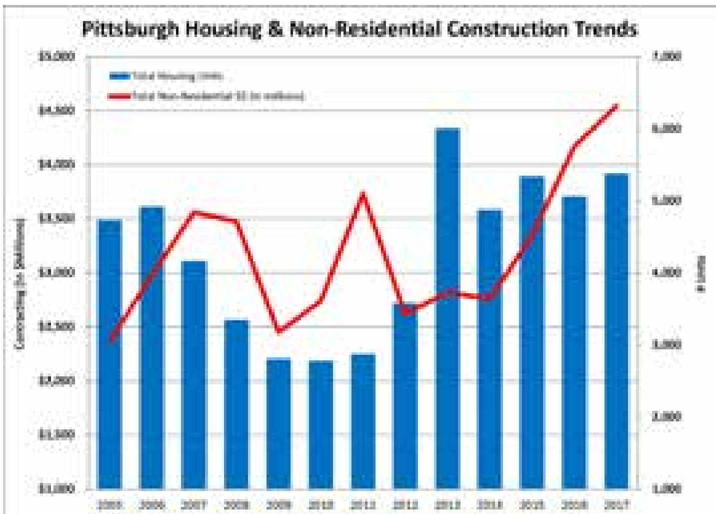
Residential construction was off slightly in the first quarter of 2018. The headline total number of new units started fell more than 28 percent, mainly due to a 60.4 percent decline in the construction of multi-family units. A closer examination of the data reveals that the prevailing higher trend in housing held in the first quarter; the decline was

By County	SFD	SFA	M/F	Total
Allegheny	253	76	139	468
Beaver	11	0	0	11
Butler	98	31	0	129
Fayette	16	0	0	16
Washington	76	32	88	196
Westmoreland	44	8	0	52
Total Pittsburgh MSA 2018:1	**498**	**147**	**227**	**872**
Total Pittsburgh MSA 2017:1	**445**	**198**	**573**	**1216**
% Change	**11.9%**	**-25.8%**	**-60.4%**	**-28.3%**

Construction of single-family homes ticked up in the first quarter, while fewer apartments were started. Source: Pittsburgh Homebuilding Report.

essentially the decline of 350 apartment units, or one new large project, compared to 2017. Single-family detached home construction rose by 11.9 percent year-over-year. Given the burgeoning demand for single-family housing, growth in new construction may have been constrained by the poor construction weather in the early spring.

One area of surprise was the 25 percent decline in single-family attached homes. This category has been consistently growing because of favorable demographics for the product type, which appeals to empty-nesters and first-time buyers. Here again, unfavorable weather conditions may explain the decline, which amounted to 51 units.



Source: Pittsburgh Homebuilding Report, Tall Timber Group.

Favorable economic conditions should continue to drive the commercial and institutional construction markets throughout the next 12 to 18 months, but it is the number of large construction projects that is making Pittsburgh a boom market. Most of these projects will get underway in 2019 or later, but their impact on the market makes it worth getting a progress report.

Procurement is underway for the program manager for the $1.1 billion Terminal Modernization Program (TMP) at the Pittsburgh International Airport. The Allegheny County Airport Authority expects to award that contract by the end of May. Requests for qualifications have been issued for architectural/engineering teams for the TMP. It's expected that procurement for those services will follow the awarding of the program management contract. Construction management services will be procured later this year.

UPMC has been procuring design and construction management services for several of the major projects in its $2 billion expansion program. In mid-April, the construction managers were chosen to complete the design/construction team for the $700 million Heart and Transplant Hospital at UPMC Presbyterian (see page 70). UPMC will complete the selection process for construction manager for its $250 million expansion of the UPMC Shadyside and Hillman Cancer Institute. Both of these projects will have 2019 starts. The hospital system has been working with Mascaro on budgets for the $350 million UPMC Vision and Rehabilitation Hospital at Mercy. This project will require a revision to the Institutional Master Plan (the other two are not expected to) before development plans can be submitted for permit. Construction is still anticipated by late 2018. A fourth new hospital, the $125 million UPMC South Hills, has moved off the back burner. UPMC is at the early stages of municipal review.

Allegheny Health Network (AHN) has been more active with construction of a number of smaller satellite facilities, along with two major projects. Construction is underway at cancer centers in several locations. Mascaro has started work on a 30,000 square foot facility in Butler and will be underway soon on a 33,000 square foot facility in Center Township, adjacent to the Beaver Valley Mall. Rycon Construction has started on the 60,000 square foot Forbes Regional cancer center in Monroeville. Massaro Corporation is preparing to start work on the flagship $85 million cancer institute at Allegheny General Hospital.

Massaro/Gilbane have taken proposals for design-assist specialty trades on the 160-bed, $220 million AHN Wexford hospital. Construction on that facility is still planned for early fourth quarter of 2018. AHN's satellite neighborhood hospitals, being developed in conjunction with Emerus, have begun rolling out. Construction is underway on the 79,000 square foot Greensburg neighborhood hospital, being built by Rycon in Hempfield Township. AHN/Emerus is also taking mini-hospitals through the municipal process in Harmar Township and McCandless. Two other regional hospital expansion projects, the $16 million Forbes Regional perioperative infill and the $21 million Jefferson Hospital emergency department expansion, are under construction.

Work is proceeding on schedule at Shell's Franklin petrochemical facility in Potter Township, Beaver County. Construction on the vertical processing plant is getting underway, as prefabricated sections of the plant are being shipped to the site by barge. Roughly 2,000 workers are on site. Turner Construction is beginning construction of the conventional buildings at the site, including the permanent plant, administration and fire buildings. Some 250,000 square feet of administrative/support buildings are planned for the site, not including a 47,000 square foot railcar maintenance shop. Shell Chemicals expects to be operational by early 2021.

There was news on the region's other proposed ethane cracker, the plant for PTT at Dilles Bottom, OH. In March, PTT announced it had signed an agreement with Daelim Energy from South Korea as a partner in the development. PTT/Daelim also announced that the plant would be larger than originally announced, growing by 500,000 tons to 1.5 million ton annual output. The cost of the project was also bumped higher, ranging from $7.5 to $10 billion. No word was given on an EPC firm selection. PTT had paid $100 million to Bechtel and Fluor to develop engineering/budget proposals at the end of 2016. Given the added capacity and the economics of the project, petrochemical industry observers expect that the project will require another major partner before moving ahead. PTT has signaled that it will make a final investment decision this year.

The Hazelwood Green project (formerly known as Almono) will develop well into the next decade but the first phase of the project has been attracting brisk tenant interest. Mill 19, which is being developed by RIDC, will be the home of the Advanced Robotics for Manufacturing (ARM) Institute. The 90,000 square foot shell of first phase of the Mill 19 building is under construction and Jendoco Construction has been retained to build out ARM's space. Phase 2, another 90,000 square feet of new construction, is in the process of being contracted, with a tenant nearly signed.

One of the region's most-anticipated projects, the ALCOSAN Wet Weather Solution, is still tracking towards construction in 2019 or later, but the county authority has moved forward with consulting/engineering contracts. ALEM Consulting, founded by Alex Sciulli, will act as the program manager for ALCOSAN. CDM Smith has been tabbed as the lead engineering firm and Wade Trim received a contract for engineering also. Arcadis US was retained to manage engineering/construction on the main treatment plant expansion. Contracts for the preparatory demolition and utility work were expected to bid in the second quarter of 2018 but no schedule has been released. BG

NATIONAL MARKET UPDATE

U.S. businesses experienced modest to moderate growth during the first quarter, according to the Federal Reserve Bank's Beige Book, a survey of business owners about conditions in the Fed's 12 regional districts. Multiple districts reported respondents had called out "robust construction activity" in their marketplaces, a sign that business owners are feeling confident about future economic expansion.

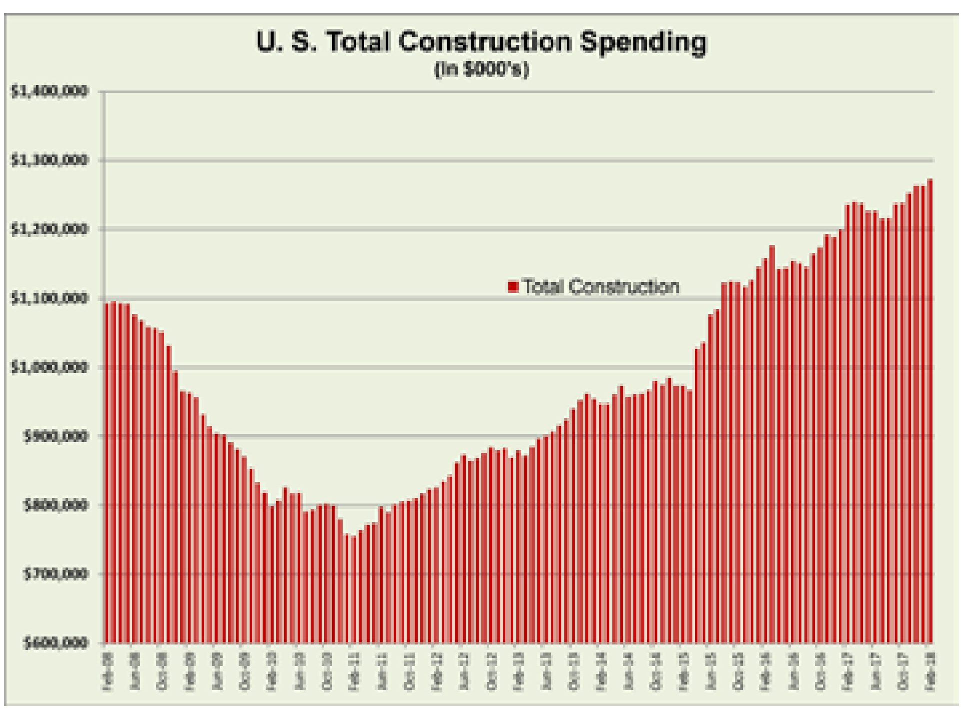
Ahead of the 2.3 percent first estimate of gross domestic product (GDP) for January through March 2018, the Commerce Department reported that GDP growth in the fourth quarter was 2.9 percent, up slightly from the previous estimate of 2.5 percent. That level of economic activity represented only a small decline from the 3.2 percent growth in the third quarter of 2017. For the full year of 2017, GDP growth was 2.3 percent, a marked improvement over the 1.5 percent rate during the election year of 2016.

Better-than-expected consumer spending pushed GDP higher, offsetting a steeper decline in exports than was forecast. Indications are that both consumers and businesses anticipated the tax cuts that passed at year's end and spent or invested accordingly.

Economists are expecting a slowdown when the final estimations of GDP growth for the first quarter of 2018 are announced. Although there is the anticipation of a follow on effect from the Tax Cuts and Jobs Act, uncertainty over the economic impact of the proposed tariffs is seen as dampening business investment in the first quarter.

As the Trump Administration has made policy decisions of late that have sent mixed signals to businesses, it is more difficult to gauge how long business confidence will support the economic expansion. With 70 percent of the gross domestic product tied to consumer spending, it is worth examining how the U.S. homeowner and consumer are behaving after the first quarter of 2018. The data from the first quarter reveals a consumer who feels good about their job and personal wealth but is behaving more cautiously.

Since the financial crisis of 2008, consumers have rebuilt their finances, bringing their balance sheets into line with the pre-crisis era. Private asset-to-liability ratios have fully rebounded, hitting 7.3:1 at the end of 2017. That is the highest asset-to-liability ratio since before the 2000-2001 recession. But the long-term trend is for a higher ratio of household liabilities to assets for U.S. consumers. The asset-to-liability ratio fell from above 10.5:1 in 1960 to the 7.5:1 level of 1999. There is evidence in recent months that consumers have become more cautious as this ratio has rebounded.



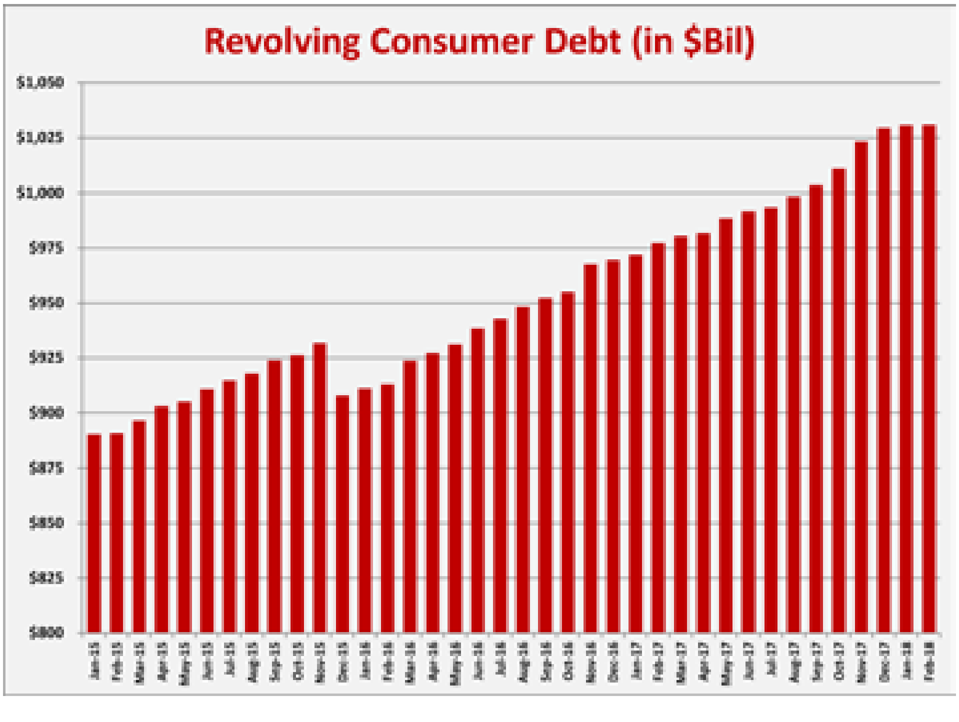
Year-over-year construction growth is maintaining a three percent rate going back into 2015. Source: U.S. Census Bureau.

Revolving credit, which is primarily credit card debt, increased by $100 million in February, following a tepid $1.4 billion increase in January. This two-month increase represents the weakest expansion of revolving credit in consecutive months since the end of 2013.

This weakening credit trend is consistent with the recent trend in consumer and retail spending, which has been slowing. Consumer confidence, as expressed in recent months' surveys by Thompson/Reuters and the University of Michigan, remains at all-time highs, but concerns about rising prices, higher interest rates, and falling stock prices may be influencing consumer behavior more than consumers are letting on. Credit card interest rates have reached 14 percent annualized, a hike of 200 basis points since mid-2015. Consumer behavior has remained remarkably positive and consistent during the long recovery from the Great Recession. Changes in consumer spending and credit trends will mark a change in the direction of the overall economy, at least while the consumer adjusts to shifts in the factors affecting their income.

Other consumer metrics are consistent with behavior that often occurs late in the business cycle, although it is rarely a reliable predictor of recessions. The consumer balance sheet remains very strong, with debt service ratios as favorable as any time since the 1970s. From a high of nearly 13.5 percent in 2008, consumer debt is less than 10.5 percent of income currently. That ratio is creeping higher, a trend that is consistent with the slowing credit growth and the falling savings rate. The gap between homeowner equity and mortgage liabilities has grown to more than four percent positive, roughly double the two-point gap that has been the non-recession norm since 1990. Only the declining savings rate, which has plunged from six percent to two percent since 2016, is a concern for the consumer balance sheet. Even this factor could be deceptive, given that the massive deleveraging that followed the financial crisis precipitated six years of higher-than-normal savings to pay down debt.

Observers of consumer behavior and finances make the point that while the trends of consumer behavior seem to track the business cycle closely, the inflection point of these types of consumer metrics trends follow major economic events, rather than predict them. For example, the savings rate fell steadily from eight percent to two percent during the 15 years from 1990 to 2008. While a declining savings rate might then seem to be an indicator of economic weakness, the data shows that significant changes in savings occurred after major economic events. The trend has remained in place even in the face of a downturn, such as was the case of the savings rate during the dot.com bubble.



Source: Federal Reserve System, U.S. Department of Commerce and Wells Fargo Securities

The best way to use consumer behavior to predict the economic outcome seems to be monitoring spending. History has shown that consumer confidence and the consumer's sense of individual wealth can be false flags. In the final analysis, if consumers aren't spending, stores aren't selling and manufacturers soon won't be manufacturing. It appears that credit metrics follow these straightforward realities.

One measure of consumer spending that has been less reliable as a bellwether is housing starts.

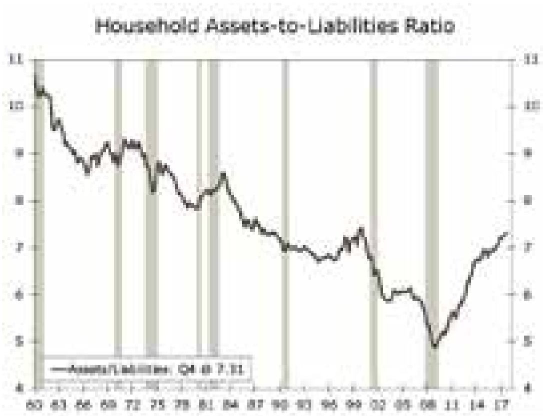
Investment in a new home isn't the same as spending on consumable items, but home sales and housing starts reliably indicated the consumer's frame of mind prior to the housing crisis. In simplest terms, increases in housing starts occurred when economic expansion was getting underway.

The housing bubble of the mid-2000s created an imbalance that still exists. Sufficient time has passed to have absorbed the overhanging inventory that plagued the housing industry early in this decade; however, the lingering after effects continue to impact the market. Regulatory and lending changes have dampened the appetite for residential development, keeping lot inventory lower

"Private asset-to-liability ratios have fully rebounded, hitting 7.3:1 at the end of 2017. That is the highest asset-to-liability ratio since before the 2000-2001 recession."

than the levels of demand. A psychological side effect of the housing crisis has also limited the market, keeping a younger generation of potential home buyers out of the market for longer than its predecessors. The supply/demand imbalance has accelerated the price of homes nationwide, raising the barriers of entry to younger buyers who are already wary of home ownership.

These effects can be seen in the latest housing start data. This is especially true in the multi-family market, which was seen to be slightly overbuilt. March's data on starts showed a year-over-year increase of 9.5 percent for multi-family projects begun during the first three months of 2018. This unexpected level of increase may be a reflection of the slower transition of 25-to-35-year olds from renting to owning and the resilience of New Urbanism, which explains the growing strength of the



Source: Wells Fargo Securities.

condominium market. Overall, housing starts increased eight percent January-to-March 2018 compared to the same months in 2017. March's total starts hit the 1.319 million mark, a post-crisis high. April's total spending declined to $1.285 trillion, as private sector demand reacted to tariff fears. Single-family home starts jumped seven percent during the same period. That level of activity suggests that the pace of lot development is increasing, although a comparison of the activity levels during the busy second quarter will be a better reading of the trends. Comparison of building permits, year-to-year, suggests that the trends will continue. Permits were 6.2 percent higher during the first quarter of 2018, with single-family permits up 5.3 percent while multi-family permits rose seven percent.

The continued solid residential construction activity is one of the reasons that total construction spending in the U.S. remains on an upward trend that has been virtually unabated since February 2011. The latest data on construction spending showed an annual pace $1.273 trillion, an all-time record high. Spending has been above the March 2006 $1.213 trillion peak of the previous business cycle for 13 consecutive months.

Tight construction labor supply may constrain the spending growth rate in the busy second quarter but rising material prices will likely assure that construction spending will maintain the steady three percent long-term trend into the foreseeable future. BG

WHAT'S IT **COST?**

"The Bureau of Labor Statistics (BLS) on April 10 confirmed growing anecdotal evidence that prices for construction-related materials are rising much faster than overall inflation."

The government's report on inflation in March showed the first month-to-month drop in consumer prices in almost a year, but the data on core inflation and producer prices showed that the prevailing trend is still upward. March's Consumer Price Index (CPI) fell 0.1 percent from February, owing entirely to declines in the price of gasoline. Core CPI, which excludes volatile energy and food components, rose 0.2 percent in March and 2.1 percent year-over-year. That increase continued the trend of growing year-over-year inflation. Producer prices rose three percent compared to March 2017.

Data released by the Bureau of Labor Statistics (BLS) on April 10 confirmed growing anecdotal evidence that prices for construction-related materials are rising much faster than overall inflation. The producer price index (PPI) for inputs to construction rose 0.8 percent in March alone and 5.8 percent compared to March 2017, the largest year-over-year increase in seven years.

The increases were observed across a broad spectrum of materials, including those that will be subject to tariffs. Those tariffs, coupled with growing demand for a number of short items like lumber and plywood, are providing the impetus for manufacturers of all products to test the markets to accept pent-up price increases. One of the industry's leading associations raised concerns that that tariffs on some items might lead to project delays and cancellations if supplies become unobtainable or too expensive for current budgets.

"Prices increased for many items in March, even before tariffs announced for steel, aluminum and many items imported from China have taken effect," said Ken Simonson, chief economist for the Associated General Contractors of America. "Steel service centers and other suppliers are warning there is not enough capacity at U.S. mills or in the trucking industry to deliver orders on a timely basis. Thus,

PERCENTAGE CHANGES IN COSTS	March 2018 compared to		
	1 mo.	3 mo.	1 yr.
Consumer, Producer & Construction Prices			
Consumer price index (CPI-U)	0.5	0.9	2.2
Producer price index (PPI) for final demand	0.5	1.4	3.0
PPI for final demand construction	0.2	1.0	3.6
Costs by Construction Types/Subcontractors			
New warehouse construction	0.0	0.5	3.6
New school construction	(0.3)	1.1	3.8
New office construction	0.7	1.2	3.2
New industrial building construction	(0.2)	0.8	4.3
New health care building construction	0.2	0.7	3.8
Concrete contractors, nonresidential	0.2	0.8	3.7
Roofing contractors, nonresidential	0.1	0.0	1.1
Electrical contractors, nonresidential	0.2	1.2	4.5
Plumbing contractors, nonresidential	0.1	0.9	4.0
Construction wages and benefits	N/A	0.4	2.5
Architectural services	0.0	(0.2)	1.2
Costs for Specific Construction Inputs			
#2 diesel fuel	(0.4)	0.7	39.7
Asphalt paving mixtures and blocks	(0.7)	8.7	4.7
Cement	0.1	1.2	3.3
Concrete products	2.0	3.0	4.9
Brick and structural clay tile	0.2	0.6	2.0
Plastic construction products	0.8	1.8	5.8
Flat glass	0.7	1.4	2.5
Gypsum products	0.0	9.6	8.4
Lumber and plywood	1.8	6.9	13.7
Architectural coatings	0.1	1.2	3.2
Steel mill products	1.9	4.3	4.9
Copper and brass mill shapes	(1.8)	2.6	11.2
Aluminum mill shapes	1.4	5.9	11.4
Fabricated structural metal	1.7	3.3	5.3
Iron and steel scrap	4.3	20.1	15.1

Source Bureau of Labor Statistics, Updated April 10, 2018
Compiled by Ken Simonson, AGC Chief Economist

contractors are likely to experience still higher prices as well as delivery delays in coming months."

From March 2017 to March 2018, the producer price index jumped by 13.7 percent for lumber and plywood, 11.4 percent for aluminum mill shapes, and 4.9 percent for steel mill products.

Other construction inputs that rose sharply in price from March 2017 include diesel fuel (39.7 percent); copper and brass mill shapes (11.2 percent); gypsum products (8.4 percent); and plastic construction products (5.8 percent). Concrete and other suppliers announced significant price hikes that were due to take effect in April.

Although the jump in PPI for steel mill products and structural shapes was lower than the composite index for all construction inputs, the March data misrepresents the market trends that followed President Trump's tariff announcement. Manufacturers announced double-digit price increases within days of the announcement, which did not come as a surprise to industry players. Because the tariffs had been anticipated, many distributors and fabricators placed advance orders for steel with the intent of beating the price increases of the coming months. This surge of orders, in turn, created a shortage in a number of domestic steel construction products, which pushed prices higher anyway.

Just as concerning was the impact on capacity and lead times. The activity in March, coupled with a shortage of flatbed trucks nationwide, added one to two weeks to lead times for many steel products. Lengthening lead times may prove a greater risk to construction than the rising prices, which can be managed through the budget process. Owners can adjust to higher costs by increasing budgets or value engineering. Few measures exist to shorten lead times. BG

In the midst of tough times for malls, the fortunes of malls with higher-end and specialty tenants, like Ross Park Mall or South Hills Village, remain strong.

RETAIL IN TRANSITION

THE BATTLE OF BRICKS VS. CLICKS


L.L.Bean

The renovation and rebranding of the Block at Northway by LRC Realty is the only major pure retail development under construction in 2018. Photo by Rycon Construction.

Amazon isn't killing retail as we knew it. Neither is Alibaba. These behemoths of online shopping seem to be dominating the retail environment in the U.S. and China respectively, yet even recent surveys show that roughly nine out of ten purchases in the world's two largest markets are still made in bricks-and-mortar stores.

So what is happening to the shopping centers and malls that dominated shopping for decades? The simple answer is that they aren't changing as fast as the shopper is.

While it's true that Amazon and the like aren't killing retail as we knew it, they are certainly beating up traditional retail. The share of retail dollars spent shopping online has been growing at almost the same rate each year for more than a decade. The line chart that illustrates the market share data rises at virtually a straight 45 degree angle to the x/y axis and there is little to suggest that this will change soon. There will come a day when online shopping grows more slowly compared to the other channels for retail, but that time is not yet on the horizon.

What's happening in retail is that the landscape is changing and retailers have to adjust to survive. The move to online shopping may seem like a radical departure but it may just represent a different response to the time-honored mantra of retailing: the customer is always right. This is hardly the first time that the retail landscape shifted dramatically. It has only been a couple of decades since the shift towards big box centers put mom-and-pop hardware stores or electronics shops out of business. Now those big boxes are becoming extinct, or at least the ones are that didn't figure a strategy for straddling the digital and bricks-and-mortar experience. Before that change it was malls making Main Street obsolete.

The common thread in all of these tectonic shifts is that the customer was looking for something different, something better when the shift came along. Power centers took the convenience of mall shopping and applied it to retailers that didn't usually rent space in malls. We mourn the loss of the anchor department store, but those were just real estate that combined the shopping experience of going from the dry goods merchant to the haberdashery to the stationery store or whatever. The department store was the customer convenience solution of another century.

Online shopping took off when online retailers began solving the problems that bricks-and-mortar addressed better. Free shipping. Paid returns. Better ways to ensure size and color were what the shopper needed. Online shopping prospered as it more closely resembled the bricks-and-mortar experience.

For the construction industry, this retailing disruption has ramifications that earlier disruptions did not. The shifts in the

1960s and 1980s and 2000s generally meant that more real estate was being devoted to retail sales. The rise of online shopping has had a negative impact on firms that had retail portfolios and clients that comprised a significant share of their revenues. The construction industry would enjoy seeing retailers figure out how to build a bricks-and-mortar experience that complemented online shopping and drove more stores. Thus far, the research tells us that such a strategy can work. The key is creating the experience, which is easier said than done.

Source: St. Louis Federal Reserve Bank

Economic Fundamentals

One silver lining in the clouds above retailing is the fundamental behavior of the customer. People are shopping. Except for the years immediately following the financial crisis, U.S. consumers have increased the amount of money they spend on clothing, cars, appliances, electronics, and dining each year. These are trying times for retailers but the disruption to the industry is in the way consumers are shopping, rather than not shopping. Other industries have experienced existential disruptions from their demand evaporating. Blacksmiths went away because people stopped riding horses to get around, not because they wanted to buy their horseshoes in some new way.

Economic conditions can change quickly but, to all appearances, the climate for retailing should be supportive in the coming years. Employment is at an all-time high. Wages are finally rising at a pace that is faster than consumer inflation. The local and federal tax environment is allowing consumers to keep more of their wages for their own uses. These are conditions that should support those companies who dare to expand their retail offerings. There is a consensus that the economy should reward real estate development for the rest of the decade.

The Urban Land Institute's (ULI) Real Estate Economic Forecast, which includes predictions over three years, is based on a semi-annual survey of 48 of the nation's leading economists and industry analysts. Responses to the most recent survey, conducted in March 2018, suggest that the industry is receiving a boost from the enactment of the Tax Cuts and Jobs Act in December 2017.

Survey participants responded with a rosier outlook than was expressed in the previous survey taken in October 2017. Economists predicted that the improving economy would likely lead to higher interest rates, and perhaps inflation, but did not feel either would create condition that would be detrimental to real estate.

Survey respondents recognized that the head winds plaguing retail real estate were holding back retail fundamentals. Their outlook for 2018 and 2019, however, reflected an expected increase in consumer spending due to the projected stronger economy. The expected rental rate growth for 2018, at 2 percent, is stronger than that of the October survey, as is the 2019 projection of 1.8 percent. Total returns for retail are forecast to be 5 percent in 2018, declining to 4.6 percent in 2019 and 4.3 percent in 2020. Economists expect that market fundamentals will sour somewhat in 2020, compared to the next two years.

Assuming the ULI survey respondents are correct in their forecasts, the market should give retailers the cover to try to reposition their bricks-and-mortar portfolios. For emerging retailers, this will mean expanding their footprint by expanding into new markets. For established companies, the market should allow them to experiment in response to what they perceive their customers want from their stores. For those that wish to hold their ground, the market is likely to move further away.

The Changing Mix of Retail

The disruption in retail bricks-and-mortar hasn't been entirely bad news for constructors and developers. As construction of stores and shopping centers has declined, there has been a boom in warehousing. Online shopping's market share gains had a noticeable impact on distribution and logistics almost a decade ago, as online retailers had to stockpile merchandise regionally to meet the demand from shoppers. When the most successful of the online merchants upped their game with premium free shipping services and accelerated delivery, the focus changed from distribution to fulfillment and warehousing exploded.

Since the end of the recession in February 2009, the amount of occupied retail space has nearly doubled, even with the challenges posed by online shopping. During the same period, however, the amount of commercial warehouse space has quintupled.

Unlike earlier build cycles in logistics and distribution, this current buildout of fulfillment centers is occurring throughout the U.S. Traditional distribution models were built upon high-volume hubs clustered in locations that were served by multiple interstate highways and provided access to major markets. Flat was preferable, since these centers were extraordinarily large – usually more than one million square feet – and lower site development costs improved returns. This benefitted places like Harrisburg, Columbus and the I-81/I-78 corridor in northeastern PA. The model didn't suit Pittsburgh.

Today's distribution model is skewed towards rapid fulfillment and focuses more on the "last mile" in the delivery. Pittsburgh's topography and demographics haven't changed but those serving the online shopper in Pittsburgh now need more space for stocking products. This expansion of logistics is the reason for the expansion of UPS's footprint and the large FedEx distribution center in Jackson Township. Many of the merchants have also built out their presence in Western PA, both in consumer and business-to-business fulfillment. Deals for Berlin Packaging, W. B. Mason and the Appliance Dealers Association were made to put products closer to customers. That's the motive behind the rumored million-square-foot Amazon fulfillment center.

Amy Broadhurst, vice president at CBRE, says that her company's research into the fulfillment center boom has yielded some interesting trends.

"W. B. Mason competes with office supply stores. They are referred to as the Amazon of the office supply industry," she says. "Their desire is to get products to the customer as soon as possible. In that industry there is usually lag time, but Mason wants to be right down the street from its customers. They are trying to understand what their customers use to anticipate what they will order next."

Broadhurst notes another trend that CBRE's research highlights: reverse logistics.

"As logistics increases because of online shopping, reverse logistics is increasing, whether it's because of returns or because of the raw materials used in shipping," she says, noting that there is a noticeable increase in the business of gathering and recycling the wasted shipping materials after packages have been delivered. That's certainly a business opportunity that would not have been anticipated even a few years ago.

Within retail proper, there are some trends becoming visible that may help retailers respond to the consumers growing adoption of online shopping. Among the most salient is that merchandisers of little differentiation are being clobbered. Whether it's clothing, home electronics, books, medicine, or even furniture, shoppers are comfortable shopping online for common, day-to-day items. But they will go to stores for something that is perceived to have higher value.

"Some high-end fashion seems to be doing OK but ready-to-wear fashion retailers are getting pummeled by Amazon and online shopping, unless the clothing is at WalMart or Target," explains James Kelly, senior vice president and principal at Avison Young.

What seems to be working beyond just having higher-priced merchandise is a shopping experience that is different and adds value to the shopper. A 2016 Pew Research Center found that 65 percent of those shopping online still preferred buying in a physical store but felt no compelling reason to do so. What defines a "compelling shopping experience?" Therein lies the problem for retailers. What's becoming clear is that many of the things that compelled consumers to visit the mall or discount store aren't compelling any more. IBM's 2017 Customer Experience Index Study found that only 21 percent of North American shoppers felt that stores offered a satisfactory shopping experience. That same study spelled out what shoppers felt distinguished those retailers that were succeeding, rating successful companies five times higher at in-store experience, personalization, online experience and integration of digital/ personal experience.

The recipe for this one store in five varies. Apple attracts shoppers with its store design but gets highest ratings for having sales people who know the technology and are able to communicate and solve customer concerns. Apple also uses the store for training on the hardware and software its customers use.

Bass Pro Shops invests in large spaces (with heavy merchandising costs) to add significant value to the shopping experience that pays off. Well known for its product demonstration spaces, Bass Pro Shops also offers connections to outdoor organizations through its locations and, in many stores, makes meeting rooms available for outdoor groups.

Cosmetics seller, Sephora, integrates classes on skin care and makeup trends into its locations. Customers can also book limited spa-like experiences, including makeovers.

Another trend that is working in Europe and beginning to get a footing in the U.S. is "click and collect" or "buy online, pick up at store" (BOPUS) shopping.

Click and collect has benefits to retailers that are compelling, both in terms of more sales and lower costs. BOPUS shoppers solve the dilemma of the last mile for sellers, since the customer removes the burden of delivery. That is viewed as a benefit by the shopper because it eliminates shipping charges and trims more than a day off the delivery time. Shoppers have indicated a significant increase in buying in click and collect environments because they view the ability to return unwanted items to the store as a big benefit. Virtually all shoppers surveyed about click and collect shopping experiences admitted that they purchased additional items when picking up an order at the store, even though those same items were available online at the time they placed their original order.

Technology and the Right Mix

While a technology company – Amazon.com – is credited with the decline of bricks and mortar retail, the future of retail success may depend as much upon emerging technology as offering the right products to the right markets. Giant Eagle CEO, Laura Karet, admitted that after reacting to the threat that companies like Amazon or WalMart played to her family's grocery and convenience store chain, she decided to embrace the disruption. Karet is a champion of finding technologies that can help Giant Eagle with everything it does, from sourcing to inventory control to understanding its customers better.

The food business is one that remained somewhat immune to online shopping until recently. As recently as 2017, almost 90 percent of food shoppers expressed the desire to buy in physical stores. But last year saw at least a ten percent increase in online purchases of food every month and with Amazon entering the grocery business through its Whole Foods acquisition, online grocery shopping is likely to change radically.

Giant Eagle's early use of emerging technology focused on optimizing its curbside pickup services. The company uses predictive analytics to better understand customer buying and making offers that matched up to buying patterns. Karet expects that mining its own big data will yield other advances that will keep Giant Eagle compelling and competitive into the future.

One technology application that may become attractive to retailers soon is the cashless store. Amazon is leading the way in the use of this technology as well, opening a cashless Go convenience store in Seattle in January. The Go store melds features of online and in-store technology by using sensors to read and charge customers' credit accounts for payment. Amazon has been experimenting with the technology in other physical stores and is prepared to roll out a handful of additional cashless Go stores on the West Coast in 2018. That rollout still puts Amazon about a year behind its Chinese competitors, which have successfully opened four dozen cashless retail stores in 2017.

Thus far, Chinese consumers have proven to be much quicker adopters of technology than Americans, whether it is cell phones or apps. A lower share of Chinese say they prefer to shop in stores – roughly 60 percent – yet only 16 percent of total retail sales in China were done online. Those numbers are high among the reasons that Alibaba has invested $6.7 billion in physical stores since late 2016 and JD.com has invested $1.5 billion in Chinese grocery stores, including a partnership with WalMart.

The emerging technology with the potential to have the greatest impact on retailing is artificial intelligence (AI). The retail trade has collected mountains of data in its digital history. That data has largely gone unexamined, partly because the ability to process it didn't exist until recently, but also because retailers didn't comprehend the opportunity AI presented.

A local AI company, Cognistx, has developed apps for retail use that allow for companies to mine their own data to get feedback that drives customer engagement and marketing. For automotive service giant Monro Inc., Cognistx developed an app that reaches out to customers to remind them of needed maintenance and inspections, offering discounts to have the

Construction is underway on the tenant improvements for Ashley Furniture, the third tenant to occupy the same space in the Ross Town Centre during the past five years.

Source: St. Louis Federal Reserve Bank

service done in a timely manner. The driver of the offers, says CEO Sanjay Chopra, is the data about the vehicle that was previously not integrated into Monro's marketing efforts. Information about past service and inspections was not even shared between Monro Muffler Shops and Mr. Tire operations. Merging Monro's in-house data with information about vehicle make and model creates a predictive model that has worked surprisingly well.

Monro reports that the app has driven $4.9 million in sales from 40,000 users during the trial period and has a 91 percent customer engagement level. That heightened level of engagement has nearly doubled the customer visits from four to seven trips per year. The company says it will see an additional $8 million in profits from those 40,000 app users.

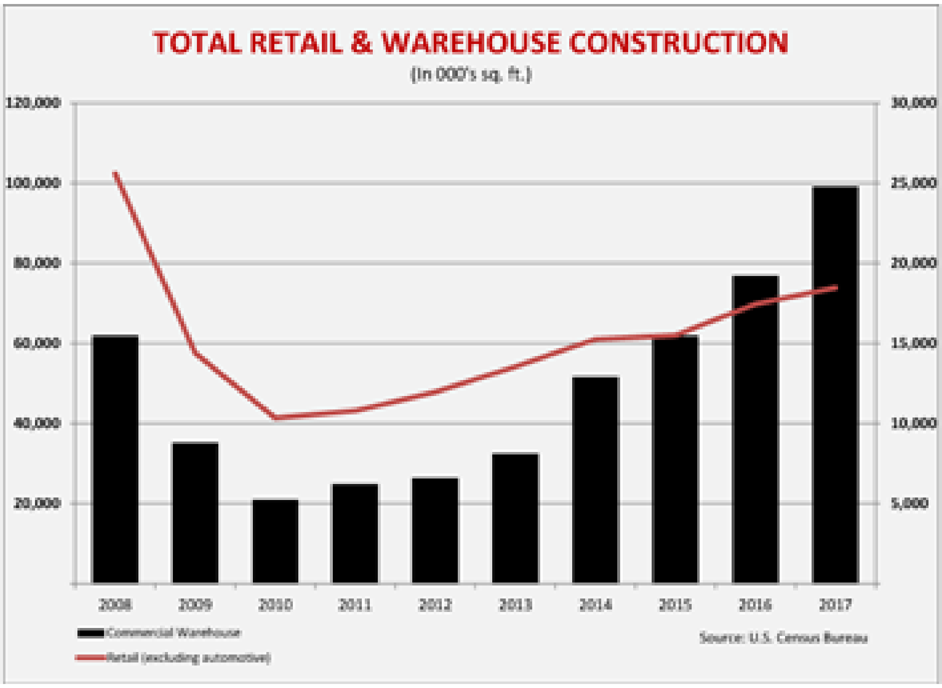
Chopra says that enhanced customer engagement is the key to unlocking what retailers must do to compete with the online and omni-channel giants.

"By understanding their customers individually – at a segment of one – retailers can drive personalized offers that increase engagement," Chopra explains. "Customers who used to come to the store once a month will come three or four times a month. Having a dual strategy – a "bricks and clicks" strategy – is what will work for retail. That's how they will compete with Amazon."

Chopra also sees AI giving bricks-and-mortar retailers the same advantage of intelligence that online retailers have about their shoppers. Using store Wi-Fi to gather data from shoppers' smart phones and purchases, retailers will understand who is shopping and what they are, or are not, buying. This advantage will allow bricks-and-mortar sellers to make relevant offers to shoppers while they are in the shopping center or mall.

AI has already begun to have an impact on the retail trade's logistics. Using predictive analytics, retailers have been able to improve inventory management by better forecasting what their customers will buy. This helps cut down on overstocking, which results in companies paying to ship the same merchandise multiple times or mark down for liquidation. Even worse, failing to stock items that customers want means sales went wanting.

Neither of these tactics improves upon the thin margins retailers work with. Research firm IHL Group estimates that overstocking cost retailers $470 billion and inadequate stocking meant $630 billion in lost sales annually.



Retail construction has nearly doubled since the recovery from the financial crisis while new warehouse construction has grown by five times.

AI has already been hard at work on logistics. It's part of the special sauce for Amazon and other retailers, but it's also part of the constant improvement strategies of the pure logistics companies like UPS and Federal Express. More conventional technologies like bar coding and sensors allow shippers to track packages and streamline delivery of goods. Crunching all the data that these technologies have accumulated results in further improvements to logistics, making delivery routes that much more efficient. According to UPS, every mile that all its drivers eliminate each year saves $50 million.

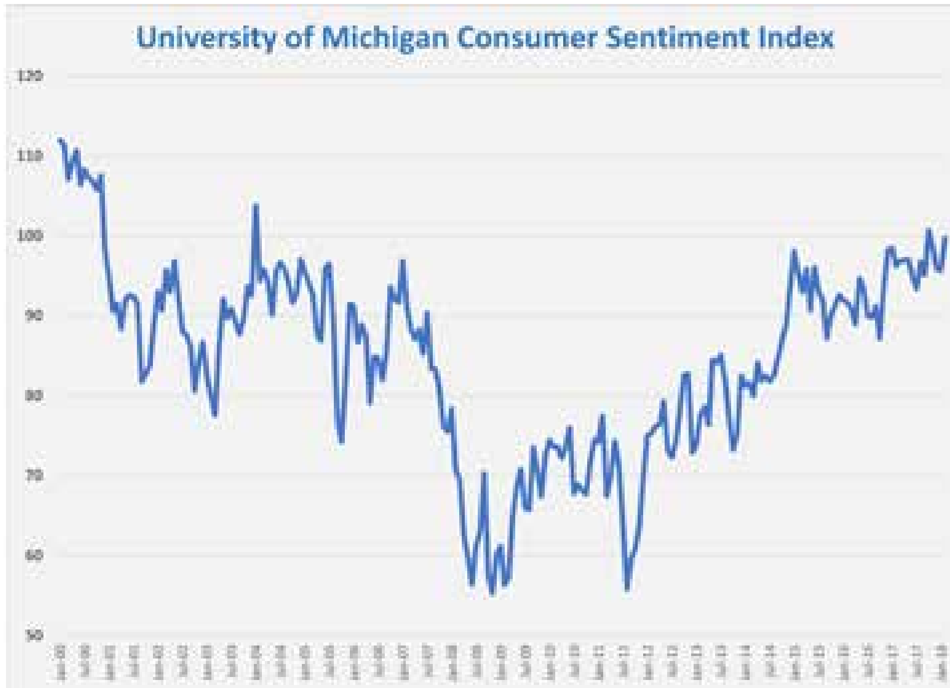
Personalization of the shopping experience represents potential for closing the gap for retailers trying to create a compelling shopping experience. An Accenture study in 2017 found that 75 percent of shoppers admitted to an increased willingness to buy (or increased buying behavior) from sellers that knew their name. Yet only 30 percent of sellers have created a personalized experience. That's a gap that represents hundreds of billions of dollars in sales.

An Uncertain Future

While retailers are wrestling with finding the right mix of online and bricks-and-mortar, there is evidence that the market is still shaking out the existing space. CoStar, the largest commercial real estate information service in the U.S., concluded in a 2018 retail study that U.S. retailers still operate more stores than are needed. CoStar estimated that one store in five should be closed to be in line with historical averages. Ryan McCullough, senior real estate economist with CoStar, said the U.S. has 18% more retail space than is needed.

Were CoStar's research to play out, retailers would close 1.6 billion square feet of store space at the sales volume of 2017. McCullough emphasized that he was not predicting such a result but Cushman & Wakefield, the real estate brokerage firm, is forecasting that 12,000 stores will close in the U.S. in 2018, an increase of 3,000 more than were closed in 2017.

Another real estate data firm, Reis Inc., reported that first quarter absorption of 453,000 square feet in the first quarter of 2018 was the lowest in any quarter since 2013. Reis also found that occupancy slipped in neighborhood shopping centers in 41 of the 77 cities it studied. Among its other findings were a lower-than-average amount of new completions at 712,000 square feet, and higher vacancy rates for anchored malls (8.4 percent) than any quarter since 2012.



Consumer sentiment has leveled but remains at historically high levels.

In Pittsburgh, the success of urban – and some suburban - mixed-use, along with several healthy conventional malls, has kept the construction volume relatively static since the Great Recession. Retail construction in Pittsburgh pales by comparison to the last business cycle, which started with a spate of big box projects in late 2003 and 2004. Since the 2009 recession trough, big box construction has been nearly nonexistent, regardless of the market. In the seven-county Pittsburgh metro, the last big box store built was the Moon Township WalMart in 2015. Prior to that, a WalMart started in January 2011 at the Northern Lights Shopping Center and the East Liberty Target store (built in 2010-2011) were the only other new big box projects.

Even with the significant reduction in new retail construction, the real estate market is not catching up.

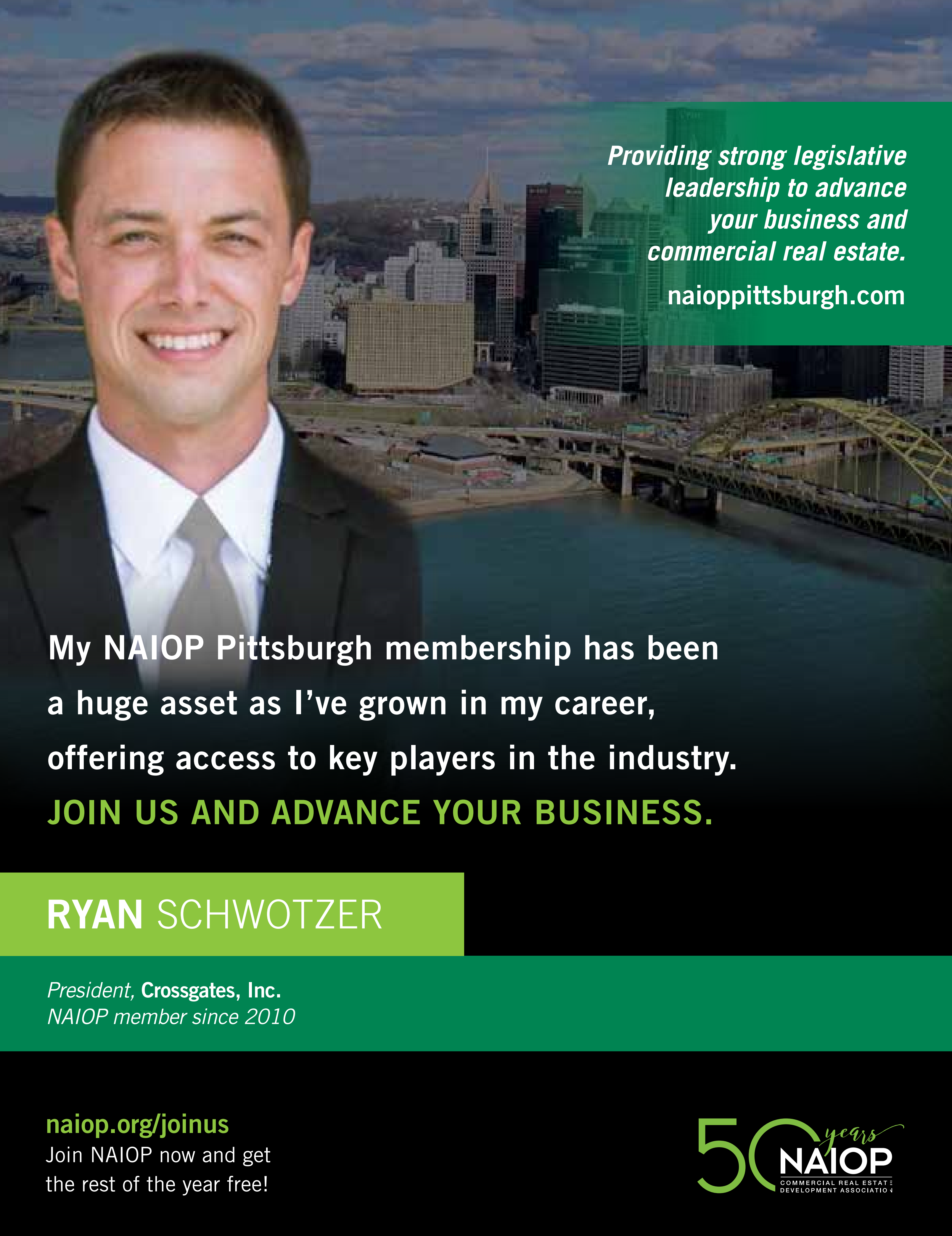
"The retail market is still shaking out, although that's mostly in mall settings with higher rents and CAM (common area maintenance) charges. Strip centers are doing better," says Kelly. "Properties priced in the $20s will do OK. There are some ridiculously high rents out there for specific reasons but, for the most part, there is pressure on rents."

Kelly has observed one trend that he fears may be a predictor of problem real estate assets to come.

"There has been an abundance of these two-to-five-store strip centers built, under 10,000 square feet, where the developer has worked whatever deal they can to get pumped up rents. They come from all over the country and we've seen some of it here," he says. "The developer has peak income at low cap rates and gets an incredible number - $300 or $400 per square foot – in a 1031 exchange. The buyers get a nice check in the mail each month and are happy. But what happens when the tenants reach the end of those leases or go bankrupt and the owner has to go back into the market? They can't get those $35 or $37 rents and can't replace the income in a market that's $25 a square foot. I predict those kinds of centers will be the next wave of troubled product in the commercial market."

High-demand brands like Apple are proving that bricks-and-mortar spaces that provide exceptional experiences augment online sales.

Capitalization rate compression has been one factor that has driven retail property values higher. Another has been the seemingly unending hunt for yield among investors. The historically-low interest rate environment has pushed cap rates down to levels rarely seen. The low rate environment was something of a double whammy for commercial real estate in that it inflated property values somewhat artificially (there would be an equal and opposite effect as rates rose), while creating an addictive need for higher yields that was out of proportion with the inherent risks of commercial real estate. Investors were accepting warehouse-level returns for retail properties, even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though the higher risk of retail development remained.

The prices Kelly spoke of pale in comparison to sales of higher-quality properties. The recent sale of the Whole Foods building at the Siena at St. Clair to Spectrum Properties LP from Dallas topped $600 per square foot. Sales per square foot are high for a Whole Foods store but the high price begs questions about the potential for growth or appreciation.

Uncertain times usually make for poor development environments. That's the case in Western PA in 2018. Even with the potential overpricing of small neighborhood centers, those kinds of projects dominate the pipeline of proposed retail centers. Developers of large-scale projects have mainly moved to the sidelines.

LRC Realty has been renovating the former 470,000 square foot Northway Mall into a brand-driven Block at Northway for several years. The Block at Northway has succeeded in attracting higher-end retailers like Nordstrom Rack, Saks Off Fifth and The Container Store; and the project converted dozens of smaller store spaces into fewer mid-size stores. The only other new retail development of size is a 91,800 square foot neighborhood center David Smail is proposing for the Doyle Property in Cranberry Township.

Even in some of the more successful retail submarkets, projects are shifting to other end uses. In Cranberry, the phases of The Village at Cranberry Woods that were originally slated to be walkable mixed-use retail have been switched to office or other use. AdVenture Development's McCandless Crossing continues to be built out, but the bulk of its quarter-million square feet of retail space has been completed for several years. New projects at McCandless Crossing have been for office, hotel and senior living usage.

The hand-wringing about the retail market isn't without merit. Stories like Century III will continue to emerge as the face of physical retail is re-imagined. There will be another economic downturn, perhaps sooner than later, and that will put more pressure on those trying to figure out how to position their offerings to the American consumer.

Retailing is not dying, however. The massive investments being made in physical plant by online shopping giants is an indication that the demand for physical space has not abated. Futurist predictions of the abandonment of retail stores are probably not wrong. It's not difficult to imagine a future where all purchases are delivered, or even fabricated through 3D printing or the like. It's impossible to imagine when that will occur. There are probably a few business cycles between today's reality and that fantastic future.

In the interim, demographics and consumer behavior tells us that the demand is for more goods not less, even if understanding how to keep your share of the market is more difficult. The challenge for retailers is to figure out what will grow and where to plant it. BG

Light fixtures and furnishings were custom made for BURN Pittsburgh. Photo courtesy BURN by Rocky Patel

PROJECT PROFILE

BURN

BY ROCKY PATEL PITTSBURGH CIGAR BAR

It was a recipe for disaster. Rocky Patel is an owner from out of town, a successful businessperson whose expectations for the project were evolving as construction proceeded. The designer hired by Patel, Swatchroom, was creating a one-off, completely custom environment that was short on details. Both they and Patel had relationships with vendors that would supply the project directly, outside of the control of the contractor. The architect of record, NEXT Architecture, was a local firm charged with detailing and administering a construction process that it didn't create. The contractor was selected by hard bid, leaving the potential for the documents to be conflicts waiting to happen.In many ways the BURN by Rocky Patel buildout was set up for failure, but the project turned out instead to be a great example of what can be accomplished by a good team.

"I was at BURN for one of the soft openings with a friend who enjoys cigars," says Fred Swearingen, project manager for A. Martini & Company, the project's general contractor. "I told him that in 41 years, this might be my favorite project. It's the one I'm most proud of."

A veteran project manager, Swearingen had been involved with many projects that presented difficult coordination, lots of owner-supplied items, challenging team members or technical challenges. What set BURN apart was the level of finish and detail in the completed product. Regardless of the source of the materials, the finish work throughout BURN Pittsburgh is unusual because of the atmosphere Rocky Patel was intending to create and the level of skill needed to properly install the finishes.

"The biggest challenge I recall was the quality of the finishes and matching the right subcontractors to build them," Swearingen says. "We're used to getting high quality casework from Wyatt or flooring from Phillips, but even those subs only have so many people who can do this level of work. The question was would those people be available?"

BURN Pittsburgh's finishes reflect Rocky Patel's luxury lifestyle business model, as well as his aversion to using materials that are less than durable. The furniture, lighting and fixtures throughout the bar are custom-made for BURN Pittsburgh.

Seating areas on the sides of the main floor were raised to create plenum space for the HVAC system and more private gathering spaces. Photo courtesy BURN by Rocky Patel.

A porch structure was built to house the outdoor seating area, which is climate-controlled for year-round seating and includes a complete bar.

The décor is eclectic, with Asian, Mediterranean and Caribbean influences, rather than overstuffed chairs and dark wood-paneled walls. There seems to have been a rule that no painted drywall surfaces could be used and that no more than ten feet of lineal wall could get the same treatment. Exotic wood flooring is offset by a black-white-gray tile pattern that brings to mind an Escher drawing, complete with an optical illusion. The bathrooms have ceramic tile on all wall and floor surfaces. And BURN Pittsburgh's centerpiece, the 600 square foot humidor, is lined with cedar panels and casework.

Washington, DC-based Swatchroom is the designer responsible for interpreting Rocky Patel's vision for a luxury experience. NEXT Architecture was responsible for taking that design and making it constructible and compliant.

"Rocky doesn't like finishes that need maintenance," chuckles Gordy Adams, director of construction for Burn by Rocky Patel. "For the finishes we had to make sure that Swatchroom picked products that met code and accessibility standards. I have to look at them from every aspect, from first cost to maintenance to cleaning and repairs. Chris Pless (NEXT's project architect) was extremely diligent in that."

On the surface, the BURN build-out could have been an easy project. The space selected for the project in North Shore Place was a 6,500 square foot cold dark shell. The building's structure was steel with concrete decks, an easier environment to customize. It's the end use of the space that made things interesting from the start. Cigar bars aren't the most popular tenants and they work only when a very sophisticated HVAC system keeps the environment of the bar isolated from other tenants. Then too, the approach that Patel took to the space upped the difficulty factor a few more notches.

"The North Shore location worked well for the kind of client that BURN seeks. It's a good fit for the sports fan looking to have a drink before or after a baseball or football game," explains Warren Weixler, partner at Swatchroom. "All of this starts with Rocky giving us a single image, saying 'I like this'. It could be a hotel in India or Tokyo. It could be a restaurant in LA. We try to extrapolate from that and give him a place that he likes. The image for Pittsburgh was a black white and gray floor that was really interesting. It wasn't easy. We did a lot of layouts and went back and forth on this quite a bit. I'm surprised the contractor doesn't want to shoot me."

"Being the architect on site, I can tell you that there were shots fired," jokes Pless.

The humidor room features cedar millwork and climate-controlled storage for the Rocky Patel cigars sold to patrons. Photo courtesy BURN by Rocky Patel.

The signature tile floor is a good example of the project's nature. The tile was purchased directly by Swatchroom and shipped to the site for installation by J. P. Phillips, Inc. When the material was delivered, the tiles were matted together by color, even though the design called for individual tiles to be installed. That created a headache for the flooring contractor.

"The individual tiles are diamond-shaped parallelograms. Each one is the same size, but the alternating pattern makes it appear that the tiles further from your eye are smaller," explains Swearingen. "The tile was delivered on mesh mats of one color – all the black pieces linked together and so on. Phillips had to cut each individual tile off each mat. That took eight hours a day for a week."

The tedious work paid off in the end. "When they laid out that geometrical floor all the way around the bar, the last piece fit perfectly," Swearingen says.

For all the extraordinary finishes, the most complex part of the project was the HVAC system. The guts of a successful cigar bar aren't meant to be visible to the patrons.

"It's the Cadillac of mechanical systems and it's installed seamlessly. There aren't mechanical units hung from the ceiling or smoke eater units. We have neighbors and tenants above us and we had to make considerations for that smoke," says Pless. "Designing that system into this high quality of a space without it being evident was a challenge, not only on the design side but on the construction side. We held Martini to a very high standard in terms of ceiling spaces and creating those plenums."

"There are two other places where this system is specifically used: casinos and cruise ships," continues Pless. "All of the air is delivered low in the space at a slightly higher temperature and a lower rate. The air comes out of the system and grabs onto a heat source, typically bodies or furniture. When it mixes with the heat source the exhaust pulls it directly up. When this place is fired up and there's smoke everywhere what you see at each of the exhaust diffusers is a vortex of air. It's 100 percent exhaust out of the building through the roof. The air does not get reintroduced back into the system. We have two rooftop units. One is doing the majority of the work in the main bar, the humidor and the VIP areas. And one picks up the kitchen area and the back-of-house spaces."

To accomplish the goal of maintaining the indoor environment unobtrusively, the architects used spaces that might normally have been wasted for plenums. Breaking the bar layout up by elevating certain portions of the floor provided more opportunities to integrate the HVAC system while differentiating the space.

"We had to decide how to get this smoke-eating system integrated into the space. You can't just put it around the edges. You have to serve all of the spaces," notes Weixler. "Putting it into the foot rail of the bar was an interesting solution but how do we get it on the edges to also blow towards the middle? The raised lounges became two things:

one, they offered a different experience, but it also gave us the space to run all the ducting below that platform. That also helped us create a VIP area for some additional rentability."

There were plenty of challenges involved in the finish of the bar too. Swatchroom was tasked with designing an environment that was representative of Pittsburgh, but with the specific prohibition of avoiding black and gold. (There is, however, a portrait of Art Rooney, cigar firmly planted in his mouth.)

Swatchroom accomplished this by using heavier, durable materials that call to mind the industrial age. Wood column covers have raised panels coated with a paint containing metal. Light fixtures and the candle wall behind the bar are made of Core 10 steel that was laser cut by an artist in Indianapolis. One wall in a raised section of the seating is covered with panels made of curved, one-inch by 12-inch pieces of wood applied continuously. Many of the finish materials and fixtures were sourced directly by Swatchroom or Rocky Patel from around the world.

The fragmented nature of procurement complicated the coordination of the construction. Swearingen recalls being directed to do two different things by each architect, only to have the owner direct a third. He says that Rocky Patel called more than once with something he had seen at 10:00 the previous evening. Once the bar's general manager came on board, a completely different set of priorities emerged that hadn't previously been considered. Swearingen gives Gordy Allen credit for the way he managed the process.

"The key to being the owner's representative is to make sure that the owner gets what he needs. The owner wants to make changes and I want to help him achieve that but sometimes the changes can't happen because of what the landlord allows or the ordinances," Allen says.

Swearingen recalls that there were significant items for which the construction team never saw a shop drawing or cut sheet until the material arrived on site. Some items arrived well ahead of schedule – like 2,000 pounds of acrylic wall panels – and had to be stored in the middle of the job site until it was time for installation. Decisions about kitchen and bar equipment were made after the plumbing was laid out and some of the equipment requirements were different than the plumbing drawings showed. BURN Pittsburgh is the first of many in Rocky Patel's plans, so there was a steep learning curve involved and that ultimately meant the project took longer than expected, a fact Gordy Adams grasped when he arrived on the site midway through construction.

"I took my first trip to the job site and saw that we were not going to be open on time, or anywhere close to our original schedule," he recalls. "We were all learning about building this kind of place at the same time. The big thing was that we didn't make the same mistake twice."

Chris Pless credits Rocky Patel with sticking to his vision and walking the walk about BURN Pittsburgh.

"We had these value engineering conversations internally with the team," says Pless. "Ultimately Rocky just kept coming back to wanting a really well-done new place that offered something completely different to this market and the savings didn't outweigh the need to produce something really great. It's not like we didn't talk about it. It just never came to fruition."

Ceramic tile was used on all surfaces, except the ceilings, in the bathrooms. Photo courtesy BURN by Rocky Patel.

For all the challenges that BURN Pittsburgh presented, it's clear that the project team was able to manage them without major disputes. NEXT and A. Martini & Company have a track record of past projects, but neither had worked with Swatchroom or Rocky Patel before. Adams says that the reason the project succeeded is hardly a secret.

"With A. Martini the lines of communication were always open. Fred always took my call or replied to my emails," he says. "Gerard Vinski (superintendent for A. Martini & Co.) was a very good choice for the project. He was patient. He was meticulous. There were a lot of high-end finishes and we needed someone who didn't treat the job site like it was a warehouse."

"I knew from the beginning that this was going to be challenging but it was a fun project. I enjoyed the people, the architects and the owner," recalls Swearingen. "What made it work was we actually had people there who cared about doing the job right." BG

PROJECT TEAM

A. Martini & Company	General Contractor
Burn Pittsburgh LLC	Owner
NEXT Architecture	Architect
SwatchRoom	Interior Designer
Allen & Shariff Engineering	Mechanical/Electrical Engineer
Advanced Plumbing & Mechanical	HVAC & Plumbing
M & J Electrical Contracting	Electrical
Preferred Fire Protection	Fire Protection
J. P. Phillips Inc.	Ceramic Tile
Modany Falcone, Inc.	Concrete
Marsa Inc.	Masonry
Keystone Metals, Inc.	Structural & Miscellaneous Steel
A. G. Mauro Company	Doors/Frames/Hardware
RAM Acoustical	Interior
Wyatt Inc.	Casework
Phoenix Roofing	Roofing
Specified Systems, Inc.	Glass & Glazing
Thomarios	Painting
Tom Brown Performance Floors, Inc.	Wood Flooring

FIRM PROFILE

A.C. DELLOVADE, INC.

Tucked away between I-79 and the sleepy borough of Canonsburg, PA is the home office of one of the largest specialty contractors in Pittsburgh. A.C. Dellovade is an erector/installer of the major systems that make up the envelope of a building. Over the years, Dellovade has been the exterior contractor for the newest casinos in Las Vegas, the hangar for Air Force One and Pittsburgh architectural icons like Heinz Field, PPG Paints Arena and the Tower at PNC Plaza. It's the largest architectural metal wall and roofing system contractor in the U.S. and one of a handful of building envelope specialists that are called upon to bid on major projects throughout the country.

For A.C. Dellovade, the past two years have marked a significant transition from the first generation of the Dellovade family to a management team of long-time employees. Three of the four Dellovade brothers retired during that period, triggering the company's succession plan. The good news is that as 2018 unfolds, the change has put Dellovade on pace to have some of its best years going forward.

The management team is comprised of a group of veterans and the next generation of the Dellovade family. Pat Riley is vice president of operations. The vice president of sales is Len Pesce. Michael Dellovade represents the company's ownership and financing, and he manages the construction group with Tom Haught.

The remaining Dellovade is the founder of the company and president. Armand C. Dellovade started his career working for Plasteel Products, a manufacturer of exterior panels in Washington, PA. An ironworker by trade, Dellovade saw an opportunity to fill a niche in the market while in his early 30s and struck out on his own in May 1973. At that time manufacturers had more control over the exterior wall products, selling projects more or less directly to the architect and owner. That approach left manufacturers scrambling to find erectors for the wall or roof systems. Dellovade aligned his new company with a few manufacturers as a reliable source of labor.

During Dellovade's first decade in business, the manufacturers experienced a lot of consolidation and a risk-shifting trend

"When you come in during the early stages, you're a team member. They don't think of us as a subcontractor. When there's a problem, the approach is to figure out how to solve it."

emerged that created demand for installers to expand their business to include buying and erecting the systems. For businesses like A.C. Dellovade, the shift helped mitigate risk because the additional revenues associated with selling the panels came at little risk compared to the risk of just doing erection.

The change in business approach essentially doubled A.C. Dellovade's revenues, but it also opened up the market because many of its competitors chose not to leave the labor-only business model. Those companies struggled to grow and, in time, found it harder to get business from general contractors that had no interest in holding separate contracts for the materials and the labor. Riley notes that this shift was the catalyst for Dellovade's pursuit of total building envelope solutions.

As its business grew geographically in the 1980s and 1990s, Dellovade recognized that there was a ceiling to the U.S. market for architectural panels that was $90 to $100 million per year. The company began looking at other related building envelope systems that would dovetail with its existing expertise to allow for more growth. The curtain wall business was a natural fit. In 2006, Dellovade acquired Icon Exterior Building Solutions to optimize the expansion into that business.

"Curtain wall was a fantastic system to bring in because there was a tremendous amount of growth, although it's not for anyone who can't tolerate risk. Curtain wall has a lot of risk," Riley explains. "But if you really control quality, use quality products and do it right, the upside is tremendous in that business. I can see our Icon operation surpassing the original Dellovade company by 2020."

One of A.C. Dellovade's principal challenges is to manage the work it does around the country. To do so it has cultivated a network of skilled labor and supervision in all parts of the country. Exterior envelope systems carry significant liability for the building's performance and the labor force used to install those systems must be skilled. Dellovade invests heavily in training to keep their workforce up-to-date.

"If you are going to be a project manager or foreman or superintendent on one of our projects, we will put you through a three-day training program on that system," Riley explains. "We take them to one of our manufactures, Centria is one that comes to mind, and they receive classroom and book study as well as hands on installation training. When they leave, they are certified in a particular product. We try to get our workers certified in as many products as possible so we have people certified in exterior wall products, current wall or roofing products.

"If we have a three-person crew on a project each crew will have at least one certified person. Every superintendent will be a certified installer of all products. That's how we manage the quality control," Riley concludes.

In support of the product training, A.C. Dellovade has produced videos of the mock-up portions of the training. When a Dellovade worker in the field is unsure about a particular window or panel system detail they can view the training session for that system on their iPad or iPhone.

Dellovade keeps a contingent of skilled workers, experienced in their products, in regions throughout the U.S. While their average project employs about 20 workers, it's not uncommon for there to be the need for 60 or 80 workers on larger projects. The challenge is to keep enough work going in the various parts of the country to maintain that contingent of skilled workers. To do so, Dellovade pursues about 300 project leads each year, ultimately bidding about half that number. On average they will book 45 to 60 projects in a year.

The approach to the market that A.C. Dellovade takes also gives them opportunities to work on projects during design.

A. C. Dellovade erects both the curtain wall and the wall panels for SUNY Colleges of Nanoscale Science and Engineering, Albany, NY

Exterior building systems are critical design elements and Dellovade looks forward to working with construction managers and architects to add its staff's experience with budget and constructability issues. Many of the projects that the company wins involve design-assist relationships that make the projects successful before construction starts.

Like many construction executives, Riley expresses frustration about the projects on which Dellovade staff has invested a lot of time up front, only to have to bid the job in the end. Armed with too much knowledge about the project, it's usually difficult to be the low bidder in those situations. He is a firm believer in the value of investing in projects during the design stages nonetheless, since the effort results in a win more often than not, and the project that results is more successful.

"You know exactly how the project is going to go. You build such a relationship with the project team that you don't have problems," Riley says. "You don't have the kinds of disputes you get when you come into a project when it's out to bid and the project is getting under construction. When you come in during the early stages, you're a team member. They don't think of us as a subcontractor. When there's a problem, the approach is to figure out how to solve it."

In recent years, the health of the Pittsburgh market has changed the geographic mix of Dellovade's business. In a normal year, as much as 90 percent of Dellovade's annual revenue will be from projects located in other parts of the country than home. Since 2016, the share of local projects in Dellovade's portfolio has been 20 percent, and Riley sees the opportunity to have that share go higher.

Riley says that the company's preferred approach is to provide a total building envelope system but has found that approach is less popular with local general contractors than with the national construction managers with whom Dellovade works. He says he understands the impulse to bid more packages but argues that there is a benefit to the owner that supersedes low bid.

"Every time you break that exterior into another package - bringing somebody different in to do the wall panels, the curtain wall, the metal work and vapor barriers, or whatever – unless you're very good as a manager to make sure all of those things come together and have proper seals and a good monolithic barriers across all the products, you're better off with a total enclosure application."

The company maintains a shop in Avella, PA to do fabrication of the specialty items – like flashing products – that are ancillary to its main exterior wall systems. Dellovade also fabricates aluminum composite wall panels at its shop, almost exclusively for projects located within a 200-mile radius of Pittsburgh. A.C. Dellovade has offices in Phoenix and Los Angeles, and the Icon office in Baltimore.

There are 45 employees at the headquarters location, 38 of whom have been with the company at least 20 years. Fifteen of those have been with the company either since the beginning or for more than 30 years. Riley, who joined the company in 1979, believes the low turnover is the result of a family-focused culture that is the key to the company's success.

"Armand runs this business like it was family," he says. "I came from Columbia Architectural Metals but I always felt like I was family, even though there was blood family working here. I think that's the feeling everybody has."

Riley recalls being asked to speak at the 2017 office Christmas dinner by Armand Dellovade at the last minute. He says being caught unprepared made him speak from the heart about the culture of family at A.C. Dellovade.

"I reminded people that have been coming to these dinners for years that the same people are sitting to their left and right. It reminded me of my own family's holiday dinners, that I could count on the people sitting at that table," he says. "This is our family too, our work family. I ended by encouraging everyone to be thankful. We should be thankful for each other and, really, thankful to Armand for starting this company and building this culture." BG

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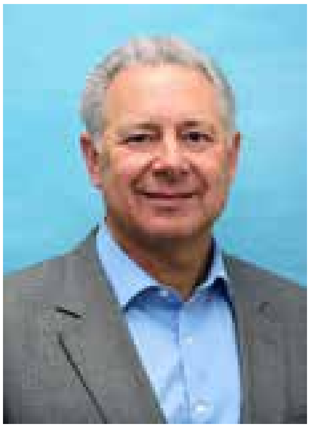

Len Pesce

Tom Haught

LEGAL PERSPECTIVE

Three Ways State & Local Governments Can Fund Infrastructure Projects

BY THOMAS J. MADIGAN

In 2014, the American Society of Civil Engineers graded Pennsylvania's infrastructure a D+, and estimated that drinking water infrastructure, alone, required an investment of $13.9 billion over the next 20 years. It also estimated that twenty-three percent of Pennsylvania's 22,660 bridges were structurally deficient. Even after the on-going Rapid Bridge Replacement project (RBRP) replaces nearly 600 of these bridges (at a cost of $1.2 billion), there will remain more than 5,000 bridges in need of attention. The need for investment in infrastructure is one of the few issues upon which both political parties agree, but neither the White House nor Congress seems to have an appetite for the level of spending required.

In February of this year, the White House unveiled its long awaited infrastructure investment plan, titled "Legislative Outline for Rebuilding Infrastructure in America." The plan proposes direct federal investment of only $200 billion, and counts on attracting an additional $1.3 to $1.5 trillion in state, local and private funding. Proposed federal funding is limited to 20 percent of individual project costs, which represents a significant decrease from current levels. Congress has questioned how this $200 billion will be funded and it seems unlikely that the final bill will include significant additional federal dollars.

As proposed, half of the $200 billion in committed federal funds would be distributed through an "Infrastructure Incentives Program," which would award grants based on criteria heavily weighted toward a project's ability to generate revenue or attract non-federal sources of funding. In addition to the Incentives Program, the plan commits $50 billion to a new Rural Infrastructure Program, $20 billion for a Transformative Projects Program to fund "bold, innovative, and transformative infrastructure projects," and $20 billion for Infrastructure Financing Programs to advance major, complex infrastructure projects by increasing existing federal credit programs. The funding formulae and award criteria for each program makes clear the intention to incentivize state and local governments to attract private funding or monetize public assets. In Pennsylvania, there are a number of existing mechanisms available to local and state government which can be used to leverage private dollars and unlock revenue from public assets, but all have limitations and none, by themselves, will be sufficient. Monetizing public assets or partnering with private investors will require significant creativity and flexibility.

One approach to generating revenue for new projects is "asset recycling." Popular in Australia, asset recycling is simply the sale or long-term lease of existing revenue generating assets to finance the construction of new, non-revenue generating assets. The government receives an upfront cash payment and the private entity takes over operation and maintenance costs -- and collects the revenue stream. The sale or lease of public services and assets can face significant political headwinds, however – as voters may fear that privatization will bring rate hikes and reduction in quality of service. Opponents of privatization deride the practice as short sighted; trading a long term revenue stream for a one-time infusion of cash. Critics often point to the City of Chicago's long term lease (75 years) of street parking meters to a private operator as a prime example of what they consider a bad deal. Although the lease provided a much needed infusion of cash to the City budget, users saw significant

immediate increases in parking fees and the City will lose $974 million in revenue over the term of the lease. While the Chicago parking privatization is a cautionary tale, there are success stories as well. For example, the City of Scranton leased its parking assets and sold its sewer assets, allowing it to fill a significant budgetary deficit, and the increases in rates were less than those allowed to the public operator.

Privatization is not a panacea, however, as assets can only be sold once, and the revenue generated from the sale or lease of assets may fall well short of the cost to design and construct new infrastructure. Local governments will need financial assistance from the state or federal government to fill this budgetary gap, or will need to find ways for new assets to "pay for themselves."

There are a number of existing programs that can contribute to capital stacks to cover funding shortfalls for infrastructure projects. The Commonwealth's Redevelopment Assistance Capital Program ("RACP"), administered by the Office of the Budget, can be used for the acquisition and construction of regional economic, cultural, civic, recreational, and historical improvement projects, which have a regional or multi-jurisdictional impact, and generate substantial increases or maintain current levels of employment, tax revenues, or other measures of economic activity.

The Multimodal Transportation Fund, administered by the Commonwealth Financing Authority (the "CFA"), is another available program. CFA grants can be used for the development, rehabilitation and enhancement of transportation assets, connectivity of transportation assets and transit-oriented development. Grants up to $3 million are available for projects with a total cost of more than $100,000. PennDOT administers a similarly named program – the Multimodal Grant Program – which provides grants for projects which coordinate local land use with transportation assets to enhance existing communities; projects related to streetscapes, lighting, sidewalk enhancement, and pedestrian safety; projects improving connectivity or utilization of existing transportation assets; and projects related to transit-oriented development.

To the extent infrastructure projects are expected to generate private real estate development, tax increment financing ("TIF") is another potential source of funding. Tax increment financing can be used to capture the incremental real estate taxes generated by private development spurred by an infrastructure project to secure a private financing for the capital cost of the project. Transportation facilities are well suited for TIF financing, given the increase in property values that comes with improved access to an area. Similarly, Business and Neighborhood Improvement Districts ("BIDs" and "NIDs") are mechanisms by which the private sector can essentially tax itself to fund services and improvements that benefit its members. While more traditionally used for smaller scale projects like curb installation or street cleaning, the concept could be applied to larger scale infrastructure needs.

While all of the above are important tools in the tool box, whether employed singularly or in combination, they will not be enough to raise the staggering amount of money needed to fund the Commonwealth's infrastructure needs without a significant influx of private investment. Under the current procurement laws, the most likely avenue for private funding of public infrastructure in Pennsylvania is Act 88 of 2012, known as The Transportation P3 Act. The P3 Act authorizes public-private partnerships for transportation projects, which is broadly defined to include virtually all modes of transportation and associated facilities and structures. The P3 Act provides significant flexibility in the use of project delivery methods beyond the traditional design-bid-build, expressly allowing for the use of finance-design-build-operate-maintain agreements. To date, there have been two major projects completed under the P3 Act. The Rapid Bridge Replacement Project (RBR) bundled the replacement of 558 structurally deficient bridges into a single design-build-operate-maintain contract, and the CNG Fueling Stations Project (CNG), involved a single contract for the design, construction and operation of 29 compressed natural gas fueling stations at public transit agency sites.

While the P3 Act's definition of "transportation" is expansive, it is not limitless, and projects such as water and wastewater systems, energy production facilities, and brownfield site redevelopment would likely not be covered by the P3 Act. Such projects are currently governed by the Procurement Code, or one of the various other procurement statutes governing municipalities and authorities. Unfortunately, these procurement schemes are not conducive to private investment and innovative project delivery methods. Even though the Procurement Code allows for competitive sealed proposals, non-price award criteria must be "objectively measurable" so as to allow for direct comparison of proposals. In addition, Pennsylvania Courts have expressly prohibited the use of a two-step, short-listing process under the Code on the grounds that all responsible bidders must be permitted to submit price proposals, meaning that the contracting agency cannot reduce the number of bidders other than by eliminating the "non-responsible" ones. These efforts to open the bidding process to all comers and "objectify" the basis for award, while assuaging concerns of favoritism, dilutes one of the main benefits of using a best value award and integrated delivery method – attracting qualified and experienced proposers who can offer innovative approaches and solutions. Many other procurement regulations, such as the Municipal Authorities Act, are even more restrictive, as they require competitive sealed bids and mandate award on the basis of lowest price – neither of which are conducive to private investment. Thus, absent significant legislative changes, for projects that do not fit within the Transportation P3 Act, considerable creativity will be required to attract and utilize private investment, such as shared or mixed use developments in which the private and public components, while intertwined from a development and financing perspective, can be separated for financing, procurement and contracting purposes.

On the two major P3 projects completed in Pennsylvania thus far, the RBRP and the CNG fueling stations, the assets are not non-revenue generating, and the private developers are being paid through a stream of "availability payments." While the P3 method of procurement achieved considerable savings over traditional procurement methods, the availability model is not a new source of funding, but essentially an alternative financing mechanism, and the public body must still appropriate the funds to pay the private investment back over time. Thus, even for transportation projects, the "availability" payment model would not appear to be the answer to filling the anticipated funding gap, and it will likely be necessary to find ways to design projects to generate revenue sufficient to help pay for themselves.

Key to attracting investment will be finding ways to allow for and reward the generation of higher returns through above-contracted for levels of performance. To date, P3 projects in Pennsylvania have attracted investors who are expert at evaluating and managing construction risk, as the return on investment is largely determined by the ability to control the capital cost of design and construction. The traditional methods of generating revenue from public assets – tolls, user fees, and surcharges – are well-known, but have significant limitations. The tolls, rates and fees are established, directly or indirectly, by a political body, and are thus influenced by political considerations, which can result in below-market rates and operating deficits. Rates tend to be static and inflexible; they do not vary with fluctuations in demand, but are raised periodically to meet operating budget shortfalls. "Variable" or "dynamic" pricing has been used by airlines and hotels for decades and more recently by Uber and other rideshare services. Mobile technology and embedded sensors make dynamic pricing now possible for highways, bridges, parking, and other public assets, based on variables such as time of day, road congestion, speed, and occupancy. P3 models which reward innovation and efficiency in operation, such as dynamic pricing, will serve to maximize the revenues generated from infrastructure and attract additional sources of equity.

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FINANCIAL PERSPECTIVE

Managing Risk in a Boom Market

Contractors don't go out of business from not having enough work; they go out of business from having too much bad work. That (or some variation of that) is an old adage that is repeated because it's true.

Pittsburgh has seen how this adage holds up over the past few business cycles. The majority of contractors in business before the 2008 crash remained in business throughout the recession and slow recovery that followed. Companies downsized and survived. Those that didn't survive followed a similar path out of business: they bid too aggressively, landed a lot of no-profit work and failed when they ran out of money before completing it. That's not a Pittsburgh phenomenon. It's a universal recipe for disaster that happens when markets change across the globe.

The market in 2018 is one that has changed. While the past two construction seasons have been good to most firms designing or constructing, this year marks a jumping off point for construction in Western PA. As firms involved in construction prepare for a marked increase in activity during the next two to three years, there are different kinds of risks associated with a boom market that have to be considered. And while it's true that profits should increase (and more profit always helps mitigate risks), there will be different kinds of risks associated with the 2018-2020 boom than Pittsburgh firms have faced in a generation. Some of them are indeed existential risks.

Lisa Wampler, managing partner for the Pittsburgh office of Cohen Seglias Pallas Greenhall & Furman, considers the timing of the surge in activity as beneficial to contractors. She sees that clients have had solid years in 2016 and 2017, building backlog coming into this year.

"I think the best advice to give in this kind of market is don't drop your guard," Wampler observes. "Mitigating risk is always important whether there's a back log or not. Contractors should make sure they are still reviewing and negotiating their contracts, making timely notice of and preserving claims, and getting signed change orders for the work. You don't want to give anyone an easy out to not pay you. Also, other busy markets have found themselves running out of labor. So, with an uptick in work, it's a good idea for contractors to have a strong working relationship with the source of their labor."

Alan Torrance, shareholder at Dickie McCamey & Chilcote and co-chair of the firm's Construction Law Group, concurs with Wampler.

"A booming economy can give a false sense of security," Torrance warns. "Don't be fooled by the fallacy that just because a lot of cash is flowing into the project, you're going to get paid. Don't let your guard down and get lax about protecting your lien rights. And that gets more complicated all the time. If it's a big enough job relative to the size of the company, not getting paid can choke a contractor's ability to complete the work. It can jeopardize its ability to capitalize the next project."

These attorneys echo the number one concern that legal and financial advisors expressed when asked about the risks of a boom market: becoming less disciplined about managing the business. In tight markets, companies understand that profits are thinner and that every penny lost is critical. In many cases, projects won were secured by accepting lower profit margins going in; so project management has little margin for error during construction. In fact, it's not uncommon for managers of tight-margin projects to look to micromanaging the work to add profits back that weren't in the bid. In fatter times, human nature tends to persuade the opposite kinds of behavior. That tendency needs to be overcome in boom markets, especially ones in which there are more large projects where sloppiness becomes magnified.

Booming markets do offer more opportunities for companies to grow. The abundance of work makes for a safer environment in which to grow, but this understandable response needs to be held in check.

"Companies tend to go after anything and everything when there is a lot of work. That's a natural reaction to the market but it can be detrimental too," says Hillary Hambleton, senior accountant at Clifton Larson Allen. "There's a risk of taking on projects and not having enough experienced resources to perform. Know your short-term needs and long-term goals and go after projects that fit those models."

You can make the argument that risk management is the number one priority for any business owner in the construction industry. The formal voice of risk management in construction is the surety industry, the companies that provide bonding to guarantee that contractors will complete the project as contracted or pay the project's subcontractors and suppliers. In booming market conditions, surety companies find themselves fielding regular requests for increases in their bonding capacity. This allows the insured to grow beyond its previous limits. Surety companies have not

“Contractors don’t go out of business from not having enough work; they go out of business from having too much bad work.”

always distinguished themselves as the risk manager for the industry, but over the past decade, insurers have remained more disciplined in evaluating contractors’ main risks. In the current market, nearly everyone agrees about which risk factor is paramount.

“Growth risks are something that we talk about when a customer gets to the upper end of their program. Right now, everyone is concerned about available labor,” says Chris Pavone, surety manager for Liberty Mutual Surety. “We worry about contractors having sufficient project administrative staff. Do you have a project manager or superintendent in place to manage that next big project?”

Pavone explains that disciplined underwriting exists to help the surety customer understand what their risks are, especially when a customer is trying to take advantage of increased opportunities to land projects.

“When a customer is pursuing a big project that we’re evaluating, we’re looking to see if there’s something bigger coming down the road. We try to look ahead,” he says. “Is the contractor trying to ramp up in a way we don’t know about? We want to be on the same page.”

Beyond the concerns about adequate supervision and labor to complete the project, contractors must consider the financing implications of being successful in bidding more opportunities. Construction projects are costly to get out of the ground. Payments lag the progress on the project, so even with quick-paying clients, contractors should worry about the cash flow needed to get several big projects underway at one time. That’s especially true in Pittsburgh, where an unusual number of projects have been delayed after contracts were signed over the past year or so. A higher-than-usual share of the construction put in place in 2018 will come from projects held over from 2017, or even 2016. Pavone encourages negotiating mobilization expense reimbursements and strengthening bank lines of credit.

Another facet of the tight labor supply is the risk associated with workers being asked to perform work for which they have less experience. Alan Torrance notes that experienced workers possess more than technical skills training.

“With a tight labor supply there will be more workers who don’t know what they are doing from the standpoint of workers compensation and liability issues,” he says. “That risk has to be actively managed.”

Contractors aren’t the only parties to construction that need to guard against the tendency to become complacent in a boom market, or to assume that everyone is doing well. History has shown that owners will give in to the temptation to put a few thousand dollars in their pockets by reducing or eliminating bonding. That’s a penny wise, pound foolish approach.

“Owners may have a performance bond but, if they feel comfortable with the general contractor, they will waive the bonds without knowing what else is in the contractor’s backlog,” warns Pavone. “Is there a bad project that the contractor is doing? If so, are they devoting the resources necessary to manage and wrap up the job?”

“When times are good people tend not to do as much about bonding. That’s true of both the bond buyer and the insured,” notes Torrance. “You need to watch the language in your bond agreements to protect your bonding rights. Owners should consider adding themselves as a dual oblige.”

Even companies with good work that are performing as expected – and making solid profits – should be thinking about how they manage success. The construction industry is chock full of small firms with closely-held ownership structures. It’s human nature to view good times as an opportunity to spend more, either on the company or the owner’s lifestyle. Having extra cash on hand becomes another risk management issue, albeit a good one to have.

“It’s also important to diversify your capital. Sitting on a pile of cash at the end of the year doesn’t necessarily help the business,” Hambleton says. “It’s better to use some of that cash by making conservative investments. The capital will be there again when you need it.”

Leave it to an accountant to sound the alarm just as the floodgates are opening up; however, Hambleton makes a final point about good times that is worth heeding.

“Don’t get comfortable with the boom,” she says. “The well does eventually dry up.” BG

MANAGEMENT PERSPECTIVE

Wearable Technology Will Change Construction

As was the case with computer-aided drafting or building information modeling, adoption of wearable technology is happening selectively. In Pittsburgh, contractors are dipping their toes into the water or exploring the emerging technologies for the right application.

Mascaro's Bill Derence was enthusiastic about the application of wearables for the jobsite, although he admitted that Mascaro wasn't employing it yet.

"It's going to have a big impact," he asserts. "We had a company here from CMU, Sole Power, that makes a device that fits in the sole of a shoe that tracks that a worker is on the site. For safety applications, the device can check with the building model to see if the worker is in an area they should not be. We're also looking at a similar technology in vests, which are easier to pass from one worker to another than something located in a shoe or sole."

Image by SolePower

Wearable technology involves the adaptation of technology to the clothing and protective equipment worn by workers on job sites. There are a number of enhancements being used for workers today, many of which are low technology. What has construction futurists excited is the application of emerging technologies, like robotics, artificial intelligence (AI) or augmented reality to make construction projects run smoother and safer. For an industry that is facing a demographic black hole in its workforce, technology offers an enticing solution.

Today's available technology in wearables appears mainly in smart helmets (including vision), smart vests and smart footwear. Among the low technology add-ons to construction clothing that are in the market now are almost exclusively improvements to worker safety. In some form, these low-tech wearables are already being used in Pittsburgh.

"Because of the silica regulations, we're using helmets that have built-in respirators. It's hard to think that we ever did things without these helmets," says Brett Pitcairn, president of PJ Dick Special Projects Group. "There are also safety gloves with Teflon strips on the fingers to prevent cuts. They have a plastic skeleton in them that prevents injury. We require them of anyone in the field who is doing any cutting."

With advancements in battery technology, manufacturers are introducing more heated and cooled vests for workers. These vests make workers more comfortable and, in extreme weather, reduce the risk of hypothermia and hyperthermia. Alert buttons are more commonly being added or integrated into vests to allow workers to signal an emergency or call for help.

The more intriguing enhancements to vests involve the use of sensors to monitor both the environment and the worker's condition. Smart vests can include biometric sensors to alert field supervision about the health of the workers on the site. Monitoring heart rate or brain wave activity can warn that a worker is becoming drowsy or experiencing distress. Hydration and nutrition can be monitored to keep workers healthier and more productive.

Smart vests using tracking technology have a myriad of applications in the field. Tracking devices like Spot-R clips can be attached to the vest or made integral. Using global positioning satellite (GPS) information to track the vest allows supervisors to ascertain the number and location of the workers on the job site. Using GPS coordinates or a building information model (BIM), smart vests can give an alert when a worker enters an area that they should avoid or is unsafe. Workers can be warned when they are in danger of close proximity to heavy equipment or when the work environment has become hazardous for human health. Caterpillar has introduced Cat Detect for Personnel, which uses radio-frequency identification (RFID) technology to locate workers. Using RFID badges in vests or boots, Cat Detect is signaled when workers are within unsafe proximity to heavy equipment.

Smart helmets and glasses allow workers to use technology to have information about the construction site that would otherwise be unavailable except on paper. Smart helmets employ eye level displays that can give workers instructions about their tasks or guidance about the job site that will improve safety and productivity. This can include videos about installation or equipment operation, or drawings displayed. Integrated with the BIM model or CAD drawings, smart helmets can provide workers with the drawings that relate to where the worker is physically located in the building, along with any notes about field decisions or updates that have been made.

Smart helmets also represent the medium for using virtual reality (VR) or augmented reality (AR) to bring the drawings to life for the worker. These two technologies are often confused as interchangeable, but each serves a different function. VR creates a visualization of a scene that does not exist while AR adds visuals to scenes that exist. Video games use VR to display the world in which the game is played. The Snapchat filter that lets you put dog ears or huge teeth on a photo is an application of AR.

Both AR and VR can be displayed using technology-enhanced safety goggles, like Microsoft's HoloLens. Certified as protective eyewear, HoloLens can be used in addition to a smart helmet to have the user visualize how an unfinished space will look. The more practical construction application for the goggles is to augment the space as it exists by viewing elements taken – at scale – from the BIM model in their installed locations.

"We're using AR in HoloLens goggles with the 3-D model built into the glasses, so you can go into finished space and see where the runs and chases are located," explains Drew Kerr, business development manager for Turner Construction. "The other way we use it is to view finished interior studs to see where the mechanical and electrical systems are supposed to go. It can help with quality control to check how accurate the installation of the MEP systems have gone."

Smart footwear is the third category of wearable technology that has gained a foothold (pun intended) in construction. Boots and work shoes are fitted with lights, RFID/GPS badges, sensors and communications devices. Pittsburgh-based Sole Power outfits its work boots with all of this kind of technology, plus a kinetic charger that re-charges the boot's battery with each step. Like with other wearables, smart footwear can be used to track and monitor workers in much the same way as vests and helmets.

These wearable applications are gaining ground throughout the industry worldwide. A fourth category of wearables, exoskeletons and bionic suits, have fewer products in the market but also have enormous upside potential for the industry. There have been no adopters of exoskeletons or other bionic suits in Pittsburgh yet (or at least none that would admit it). Bionic suits or exoskeletons add mechanical strength to human activity, making it possible for workers to multiply their own strength on job sites. Bionic suits can increase a person's ability to lift, reducing fatigue, improving the amount of material a worker can move, and making heavy tools feel weightless. Workers will be able to do more with better results, increasing productivity and decreasing work-related injuries.

The benefits of wearable technology are multi-layered. Workers in the field can gain dramatic increases in efficiency and productivity, while improving the safety of their working conditions. Companies can monitor their job sites to mitigate unsafe situations and optimize the environment in which its craftspersons operate. Wearables can enhance communications, minimize the time to solve field questions, alert first responders when an accident or other emergency occurs, and ensure that skilled workers have the best information available to complete their assignments.

A more nuanced benefit is the ability to collect data from the construction site, an opportunity to build a data set of all activities that occur on a job site. Over time – aggregated with the same kinds of data from thousands of job sites – managers will be able to predict job site behavior and isolate the activities that are most useful or most unsafe. Combined with advanced robotics, the data gleaned from tracking wearable technology may enable automation of many construction tasks, developments that could solve the workforce problem over the long haul.

There are a few hurdles to overcome between now and the full automation of the construction job site. For all the potential benefits of wearable technology, there are also intrusions. Biometric monitoring should be outside the realm of HIPPA but the worker's right to keep medical conditions private has not been tested legally. Workers would also have to buy in to using devices or clothing that they may perceive as less comfortable, more confining or too intrusive. A generation of ironworkers had to be convinced that the benefits of tying off outweighed the perceived loss of productivity. Companies that collect and apply the big data that will result from just a few years of wearable technology performance will have to figure out what is proprietary and what should be shared for the good of the industry. Technology manufacturers are likely to have to defend the intellectual property of advances, maybe against their own customers.

"There are challenges to setting up the infrastructure," acknowledges Hahna Alexander, co-founder and CEO of SolePower. "The first is actually worker buy-in. The culture between workers, supervisors and safety managers is critical. People don't want to feel like they are being bar-coded.

"Then there is the challenge of what connectivity solution will be used and that requires some level of investment by the company. There can also be transmission difficulties if the job site is near water or metal. The other infrastructure issue has to do with where the device is stored at the end of the day, how it's charged and how people check in each day. A wearable device can be worn by different people day-to-day."

These are but a few of the challenges that face the industry as it begins to embrace the advantages of job site technology. The upside of that embrace – fewer accidents, better productivity and quality, a deeper understanding of what works and what does not – is too attractive not to pursue. And if emerging technology has taught us anything during the past 20 years, it's that technology pursued comes to fruition much sooner than expected. The time to plan for using wearable technology is now. BG

MBE / WBE COMPANY SPOTLIGHT

BIG LULU'S TRUCKING LLC

Celeste Phillips and John Williams. Photo courtesy of Bridgeway Capital.

Celeste Phillips was a Port Authority bus driver with a dream. After 15 years with the authority and, with her children raised, she decided to follow the spark of a business idea that came from watching some of her counterparts who had used their commercial driver's licenses (CDL) to make a better living for themselves.

But before the story of Big Lulu's Trucking is told, perhaps an explanation of the company's name is in order.

"People always see me and say, 'you're not big,' but I'm bigger than Little Lulu," laughs Phillips. "Little Lulu is my youngest daughter. I have four children but Lulu is the only one that looks like me, so her friends always called her Little Lulu. When my husband and I started the trucking company, we thought that was a catchy name that people will remember."

Phillips' husband, John Williams, is now the company's operations manager. He played an important role in Big Lulu's Trucking's founding, which Phillips had begun planning after learning about the success some fellow drivers had experienced.

"I started asking them questions about what the trucking business was about, how they made money. I approached a couple of girlfriends of mine who were drivers and I asked if they wanted to pitch in and buy a truck. They didn't want to," recalls Phillips. "My husband and I were just friends then and I told him about this dream of mine. He was in the real estate business and he wondered why I would want to get into the trucking business. I told him about the business and I had a friend who was the accountant for her brother, who owned a truck. After he listened to her talk about the business, he decided he was going to help me buy a truck."

Big Lulu's Trucking opened its doors in April 2015. Williams obtained a CDL and traded shifts with Phillips, taking turns driving and sleeping so that they could maximize. Big Lulu's got a taste of small business risk early on, losing its only truck to an electrical fire at the end of the 2016. In early 2017, the company located another truck and launched on a first full year in 2017 that was full of growth. Big Lulu's added five trucks and drivers, an approach that Phillips says came from learning how vulnerable her business was when it started.

"You know you'll always have a truck down so that makes you want to get another one. Once you have two trucks you don't want to go back to one truck income, so you just keep investing and getting larger. We didn't even realize that we bought five trucks last year," she jokes.

The growth strategy is part of a larger plan that Phillips is developing to create a community of small trucking companies. Big Lulu's operates from a garage on New England Road in West Mifflin, sharing the facilities with Phillips' sister, Williams' brother, and a childhood friend, all of whom have been assisted by Big Lulu's. Phillips was raised in East Liberty and loves the city. She is very optimistic about the amount of construction that is underway and the opportunities for her company, as well as others entering the business.

"I tell people all the time that there's so much construction because the whole city is being renovated," she says. "There's enough going on for everybody here. Just because you get a truck doesn't lessen the need for my truck. Nobody ever calls and says I just need one truck; they need 15 trucks."

Big Lulu's has a growing relationship with US Steel, hauling hot rock year-round so that there is activity when construction slows. Big Lulu's subcontracts with some of the larger heavy/highway contractors during the construction season, hauling asphalt, stone and concrete. The desire to create something that can be a legacy for her children drives Phillips and Williams to continue to reinvest and look beyond making a good living. She has ambitions for herself and plans for expanding by serving the gas industry. The idea of adding drivers means adding expenses and headaches. While she acknowledges that growth brings complications, she also feels strongly that there's enough upside to more than compensate for the problems of owning a growing business.

"Everything is a problem if you look at it from the perspective of problems," notes Phillips.

Another part of Big Lulu's growth ambition is to act as an agent for improving the community. The company has made a practice of hiring people who have been incarcerated, giving second chances to people who will have a hard time finding meaningful employment.

"A lot of people come out of jail and can get a CDL but they can't get hired," she says. "If I can put you in a truck and help you make an honest living, that's going to keep the streets safer. That's going to keep you from going back to the penitentiary. I can't save the world, but I can keep some people off the street and help them provide for their families and raise their kids."

Phillips and Williams have thus far blended ambition and caution in growing Big Lulu's Trucking. The company has worked with previously-owned trucks, patient to have a few years operating before expecting a dealer to finance new trucks for the firm. Phillips has been sensitive to the pressures of the market but has resisted the temptation of walking back from a commitment to take an assignment that pays more. In a seller's market, there have been the opportunities to chase a few more dollars but Phillips is protective of the reputation that she is building for Big Lulu's Trucking. And it's clear that regret is not in her vocabulary."I just love it. I love everything about it. It's my baby and everybody loves their baby," Phillips says. "If I had to do it all over again, even with the ups and downs, I'd do it a hundred times over. I always say, every year our ups get higher and our downs aren't as low." BG

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Mentor-Protégé Program: A Way for Small Businesses to Access the World of Federal Procurement.

BY MATTHEW WHIPPLE, ESQ.

Every year, federal agencies enter into agreements with private sector contractors that are worth nearly $500 billion. With money on the table that is roughly the equivalent to the GDP of Sweden, it is unsurprising that many large companies do business with the federal government. Further, because federal contracting requires compliance with a dizzying array of statutory and regulatory mandates, it may seem like the barriers to entry to the federal procurement marketplace are too high for small businesses to surmount.

To increase competition and encourage greater diversity among their contractors, federal agencies frequently take steps to give small businesses a leg up. Set-aside projects are common and take many forms, including minority-owned, service-disabled veteran-owned, and women-owned small-business set-asides, as well as set-asides for Historically Underutilized Business Zones. Even where a small business might have an opportunity to compete for a project, however, it may seem too difficult for a company to learn the ins and outs of federal procurement for the first time.

Enter the Mentor-Protégé Program. Although mentor-protégé arrangements have been used in a limited capacity in federal procurement for some time, in 2016 the Small Business Administration introduced a "universal" Mentor-Protégé Program that applies across agencies. The program allows small-business "protégés" who are new to the federal space to partner with larger, more experienced "mentors," with the stated goal of enhancing the capabilities of protégé firms through business development assistance from the mentors.

The program allows larger firms to partner with, and even invest capital into, smaller firms, thereby allowing the large business to compete for small-business contracts that would otherwise be unavailable. In exchange, the established business provides technical, management, financial, or other assistance to the protégé, thereby increasing its capabilities and, ultimately, allowing it to better compete for projects in the future.

Although over a year old, many small businesses are still unfamiliar with the program. If you are a small business that is interested in entering the federal marketplace, or a larger business interested in acting as a mentor, here are a few practical tips to consider:

- Plan Ahead. Mentor-Protégé agreements require approval by the Small Business Administration. Although not onerous, the SBA application process is exacting, requiring the protégé to submit a business plan and both parties to submit a "mentor-protégé" agreement, and, typically, a separate joint venture agreement. The SBA has up to 45 days to grant or deny an SBA application, and may require amendment if there are areas of concern or noncompliance. Avoid jeopardizing a project by applying as early as possible.

- Candidly Assess What Each Party Brings to the Table. As part of the mentor-protégé agreement, the parties are required to lay out, inter alia, how the arrangement will assist the protégé in meeting the business plan goals. Further, if the parties are entering into a joint venture agreement, the parties must comply with 13 CFR § 125.8. Section 125.8 mandates that all joint venture agreements include at least 12 specific provisions, including a requirement that the small-business partner perform at least 40 percent of the joint venture's work and that the small-business partner perform substantive contract work—

administrative or ministerial functions are insufficient. The Mentor-Protégé Program is not designed to allow large firms access to small-business projects by using a protégé as a "fig leaf." The SBA will require a candid assessment of the capabilities of, and benefits to, the protégé.

- Prepare for Ongoing Obligations. Obtaining approval of a mentor-protégé relationship is simply the beginning. The mentor must provide assistance for at least one year. The protégé must offer periodic reporting to the SBA, detailing the work of the joint venture and how the protégé's work is complying with the program. Both parties must certify each year that they are continuing to comply with the program and to inform the SBA of any changes in their relationship.

- Protect Yourself. While the phrase "mentor-protégé" may bring to mind Gershwin's "Someone to Watch Over Me," it is still fundamentally a business relationship. And all business relationships require an honest assessment of risk and appropriate protections. In particular, parties may want to consider building into their contracts provisions related to the preservation of intellectual property, including appropriate nondisclosure provisions, and protection of employees and customers, through appropriate non-compete and non-solicitation provisions.

- Consider Exit Strategies. While mentor-protégé relationships can beneficial, they are not meant to be indefinite. As noted above, the stated goal of the program is to allow protégé firms to ultimately compete without a mentor relationship. The parties should give thought from the outset, therefore, to the timeline for their relationship. Do the parties envision a one-off project or a series of projects? Is the goal simply to partner in the federal space, or will the parties compete for other projects as well? Does one party bring specialized capabilities to the table, such that they would be a preferred subcontractor going forward? Contemplating the end of the mentor-protégé relationship may allow the parties to best position themselves for that time.

Additionally, despite good intentions, the relationship may not work out as planned. If internal problems arise, a protégé partner that is unable to handle the project on its own may be left at the mercy of the mentor firm. Therefore, consider provisions regarding how conflicts should be addressed and the partnership dissolved, if necessary.

Federal agencies have numerous opportunities for small businesses that are new to the federal marketplace. If you are considering the Mentor-Protégé Program, keep in mind the above tips to maximize your potential for success. BG

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INDUSTRY & COMMUNITY NEWS

Members of the A. Martini & Company team attended the Black Tie, Baby! fundraiser for the Westmoreland/Frick Hospital Foundation. From left are George Germany, Sidney Rawlings, Maria and Michael Larson-Edwards, Angelo Martini, Jr., Nikole Lopretto, Mike and Rebecca Yohe, Zak and Elizabeth Roberts.

On April 12, 2018, Mascaro celebrated 30 years of service to the Pittsburgh region. The Mascaro family celebrated the event at the Heinz Field UPMC Club on April 14, 2018, with over 400 employees, business partners, and their family members in attendance.

A fundraising bourbon tasting co-sponsored by Burchick Construction and Babst Calland raised more $11,300 for Special Olympics of PA on April 5 at Shannopin Country Club. Pictured are Kate Schuster from V. O. George, Burchick's Dave Meuschke and Esther Mignanelli from Babst Calland.

Paul Becker from Willis Towers Watson (3rd from the right) presented PJ Dick with the first place award in the 2018 Willis Towers Watson/ AGC Construction Safety Excellence Contest on April 9. Pictured with Becker from PJ Dick are (from left) Cliff Rowe, John Spatafore, Rick Scott, Joe Franceschini, and Jake Ploeger.

(From left) Robin Zoufalik from Pieper O'Brien Herr, MBA's Eric Starkowicz and Zach Huth from Huth Technologies at the Pittsburgh 2030 District Progress Report.

(From left) Mayor Bill Peduto with GBA's 2030 team, Isaac Smith, Quinn Zeagler and Angelica Ciranni, and Aurora Sharrard, GBA executive director.

(From left) AHN's Brad Cole and Skyler Van Soest, Nick Shafer from Rycon, Jordan Miller and Jeanne Green at the ACE Mentor Clay Shoot.

(From left) Lance Shreffler from McKinney Drilling, MBA's Eric Starkowicz and The Hartford's Brian Mozena.

(From left) Nello's Gene Boyer and wife Cherri Silak, Gerald Lopata from NVR Mortgage, and Bill Kottner from Bridgeville Appliance.

(From left) John Wattick from Mosites, Katie Walsh from Bohlin Cywinski Jackson, Eric Phillips from Strada and BCJ's Jennica Deely at the MBA YC kickoff.

Rothschild Doyno's Bea Spolidoto and guest speaker Matt Minczeski from the Allegheny Conference on Economic Development.

Dick Building Company's Brittany Coscia (left) and Laura Albert with the MBA's Eric Starkowicz.

Pittsburgh Councilwoman Erika Strassburger (left), Jendoco's Domenic Dozzi and Diane Katz.

(From left) Pittsburgh Councilman Corey O'Connor, Jendoco's Trina Lloyd, Laleh Gharanjik, and Katey Andaloro.

Langan's Scott Rowland (left) with Turner Construction Project Manager Shawn Bell at the MBA/GBA tour of the Carnegie Science Center expansion

Rob Slarsky from RJS Construction (left) with Chuck Coltharp from Indovina Associates.

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MBA

AWARDS & CONTRACTS

The Elmhurst Group selected **Burchick Construction** as contractor for its new $5 million Heights of Thorn Hill office building. The 60,000 square foot, tilt-up building was designed by Desmone Architects.

UPMC selected **Rycon's** Building Group for a 53,000 sq. ft. interior renovation in Oakdale, PA. The scope includes a new Chartwell pharmacy, clean room, and lab support spaces as well as replacing all MEP systems.

Rycon's Building Group continues upgrades throughout Jameson Hospital in New Castle, PA. Currently underway are improvements to the orthopedic medical surgical unit and the ICU. Stantec is the architect.

Rycon's Special Projects Group recently finished two renovations to JCPenney's stores in Uniontown, PA and Indiana, PA. The four-week projects ranged in size from 2,500 sq. ft to 3,100 sq. ft.

Jones Lang LaSalle awarded **Rycon's** Special Projects Group a $665,000 tenant fit-out of the 27th floor within EQT Plaza for Aon Insurance. The 7,100 sq. ft. project is scheduled to last 12-weeks.

Work is underway by **Rycon's** Special Projects Group on a $1.6 million renovation to Wells Fargo offices on the 23rd floor at 11 Stanwix. The 10,000 sq. ft. project is expected to wrap up early June 2018.

Rycon is completing two renovations for owner CBRE on the 6th and 14th floors of Liberty Center. Desmone Architects is the designer for both spaces which range in size from 1,100 sq. ft. to 16,700 sq. ft.

Ten miles North of Orlando in Altamonte Springs, FL, **Rycon** started work on a $680,000 remodel to Aldi. Cuhaci & Peterson is the architect for the 15,000 sq. ft. project.

Rycon was awarded a CM at-risk contract to construct a new 250,000 sq. ft. industrial building in the Countyline Corporate Park in Hialeah, FL. Work is expected to break ground early May 2018.

Seritage Growth Properties selected **Rycon** to complete renovations totaling $615,000 at Southridge Mall in Greendale, WI. The scope includes an interior build-out of a Dick's Sporting Goods as well as exterior demo and new façade work.

Rycon recently relocated two retailers, Under Armour and Levi's, into larger spaces at the Tanger Outlets in Jeffersonville, OH.

Rycon was selected to complete renovations for AC Moore in Cincinnati, OH which will open this spring. The 19,700 sq. ft. store will be located in a former Office Depot space in the Ridgewater Plaza.

In Knoxville, TN, **Rycon** was chosen as CM at-risk by TD Management to build a new $1.6 million Tire Discounters store. Work will break ground early April and will continue for 16 weeks.

Landau Building Company began a 5,798 square foot renovation project at UPMC Shadyside Hospital Preservation Hall for Support Services. Working alongside architectural firm Radelet McCarthy Polletta, this project is a continuation of a project completed earlier this year.

Landau Building Company was awarded the WVUM Cardiac and Pulmonary Rehab and Wellness Gym renovations at the WVUM Heart Institute in Morgantown, WV. The project involves the fit-out of the existing 4th floor shell space and includes creating a new gym area, locker and toilet rooms, offices, conference room, and other support spaces. Renovations are expected to finish by June 30th. The architect is IKM, Inc.

Landau Building Company began renovations of UPMC Benbrook Cancer Center in Butler, PA. The project is anticipated to take 26 weeks and includes upgrading the CT Room for new equipment, adding additional exam rooms, renovating the conference room, adding new entrance doors, and upgrading the main entrance waiting/check in area. WTW Architects is the designer.

PJ Dick is providing preconstruction services for the Bakery Square 3.0, a 320,000 square foot office building. The project is being designed by Strada Architecture.

PJ Dick was selected to provide CM at Risk services for Allegheny Health Network's Saint Vincent Hospital Community Cancer Center. Work includes a new 36,500 square foot, two-story construction on the existing property.

PJ Dick is providing preconstruction services for the Larimer Multi-Modal Transit Center Garage, a new precast concrete 1,000-vehicle garage.

PJ Dick was selected to provide CM at Risk services for the Marshall University School of Medicine Multi-Use Facility project in Huntington, WV.

UPMC selected the **PJ Dick**/Whiting Turner team as construction manager for its new Heart and Transplant Hospital at UPMC Presbyterian. The 620-bed, 940,000 square foot hospital is being designed by the team of Hammel Green & Abrahamson/IKM Inc.

A. Martini & Company was selected by the University of Pittsburgh for its $3.2 million renovation of Thaw Hall. The architect is LGA Partners.

Penn Cove Group Real Estate selected **A. Martini & Company** as contractor for its new 120,000 square foot sports complex at the former Wildwood Highlands Family Fun Center in Hampton Township. OBA Design is the architect.

Mascaro received an initial award notice from the General Services Administration for the construction of a 243,000 square foot courthouse in Harrisburg, Pennsylvania. The scope of the project includes five district courtrooms, two magistrate courtrooms, one bankruptcy courtroom and the associated supporting spaces.

UPMC awarded a construction manager at risk contract to **Mascaro** for the complete demolition and renovation of the fifth floor at UPMC-Western Psychiatric Institute.

Mascaro will provide general construction services for the expansion of the MRI suite at Mon General Hospital in Morgantown, WV.

Mascaro was awarded the 2017 Thomas J. Reynolds Award for Construction Safety and Health from the Association of Union Constructors (TAUC) in recognition of the outstanding achievement of minimizing the number of work site accidents, injuries and illnesses to employees.

Carnegie Mellon University selected **Volpatt Construction** for the $3.5 million Wean Hall and Doherty Hall classroom renovations. The architect is Renaissance 3 Architects.

Volpatt Construction is doing interior renovations for CBC Companies at 8 Parkway Center. Scot Kurtz is the architect.

The Carnegie Museum of Art awarded a contract to **Volpatt Construction** for renovations to the Scaife Gallery.

Volpatt Construction was selected as construction manager by Allegheny Health Network for the Canonsburg Hospital CT Replacement. Zilka & Associates is the architect for the $900,000 project.

UPMC awarded **Volpatt Construction** a contract for Presbyterian University Hospital CT Replacement. The architect is IKM Inc.

Volpatt Construction is the successful contractor for St. Clair Memorial Hospital's cart wash renovation. The project was designed by The Design Group.

Baptist Homes Society selected **PJ Dick Inc.** as general contractor for its $40 million expansion of Providence Point in Scott Township. The architect is Reese Lower Patrick & Scott.

Mosites Construction was selected by Midpoint Group of Companies as general contractor for its $36 million City's Edge Apartments, located at 1400 Colwell Street in the Hill District. The mixed-use development includes 12,000 square feet of ground-floor retail, a 423-car parking garage and 106 units of mixed-income apartments. The architect is Strada Architecture LLC.

F. J. Busse Co. was awarded the general trades package for the Morewood Gardens Bathroom Renovations Phase 2 at Carnegie Mellon University. The architect is PWWG Architects. Rycon is the project's construction manager.

FACES & NEW PLACES

Volpatt Construction hired **Bob Michel** as senior estimator. Michel earned a B.S. in Civil Engineering and a B.A. in Architectural Studies from the University of Pittsburgh. He previously worked in management and estimating at Forms+Surfaces and Allegheny Construction Group. Michel served four years on the MBA Young Constructors Committee.

ABMECH Acquisitions LLC, formerly known as ABMECH, Inc., introduced **Joseph "Bud" Norton,** president of Matthews Wall Anchor & Waterproofing Services, and **Ben Ditson**, chief operating officer at Matthews Wall Anchor & Waterproofing Services, as the company's new ownership group.

Rycon's Special Projects Group recently hired senior estimator **George Knoll** to the team. He spent nine years as a carpenter and over 20 years in estimating.

With over seven years' relevant experience, **Jessica Ramsey** joined **Rycon's** as marketing manager. She is a graduate of St. Francis University with a degree in marketing and management.

Rycon's Casework & Millwork Division added **Adam Kampmeyer** as lead CNC programmer. Adam brings over 15 years of cabinetry and millwork experience. He studied industrial design technology at the Art Institute of Pittsburgh.

Shakthi Paramasivam was hired in **Rycon's** Cleveland office as a senior estimator. He holds a civil engineering degree and has been in the construction industry for more than18 years.

Hannah Reyes joined **Rycon's** accounting department as staff accountant. She has a degree from Roehampton University in London, England.

Rycon's welcomes back **Bob McAdams** as facility manager at the Casework & Millwork Division. Bob previously aided Rycon as facility manager for twelve years when the company was started.

Assistant Project Manager **Anthony Alvarez** was hired in **Rycon's** Ft. Lauderdale office. He's finishing up a degree at Florida International University.

PJ Dick has hired **Kyte Picheco** as a QA/QC manager. He has a Bachelor of Science in Building Construction Management from Penn State, Pennsylvania College of Technology and 14 years of experience construction management.

PJ Dick has hired **Jorge Dorantes** as a QA/QC manager. He has an architectural professional degree from National Autonomous University of Mexico and 28 years of experience executing projects in the architectural and construction fields.

PJ Dick has hired **Mel Miller** as a senior project manager for the Marshall University School of Medicine Multi-Use Facility project. He has a Bachelor of Science in Mechanical Engineering from Wright State University and over 30 years of construction management experience.

Upon graduation in May, **Nick Hayes** will join **PJ Dick** as a project engineer. Nick will graduate from the University of Akron with a civil engineering degree.

Upon graduation in May, **Dominic Matarazzo** will join **PJ Dick** as a project engineer. Dominic will graduate from the University of Pittsburgh with a civil engineering degree.

Larry Lombardi became a member of the **Mascaro Construction** team on March 5, 2018. As superintendent, he brings 39 years of experience in institutional, commercial, and light industrial projects.

B.J. Burchfield joined **Mascaro** on April 2 as a superintendent. B.J. brings over 25 years of commercial construction experience.

On April 3, **Gretchen Gloff** joined **Mascaro's** Buildings estimating team as the estimating and small business coordinator. Gretchen received a bachelor's degree from the University of Pittsburgh in media communications.

Cory Krieger joined **Mascaro's** estimating staff on April 9, 2018. Cory has a bachelor's degree from Pennsylvania State University in industrial engineering.

Suzanne Solaita joined the **Mascaro** team on April 16, 2018, as a support administrative assistant working with several departments within Mascaro. Suzanne recently moved to Pittsburgh from San Bernardino, California.

Renee Batronis joins **A. Martini & Co**. as their CM Division Leader, with 21 years' experience in the construction industry. She will focus on strengthening the organization's construction management portfolio, while providing oversight for major construction and renovation projects.

Michael Smith joins **A. Martini & Co**. as a superintendent with more than 17 years of construction experience, on complex, out of the ground, projects.

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CLOSING OUT

Long Live Retail

BY JASON CANNON

What in the World is Causing the Retail Meltdown of 2017?
– The Atlantic
Retail is Dead. Here's What To Do Now – Forbes
Will the Death of U.S. Retail Be The Next Big Short?
- Financial Times

One must look beyond the headlines to find the realities of that state of retail. Retail is NOT dying. Retail is changing. Consumers are spending, but they are spending differently. For a couple decades or more, the traditional growth categories for retail sales were apparel, department stores and general merchandise. The growth categories today are food and beverage, home goods and health & beauty.

Over the past decade consumers have changed their spending habits. These days, we find consumers are choosing to spend at the low and high ends of the pricing spectrum, which has put pressure on the mid-range brands. As a result, most closures over the past 24 to 30 months have been mid-range retailers and, for one reason or another, the spotlight often shines brightest on bad news. What is less publicized is the consistent growth of off-price and discount retailers, the surge of restaurants, the incredible growth of fitness concepts and the arrival of amenities, entertainment venues and active lifestyle concepts.

Consumers are showing an increasing interest in "local" and "indie" concepts across many retail categories, causing chain retail and restaurant brands to seek new ways to appeal to this consumer demand through new concepts and product mix.

E-commerce is NOT killing brick and mortar retail. But it is forcing retailers and property owners to think differently to adapt, to improve and, in some cases, to deal with the reality that we (the United States) may very well be over-built as it relates to retail properties. E-Commerce is seemingly forcing a right-sizing of the U.S. retail real estate universe to occur. The United States has approximately 23.5 square feet of retail space per person. The next closest countries are Canada at 16.4 square feet per person and Australia at 11.1 square feet per person. There are a little more than 1,200 malls in the U.S. The forecast is realistic to think that 300 of them will close or be converted to other uses over the next decade. I prefer to think of this as a garden where you remove the dead and ugly plants and prune the others to allow for healthy growth and to create more room for the best and strongest plants to thrive. At the end of the day, we'll end up with a better, healthier garden.

A few other data points that paint a picture of the realities we are experiencing are as follows:

- More than 90 percent of retail sales still occur in-store.
- 50 percent of E-Commerce sales actually go to brick and mortar retailers.
- Less than five percent of retail sales go to "pure play" E-Commerce retailers.

The physical store won't go away. E-Commerce is too expensive for that to happen. There is a high cost to free delivery and an even higher cost for returns. Additionally, stores generate more profit. Consumer spend is more per transaction in-store, there are more and better up-sell opportunities in-store. Stores ultimately drive online sales, as people like to buy things they've seen in person, touched, or tried on.

So, what's next?

The high growth (low e-commerce) categories - restaurants, service (amenity), fitness and entertainment tenants will be a part of most future merchandising mixes.

The average shopping trip will become more of an experience. Landlords and tenants are focused on creating great environments and memorable experiences for the consumer. In a world where people are increasingly more interested in doing stuff than owning stuff, the shopping experience will transform so that shopping is as much (or more) about the experience than the transaction. The result will be continued and consistent retail sales growth. Long live retail.

Jason Cannon is first vice president at CBRE. He can be reached at jason.cannon@cbre.com