# Breaking Ground

THE MAGAZINE OF THE MASTER BUILDERS' ASSOCIATION OF WESTERN PENNSYLVANIA

MAY/JUNE 2024


## HIGHER EDUCATION
### MARKET UPDATE

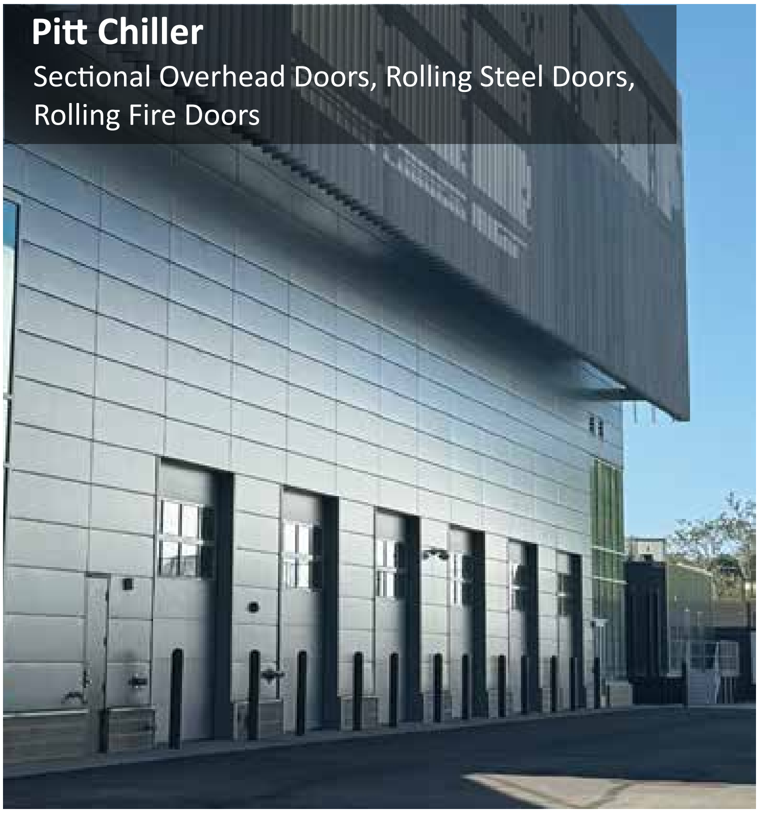
MBA

# The Genuine. The Original.


**RMU Boathouse**
Rolling Steel Door

# Overhead Door Co. of Greater Pittsburgh™

**CSI Divisions 08, 10, 11 |(412) 781-4000 | info@ohdpgh.com**



**Pitt Chiller**
Sectional Overhead Doors, Rolling Steel Doors, Rolling Fire Doors

**CMU Software Engineering Institute**
Rolling Steel Door

**PROJECT FEATURE**
Pittsburgh Athletic Association
*Pittsburgh, PA*

# BUILDING ABOVE AND BEYOND

At PJ Dick, we follow a simple 3-step process for serving our customers: **Go above. Go beyond. Repeat.**

The extra mile is our commitment to you. Trust your next construction project to PJ Dick.

PJDICK.COM

Scan the QR code to check out our website!

(412) 807-2000

INFO@PJDICK.COM

**Make your mark, make a difference, and make history. Build with us!**

- Healthcare
- Higher Education
- Sports + Entertainment
- Multi-Family
- Commercial Space
- Mixed Use
- Transportation Infrastructure

PJ DICK | TRUMBULL | THE LINDY GROUP

**PUBLISHER**
Tall Timber Group
www.talltimbergroup.com

**EDITOR**
Jeff Burd
412-366-1857
jburd@talltimbergroup.com

**PRODUCTION**
Carson Publishing, Inc.
Kevin J. Gordon

**ART DIRECTOR**
Carson Publishing, Inc.

**GRAPHIC DESIGN**
Blink

**CONTRIBUTING PHOTOGRAPHY**
American Subcontractors Association of Western PA
Matt Dayak
Duquesne University
Halkin Mason Photography
Landau Building Co.
Massery Photography
Master Builders' Association of Western PA
NAIOP Pittsburgh
Nala Marketing
University of Pittsburgh

**ADVERTISING DIRECTOR**
Karen Kukish
412-837-6971
kkukish@talltimbergroup.com

**MORE INFORMATION:**
BreakingGround™ is published by Tall Timber Group for the Master Builders' Association of Western Pennsylvania, 412-922-3912 or www.mbawpa.org

Archive copies of BreakingGround™ can be viewed at www.mbawpa.org



Keep up with regional construction and real estate events at www.buildingpittsburgh.com

*On the cover: Carnegie Mellon University' Forbes and Beeler Residence Hall. Photo by Massery Photography.*

5 HOT METAL STREET PITTSBURGH, PA 15203

# THE WESTERN PA CHAPTER, NECA

NECA WESTERN PA

## EMPOWERING LIVES & COMMUNITIES SINCE 1946

WWW.WPANECA.COM

#WEPOWERPA

2024

# **PUBLISHER'S** NOTE

You have read my rants about public education in this column before. My apologies for any redundancy that follows here. I am old and forgetful. The good news is that, like a goldfish, every idea I have seems fresh and new!

The feature article in this edition of BreakingGround is an update of the higher education construction market. I emphasize construction because higher ed is in a very different place from the higher ed construction market. The article is definitely a tale of have's and have not's. The most basic divide is in the state of higher education (not great) and the state of construction on higher education in Pittsburgh (pretty great).

The other great divide is between the higher ed institutions that are doing well and those that are struggling. Pittsburgh is lucky to have two of the former in the same zip code. Those two, Pitt and CMU, are driving the strong regional higher ed construction market. There are also quite a few of the latter institutions in the region.

Some of those that are struggling are the small private colleges that Western PA has in abundance. You can read the specifics about what is ailing them starting on page 16. The long and short of it is that there are fewer kids enrolling and the colleges spend too much educating them. These colleges have produced many of the smart people you run into every day in Pittsburgh and its surroundings (and some not-so-smart people who started construction magazines). For better or worse, these small colleges and universities need to right the ship. That almost certainly means reducing expenses, faculty, and staff. Or, they can choose to wait and see if things get better. That's the beauty of being a private institution.

Nearly all the public institutions are struggling, and we taxpayers should not wait to see if things get better. The PASSHE system has already taken some significant steps to cut costs. They merged three universities in both halves of the state to be leaner. Faculty and staff have been reduced, majors eliminated. What has been done is not enough, however. Therein lies the problem. I'm not sure how much more the state universities can do to attract students. They can make tuition less expensive, but that just creates a bigger hole. It may be time for the citizens of Pennsylvania to take a more vested interest in our public universities.

I am a believer in American exceptionalism. One of the pillars of our exceptionalism is the upward mobility of the working class and middle class; and one of the pillars of upwardly mobile classes is public education. It is not the right of every PA resident to get a college education. It is right for PA residents to want to provide a college education to as many of its residents as we can. We're losing population for a number of reasons, but one of them is that our young people go elsewhere after high school and don't come back. Maybe if it weren't cheaper to attend college in Virginia or North Carolina as a non-resident than it is to attend a PA college as a resident, we could keep a few more here.

My proposal is that we give a higher priority to public higher education (of all types), including funding them better. Those institutions will need to be better managed. There will need to be oversight. We'll need to raise revenues and we'll need to cut some wasteful spending at the same time. The details are above my pay grade and, no, I don't have much confidence that our elected officials are capable of solving the problem of making public higher education more accessible. But I have told my representatives that my vote is conditional on their trying to do so. You can do the same.

At all levels of public education, the systems are being strained. You probably have a greater concern about the state of your local school district than how well Clarion or Edinboro are doing. But I urge you not to ignore the advantage our commonwealth – and our nation – has when a smart kid who can't afford to go to college has the opportunity to get a degree. Or when a smart kid who isn't book smart has a chance to get a career education beyond high school. That lifts the boats of the whole community.

We have an economic gap in this state that has widened since I was young. It should not be a surprise that the economic gap mirrors the gap in education. Our history has shown that our economy grows when our citizens become better educated. Investing more of our tax dollars in public universities is good for business, good for society, and good for our industry.

# **REGIONAL** MARKET UPDATE

## SPONSORED BY:

DollarBank
Let's get you there.

Pittsburgh's economy continued to grow during the first quarter of 2024, adding jobs and registering slightly positive absorption of commercial real estate overall. The region's emerging new employers saw increased levels of investment. Several announced new or expanded headquarters space in Pittsburgh. There were few indications of accelerating economic activity, but the Pittsburgh economy largely outperformed the national economy.

According to Southwestern Pennsylvania Quarterly Vitals Report, published by the Allegheny Conference on Community Development, Pittsburgh's labor force growth outpaced that of U.S. and Pennsylvania, growing 0.8 percent compared to 0.7 percent year-over-year. The unemployment rate in Pittsburgh fell by 1.3 percentage points compared to February 2023, in contrast to a 0.2 percentage point increase nationally. Job growth in Pittsburgh compared to the previous year was a full percentage point lower than the U.S. growth rate, 0.7 percent versus 1.7 percent.

Pittsburgh's employers were more actively looking for workers at the end of the first quarter. The 71,178 open job postings represented a 10.4 percent increase over the first quarter of 2023. At the national level, job postings were off 10.7 percent. Similarly, job postings at benchmark cities were down 11.7 percent compared to the first quarter of 2023.

The region's employment situation remained largely unchanged through the winter. The latest reading from the Bureau of Labor Statistics metropolitan data showed 38,000 unemployed persons in the seven-county region, dropping the unemployment rate to 3.4 percent. The civilian labor force remains approximately 40,000 smaller than four years ago.

Pittsburgh's construction economy is similarly strong and steady but not accelerating. The housing market continues to be plagued by a shortage of buildable lots and existing homes for sale; however, those dynamics continue to push home prices higher than normal. Nonresidential construction is being driven by an institutional sector that is characterized by more large projects than usual, which is driving volume up in contrast to the fundamental weakness in education and healthcare services. There was even a burst of K-12 projects bidding during the spring months. Heavy and highway construction remains robust, as the dollars from the Bipartisan Infrastructure Law and the American Recovery Plan Act filter down to the state and municipal governments. What weakness exists in the construction market is mostly limited to new commercial office and industrial properties.

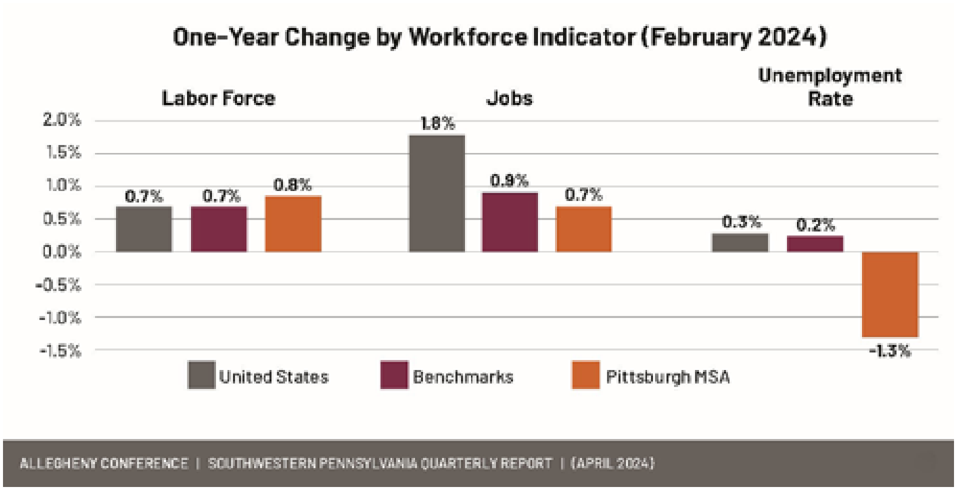
| | #SFD | #SFA | M/F | Total |
|---|---|---|---|---|
| **Total Pittsburgh MSA 2024:1** | **470** | **145** | **674** | **1289** |
| **Total Pittsburgh MSA 2023:1** | **425** | **297** | **201** | **923** |
| **% Change** | **10.6%** | **-51.2%** | **235.3%** | **39.7%** |
| | | | | |
| **By County** | **SFD** | **SFA** | **M/F** | **Total** |
| Allegheny | 190 | 61 | 650 | 901 |
| Beaver | 30 | 0 | 24 | 54 |
| Butler | 121 | 38 | 0 | 159 |
| Fayette | 13 | 0 | 0 | 13 |
| Washington | 80 | 38 | 0 | 118 |
| Westmoreland | 36 | 4 | 0 | 40 |

*Construction of new housing units was nearly 40 percent higher than a year ago in the first quarter, primarily due to an increase in multi-family housing. Source: Pittsburgh Homebuilding Report.*

New home construction showed mixed results in the first quarter, according to the Pittsburgh Homebuilding Report. Permits were issued for 470 single-family detached homes in the six-county metropolitan area during January through March. That was 10.6 percent more than a year earlier. Construction of townhouses and other attached single-family homes fell by 51.3 percent year-over-year, however, bringing the total single-family permits to 615 versus 722 in the first quarter of 2023. The decline in townhome construction was entirely due to a lag in the entitlement pipeline, rather than a decline in demand. Developers are working on sufficient lots that townhome construction is expected to match the typical 900-to-1,000-unit pace for the full year.

Construction of multi-family units jumped dramatically year-over-year. Developers started 674 units during the first quarter of 2024, an increase of 235.3 percent over the first quarter of 2023. Demand for apartments was supportive of new construction in 2023, but higher lending rates and construction costs made new development undesirable. The dip in long-term rates that occurred at the end of 2023 helped push several of the numerous apartment projects in the pipeline across the finish line during the first quarter. Roughly 8,000 multi-family units are in the pipeline in metropolitan Pittsburgh, an inventory that should mean 2,500 will get underway in 2024; however, the rebound in interest rates since February has chilled the market again. The outlook for interest rates in 2025 and 2026 (when any new development will be seeking permanent financing) is more favorable, which may push new apartment construction into the second half of 2024.

Nonresidential/commercial construction was off slightly compared to the first quarter of 2023. Contracting and starts during the first three months of 2024 totaled $922.9 million, a decrease of $86.1 million compared to last year. First quarter activity has typically made up 15-to-20 percent of the full year




| | Pittsburgh MSA Value | Pittsburgh MSA YOY Change | United States YOY Change | Benchmark Cities YOY Change |
|---|---|---|---|---|
| Labor Force | 1,185,792 | 0.8% | 0.7% | 0.7% |
| Payroll Employment | 1,148,600 | 0.7% | 1.8% | 0.9% |
| Unemployment Rate | 3.6% | -1.3% | 0.3% | 0.2% |
| Job Postings (Jan. - Mar. 2024) | 71,178 | 10.4% | -10.7% | -11.7% |

Data current as of 4/9/24, the Unemployment Rate re ects the non-seasonally adjusted rate.

Source: Bureau of Labor Statistics, Local Area Unemployment Statistics, Current Population Survey; Lightcast (datarun 2024.1)

*Source: Southwestern Pennsylvania Quarterly Vitals Report, Allegheny Conference on Community Development*

total since 1995. That metric suggests that total activity in 2024 will be between $4.6 billion and $5.3 billion. Activity in both 2022 and 2023 exceeded $1 billion during the first quarter, only to have the full year volume fall below $4.4 billion because of the unfavorable interest rate environment. Since that unfavorable environment will linger into the latter half of 2024, construction volume for 2024 will be at the lower end of range suggested by the first quarter volume.

Economic conditions overall are supportive of commercial real estate, except for office properties. Low unemployment and modest job growth kept demand solid for retail, hospitality, apartments, and industrial buildings. The unusual volume of construction started for the latter has mostly been delivered. Despite the infusion of nearly three million square feet of industrial space in 2023, occupancy remained stable, slipping only 0.3 percentage points. New industrial construction will be mostly build-to-suit for the near future. Limited new construction helped push retail occupancy above 95 percent and hotel occupancy to 94 percent. Hotel revenue per average room to 121 percent of pre-pandemic rates. Office tenant improvement volume remained higher than pre-pandemic levels, but the daily occupancy levels remained greatly reduced compared to 2019.a

There is growing evidence that the office market may be reaching an inflection point in mid-2024. That is not all good news.

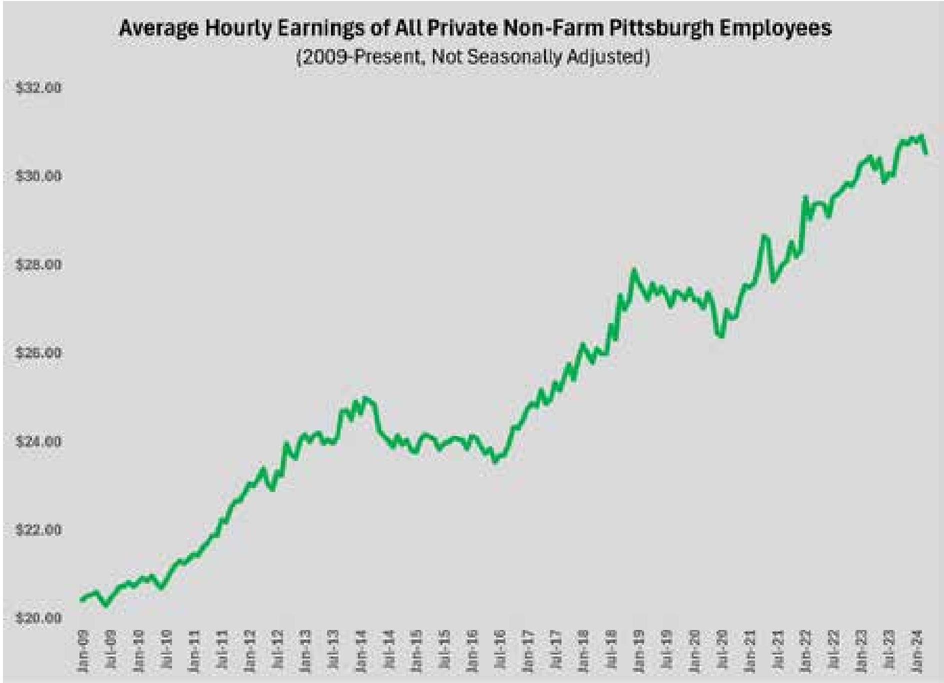
On the upside, the first quarter brought a slowdown in the negative absorption of office space and an increase in pre-leasing activity. According to JLL, tenants signed leases totaling 49,000 square feet at the FNB Financial Center Uptown and Diamond Ridge in Moon Township, both of which are still under construction. JLL also reported that that amount of new vacant space outstripped the new leases by 48,701 square feet. That was a 67,000 square foot decline in negative absorption compared to the final quarter of 2023.

JLL pegged office vacancy at 22 percent. Newmark reported that the share of sublease space available fell slightly from the end of 2023 to 3.5 percent. Newmark calculated the vacancy rate at 24.3 percent but offered two upbeat observations: asking rents for Class B buildings rose for the third consecutive quarter; and the number of occupants seeking at least 50,000 square feet is increasing. (The latter report does not address whether these are increased or decreased requirements.) Avison Young reported that office availability was roughly unchanged at 20.4 percent.

In late April, it was reported that Deutsche Bank filed bankruptcy action on behalf of the lenders for three buildings in Cranberry Woods. That followed similar actions taken by lenders for the Grant Building, K & L Gates Center, and Heinz 57 Center downtown. None of the foreclosure proceedings were surprises, but the decisions to move forward suggest that lenders may be reaching an inflection point in the "extend and pretend" approach that has been applied to nearly 70 percent of maturing office loans since 2022. In its first quarter office market report, Avison Young noted that delinquency on commercial mortgage-backed loans had risen to nearly nine percent, up from less than one percent in mid-2022.

The danger of the increasing delinquency rate and foreclosures is two-fold. First, each new foreclosure puts more pressure on the overall office property values and rents. The second danger is the systemic damage caused to the capital markets. Growing losses at lenders can result in more layoffs in the financial sector, weaker appetite for lending for other real estate types, and a longer run of higher interest rates. Systemic credit problems would be one more obstacle for office market recovery, particularly in the central business district.

One emerging trend that bears watching is the impact of the extended high levels of construction activity are having on bidding for specialty contractors and suppliers. The Pittsburgh region has had a billion-dollar project underway since the Shell polymers complex began in 2017. Moreover, there are numerous projects over $100 million underway and in the pipeline for the next two or three years. Without an increase in the skilled workforce, the risk for specialty contractors is in taking on more work than they can manage as profitably as the work in their current backlogs. Feedback from construction managers suggests that specialty contractors in most trades are being more selective, with fewer bids being received. For a market that has long counted on aggressive subcontractor and supplier bidding, such a trend would have impacts on budgets and schedules. BG




*Average wages for workers in Pittsburgh have grown by 50 percent since the Great Recession. Source: Bureau of Labor Statistics, Federal Reserve Bank of St. Louis.*

www.mckamish.com

# OUR VISION IS

WE CHALLENGE OURSELVES TO EXCELLENCE AND TO BE THE LEADER IN THE MECHANICAL CONTRACTING INDUSTRY.

McKAMISH

BUILDING EXCELLENCE

# NATIONAL MARKET UPDATE

The outlook for the construction economy soured slightly in the first quarter of 2024, as hopes for lower interest rates were dashed by inflation readings that were higher than anticipated. Demand for construction remained unchanged but, for interest sensitive sectors, the halt in disinflation meant that much-needed relief in borrowing costs is unlikely to come before late 2024.

Media coverage of inflation readings during the first quarter was superficial, focusing on the headline consumer price index (CPI) or core inflation without providing context for the data. Overlooked in the reporting was an arbitrary change in the weighting of shelter inflation, which lags the rate of inflation for goods and services. Inflation, compared to a year earlier, is typically higher in the first quarter (especially January) for seasonal reasons. Salary increases and price increases for many items tend to be pegged to the beginning of a new year.

These technical minutiae would be footnotes that would concern bond traders and technical analysts in most years. But, with the housing industry and commercial real estate looking to lower rates to unlock a resurgence, a delay in the slide towards the two percent inflation rate delays recovery.

In late April there was some mixed news for the battle to normalize inflation. The first estimate of gross domestic product (GDP) for January through March came in lower than expected, at 1.6 percent higher than the fourth quarter of 2023. According to the Bureau of Economic Analysis (BEA), GDP growth in the first quarter was largely driven by strong consumer spending, which was 2.5 percent higher, government spending, fixed investment in residential structures, and intellectual property products. Government spending increases were in compensation for state and local employees.

The primary headwinds to GDP growth were a decline in private inventory investment and an increase in imports, which detracts from GDP.

Consumer spending declined for goods, however, and the increase in spending on services was primarily for healthcare, financial services, and insurance. Leading the decline in spending on goods were automobiles, gasoline, and energy. Spending was supported by a 4.5 percent increase in disposable personal income, which followed an increase of 3.8 percent in the fourth quarter of 2023. Even with the higher levels of inflation in the first quarter, disposable income outpaced inflation by 1.1 percent. Personal savings dipped again. The rate of savings fell to 3.6 percent of disposable income in the first quarter.

Economists expected the rate of consumer spending to grow 3.0 percent in the first quarter and GDP growth to be 2.4 percent.

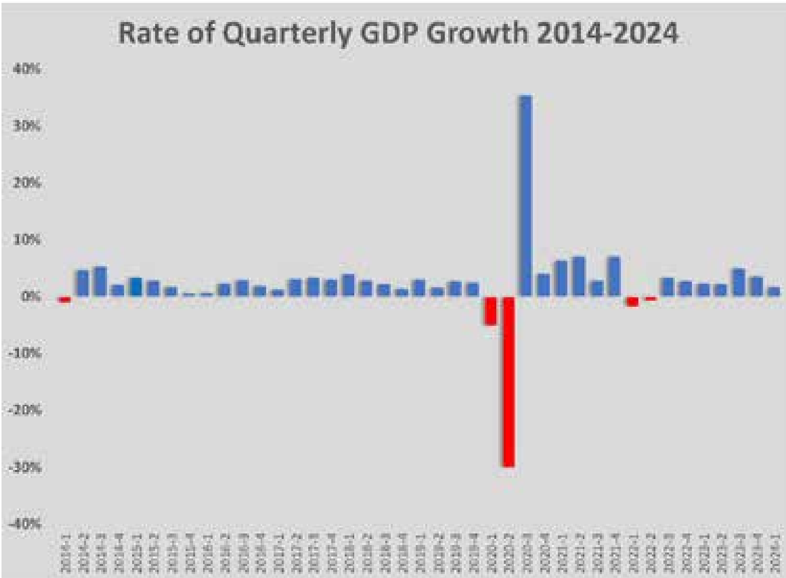
The BEA report on GDP also found that core personal consumption expenditure (PCE) prices rose 3.7 percent, the highest in more than one year. Core PCE is a key indicator of inflation for the Federal Reserve Bank, and the hotter reading is likely to ensure that the Fed Funds rate will remain in its current 5.25-to-5.5 percent range until at least the July meeting.

On the surface, the report on the first quarter was bad news for rates. Markets responded by lowering the odds of any cuts in 2024 and the yield on the 10-year Treasury bill jumped to 4.69 percent. In light of the reasons listed above, however, there is good reason to believe that the rate of inflation will cool over the coming quarter. The slower rate of GDP growth – especially for consumer spending – should add confidence that higher long-term interest rates are applying the brakes to the economy. That increases the likelihood that the Fed will cut rates more than once in 2024, assuming the inflation readings cool as the year unfolds. A cooler economy should apply downward pressure on short-term rates, which typically pulls long-term rates – like residential and commercial mortgage rates – lower after a lag of three to six months.

On April 26, the measure of inflation preferred by the Federal Reserve showed that core PCE maintained the same pace from February to March as the previous month. Without rounding, core PCE was 2.82 percent higher, year-over-year, than February's 2.84 percent pace. That was two full percentage points lower than a year earlier, which was within 17 basis points of the 40-year high of 4.98 percent in October 2022. Bond yields remained elevated, as the expectations of rate cuts in 2024 weakened. For the most part, however, investors were relieved to see that inflation was holding rather than returning.

The response from the markets for long-term interest rates assures that the recent upward trend in the 10-year Treasury and residential mortgages will remain restrictive into mid-2024. The average 30-year fixed mortgage rate has drifted higher since January 1, drifting higher towards 7.2 percent in early May. Trading on the 10-year Treasury at the start of May was 120 basis points higher than a year ago, when core inflation was two percentage points higher. That yield will keep commercial mortgage rates above six percent.

Along with higher construction costs, the elevated commercial mortgage rates are a drag on commercial real estate development. Despite strong demand and investor liquidity, higher rates are keeping multi-family projects from getting underway. Data on March's housing starts showed that fewer apartment units got underway than May 2020. There were 290,000 units started in March, a dramatic drop from a year earlier, when 533,000 units got underway. The lower levels of construction should continue for at least 12 months to offset




*Source: Bureau of Economic Analysis.*

the unusually high number of units that started during the 18 months prior to the start of 2024.

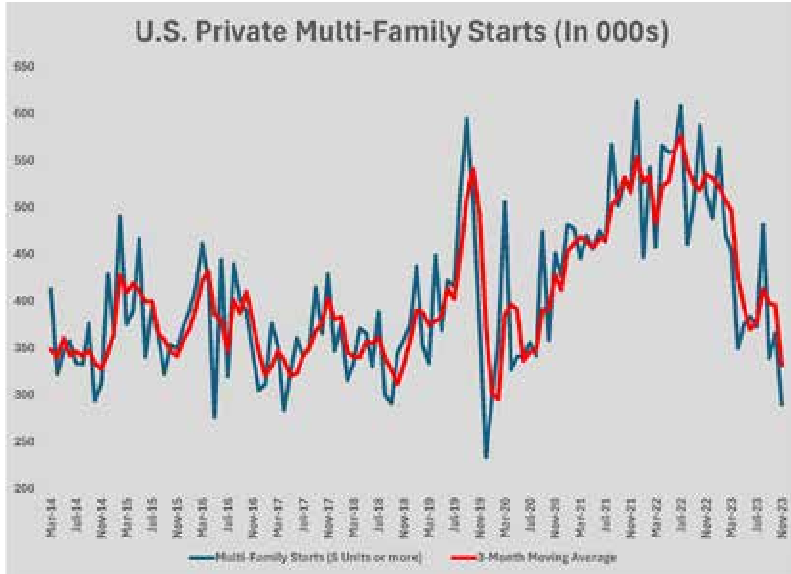
According to Apartmentlist.com and CoStar, apartment rents have begun to increase again slightly since February, reversing a year-long trend of softer rents due to oversupply. Rent growth in April was 0.5 percent and was still slightly negative (0.8 percent) compared to a year earlier. It is expected that rent growth for 2024 will be less than three percent, as the million units under construction keep pressure on rents as they are delivered. The major constraints on single-family home inventories, both existing and new construction, will be a tail wind for the multi-family market that should keep demand stronger than the supply coming online.

It is anticipated that mortgage rates will pull back in 2025, likely bringing the 30-year mortgage to 5.5 percent by the end of next year. Higher rates remain an obstacle for existing homeowners with pre-2022 mortgage rates below four percent who want to move up or sell their home. Getting those homeowners to sell is a key to unlocking higher inventory of homes for sale and greater demand for new construction.

New single-family home starts fell by 45,000 units, annualized, from February to March, according to the latest Census Bureau report. The 1.02 million units started were 21.6 percent more than the cyclical low of 840,000 units in November 2022.

Nonresidential construction increased slightly from March to April, according to the May 1 Census Bureau report on construction spending. Total private nonresidential construction spending was 13.7 percent higher year-over-year, at $1.19 trillion. Manufacturing buildings comprised the largest share of the total spending at $223 billion, which was 25.9 percent higher than April 2023. Other categories experiencing large increases in spending included education, power generation, and highways. No major nonresidential building category saw lower spending in April 2024 than in 2023, although the increases in communication, non-office commercial, and lodging spending were less than the construction escalation rate.

The May 3 Employment Situation Summary showed hiring continued to outpace expectations in April. Employers added 175,000 jobs in April, lower than the consensus forecast of 238,000. The April jobs report saw two other trends continue that suggest weaker hiring ahead. The estimates of the number of jobs created in February and March were revised lower. And the number of part-time positions created outnumbered the number of full-time positions.




*New multi-family starts fell below an annualized 300,000 units in March for the first time since May 2020. Source: U.S. Census Bureau, Federal Reserve Bank of St. Louis.*

Looking below the monthly jobs report headline, however, there are several strong signals that the labor market has soft spots. According to the monthly Job Openings and Labor Turnover Survey (JOLTS), the number of people quitting their job has fallen back to pre-pandemic levels. The quits rate in April was 2.2 percent, identical to the rate in March 2018 and nearly the same as the 2.3 rate that prevailed from April 2018 through February 2023. At its post-pandemic peak in


*The quits rate has returned to pre-pandemic levels of confidence. Source: Federal Reserve Bank.*

April 2022, the quits rate reached 3.0 percent, a difference of roughly 1.3 more million people quitting their job monthly. The quits rate is indicative of how available workers feel another job is. A lower rate indicates fewer people are as confident that opportunities exist.

A related ratio, the number of job openings per unemployed person, has also been falling steadily over the past year. Unfilled job openings peaked at 12 million in March 2022. That number was 8.7 million in April, compared to the 6.4 million persons unemployed, a ratio of 1.36 to 1.

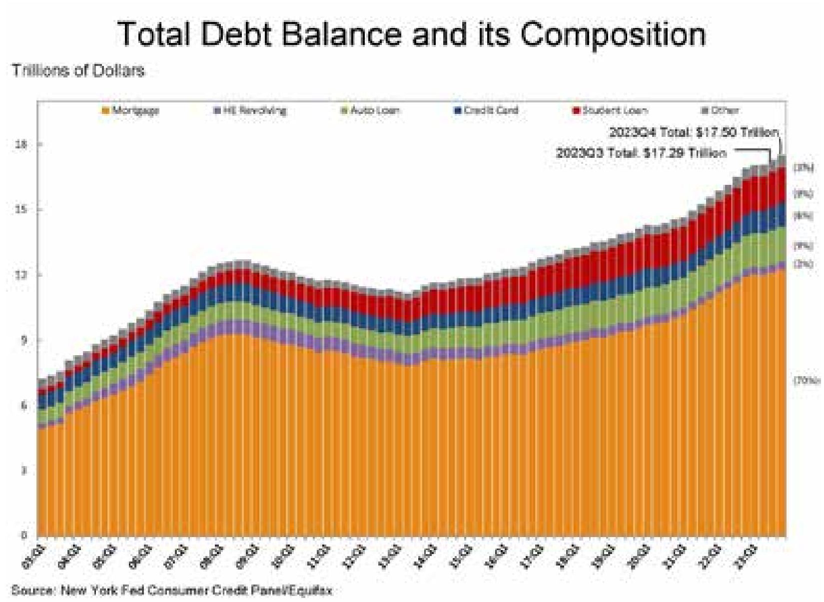
Initial claims for unemployment remained low throughout the first quarter, the four-week average for initial claims was 213,000, about 85 percent of the number of claims filed weekly in June 2023 and slightly lower than the four-week average at the beginning of May 2019. Continuing unemployment claims have bounced between 1.78 million and 1.82 million weekly since February 2024, which is the same range of weekly claims prior to the pandemic.

The U.S. economy remains supportive of residential and nonresidential construction at levels that would go higher from the current spending were the cost of borrowing lower by one to two percentage points. The demand generated by the current economic activity is showing signs that it may have peaked. Consumers continue to spend at high levels; however, the consumer capacity to spend is nearing exhaustion. Credit card debt reached a new high at the end of 2023, increasing by $50 billion to $1.129

trillion. Moreover, the percentage of credit card debt that was delinquent by more than 90 days jumped from 4.01 percent to 6.39 percent at the start of 2024.

According to the Federal Reserve Bank of New York's Household Debt and Credit Report, all forms of credit debt delinquency increased in 2023, except for home equity loans and student loans. (The latter was a result of forgiveness rather than repayment.)

The most likely scenario for the path of the economy in the coming quarters is for activity to continue to slow, held back by higher borrowing rates and a weaker consumer balance sheet. Low unemployment will continue to be a bulwark against recession. Business spending should slow in the third quarter as the election politics heat up. The economy will be stuck in neutral, although in a strong position, until the uncertainty about inflation and elections clears. BG




LET'S BUILD A SOLID FINANCIAL FOUNDATION.
100 PINEWOOD LANE, SUITE 201 | WARRENDALE, PA 15086
(724) 934-5300 | hbkcpa.com
HBK®
CPAs & Consultants
WORKING TOGETHER SETS US APART


safety
FERRY ELECTRIC
COMPANY
Electrical Contractors

# WHAT'S IT **COST?**

The headline story on inflation since January 1 has been the end of the disinflationary trend that had pushed inflation lower for 15 months. The latest readings on producer inflation showed that intermediate hikes in energy prices pushed the producer price index (PPI) for final demand back to the two percent range, both in year-over-year and 90-day trends. As is nearly always the case, those price pressures have not been felt in construction through March.

For construction, the steadiest upward price pressures have been on materials and trades that are heavily involved in infrastructure projects, with the exception of steel. Global competition and declining demand from durable goods and automobile manufacturing have weighed on steel prices, shifting the upward trend at the end of 2023 to 7.8 percent decline from February to March. For other materials heavily used in infrastructure, however, price escalation was consistently much higher than construction materials overall. For example, the PPI for cement rose 2.5 percent since January 1 and 5.0 percent compared to a year ago. For concrete products inflation measured 2.5 percent and 6.2 percent respectively; for asphalt at the refinery those numbers were 5.6 percent and 13 percent. While PPI for most of these materials remained flat from February to March, higher escalation is expected as the weather warms up to allow heavy/highway work to begin in earnest for 2024.

A decline in multi-family construction helped keep materials used more heavily in residential construction – lumber, plywood, drywall, and paint – relatively flat during the first quarter. One source of anxiety about escalation in 2024 was the attempted hike in gypsum product prices, some of which were reported as high as 20 percent. Thus far, the slower market conditions have pushed back on the price increase, keeping inflation at 5.3 percent for the quarter and 1.3 percent year-over-year.

Prices for the major building types were slightly negative in March compared to a year earlier. The PPI for new nonresidential buildings was 1.3 percent higher year-over-year. Among the specialty contractors measured by the Bureau of Labor Statistics, the PPI fell for concrete contractors and electrical contractors, and increased 1.8 percent for plumbing contractors and 3.7 percent for roofing contractors.

There was a significant change in construction wage inflation, which fell a full percentage point to 3.2 percent year-over-year. A similar decline occurred in private industry wages overall.

Energy costs rose 2.4 percent in March and 14.7 percent during the quarter. The index for #2 diesel fuel was more volatile, falling 0.6 percent in March but spiking 11.4 percent since the beginning of 2024. Diesel prices tend to rise as the weather warms and refiners transition to mixes that are less likely to vaporize. Persistently higher diesel prices have a knock-on effect on construction, as diesel impacts shipping costs, lubricants, and derived materials like asphalt and plastics. BG

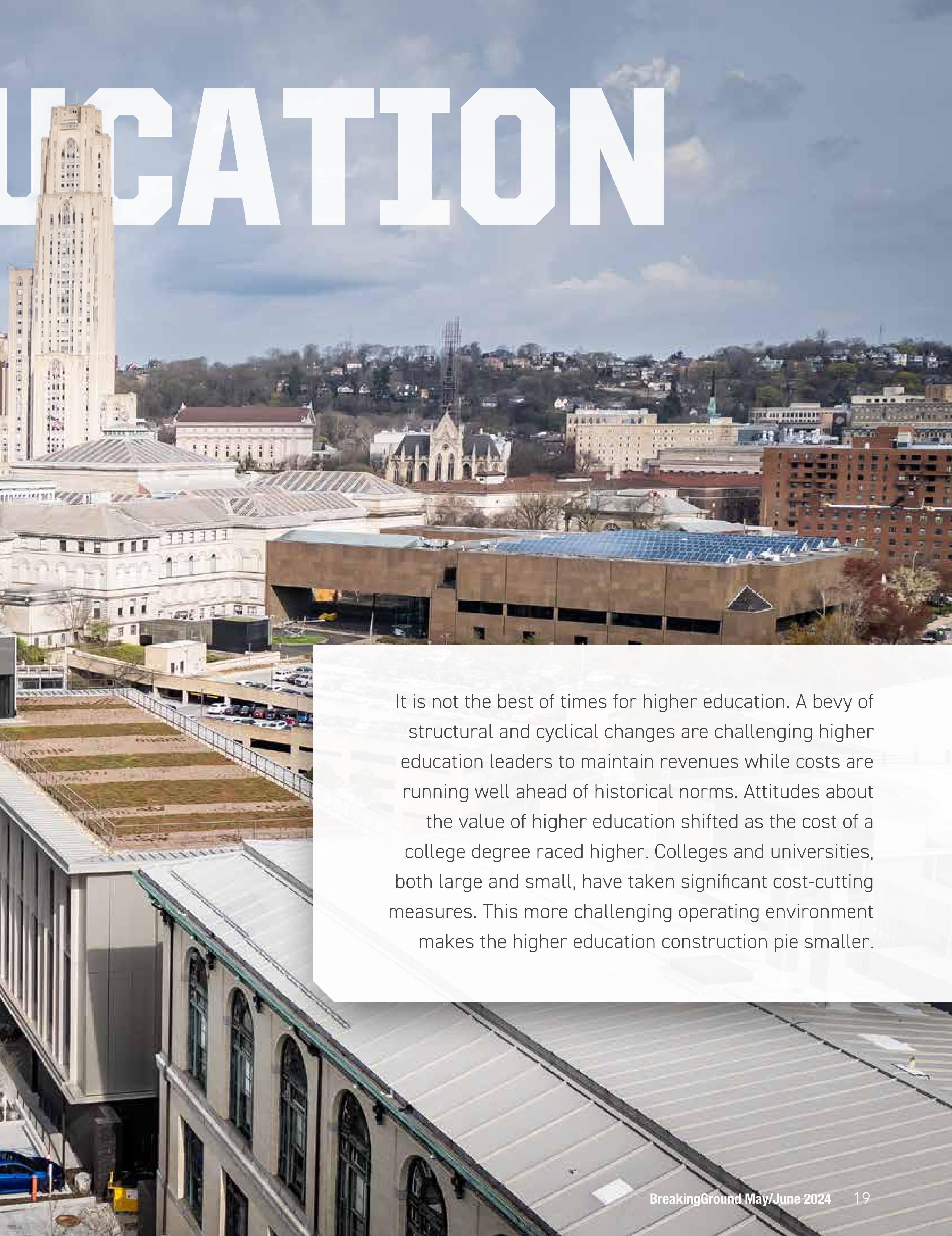
| PERCENTAGE CHANGES IN COSTS | March 2024 compared to | | |
|---|---|---|---|
| Consumer, Producer & Construction Prices | 1 mo. | 3 mo. | 1 yr. |
| Consumer price index (CPI-U) | 0.6 | 1.8 | 3.5 |
| Producer price index (PPI) for final demand | 0.5 | 1.9 | 2.1 |
| PPI for final demand construction | 0.1 | 0.3 | (1.1) |
| PPI for new nonresidential buildings | 0.1 | 0.3 | (1.3) |
| **Costs by Construction Types/Subcontractors** | | | |
| New warehouse construction | 0.1 | 0.0 | (1.0) |
| New school construction | (0.1) | 0.4 | (1.4) |
| New office construction | 0.4 | 0.6 | (1.2) |
| New industrial building construction | 0.0 | 0.5 | (0.7) |
| New health care building construction | (0.2) | 0.0 | (1.8) |
| Concrete contractors, nonresidential | 0.2 | 0.8 | (0.8) |
| Roofing contractors, nonresidential | 0.0 | 0.2 | 3.7 |
| Electrical contractors, nonresidential | 0.0 | 0.0 | (5.1) |
| Plumbing contractors, nonresidential | (0.1) | 0.2 | 1.8 |
| Construction wages and benefits | N/A | 0.0 | 3.2 |
| Architectural services | 0.0 | 0.6 | 2.1 |
| **Costs for Specific Construction Inputs** | | | |
| #2 diesel fuel | (0.6) | 11.4 | (6.2) |
| Asphalt paving mixtures and blocks | (0.6) | 7.6 | 0.9 |
| Cement | 0.0 | 2.5 | 5.0 |
| Concrete products | 0.0 | 2.5 | 6.2 |
| Brick and structural clay tile | 0.3 | 3.6 | 4.0 |
| Plastic construction products | 0.0 | 0.2 | (2.0) |
| Flat glass | (0.3) | 0.0 | (0.7) |
| Gypsum products | 2.2 | 5.3 | 1.3 |
| Lumber and plywood | 1.7 | 3.0 | (2.7) |
| Architectural coatings | 0.0 | 0.4 | 0.0 |
| Steel mill products | (7.8) | 0.5 | (3.6) |
| Copper and brass mill shapes | 2.0 | 2.1 | (3.1) |
| Aluminum mill shapes | (0.5) | (1.1) | (6.6) |
| Fabricated structural metal | (0.7) | (1.9) | (1.0) |
| Iron and steel scrap | (9.6) | (10.5) | (18.1) |

*Source Bureau of Labor Statistics, Updated April 11, 2024*
*Compiled by Ken Simonson, AGC Chief Economist*

# HIGHER ED

## MARKET UPDATE

*The view of Oakland from the southwest corner of Carnegie Mellon's campus reveals the cranes for three major new buildings at Pitt – Fifth and Halket, the Student Recreation Center, and the Arena and Sports Performance Center – plus the last phase of Hillman Library. The site of CMU's R.K. Mellon Hall of Science is on the far right, adjacent to the Carnegie Museum of Art. The recently-completed Scaife Hall is in the left foreground. Photo by Matt Dayak.*



# UCATION

It is not the best of times for higher education. A bevy of structural and cyclical changes are challenging higher education leaders to maintain revenues while costs are running well ahead of historical norms. Attitudes about the value of higher education shifted as the cost of a college degree raced higher. Colleges and universities, both large and small, have taken significant cost-cutting measures. This more challenging operating environment makes the higher education construction pie smaller.


*Scaife Hall, home to Carnegie Mellon's School of Mechanical Engineering, opened in November 2023. Photo by Matt Dayak.*

Chief among the challenges is the so-called "demographic cliff," a steep decline in the number of college-aged students that follows the end of the Millennial generation's surge through higher education. The nadir of this demographic cliff will happen in 2026-2027. The weakening demographics are compounded by a shift in attitudes towards the value of higher education and the ever-higher costs of higher education, both for students and for the institutions themselves.

Pennsylvania's public higher education system is saddled with several of these structural challenges. Like all states, Pennsylvania educates more of its own residents than those from other states. With a larger demographic cliff in Pennsylvania than in most states, that exacerbates the decline in available students that is tied to the declining perception of the value of a college degree.

The silver lining for Western PA is in the exceptions to the overall challenging higher education climate. Across the U.S., the negative trends in education have not been impacting the 50 to 100 institutions that are perceived to be the best in class. Pittsburgh is home to two of these, and they happen to be located in the same Oakland neighborhood. While capital spending is in decline elsewhere, Pitt and Carnegie Mellon are in the middle of a multi-year building boom. The same is true of Penn State, which is served by designers and contractors from Western PA to a significant degree.

So, in the throes of what should be a cyclical low for firms serving the higher education market, there are plenty of opportunities for work in Western PA. While nearly all colleges and universities are facing tougher times, many began making changes designed to get ahead of the challenges and adopted more aggressive strategies for cost-cutting and fundraising. The latter has worked well for institutions with strong communications pipelines to its Baby Boomer graduates or universities with a pipeline to emerging technology companies.

It is not the best of times for higher education construction, but it is not the worst of times either.

### What is Ailing Higher Education?

It is not all that complicated. There is a combination of fewer students enrolling in colleges and universities and higher costs to educate them. For the former, the principal causes are a societal hangover from decades of a "college for all" attitude towards students and the inevitability of the end of the Millennial generation's college years. For the latter, the more recent inflation cycle comes on top of decades of costly expansion of higher education. That trend included faculty, staff, and facilities.

The revenue side of the higher ed equation is under siege by a significant decline in college-age students, which increases

the competitive pressures to discount tuition. Across the U.S., the number of 18-to-22-year-olds will decline by 10 percent from 2017 to 2029. In both Pennsylvania and the Pittsburgh area, the decline will be 20 percent. The impact of those unfavorable demographics is readily apparent in Western PA.

Excluding Pitt and Carnegie Mellon, the remaining 14 private colleges in Western PA saw enrollments decline by an average of more than 15 percent from 2013 through 2022, the last year that data is available from the Department of Education. But there were widely varying results from institution to institution.

Only two of the 14 saw increases. LaRoche University added 587 students, a spike of 39.6 percent, after achieving university status in 2019. The change in status allowed LaRoche to grow its programs and major offerings. Chatham University began admitting male students in 2015, which helped bump its enrollment by 10 percent.

At the other end of the spectrum, Allegheny College, Waynesburg University, and Robert Morris University all saw declines of more than 37 percent. Geneva College saw enrollment plunge 33.5 percent and Carlow University's enrollment fell by more than 30 percent. The regional campuses of Penn State fared no better, falling an average of 40 percent during the same period; Pitt's Greensburg campus saw enrollment fall 20.8 percent.

As the combination of a declining applicant pool and declining affordability was denting enrollment at most colleges, operating expenses at higher education institutions were peaking. The heady times of the Millennial generation enrollment gave colleges and universities the room to expand faculty, staff, facilities, and debt. The formula for success was expansion. More majors. More and better buildings. More amenities. Even after the shock of the financial crisis in 2008, colleges and universities did not universally respond by becoming more financially conservative.

Then came COVID-19. The timing of the outbreak meant colleges and universities were going to have to refund tuition, even though some of the semester's expenses were in the books. When schools cautiously re-opened in fall 2020 or spring 2021, there were significantly increased expenses to operate in the middle of a public health emergency. Many students still required remote learning. Colleges and universities were faced with operating fully open while some of its students remained off campus. The pandemic would have challenged a higher education environment that was flush with cash, but that was not the case in 2020-2021.

The macroeconomics of higher education present administrators and trustees with few options to reverse the negative trends. Most private colleges and universities rely heavily on tuition as the main source of revenue, making up between 60 and 80 percent of the total. The private institutions located in Western PA have tried to expand their recruiting to increase revenue, looking at the states beyond their traditional marketplaces. Some are leaning more heavily upon wooing non-traditional students and offering more career-focused courses of study. Those strategies may yield better long-term results; however, for solutions to near-term budget problems, that answer has been cuts.

Many of the private colleges in Western PA have made cuts to staff and faculty. Robert Morris took significant steps to reduce its costs a full year before the pandemic, cutting back its Division 1 sports programs and reorganizing its five academic colleges into four. West Virginia University (WVU) eliminated 28 academic programs and cut 143 faculty positions to attempt to close a $45 million budget shortfall in 2023-2024. WVU President Gordon Gee pointed to deficits that were double that size at Penn State and Rutgers (New Jersey's state university) as evidence that the changes at Morgantown were going to be followed elsewhere.

The options for eliminating budget deficits primarily involve contraction, but there are some palatable choices that are being employed successfully. Many of those choices also create the need for construction.

### The Role Facilities Are Playing

Most colleges have tried to take a proactive approach to filling the gap between revenue and expenses by adjusting the curriculum to meet the demands of today's incoming students. That has meant adding graduate programs, beefing up majors that have better outcomes for employment after graduation, and paring back majors that struggled to find students and faculty.

| Change in Enrollment 2013-2022 | |
|---|---|
| Allegheny College | -37.1% |
| Carlow University | -30.1% |
| Chatham University | 10.0% |
| Duquesne University | -16.0% |
| Geneva College | -33.5% |
| Grove City College | -7.0% |
| LaRoche University | 39.6% |
| Point Park University | -14.4% |
| Robert Morris University | -37.4% |
| Seton Hill University | -15.7% |
| St. Vincent College | -15.3% |
| Washington & Jefferson College | -13.3% |
| Waynesburg University | -37.6% |
| Westminster College | -11.3% |

*All but two of Western PA's small colleges and universities experienced enrollment declines during the decade from 2013-2022, most of which occurred prior to the pandemic. Source: U. S. Department of Education.*

One of the curriculum adjustments that has been adopted at numerous Western PA colleges and universities is the adoption or expansion of health science majors other than traditional medical degrees. The impending shortage of doctors was exacerbated by the pandemic, requiring quicker and more varied solutions to the problem of who was going to deliver medicine to an ever-aging population that had fewer doctors. Colleges and universities have responded by adding nursing and other medical professional degrees that require lower tuition than a traditional Doctor of Medicine program. This expansion into health career education broadens the pool of applicants and has the advantage of leading immediately to employment that justifies the investment in tuition and fees.

Duquesne University's construction of a $55 million College of Osteopathic Medicine, which opened in January 2024, has attracted medical students that pay full tuition. Grove City College partnered with Butler County Community College to build a nursing school. St. Vincent College is modernizing its nursing program to compete. These professional career-centered programs can boost enrollment as well. Duquesne reported an increase in enrollment of 24 percent compared to 2020.

Grove City College has had success maintaining a relatively stable enrollment of roughly 2,100 undergraduate students by leaning into its differences from the mainstream. Its president, Paul McNulty, acknowledges that Grove City's conservative worldview and overtly Christian identification narrows the pool of students that will be interested in attending the college, but notes that for those students there are far fewer competitors. McNulty also points to his college's recent athletic successes as an important draw.

Carnegie Mellon's successes have come from its reputation as one of the top universities for emerging technologies. Its student population comes from all over the world, with only 10 percent of its enrollment from Western PA. Its current building boom is driven by funding grants that are looking to drive economic development through Carnegie Mellon's research or by alumni or friends of the college making substantial gifts. The new facilities opened over the past decade because of this model – the Gates-Hillman complex, Scott Hall, Tepper Quad, Ansys Hall, Scaife Hall, and TCS Hall – have worked to attract more students and more funding.

On a more modest scale, colleges and universities are tailoring their capital spending to mirror the needs of their future students and more successful academic and research programs.

"We have amazing research and academic programs, and part of our mission is to lift the physical space to match our academic and research prowess," says Gina Bleck, vice chancellor for planning, design, and construction at University of Pittsburgh. "As an architect, I think the student experience ties to that. It's mostly about people, but how people engage

*Student Recreation and Wellness Center is being built by the Mascaro/Barton Malow joint venture. Rendering courtesy University of Pittsburgh.*

**SYNLAWN®**
**PITTSBURGH**
artificial grass never looked more natural.

# SAFE. CLEAN.
# ALWAYS GREEN.

BIO BASED ARTIFICIAL GRASS
DEDICATED TO CREATING SUSTAINABLE SOLUTIONS

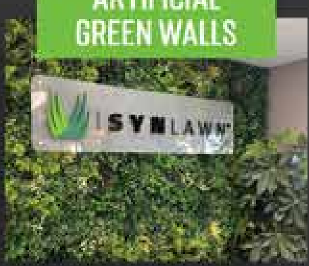
## RESIDENTIAL

## ROOF TOP

## PUBLIC SPACES

## GOLF

## ARTIFICIAL GREEN WALLS




calico greens™
ARTIFICIAL GREEN WALLS

FEATURING
SUPER YARN™

- **Sanitized®** Anti-Microbial Technology
- **DualChill®** Thermal Shield
- **Statblock®** Anti-Static Component

## SERVICES OFFERED

- Landscape Architectural Design
- Rooftop Amenity Space Installation
- Pet area and Dog Park Installation
- Outdoor Kitchens Installation
- Pools and Spa Installation
- Residential Synthetic Lawn Installation
- Putting Green Installation
- Synthetic Green Wall Installation
- Hardscape Installation (Pavers & Concrete)
- Planting Installation
- Fireplace and Fire Pit Installation
- Landscape Structure Installation

## FEATURE INSTALLATION

SCAN FOR MORE INFORMATION

103[1] NEW CASTLE ROAD PROSPECT, PA 16052
412.866.TURF (8873)
www.synlawnpittsburgh.com
brad.hazelwood@synlawn.com

A DIVISION OF
Eisler LANDSCAPES

happens at a specific place and time."

Emphasizing student experience is a common denominator. Colleges and universities recognize that retaining students is a critical factor in maintaining enrollment and growing a base of grateful alumni over the long term.

"Wellness is this thing that is playing out in every building. That applies to recreation centers that are trying to get students more active, but it is also in dining centers where they're providing fresher food, allergen-free food, vegan and vegetarian food," Amy Maceyko, principal at WTW Architects, an AE Works company. "In the student center realm, it is about stress reduction. That means providing prayer and meditation spaces. That means craft and creative activities. There are all sorts of stress-reducing activities being offered. The convenient thing is that these offerings do not take up much space."

"There is concern about what the pandemic did to the student experience, including students who were in high school when they weren't in a physical place," says Bleck. "Students were forced to learn through virtual learning and devices. We want to try to have people engaged in the same place and time. It's showing statistically to be important for mental health and student success. We want to create spaces where students can see and be seen but choose whether or not they want to interact."

John Evans, partner at LGA Partners who heads up the firm's higher education studio, agrees that student wellness has gained a higher priority across most campuses. He believes the more successful institutions have a similar approach.

"There were institutions that did wellness rooms and dedicated programs to wellness four or five years ago," he says. "The most proactive institutions aren't doing it in a way that is prescriptive – like two wellness rooms per 100 occupants - but are dedicating a percentage of the program to wellness. It's almost as if they are including it as part of the gross building factor. What they get is a commitment that they're going to have that wellness component, but they let the occupants of the building guide how it's used and how it's scheduled."

Student success is also being elevated as a facility goal. While no college or university would have ever articulated a disdain for its students's success, there have been fewer resources applied to making college students successful in the past. This type of space is being included in all the master planning for the Pennsylvania State System of Higher Education (PASSHE) campuses.

For example, Indiana University of Pennsylvania's (IUP) recently completed master plan addresses the need for student support by clustering its admissions, welcome center, student success center, and library in a quadrangle behind the administrative offices. The plan envisions this quad as a gateway for prospective students and a one-stop neighborhood for student success resources that will enhance the everyday student experience at IUP.

DRAW Collective is the architect on part of the IUP student success center spaces. Chris Brown, principal at DRAW, says the concept of student success has evolved significantly from the concept of assisting with job searches.

"There's been a lot of growth around supporting students to keep them there for all four years. Many times, that space ends up going into libraries. As libraries need less space for books, colleges are converting that space to study areas and other uses that support students," he explains. "At IUP that started out with a career center and now we're designing a Student Success Institute. That's a group of enhanced counselors who work with students over their four years there. In that same building we did a writing lab. Those spaces are integrated with each other."

Attraction and retention of students was one of the main goals of the 2000s building boom, which saw a surge in the construction of student unions, convocation centers, and apartment-style residence halls. The latter were commonly thought to be necessary to appeal to the demands of Millennial generation students. Now, after that generation has graduated, the value of those capital projects has mixed reviews.

"The improved housing helped with recruitment with peer institutions. Whether or not it helped with retention depends on how the housing was designed," says Maceyko. "If the housing causes students to interact with their fellow students and feel part of a community, then it helps with retention. If the residence hall just gives a fancy bedroom with a fancy bathroom, and the resident doesn't interact with their neighbors, that's not necessarily going to help them succeed in college."

"I have been going to the Association of College Union's International Conference for years. I have yet to meet a single person from any of the schools that did a union renovation or new union who regretted the decision," Maceyko continues. "There is data that shows that improvements to a student union or student center on campus positively impacts recruitment and retention. Students who are more engaged in campus activities are more likely to graduate. When there is a student center, where you can meet organizations and get involved, students are more likely to get engaged in campus activities."

Christine Lyons, associate and project manager at IKM Architecture, notes that colleges and universities are paying more attention to the utilization of campus facilities. Whereas campus buildings were often designed with a single purpose in mind – and may have only been occupied for a few hours daily – facility managers are now looking to optimize the scheduling of those spaces. That may be difficult in spaces that were designed for technical single purposes – a chemistry lab or athletic locker room, for example – but much of the physical plant is more like an office in its potential flexibility. Lyons explains that this optimization of space creates new project opportunities, including at the level of replacing furniture and furnishings with items that can be used effectively in multiple instructional settings.

"Flexibility was a buzz word but wasn't really in practice five years ago. Now, it's critical to the programming discussions we have. Now, we will have user groups talking about specific space needs and in the same meeting there will be folks from the facilities group weighing in on how the space might be used in the future," says Evans. They want to know if there are changes in the future how we will accommodate it. I think that's a great benefit to the university."

"The other thing that we're seeing is that institutions are struggling with their deferred maintenance backlog. There is more of a connection between capital project funding and deferred maintenance or capital systems improvements," Evans continues. "Owners are saying that if they

are going to renovate a building, they will take care of its envelope as well, rather than just letting a donor put all of their money into the high-end or splashy areas."

It is worth noting that predictions of the bankruptcy or closing of some share of colleges and universities go back more than a decade, as an earlier demographic dip and the Great Recession threatened the financials of many institutions. Fewer than 100 of the 4,000 institutions that grant degrees nationwide have met that fate, none in Western PA. Most higher education institutions will nonetheless have to take extraordinary measures to raise money and/or reduce costs to continue to serve students at the same levels, or they will serve students at reduced levels. The challenges may prove too difficult for some institutions after all; however, the difficult times are not reflected in the current levels of construction. Work is not booming on every campus, but there are ample opportunities for construction on many Western PA campuses.

## Where the Work is Happening

What differs from the college building boom of 20 years ago is that construction is focused more narrowly, either on the purpose of the facility or on a limited number of campuses. Buildings are serving a higher institutional purpose, and the cost justification is much more closely scrutinized. It is good fortune that the justification for building is being made successfully on more campuses in Western PA.

"Penn State is booming. I see cranes flying every day up there on the hill at Pitt. But the public institutions that are not land-grant institutions are down in enrollment and have less capacity to build," says Ralph Horgan, associate vice president campus design and facility development at Carnegie Mellon University.

"We have $300 million dollars' worth of work to do across the street from my office, so that will keep us busy through 2027," he laughs. "We hope to get in the Robotics Innovation Center next summer."

Horgan refers to the $100 million Robotics Innovation Center being built in Hazelwood Green by the Mosites/Gilbane joint venture and the $280 million R.K. Mellon Hall of Science, for which a PJ Dick/Mascaro joint venture recently broke ground. Both were enabled by a $150 million grant from the Mellon Foundation. He notes that Carnegie Mellon's enviable position has mostly exempted it from some of the measures taken to make the facilities a competitive recruitment tool, in part because it has built state-of-the-art buildings for many of its most highly regarded colleges over the past two decades. He is quick to point out that most of those were also driven by gifts and grants.

"There's always something churning but if the Allegheny Foundation doesn't give us $30 million, we don't do Scaife Hall. If TCS doesn't give us $30 million, we don't do TCS Hall. If David Tepper doesn't make his gift, we don't have the new building for the Tepper School of Business. It's dependent upon trustees and donors," he says. "There's always demand within the colleges, that's for sure."

Across Forbes Avenue, Carnegie Mellon's neighbor is in the early stages of a billion dollar-plus construction boom in support of its campus master plan. The University of Pittsburgh saw relatively little new construction since the 1990s, most of which was in the form of residence halls. It is in the process of updating its master plan, but much of what was planned in the 2017 rendition is moving forward.

Pitt's most recent master plan called for a series of $100 million-plus new buildings that were designed to expand athletics on Victory Heights, at the top of the Oakland campus, support student life with new residence halls and a recreation center mid-campus and enhance academics with major upgrades to its science buildings and libraries. The plan also envisioned private development at the western end of Forbes Avenue and Fifth Avenue that would be occupied by university tenants.

To those ends, a new $100 million chiller plant has been constructed in the northwest corner of campus (see page 39), and construction is underway on the $175 million Student Recreation and Wellness Center, the $195 Arena and Sports Performance Center, the $180 million BioForge facility in Hazelwood Green, the $53 million fourth phase of the Hillman Library renovation, the $52 million Crawford Hall renovation, and the $170 million Fifth and Halket Building. The latter was originally developed by Walnut Capital Group before the university purchased the building during construction. PJ Dick is completing the $80 million core and shell now, with another $90 million in tenant improvements for university occupants to begin later this year.

As those projects wind down in 2025-2026, expect to see major investments in another round of student life and academic buildings. The master plan calls for more than 700 beds in a $185 million Hillside Residence Hall and parking garage, a $150 million Dental Medicine Building, $100 million in renovations to the William Pitt Student Union, a $150 million Integrated Health Sciences Building to be built on the site of the current Crabtree Hall, a $240 million academic building on the former Syria Mosque site at One Bigelow Boulevard, and a $150 million redevelopment of the Croation Fraternal Order site at 3441 Forbes Avenue.

Besides the major capital projects, Pitt is also investing $45 million to $50 million annually on its existing campus building infrastructure. These include improvements to HVAC and electrical systems, building envelopes and roofs. Pitt's Climate Action Plan calls for $15 million per year in sustainability projects. It also plans to spend $2 million on classrooms each year.

"Students are choosing Pitt in part because it is in Pittsburgh. We're trying to lean into that," says Bleck. "The campus is unique in how integrated it is to Oakland and the larger city of Pittsburgh.

"What we're doing on the hilltop is going to transform the student experience even more. The Rec and Wellness Center that is under construction will be an amazing amenity for students. The next big step is then how that ties into the fabric of Oakland which is the fabric of our campus."

*Turner Construction is underway with the Pitt BioForge facility at Hazelwood Green. Rendering courtesy University of Pittsburgh.*

Bleck points out that, although there is more construction underway on Pitt's campus than at any other time in its history, her team is taking a fresh look at the campus master plan. She says that the intervening five years brought changes that must be accounted for in the plan for the next five years and beyond.

"There are significant changes both in how we think about sustainability and how we are working towards carbon neutrality. That is more focused than the previous plan," Bleck says. "We're still in the lingering aftereffects of COVID and what that means for work, for our staff. That changes some of our needs and has led us to change from staff space to student-centered space, particularly in iconic space like the Cathedral of Learning."

Duquesne University is coming out of a period of increased investment in its facilities, which included the creative use of third parties. The $54 million College of Osteopathic Medicine opened in January 2024. Duquesne had previously spent $45 million updating the Palumbo Center, which opened as the UPMC Cooper Field House in January 2021.

Duquesne also partnered with private developer Radnor Property Group to expand and update its student residences. The developer invested more than $25 million in renovations for Brottier Hall and St. Martin Hall, completed by Jendoco Construction in phases over a four-year period from 2018 to 2022. Radnor is also Duquesne's partner in a new $60 million, 556-bed student residence hall, Forbes Hall, that Rycon Construction is building at 1045 Forbes Avenue. Duquesne University is proposing to partner with a third-party developer on a new hotel that would serve the campus, but that project has not come to fruition.

For more than two decades, Penn State has been working on a multi-year capital plan that exceeds $1 billion. The current plan, which covers 2024 to 2028, calls for investing more than $2.1 billion during the coming five years, excluding the funding for smaller, unit-level projects. Penn State remains in the top 25 nationally for new applications, topping 86,000 for the 2023-2024 school year.

Nearly half of that capital budget will be devoted to two major projects. The larger of the two is the $700 million renovation of Beaver Stadium, for which Barton Malow has begun bidding and awarding trade packages. The other project is Pollock Halls, a complex of nine residence halls that include 20 percent of the residents on the University Park campus. The $300 million-plus project involves complete renovation of seven of the buildings and the removal of two. The project will be delivered over a five-year period between 2024 and the end of 2029.

Other major capital projects in varying stages of planning, design, and procurement are:

- $115 million Physics Building and Osmond Laboratory Renovation

- $89.9 million Sackett Building Renovation and Addition
- $79 million Applied Research Building
- $65.3 million Animal Diagnostic Laboratory Renovation
- $56 million Academic Building - Abington
- $54.2 million Eisenhower Auditorium Renovation
- $47 million Academic Learning Center - Harrisburg
- $30 million Former Palmer Museum of Art Repurposing
- $28 million Nursing Sciences Building Renovation
- $27.6 million Carpenter Building Renovation

St. Vincent College in Latrobe is a good example of the way the current higher education construction environment is operating. In summer 2023, St. Vincent took proposals from a group of construction managers for a planned $25 million to $30 million recreation center. The responses showed just how much escalation had impacted the proposed scope of work. The project was considerably over budget and is being redesigned.

At the same time, St. Vincent was working with the Donahue family on a new $16 million facility for the school of nursing. The strategy, coupling generous alumni gifts with a curriculum that has a high perceived value in return for tuition, has been successful. Construction on Rhodora and John Donahue Hall will begin in early 2025 and the building will open in 2026.

An hour north of Pittsburgh, Grove City College is bucking the trend for small colleges and universities, making investments in major new facilities for the first time in more than a decade. The new projects, part of its master plan for the decade, come after the college experienced some of the same challenges in the 2010s that its peer institutions are facing today. During the college enrollment boom of the 2000s, Grove City College admitted a smaller fraction of its applicants than its peer institutions. Applications declined in the mid-2010s and the college experienced a handful of years with less than full enrollment.

Grove City College also experienced a change in its development strategies. Long a beneficiary of the philanthropists J. Howard Pew and Albert Hopeman, Grove City College fell below its peers in alumni giving for decades, a trend that has been reversed and is the key to its current $185 million capital campaign.

Currently under construction is a major renovation and expansion of its iconic academic building, the Rockwell Hall of Science, which was built in 1913. Originally planned as the second phase of a project that brought a new $39.5 million STEM building in 2013, the $48 million modernization of Rockwell Hall will add 11,000 square feet of new usable space. Landau Building Company expects to complete the project, which will be rededicated as Smith Hall of Science and Technology, in late summer 2025.

A new field house is also on the boards at Grove City College.

*Grove City College's Rockwell Hall is being renovated to re-open as Smith Hall of Science. Photo by Landau Building Co.*

The $25 million facility will house locker rooms for the football, lacrosse, and tennis teams, as well as training rooms and coaches' offices. Construction is expected to begin on the field house in 2025. In the latter half of the decade, Grove City College expects to invest tens of millions of dollars to renovate its residence halls.

Further north, Allegheny College is about to embark on a multi-year, $15 million conversion of its Reis Hall to academic use. The project is being delivered by the design-build team of Mosites Construction and Rothschild Doyno Collaborative.

Mosites Construction recently completed construction on the e-Hive at Waynesburg University, a facility for Waynesburg's entrepreneurial program.

"e-Hive is a collaboration between Waynesburg University's business school and its art school. They're trying to spark that entrepreneurial spirit and physically make things on campus," says Brown. "They just broke ground on the new $2 million building for their criminal justice program. That's another program where the college is seeing some growth."

Pennsylvania's troubled state universities have faced numerous challenges over the past two decades. After undergoing a boom in construction from the mid-1990s through the 2000s, PASSHE has seen its annual budget for renovation and construction shrink. PASSHE schools have seen enrollments decline precipitously since the Great Recession and consolidated six of its universities – at Lock Haven, Bloomsburg, Mansfield, Edinboro, Clarion, and California – into three multi-campus institutions. The challenges that came with the pandemic, especially escalating costs, exacerbated the situation.

In the wake of the downsizing and consolidation, there are dozens of buildings on PASSHE campuses that are underutilized or sitting empty. Many of these are functionally obsolete, but all require maintenance and are part of the university's overhead. LGA Partners is currently commissioned to oversee demolition of 23 buildings at PASSHE campuses across the commonwealth. John Evans sees the program as a matter of "addition by subtraction."

"It is an opportunity for the institutions to free up resources for facilities and programs that are functioning in the way the university wants," he says.

According to Jeff Amos, director of construction management at PASSHE, the current budget for construction spending at PASSHE institutions (including DGS allocations) is $70 million annually statewide. That is an increase of only $5 million from the annual budget that was in place prior to the Rendell administration.

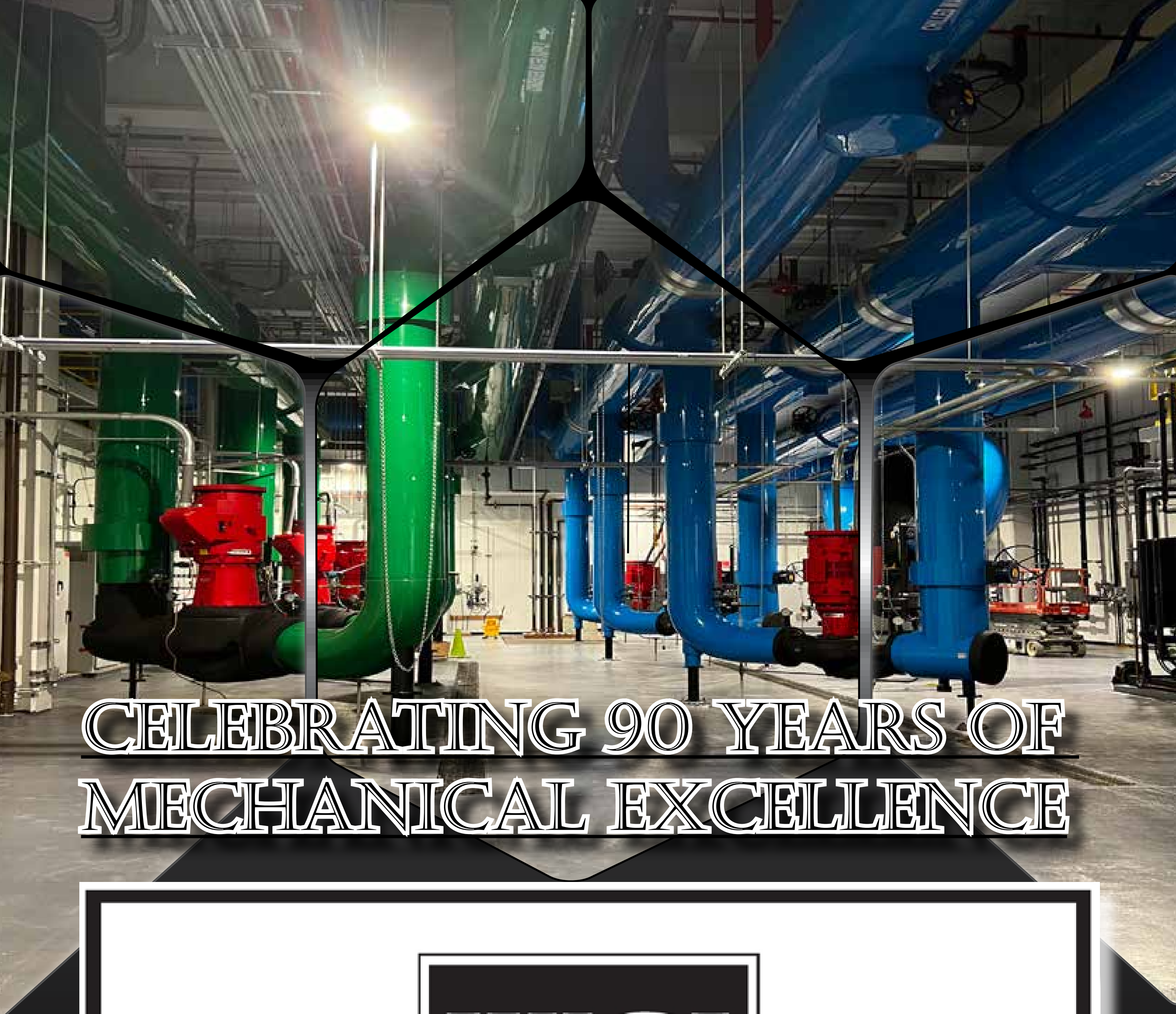
In Western PA, there are but a few major projects on the boards at PASSHE institutions that have received budget allocations. Those include a $37 million PennWest California science building, a $15.1 million culinary arts building at IUP's Punxsutawney campus, and a $14.5 million electrical infrastructure upgrade at Slippery Rock University. In the design phase are also a $5.6 million utility infrastructure upgrade at IUP, and a $6.4 million boiler replacement at PennWest California. An $8.2 million academic building renovation is in the capital planning phase at PennWest Edinboro. At PennWest Clarion, professional selection is underway for a $7.7 million deferred maintenance and repair program.

These projects will publicly bid through the Department of General Services separate prime contracting process. Further out on the horizon are plans for a new School of Osteopathic Medicine at IUP, which will involve major renovations to Johnson Hall.

That is a light lineup of projects on Western PA's public university campuses, but a significant improvement in the pipeline compared to the past decade. The good news for the construction industry in Western PA is that it is on the right side of the "have's" and "have not's" now. The rest of the decade will present challenges for colleges and universities, except for the institutions at the top of the food chain. Two such institutions share 25 square blocks in Oakland and have about a billion dollars of construction underway.

It is not the worst of times for the higher education construction market. Although many of the colleges and universities in Western PA have seen better days, investment in higher education facilities is far from a low ebb. The 2030s may bring a different environment, but the outlook for the rest of the 2020s is just fine.

*Duquesne's College of Osteopathic Medicine opened in January. Photo by Duquesne University.*



# PROJECT PROFILE

## UNIVERSITY OF PITTSBURGH CENTRAL UTILITY BUILDING

*Photo by Halkin Mason Photography.*

"A central utility plant is a big, complicated undertaking in a green field, but when you drop it in the middle of a very congested environment, especially one as old and unique as Oakland, it makes for very interesting conditions," says Pete Bianco, project manager from Mosites Construction.

That was Bianco's summation of the challenges that the joint venture team of Mosites and Turner Construction faced as it built the University of Pittsburgh's new Central Utility Building (CUB) from October 2021 to September 2023. The project involved construction of a 42,000 square foot chiller plant at the top of Pitt's campus along Robinson Street Extension and the underground distribution system that moved the chilled water to the buildings being served by the new plant.

The CUB was the first major project undertaken as part of Pitt's billion-dollar capital plan. It was an enabling project for the earliest components of that capital plan, which included new athletic facilities on what was being called Victory Heights. Designed by Burns and McDonnell, the new plant has three chillers with a combined 7,500-ton capacity, which could be doubled for future needs. A 5-Kilo volt electrical substation was built to provide additional power to the upper campus. The plant also includes a 250,000-gallon cistern that captures and re-uses gray water to reduce the usage of fresh water the plant processes.

"We were looking to provide two things with this plant," says Scott Bernotas, vice chancellor, facilities management at University of Pittsburgh. "We were maxed out on upper campus chilled water capacity [at the Peterson Events Center] to meet the needs of any growth. We also were looking for some redundancy, so we were not relying on a single plant."

Turner and Mosites joined forces to compete for the construction management-at risk contract when Pitt issued a request for proposals in spring 2021.

"We hadn't worked with them in a conventional joint venture but they had worked for us as a trade contractor doing concrete," says Steve Bayer, project engineer for Turner Construction. "There was certainly a familiarity with them and when we looked

*Photos by Halkin Mason Photography.*

at this project, we felt the expertise of both firms would work well together. Mosites has a strong civil and industrial resume. This project had a mile of distribution across Pitt's campus, with large piping and deep excavations. Mosites had a lot of expertise in that type of work that we thought would be helpful combined with our vertical construction expertise at the plant."

"We went through a source selection process to pick the Turner-Mosites team. That was through a standard process looking at minority participation, past performance, and other factors. Then we did a best value selection," recalls Bernotas. "It was one of our most successful, if not the most successful, projects for minority participation. The combined minority- and women-owned firms that participated in the project was 40 percent of the spend. We vet the firms being used and make sure that the actual spend is to those firms."

There were two overriding challenges facing the construction team. The distribution system of underground piping was going to cross dozens of streets in the densely packed Pitt campus, moving across steep elevation changes. That portion of the scope of work was going to be extremely disruptive to the campus. Second, it was assumed that there would be significant unforeseen conditions, both at the plant site and throughout the campus. Aside from the preconstruction headaches of pricing and sourcing that were occurring throughout 2021, there was an intense planning effort undertaken by the team to manage the logistics.

"We started by breaking the project up into pieces," says Bianco. "We had one team dedicated to the central utility plant and one dedicated to the distribution. Within distribution, we broke it into multiple phases and each one of those had its own execution strategy."

The execution of the CUB project was complicated by the fact that the construction would be taking place ahead of the two other major projects, the Student Recreation and Wellness Center (Rec Center) and the Arena and Sports Performance Center (ASPC), that the CUB was meant to serve. There was critical physical integration that would occur with the completed facilities, but the CUB infrastructure would have to be put in place before those other two facilities were underway.

"A big part of our project was serving future developments at Pitt, especially the Rec Center and Arena projects, so we had to work very closely with those teams. Their design and construction lagged ours, so in the locations where we had to tie into those buildings there were challenges," Bayer says.

The design and construction teams for the Rec Center and ASPC had been selected at roughly the same time as the CUB team. Before construction began on the CUB, Turner-Mosites began holding regular meetings with Pitt, owner's rep M3cm Consulting, and the Mascaro-Barton Malow and Gilbane-Massaro teams to make sense of how the excavation and pipe construction from the CUB would integrate with the early construction stages of those projects.

"It paid tremendous dividends to have what we called program coordination meetings with all six construction management teams very early in the process. We coordinated not only the logistical elements but also the respective building elements and tie-ins to the other projects," says Bianco. "It was an encouraging process to see six active members of the Pittsburgh construction community coming together for the benefit of delivering a complex series of projects. We started with a very global view of the program but then broke it into pieces. When we ran into unanticipated conditions, we had

the infrastructure in place to effectively deal with them while maintaining budget and schedule."

Bayer cited the meeting as the source of solutions that benefitted more than one project. We came up with something that helped both projects because as we did our piping work that went by the arena, it served as the construction access road as it was backfilled."

Construction began on the plant building and upper campus facilities just as material escalation was spiking upwards and before the global supply chain had normalized. Pete Mastro, owner of M3cm Consulting says Turner-Mosites mitigated the problems that could have resulted from those disruptions. Bayer credits the planning process.

"The job was pushed initially but we went back and confirmed the numbers with all the trades and got people locked in. We did mill orders on the steel and some other major items to lock in pricing. That helped mitigate the impact of escalation. We were still within budget from pre-construction," Bayer says. "We released the switchgear and other long lead items early, so when the green light came, we were able to execute the project."

The CUB team found the building information modeling (BIM) to be critical to the plant construction. Bianco notes that the physical congestion of the chiller plant made the use of BIM imperative to resolve mechanical and electrical conflicts. The team also complemented the conflict resolution with modeling of the sequencing of construction.

"During the excavation we started sequencing meetings, which preceded the scheduling meetings. We did our BIM coordination and then we would do sequencing. It's not quite 4D coordination, but it allowed everyone in the room to say which pieces need to go before other scopes of work," Bianco explains. "What we found was there were whole parts of the structure needed to be deferred to allow the larger piping to go in. Had the sequencing meetings not occurred as early as they did, fabrication and installation would have been adversely affected and ultimately those are the kinds of things that create a scheduling problem. We were able to anticipate the majority of those and never had a schedule impact because of a coordination issue."

"The building is heavy structurally but simple. The challenges were with the equipment coordination," says Mastro. "The value of BIM coordination couldn't be overstated, and the off-site fabrication really reduced rework in a big way, more than I had seen in the past."

Careful planning and coordination would be of little help once the project went underground. Oakland is one of Pittsburgh's oldest and densest neighborhoods, yet its subsurface conditions are largely unknown. As might be expected, the CUB team encountered the remains of many previous activities.

"With any utility project in a city as old as Pittsburgh you run into unforeseen conditions," Bayer notes. "We had a bad area of excavation where crossing Alequippa Street where there were multiple layers of old roads sitting on fill. We had to schedule outages with all the utility companies and relocate utilities impacted by our lines. We did a little bit of mine grouting at our plant site, and we ran into some coal seams that we had to over excavate."

All parties agree that the biggest challenge of the project was the distribution system. Roughly one mile of 42-inch supply and return lines were installed from the plant to various buildings in the blocks below it. The construction traversed roads, retaining walls,

and all types of public spaces. Solutions had to be engineered to shoring 40-to50 foot excavations. The work went on throughout the school year, meaning that there was daily interaction with students, traffic, Peterson Center events, classrooms, and utilities that were essential to campus operations. The team instituted a weekly meeting with all project and university stakeholders that might be impacted by the coming construction.

"We had a meeting every Friday that was just logistics and phasing. The meeting was attended by athletics, student recreation, housing, engineering, student services, transportation and parking and all the other project teams. I think that was a key to the success of the project," says Bayer. The Pitt leadership team and Pete Mastro made sure that all the decision makers and affected parties were present at the meeting so that nobody was blindsided. We always looked several weeks ahead at that meeting, so that we knew what was on the horizon. Pitt's safety team was paramount in that meeting as well."

"As the program developed, it was a good forum for the ASPC and Rec Center teams to continue. It made for a good exchange of information, but also relationship building," says Bianco. "Believe it or not, those kinds of meetings, which can feel a little bit tedious, created an infrastructure that de-stressed the entire environment."

For the university, the distribution phase of the project represented the greatest risk. Thousands of students, faculty, and local pedestrians were impacted by the construction. Bernotas admits that he lost sleep over the potential for problems.

"They came up with a strong safety plan for how we were going to trench across roads and keep people out of trenches. I credit the team for that and their ability to keep the project moving," Bernotas says. "There were a hundred ways it could have gone wrong. We had to alter the course of the pipe a couple of times, but the team worked through it all successfully."

Even after the plant and distribution construction was completed, there was still a major obstacle. The CUB had to tie into the facilities it would serve, including the chiller plant at the Peterson Event Center.

"After we got our plant up and running, we had to tie it into the water loop of the existing campus," says Bayer. "It was a big focus of the commissioning team to figure out how to test the plant locally before we tied in and how to schedule the tie-ins and cutovers. We created a very detailed phased schedule."

"The CUB and the other chiller plant at the Peterson event center are designed to work together or offset equipment that is down. They can be optimized to operate at the same time. The challenge was scheduling the turnover between the two plants," says Mastro. "The new plant supports many of the mid-campus buildings. The big celebration of turning it over was at 2:00 in the morning. We were all there in the plant because we didn't want to disrupt the campus. The planning effort leading up to that was more intense than I have seen on many projects."

Bernotas credits the willingness of the project team to work with all the university and community stakeholders to get the project across the finish line.

"We had great teamwork between our project manager, Pete Mastro, our engineering team and Turner-Mosites, who were very responsive," Bernotas says. "They took the job seriously from the start. They hit the schedule from day one."

"It's cliche but it was the partnership and transparency all the way through that made the project successful. There was a ton of planning and we made sure that we all had all our plans, our logistics, our sequencing, and phasing communicated," says Bayer. "We had good partnership at all levels of the university, so that when changes or unforeseen issues popped up, everybody could react quickly. Turner and Mosites had a great partnership, and we had a great partnership with the design team. It would have been a major challenge if we had breakdowns in communication or a siloed approach to the project."

"Communication was the key. Our joint venture team set the tone for the collaborative environment that was necessary. That intangible environment not only worked for us but also for the subcontractors," says Bianco. "You had people supporting each other instead of arguing with each other. There are a lot of buzzwords for this kind of delivery system, but buzzwords don't make good projects, people do." BG

## PROJECT TEAM

| | |
|---|---|
| Turner Construction Co./Mosites Construction | Construction Manager Joint Venture |
| University of Pittsburgh | Owner |
| M3cm Consulting | Owner's Representative |
| Burns & McDonnell | Design Engineer |
| Barton Associates | HVAC Consulting Engineer-Plant Building |
| WTW Architects, an AE Works Company | Consulting Architect |
| Kisak Engineering | Electrical Consulting Engineer |
| Gateway Engineers | Civil Engineer |
| Noralco Inc. | Demolition |
| Costa Contracting Inc. | Excavation-Site Work |
| W. G Tomko Inc. | Mechanical-Distribution System |
| Clista Electric | Electrical Contractor-Distribution |
| DeMarco Construction | Site Concrete-Plant |
| Franco Masonry | Masonry |
| Engineered Products Inc. (EPI) | Miscellanous Metals |
| Tungsten | Drywall/Interiors |
| Overhead Door of Pittsburgh | Overhead Doors |
| Sentinel Construction | Plant Enclosure General Contractor |
| Sally Merar Interior Resources | Flooring |
| Lisanti Painting | Painting-Plant Building |
| Saints Painting | Painting-Plant Piping |
| Wayne Crouse Inc. | Mechanical Contractor-Plant |
| Hatzel & Buehler Inc. | Electrical Contractor-Plant |
| Tail Industries | Telecommunications |
| Precision Industrial | Floor Coating |
| Amelie Construction | Shoring |
| A. Folino Construction | Paving |

## A PRACTICAL GUIDE TO DRAFTING CONSTRUCTION CONTRACTS: ESSENTIAL TIPS AND KEY CLAUSES

BY GERARD HORNBY AND DAVID MEREDITH

Contract drafting and agreement is a push-and-pull process. Everyone wants to pass down risk, limit risk, or blame someone else. A major part of the negotiated contract is risk control. The following six clauses should always be negotiated as required to control risk:

**Pay If Paid/Pay When Paid Clauses** shift the risk of non-payment to subcontractors or suppliers even though they may not have control over the circumstances that lead to non-payment. These are helpful for owners and general contractors while limiting the rights of subcontractors and suppliers.

Subcontractors and suppliers should do their best to avoid pay if paid and pay when paid clauses. At a minimum, subcontractors and suppliers should attempt to negotiate language that allows the contractor to withhold payment only if the owner's withholding of payment from the contractor is related to the performance of the subcontractor or supplier.

**Indemnity Clauses** provide that one party (the indemnifying party) will compensate the other party (the indemnified party) for any losses or damages that may arise from a particular event or circumstance. Many times, these clauses will provide that a contractor or subcontractor will indemnify the owner and design professionals from everything and anything that could go wrong on the project, from personal injury to property damage to environmental issues to economic damages.

As a general contractor, subcontractor, or supplier, you should only agree to indemnify parties when you caused or participated in the cause of the loss. This means only indemnify to the percentile extent your conduct was the proximate cause of the loss and limit your indemnification obligations to property damage and/or personal injury. As an owner, do not agree to language providing that an indemnifying party is only liable in the event of "sole" negligence.

**Liquidated Damages** provisions specify a predetermined amount of money that must be paid as damages if one party fails to meet certain contractual requirements. These clauses can provide for damages for late completion at the end of the job, or on milestones, or even for the failure of the completed project to meet specified performance criteria.

A well-drafted clause eliminates the optional nature of the clause, specifies the rationale for liquidating damages, identifies the types of losses to be liquidated (and not to be liquidated), and clarifies the events that will (and will not) trigger the clause. This can significantly reduce the types of litigation that commonly attend liquidated damages clauses. As an owner that is seeking to include a liquidated damages provision, have the engineer or architect generate a memorandum indicating how the liquidated damages were calculated. Consider also including language indicating that damages will be difficult to ascertain and that the liquidated damages are a fair and reasonable estimate of likely damages. As a contractor negotiating a liquidated damages provision, provide that liquidated damages are the exclusive damages recoverable in the event of a delay or performance issue. Another option is to negotiate a cap on all damages based on a percentage of the contract's value.

**No Damages for Delay Clauses** essentially provide that, if there is a delay not caused by you, you get more time, but not more money. A contractor negotiating a no damages for delay provision should seek to limit application of the provision to specifically contemplated events of delay, and also negotiate to provide for some objective means to calculate damages based on a reasonable per diem or percentage that ties into the original bid estimated costs for field and home office overhead. Negotiate to limit your right to recover to direct, provable costs, such as project supervision, jobsite equipment, and other project specific costs rather than no damages at all. As an owner, consider avoiding overly broad clauses, as they could lead to inflated initial pricing, excess contingency, claims for additional costs outside of delay, or a contractor default. If the owner actively interferes with the contractor's ability to perform its contractual duties, these clauses can be challenged as unenforceable.

***Contract drafting and agreement is a push-and-pull process. Everyone wants to pass down risk, limit risk, or blame someone else. A major part of the negotiated contract is risk control.***

**Incorporation by Reference/Flow Down Clauses** in a subcontract incorporate the general contract by reference

and bind the subcontractor to the general contractor to the same extent the general contractor is bound to the owner. Subcontractors often take pains to negotiate changes to the subcontract, but then ignore the fact that all those contractual "gains" may well be trumped by the fact that the terms of the prime contract— equally as onerous and one-sided—still govern because of this quiet, silent rogue.

As a contractor or subcontractor, at a minimum, make sure you have everything you are agreeing to by reference. Do you have all the documents incorporated by reference? What do the documents say? How do they affect the risk? If possible, negotiate that the terms of your contract take precedence over whatever is being referenced OR negotiate a reciprocal flow down provision where the general contractor assumes to the subcontractor the obligations that the owner owes to the general contractor. From the perspective of the owner, collaborate and ensure that all required documents are easily accessible to downstream entities.

**Material Escalation Clauses** are typically used where there is a lump sum/fixed fee or guaranteed maximum price contract, especially where the duration of a construction project is long and complex, so that there can be an adjustment to the price to be paid by the owner if there are sharp increases in the price of materials or labor.

There are several key factors to consider when negotiating a material escalation clause. The provisions generally require that the parties must identify the materials that are anticipated to have price fluctuations during the course of construction. After identification, parties will agree to the "baseline price" for the materials. Material escalation clauses can be "cost-based" or "index-based." Index-based clauses are linked to published material cost indexes such as the U.S. Bureau of Labor Statistics. There may also be limits as to the maximum adjustment amount, such as a 10 percent increase limit. Contractors may include language intended to limit their liability for delays in the delivery of materials.

The bottom line is that typical risk avoidance techniques and unfavorable contract terms are here to stay. However, if recognized and dealt with during the negotiation of the contract, these terms—and any potential risk exposure—can and should be managed.

*Gerard Hornby is an associate with Eckert Seamans Cherin and Mellott LLC. He may be reached at ghornby@eckertseamans.com. David Meredith is a member at Eckert Seamans. He may be reached at dmeredith@eckertseamans.com.*

# MEGA TRENDS THAT WILL CHANGE HOW YOU DO BUSINESS

BY JAY BOWMAN

*The Dow reached 16,000. Women began serving in combat. The word selfie joined Merriam-Webster's dictionary, and the city of Detroit filed for bankruptcy. If you guessed that these events happened in 2013, you're right. But for many of us, these events feel like ancient history.*

Such is the nature and pace of change. It is happening all around us, often so quickly that we risk not noticing how fundamentally different things are today from just 10 years ago. As a result, we struggle to imagine how different things might be in 10, 20 or 30 years.

Most engineering and construction (E&C) firms are planning one to five years out. While near-term strategic planning is critical, thinking 10 to 15 years in advance helps determine if the short-term path is leading an organization in the right direction. Thinking about the long-term impacts to your business is essential to crafting the right course and managing risk.

Take Blackberry, for example. The company created a market-leading product that was ubiquitous among businesses. The problem came when it refused to respond to shifting consumer tastes and to take competition from Apple and Samsung seriously. The company focused solely on the phone and failed to innovate to keep up with the market and new technology.

We invite E&C leaders to understand the impact of megatrends and then ask themselves, "If this megatrend were to grow exponentially, what would it mean for my current markets, customers, service offerings, employees, and competitive position? How would we adapt?"

***Different from trends that come and go, megatrends are far-reaching patterns that relate to business, human behaviors, mobility, and the environment. They are shifts that will change how we live, work, learn, get care, shop, and connect to each other.***

### Megatrends Defined

Different from trends that come and go, megatrends are far-reaching patterns that relate to business, human behaviors, mobility, and the environment. They are shifts that will change how we live, work, learn, get care, shop, and connect to each other. Like bulldozers, they change everything they touch.

Megatrends don't grow in isolation but amplify each other exponentially. Often aspects of a current megatrend are quite apparent, but we don't recognize its power until it is upon us. In short, a megatrend is:

- Far-reaching
- Powerful; it affects everything it touches.
- Growing exponentially
- Disruptive

### Four Megatrends of Recent Decades

Some of the most meaningful and ongoing mega-trends of the 20th and 21st centuries concern how we live in our built environment. They are:

**Urbanization:**

This megatrend is several centuries old. In 1800, 6 percent of the U.S. population lived in towns and cities. Today 80 percent of Americans live in what the Census Bureau defines as urban areas (towns of 5,000 or more). By 2050, 89 percent of Americans are predicted to live in urban areas. E&C firms see this megatrend in not only development opportunities but also market concentration, with 12 markets accounting for one-third of total U.S. construction spending.

**Globalization:**

For the past 50 years, the world's economies have grown increasingly interdependent due to the cross-border trade in goods and services, technology and flows of investment, people, and information. Globalization has exported some U.S. manufacturing and jobs to lower-wage economies and, in parallel, brought cheaper goods – such as fast fashion, household electronics and construction supplies – into the U.S.

**Digitalization:**

Far larger in scope than simply converting paper records into electronic files, digitalization is the process and strategy of using digital technologies and data science to radically alter how we do business. Digitalization has improved office efficiency, heralded the home computer, fueled e-commerce, facilitated global supply chains and threatened brick-and-mortar retailers.

**Aging infrastructure:**

No longer out of sight and out of mind, the nation's water, transportation, and communications infrastructures have aged at a rapid rate over the past 30 years. In 2021 the World Economic Forum rated the U.S. 13th in terms of the overall quality of infrastructure, and the American Society of Civil Engineers gives our country's infrastructure a "C-." Demand is high for renovation, repair, and replacement.

### Four Technology Megatrends Reshaping Construction and Engineering

"The future is here, it's just not evenly distributed," observed author William Gibson. FMI's emerging megatrends were drawn from observations that seeds of these trends already have taken hold in some industries, cities, or populations. They are expected to continue to grow rapidly.

**E-commerce and Continued Digitalization:**

Pundits expect e-commerce sales to account for about one quarter of retail sales by 2025. In recent years, retailers have slimmed their brick-and-mortar footprints, with some going completely online. While traditional retail is far from dead today, most retailers are adopting omnichannel strategies such as buying online and picking up in store and curbside pickup. We could imagine a distant future where traditional retail is the exception, not the rule.

One of the biggest outcomes from the rise of e-commerce is the shift in consumers' mindsets to be less reliant on interactions with sellers of products and services. This change could have far-reaching implications for those in construction procurement. Companies will need to implement tools to adapt to the changing nature of purchasing.



**Technological Advancement, Artificial Intelligence and Automation**

Technological advancements have allowed companies to be as efficient, collaborative and communicative as possible. Now artificial intelligence (AI) brings new levels of speed, insight and automated problem-solving to business.

Already, 94 percent of global business leaders say that AI is critical to their company's success, but the applications are largely limited to voice assistants, chat bots, cloud data optimization and prediction of future maintenance needs.

A recent FMI article documented emerging applications of AI in the E&C industry, including AI-enabled scheduling, machine learning-supported estimating and safety monitoring with computer vision. At this point, leaders see AI as augmenting the work of experienced professionals; however, in the next several decades, it could become as indispensable as email and word processing.

If AI-enabled tools become as reliable and trusted as professionals they support, how might AI change staffing needs? How could AI enable more productive and autonomous workflows, better risk management and happier, more enriched teams?

**Remote and Flexible Work**

An outgrowth of the COVID-19 pandemic, remote and flexible work grew from about 6 percent of full workdays pre-pandemic to more than 50 percent in spring 2020. Since then, remote workdays have declined to 28 percent of workdays. Still, despite calls for a return to the office, most executives expect remote work to continue for the foreseeable future. Not only do employees like it, but also it can be cheaper for companies (through reduced office costs) and better for the environment (less commuting).

For the E&C industry, this megatrend means that high office vacancy rates are likely to continue and suggests ongoing difficulties in traditional office construction spending. We can anticipate foreclosures and distressed sales, opening the door to renovation and repurpose projects.

Remote work is fueled by data. Data centers, classified as a subset of the office sector, will continue to be highly sought after. Data center construction could comprise as much as 50 percent of the office sector in the coming two decades. What's more, data centers may be built in new locations as energy and land constraints open the way for opportunity.

To consider: If hybrid and remote work are the norm, could temporary workers also become a larger part of the workforce? How might this impact company reputation, privacy, and security as well as the traditional contract between worker and employer? Also, might dramatic changes in office vacancies devastate some U.S. cities, with the impact also being felt by surrounding multi-family owners, retailers, and restaurants?

**Rise of Data and Cybersecurity Issues**

As transactions and work become digitized, AI grows and work is remote, so too raises the threat of cyberattacks. The global market for cybersecurity is growing rapidly while the number of victims grows exponentially.

This raises questions about how E&C companies are using and storing data and how companies can defend against attacks. In the future, project owners will likely require greater security to participate in their projects. What's more, ransomware attacks and data breaches could affect construction project timelines. Cybersecurity needs may also increase the size of data centers.

**Questions to Ask Yourself Now**

"Most people overestimate what they can accomplish in a year," Bill Gates once said. "But they underestimate what they can accomplish in 10 years." Gates' wisdom invites E&C leaders to think about the impact of the above megatrends on their current operations, staffing, tech stack and markets.

Once you identify a relevant megatrend, you should do your research on the potential threats and opportunities it could bring. Finally, for every future opportunity or threat, brainstorm reactions and countermoves that can position your company for success. BG

This is the first of a two-part series on mega trends authored by Jay Bowman. Bowman is a partner at FMI. He can be reached at jay.bowman@fmicorp.com

NAIOP

COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION

PITTSBURGH CHAPTER

**We are the leading industry resource to foster business relationships, promote responsible development & support growth of the region through**

*education*

*leadership*

*and advocacy*

# FLEXIBLE EDUCATION ENVIRONMENTS BENEFIT OWNERS, FACILITIES MANAGERS, AND USERS

BY JONATHAN LUSIN, AIA, LEED AP AND SAMARA WHEATON

In the era of remote and hybrid work arrangements, a significant shift has occurred in the balance between the cost of commercial office space and its operational value for businesses. Tenants now seek innovative ways to maximize space usage while enhancing productivity, presenting an unprecedented opportunity to reimagine communal workspaces. By actively engaging tenants early in the design process, architects can tailor flexible and efficient environments to meet the diverse needs of modern workers, revolutionizing the future of office design and fostering success for businesses across industries.

Specifically, colleges and universities are grappling with this challenge. Gone are the days where a faculty member holds multiple assigned offices on campus, or even just one. Today, the library or a cozy coffee shop may serve as preferred workspaces for faculty and students. Because of this, leasing additional space brings forth the pressing need to optimize temporary square footage effectively. It's become increasingly clear that flexible environments are the way forward, not only maximizing return on investment, but also seamlessly adapting to the ever-changing needs and preferences of the users.

**The School of Computing and Information**

In the heart of the University of Pittsburgh's Oakland campus, the School of Computing and Information (SCI) recently found itself in need of a new, consolidated location. While awaiting a permanent home in a campus building, the university secured a temporary landing space for potentially the next five years. University facilities management brokered a lease with a commercial office building at Bellefield and Fifth Avenue to create an updated workspace for students, faculty, and staff. IKM Architecture was hired to design an interior renovation of one floor that accommodates the SCI's present-day needs while also anticipating possible future tenants. Understanding that the space needed to cater to a large, diverse group, the design team quickly began an intensive engagement process to ensure that every aspect of the space resonated with the unique needs of the end users. As a result, the renovated office is now a preferred workspace for almost three-quarters of the SCI's staff, faculty, and students.

**The User Engagement Process**

When the project team first met with the user group in late 2020, the work landscape had dramatically shifted, with the workday unfolding almost entirely remotely as meetings and classes transitioned to virtual platforms. As the design team began to develop a deeper understanding of the user groups' needs, they asked faculty, staff, and students to describe a typical workday in the past, present, and future. The responses painted a vivid picture highlighting an evolution in time and nature of common activities.

In the past, mornings were dominated by commutes and emails, followed by in-person meetings at midday, and then individual work in the office. Yet, as users considered their desires for the future, they envisioned a hybrid of the past and present. Morning schedules became flexible to accommodate exercise and casual interactions in the office. Meetings, whether in-person or remote, were tailored to suit specific needs. And as the day waned, faculty could choose to remain in the office or head home for focus work. This schedule-mapping exercise exposed a powerful revelation: the desires of the user group were already aligned with a flexible work environment.

To craft the optimal workspace, the design team created a matrix to visualize the intersection of work collaboration with task-oriented spaces. The team evaluated interactions between faculty, staff, graduate students, and undergraduate students as they occurred in private offices, social spaces, meeting rooms, remote work, and their dream workspace. This exercise exposed which spaces are best suited to accommodate the SCI's collaborative activities, revealed user sentiments about each environment, and pinpointed opportunities for enhancing space utilization. The exploration uncovered several overarching desires, including:

- Flexibility in spaces
- Balance between social and workspace
- Convenient smart technology for mobility and virtual collaboration
- Experimental space for testing ideas

The students, staff, and faculty at the School of Computing and Information wanted a workplace that could accommodate their diverse and evolving preferences, whether meeting in a private setting, working on projects remotely, or collaborating with team members in the lounge.

These human interactions are the main reason students and workers at the SCI are motivated to come into the office. The design team posed one final question to the stakeholders: What is your number one reason for using the office space? Overwhelmingly, the responses centered around collaboration, including "teamwork," "human-to-human interaction," "the people," and "building and maintaining community connectedness."

**How the Engagement Process Impacted the Design**

The enthusiasm of the SCI group fueled participation in the engagement process, producing a wealth of valuable data

*The design team tailored the office environment (shown in rendering above) to suit a variety of user preferences based on feedback received during stakeholder engagement sessions. The renovated space (photo on page 55) includes a mix of enclosed focus rooms, open workspaces, and collaboration areas with lounge seating.*

to inform the renovation of their temporary workspace. As discussions continued, the design team skillfully guided users through brainstorming sessions and design evaluations, fostering a collaborative atmosphere where stakeholders felt empowered to contribute their ideas and preferences. This inclusive approach not only instilled a sense of ownership among participants, but also facilitated a deep investment in the transformation of their environment. Additionally, knowing that this space was a temporary lease, the SCI embraced a "sandbox" mentality, eagerly exploring and testing innovative ideas.

Together, the design team and the users created an open office environment that mirrors the dynamic workplaces of leading companies, aligning with the aspirations of students entering the workforce. In examining their work patterns during the engagement exercises, faculty and staff came to recognize that not all daily activities require a private assigned office; instead, many activities thrive in flexible and collaborative settings. The resulting design reflects that, with a mixture of unassigned focus rooms, open lounge seating, flexible conference rooms, lively social space, and a dedicated maker space for innovative experimentation.

**Revealing and Applying Emerging Trends**

The themes illuminated by this project extend beyond the realm of higher education. The in-depth user engagement process provides insight into what commercial office spaces will become as tenants continue to embrace remote and hybrid work options. The overarching theme that was evident throughout this project is the importance of flexibility. The School of Computing and Information plans to be in this office space for five years; however, they could move to a permanent location before that time is up. A flexible work environment not only caters to the diverse preferences of the faculty, staff, and students, but also equips university facilities management with the agility to reconfigure the space to suit the needs of future tenants.

*Photo by IKM Inc.*

**Looking Forward**

The trend of flexibility in workplace design must continually evolve to meet the dynamic needs of workers. While we've seen flexibility integrated into furniture and spatial solutions, audio/visual (A/V) technology has lagged. Technology is a rapidly evolving industry, making it difficult to anticipate what will be relevant to users. This was a particularly important topic for the School of Computing

# CALENDAR OF EVENTS 2024

**JULY** 19 — **CLAY SHOOT**
SEVEN SPRINGS

**SEPT** 4 — **MEMBERS GOLF OUTING**
LAUREL VALLEY

**OCT** 17 — **AXE THROWING**
LUMBERJAXES

**NOV** 15 — **SAFETY BANQUET**
RIVERS CASINO

MBA

For more information visit
www.mbawpa.org

Building Momentum

and Information. The design team was challenged with how to integrate functional solutions without investing in change-resistant A/V technology. Flexibility in workplace technology must effortlessly facilitate virtual collaboration, but also support mobility. We should think of our devices as another participant in the room that moves with us throughout the day. As designers, we are compelled to push the boundaries of technology integration beyond convention and pioneer flexible solutions that enable users to smoothly navigate the ever-shifting landscape.

**Mutual Benefits of Flexible Design**

Flexible office space presents an opportunity to optimize square footage and maximize return on investment for building owners and tenants. Beyond the cost benefits, there are advantages for occupants as well.

In the fall of 2023, over a year after the SCI moved into their newly renovated workspace, the design team conducted a post-occupancy evaluation with members of the original user group. The survey asked users to rate their level of satisfaction with key aspects of the work environment, including seating comfort, lighting, thermal comfort, noise level, ability to collaborate, level of productivity, and so on. The feedback was then compared with ratings collected during the early stakeholder engagement exercises to assess sentiment towards the new space compared to the previous workplace arrangement. Of the 33 staff, faculty, and Ph.D. students who responded, 24 indicated interest in choosing to work in the new space some or all of the time. When asked what factors contributed to this decision, respondents cited "collaboration spaces," "private space," "open spaces," and "space with several options."

In a world where you can work from anywhere, communal workspace must capitalize on what makes it special: community, culture, and collaboration. It's this sense of belonging and shared purpose that will attract and retain workers, driving utilization of the space and amenities that tenants invest in.

By prioritizing early discussions with user groups and encouraging open communication, designers can gain invaluable insights into the mission and values of an organization. This collaborative approach fosters a culture of innovation and consensus among stakeholders, ensuring flexible design solutions are tailored to meet the client's unique needs. When architects and users work together to customize office space, the result is a harmonious fusion of functionality and flexibility that fuels success in the ever-evolving landscape of modern education and workplace environments. BG

*Jonathan Lusin is a principal at IKM Architecture. He can be reached at jlusin@ikminc.com. Samara Wheaton is an associate and project manager at IKM Architecture. She can be reached at swheaton@ikminc.com.*

# INDUSTRY & COMMUNITY NEWS

(From left) NAIOP Pittsburgh Executive Director Tom Frank, MBA Executive Director Dave Daquelente, Brandon Snyder, NAIOP board president, Mascaro's Alicia Kunselman, Landau's Jennifer Landau, Eric Pascucci from PJ Dick, Ken Simonson from the Associated General Contractors, and the MBA's Brandon Mendoza at the March NAIOP Pittsburgh-MBA 2024 Construction Market Forecast.

(From left) Landau's Jamison Vernallis, TEDCO's Kyra Sarver, and Monica Senger from DRS Architects.

McKamish's Naley McKamish (left) and MBA Young Constructors' chair Brooke Waterkotte from Easley and Rivers at the MBA YC Kickoff at The Foundry.

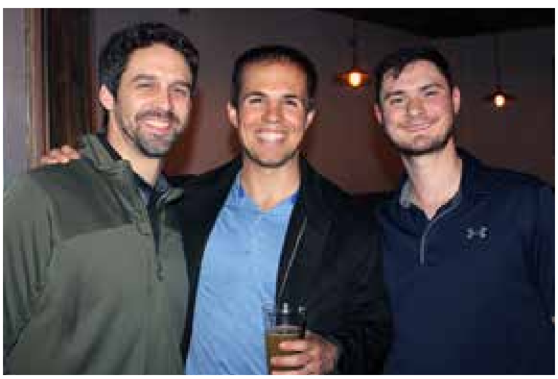
MBA Executive Director Dave Daquelente (left) and Paul Hoback from the Allegheny County Airport Authority, who spoke to the MBA YC Kickoff about the terminal modernization program.

*(From left) A.M. Higley's Stephen McAfee, Dave Wingertsahn from McKamish, and Dominick Davido from A.M. Higley.*

*Jordan Oeler from Oeler Industries (left) with McKamish's Bob Ward at Burn Pittsburgh event sponsored by ASA Emerging Leaders.*

*(From left) Ron Richwalls from EHD Insurance, Jeff Wolfarth from Mr. John of Pittsburgh, and Zachary Gumpher from Gumpher, Inc.*

David Hanno and Ethan Yohe from Easley and Rivers, Christan Gumpher from Gumpher Inc.



(From left) Mascaro's Ed Hasis, John A. Mascaro, and Zach Michak.

Allegheny County Executive Sara Innamorato (center, right of tree) joined two dozen MBA Young Constructors' volunteers in planting new trees in South Park on April 19.

*(From left) Armand Dellovade with Mohawk Construction and Supply, Turner Construction's Tara Conner, with the MBA's Tim Mackin and Bob McCall.*

*PJ Dick's Raghav Kaushik (left) and Joey-Lynn Ulrich with the Allegheny County Parks Foundation.*

*Representatives of the Master Builders' Association of Western PA (MBA) and the Construction Advancement Program presented $43,000 to the Trade Institute of Pittsburgh as part of its Construction Industry Advancement Program Initiative. Pictured at the Trade Institute's open house are (from left) Tim Mackin, Dave Daquelente from the MBA, Donte Given, executive director of the Trade Institute of Pittsburgh, the MBA's Lance Harrell, and Adam Harris from Harris Masonry.*

# **AWARDS &** CONTRACTS

**Fred L. Burns Inc.** was awarded the general construction and plumbing contracts for the $2.9 million Riverside Beaver High School Gym, Office, and Science Classroom Renovations in Elwood City, PA. The architect is HHSDR Architects & Engineers.

PA Department of General Services awarded **Fred L. Burns Inc.** contracts for the general and plumbing construction for the Warren State Hospital Boiler Upgrades and Steam Line Replacement in Warren, PA. Zimmerman Studio is the architect.

Engine House 25 selected **F. J. Busse Co.** as general contractor for the life safety updates to the Roberto Clemente Museum at 3339 Penn Avenue. Pfaffmann & Associates Architects is the architect.

**FMS Construction** was awarded a contract from the Municipality of Bethel Park for the renovations to the Clifton Volunteer Fire Company. The architect is EPM Architecture.

JLL Project Management awarded a contract to **Shannon Construction** for the tenant improvements for Sisterson in the Union Trust Building. The architect for the 11,000 square foot renovation is NEXT Architecture.

**AIMS Construction** was awarded the UPMC Passavant Air Handling Unit Replacement at the Support Services Building on the UPMC Passavant McCandless campus. Allen + Shariff is the engineer.

**Massaro** Construction Management Services is the construction manager-agency for the $125 million Cumberland Valley Elementary School program in Cumberland County, PA. The architect is Crabtree Rohrbach & Associates.

**Massaro Corporation** was selected to build the new $34 million, 72-bed behavioral health facility in Youngstown, OH, being developed by Lifepoint Behavioral Health and Mercy Health. The architect for the 61,900 square foot facility is Earl Swensson Associates.

**Massaro Corporation** was the successful contractor for the tenant fit-out for Cohen Seglias Greenhall Pallas & Furman at FNB Financial Center. Massaro was also selected to do the tenant fit-out for Garrison Hughes Advertising at FNB Financial Center.

**Rycon Construction** was awarded a $59,965,000 general construction contract by the Upper Darby School District for the new $87 million Clifton Heights Middle School. The architect is KCBA Architects.

Allegheny Health Network (AHN) selected **Rycon Construction** as construction manager for its new $140 million hospital, which will replace Canonsburg General Hospital in North Strabane Township. The architect for the 300,000 square foot new facility is IKM Inc.

**Volpatt Construction** was awarded the general construction contract for the $50 million University of Pittsburgh Crawford Hall Laboratory Upgrades. Renaissance 3 Architects is the architect.

**Volpatt Construction** is the construction manager agency for Etna Borough's $3.4 million Library and Community Center. The architect for the adaptive re-use project is GBBN Architecture.

University of Pittsburgh awarded **Volpatt Construction** a contract for the $22 million general construction portion of its $50.7 million Crawford Hall Science Labs Upgrades. The architect is Renaissance 3 Architects.

**Mosites Construction** was awarded a $48.5 million contract from PennDOT for the Charles Anderson Memorial Bridge, which connects the Boulevard of the Allies across Panther Hollow in Oakland.

**Allegheny Construction Group** was the successful contractor on the $1.8 million Equipment Storage Building at the Arnold Palmer Regional Airport in Latrobe, Westmoreland County. The project was designed by KTH Architects and McFarland Johnson.

The Sports and Exhibition Authority (SEA) awarded a general construction contract to **A. M. Higley Co.** for replacement of the second and third floor terraces at the David L. Lawrence Convention Center. The architect for the $4.6 million renovation is AE7 Architects. SEA also approved a $9.9 million contract with A. M. Higley Co. for construction management services for the replacement of the fourth floor terraces.

In Rockville, MD, **Rycon's** Special Projects Group is the general contractor responsible for the $1.4 million, 3,300 square foot tenant fit-out for Kura Revolving Sushi Bar.

CBRE selected **Rycon's** Special Projects Group to oversee a multi-phased renovation at the Alstom Local Service Company Office in West Mifflin, PA.

**Rycon's** Special Projects Group is the construction manager overseeing the emergency department expansion at Horizon-Shenango Valley Hospital in Mercer, PA.

A Bobby's Burger location in Charlotte, NC is undergoing a $682,000 renovation led by **Rycon's** Special Projects Group.

Totaling over $865,000, Starbucks selected **Rycon's** Special Projects Group to renovate two Starbucks locations, one in Erie, PA and the other in Pittsburgh, PA.

In Lakewood, OH, **Rycon's** Special Projects Group is the construction manager responsible for the $2.6 million renovation of an existing cannabis dispensary.

Dick's Sporting Goods chose **Rycon's** Special Projects Group to renovate the footwear department at their location in Morristown, TN. The project will be completed while the store remains open for business.

**Mascaro's** Client Services Group is providing minor repairs and modifications to an existing building as part of the UPMC Endoscopy Center Renovation project. With the current facility having been closed for several years, attention will be given to the site and building access. The existing building skin, mechanical and electrical systems, and interior layout and finishes will be evaluated and replaced to meet current local and state codes.

**Mascaro's** Client Services Group will also be doing the repairs and renovations to the existing parking garage as part of the University of Pittsburgh Centre Plaza Apartment Repairs project.

**Mascaro's** Client Services Group were also awarded the PNC Firstside First Floor Buildout, which will renovate the office interiors for consolidation.

**Mascaro** is completing work for Elmhurst at 912 Ft. Duquesne Boulevard for The Pittsburgh Foundation. This will consist of interior renovations to the ninth and tenth floor office space and the construction of a rooftop addition and deck.

**PJ Dick's** Special Projects Group is the construction manager-at-risk for the renovations to classrooms on the second floor of University of Pittsburgh's Cathedral of Learning as well as roof replacements.

**PJ Dick's** Special Projects Group is providing general construction services for the BNY Mellon Client Services Center renovation of the existing two-floor lobby, which includes reconfiguring of the two-story high facade with new storefront/curtainwall and interior finish upgrades. The project also includes a new Starbucks retail store on the ground floor.

**PJ Dick's** Special Projects Group is managing construction of the Willis Towers Watson office renovation on the 10th floor of One PPG Place.

**PJ Dick** continues work in Bakery Office Three and is the construction manager-at-risk for a 12,800 square foot fitout, including three speculative buildouts for future tenants and extension of the common area corridor.

**PJ Dick** is managing the third phase of the Lemington School renovations, including a renovation of the third floor, replacement of the high roof, and installation of a new elevator and shaft.

**PJ Dick** Mid-Atlantic is the general contractor for renovations and additions to First Tee of Greater Philadelphia's Walnut Lane Golf Clubhouse. The proposed renovations will increase the building footprint by nearly 3,000 square feet, and site improvements include pavement and relocating miscellaneous amenities.

**PJ Dick's** Construction Services Group – Concrete Division was awarded the concrete scope of work for the first phase of Penn State University Beaver Stadium Renovations.

**PJ Dick** Mid-Atlantic and Chiang | O'Brien Architects are providing design-build services for the 7,500 square foot renovation of the existing biology lab on the second floor of Woodland Building at the Penn State Abington campus.

**TEDCO Construction** was selected as general contractor for the $6 million renovations to Carnegie Mellon University's College of Fine Arts. Renaissance 3 Architects and H. F. Lenz Company are the architectural and engineering team.

Carnegie Mellon University also awarded a contract to **TEDCO Construction** for renovations to Baker Hall. The architect is Graves Design Group.

**A. M. Higley Co.** is the contractor for the Robert Morris University systems engineering, modeling and simulation lab renovation. The architect is RBA International.

Borough of Pleasant Hills awarded an $11.26 million contract to **DiMarco Construction** for the general construction portion of its new $15.7 million municipal building. The architect is Core Architects.

**A. Martini & Co.** is the general contractor for the tenant improvements for LPL Financial and Hapanowicz & Associates at Foster Plaza. NEXT Architecture is the architect.

Independence Health System awarded a contract to **A. Martini & Co.** for the $5 million renovations to Westmoreland Hospital Medical Commons One and Medical Commons Three in Greensburg, PA. The architect is JPT Architects.

**A. Martini & Co.** is the construction manager for a new $20 million research facility for the Center for Organ Recovery and Education at RIDC O'Hara Industrial Park. The architect for the project is DRAW Collective.

# **FACES &** NEW PLACES

**Jendoco Construction Corporation** announced the promotion of **James Messina** to project manager. He has a Civil Engineering Degree from Penn State University and has been involved in all project management aspects of the business since joining Jendoco in 2019.

**Dan Then**, who has been a full-time member of the **Jendoco** family for more than 22 years, has been promoted to vice president of special projects. Dan will continue to manage Jendoco's Verizon account, which includes bidding, constructing, and managing numerous projects throughout western and central Pennsylvania annually.

**Alex Brown** has joined **Rycon's** Pittsburgh office as payroll/ human resources administrator in the Human Resource department.

Clarion University of Pennsylvania alumnus, **Dustin DeTal**, has recently joined **Rycon's** Pittsburgh Special Projects Group as estimating coordinator.

**David DiGioia**, a Florida Institute of Technology alumnus, has joined **Rycon's** Building Group as project engineer.

**Spencer Girman**, Slippery Rock University alumnus, has joined **Rycon's** Pittsburgh Special Projects Group as assistant project manager.

With over 32 years' experience, **Andrew Lyscik** joined **Rycon's** Pittsburgh Building Group as project engineer/ quality control. He is an alumnus of Case Western Reserve University,

**Rycon's** Pittsburgh Building Group is excited to welcome **Joseph Petito** as a project engineer, bringing with him over 30 years of construction experience.

**Craftworks USA** is pleased to welcome **Curt Riegelnegg** as project manager. Curt is an alumnus of the University of Pittsburgh and the Dun Laoghaire Institute of Art, Design, and Technology in Ireland.

**Rycon's** Pittsburgh marketing department welcomes **Jessica Terrell**, Slippery Rock University alumna, as proposal coordinator.

**Rycon's** Pittsburgh Building Group welcomes **Joe Veltre** as quality assurance/quality control manager, with over 36 years of construction experience.

Carnegie Mellon University alumna, **Tanisha Yelaka**, has joined **Rycon's** Pittsburgh Special Projects Group as project engineer.

**Stephen Pellicciotta** joins **PJ Dick** as a project superintendent. He has more than 25 years of construction experience. He began his career as a stone mason and grew to own his own business for 10 years. Stephen has a Bachelor of Science in business management from Wesley College.

**Jenna Wilson** joined **Massaro Corporation** as a project engineer.

**Massaro Corporation** hired **Kelsey Swantek** as a project engineer in its Erie office. She is a Robert Morris University graduate with a B.S. in mechanical engineering and an M.S. in engineering management.

**Scott Kick** joined **Massaro Corporation** as site quality assurance/quality control manager.

**Cheri Keay** joined **Massaro Corporation** as a project engineer. She studied architecture at the University of Minnesota.

**Massaro Corporation** announced that **George Goff III** was hired as mechanical-electrical/plumbing manager. He served in the U.S. Army and worked previously in corporate facilities management and mechanical contracting.

**Zachary Sovek** joined **Massaro Corporation** as estimator. He is a graduate of Robert Morris University.

**Massaro Corporation** announced that **Patrick Schrum** had been hired as site safety specialist. He is a graduate of Indiana University of Pennsylvania with a bachelor's degree in criminology and a master's degree in safety sciences.

**Jaylyn Spitnale** joined **Massaro Corporation** as a marketing design specialist. She is a recent graduate of Bowling Green University with a degree in visual communication technology.

**Landau Building Company** announced the retirement of President **Jeffrey C. Landau** effective May 10, 2024. Jeffrey joined Landau as a warehouse assistant in 1976, and ultimately became president in 2011. **Jennifer Landau** has been promoted to president of Landau Building Company. Jennifer is a graduate of the University of Pittsburgh and earned a B.S and M.S. in Civil Engineering. She joined Landau Building Company in 1999 and has worked in various roles in estimating, project management, and executive management over the past 25 years.

# MBA MEMBERSHIP

## 2024 MBA OFFICERS

**President**
Raymond A. Volpatt, Jr., P.E.
Volpatt Construction Corporation

**Vice President and Treasurer**
Michael R. Mascaro
Mascaro Construction Company, LP

**Secretary/Executive Director**
David D. Daquelente

## 2024 MBA BOARD OF DIRECTORS

John Paul Busse
F.J. Busse Company, Inc.

Alexander G. Dick
Dick Building Company

James T. Frantz
TEDCO Construction Corporation

Michael Kuhn
Jendoco Construction Corporation

Jeffrey C. Landau
Landau Building Company

Anthony F. Martini
A. Martini & Co.

Steven M. Massaro, Past President
Massaro Corporation

David P. Meuschke
Burchick Construction Company, Inc.

M. Dean Mosites
Mosites Construction Company

Jake Ploeger
PJ Dick Incorporated

Jodi L. Rennie
Turner Construction Company

John W. Sabatos
Rycon Construction, Inc.

Neal Rivers (MICA President)
Easley & Rivers, Inc.

## GENERAL CONTRACTORS

A. Martini & Co.
AIMS Construction
Allegheny Construction Group, Inc.
Burchick Construction Company, Inc.
Caliber Contracting Services, Inc.
Carl Walker Construction, Inc.
CH&D Enterprises, Inc.
CPS Construction Group
Dick Building Company, LLC
DiMarco Construction Co., Inc.
E&G Development, Inc.
F.J. Busse Company, Inc.
Facility Support Services, LLC
FMS Construction Company
Fred L. Burns, Inc.
Gilbane Building Company
Independence Excavating, Inc.
Jendoco Construction Corporation
Kokosing Industrial Incorporated
Landau Building Company
Mascaro Construction Company, LP
Massaro Corporation
McCrossin
Menard USA
Mosites Construction Company
Nicholson Construction Company
PJ Dick Incorporated
Rocky Bleier Construction Group
Rycon Construction, Inc.
Shannon Construction Company
Spartan Construction Services, Inc.
Stevens Engineers & Constructors, Inc.
TEDCO Construction Corporation
The Albert M. Higley Company, LLC
Turner Construction Company
Uhl Construction Company, Inc.
Volpatt Construction Corporation

## SPECIALTY CONTRACTORS

A Crane Rental, LLC
A. Folino Construction, Inc.
A.J. Vater & Company, Inc.
Abate Irwin, Inc.
ABMECH Acquisitions, LLC
ACE Lightning Protection, Inc.
Advantage Steel & Construction, LLC
All Crane Rental of Pennsylvania, LLC
Alliance Drywall Interiors, Inc.
Amelie Construction & Supply, LLC
Amthor Steel, Inc.
Brayman Construction Corporation
Bristol Environmental, Inc.
Bruce & Merrilees Electric Company
Bryan Construction, Inc.
Burke & Company, LLC dba S.P. McCarl & Company
Burnham Industrial Contractors, Inc.
Buzzelli Group LLC
Centerpoint Painting Systems
Century Steel Erectors Co., LP
Clista Electric, Inc.
Cost Company
Costa Contracting, Inc.
Cuddy Roofing Company, Inc.
Dagostino Electronic Services
D-M Products, Inc.
Dom DeMarco Construction, Inc.
Donley's Concrete Group
Douglass Pile Company, Inc.
Easley & Rivers, Inc.
EMCOR Services Scalise Industries
Fay, S&B USA Construction
Ferry Electric Company
First American Industries, Inc.
Flooring Contractors of Pittsburgh
Franco Associates
G. Kidd Inc.
Gaven Industries, Inc.
Geo V Hamilton, Inc.
Giffin Interior & Fixture, Inc.
Gregori Construction Inc.
Gumpher, Inc.
Gunning, Inc.
Hanlon Electric Company
Harris Masonry, Inc.
Hatzel & Buehler, Inc.
HOFF Enterprises, Inc.
Howard Concrete Pumping, Inc.
Hunt Valley Environmental, LLC
J.J. Morris & Sons, Inc.
JLJI Enterprises, Inc.
Kalkreuth Roofing & Sheet Metal, Inc.
KELLER North America
Keystone Electrical Systems, Inc.
Kirby Electric, Inc.
Kusler Masonry, Inc.
L & E Concrete Pumping Inc.
Lanco Electric, Inc.
Lighthouse Electric Company, Inc.
Lisanti Painting Company
Marsa, Inc.
Massaro Industries, Inc.
Master Woodcraft Corporation
Matcon Diamond, Inc.
Maxim Crane Works, LP
McCrossin Foundations, LLC
McKamish, Inc.
Mele & Mele & Sons, Inc.
Mohawk Construction & Supply Inc
Next 150 Construction LLC
Noralco Corporation
Paramount Flooring Associates, Inc.
Phoenix Roofing, Inc.
Pittsburgh Interior Systems, Inc.
Precision Environmental Company
Pullman SST
RAM Acoustical Corporation
Redstone Flooring, LLC
Renick Brothers Construction Co.
Richard Goettle, Inc.
Right Electric, Inc.
Ruthrauff | Sauer, LLC
Saint's Painting Company, Inc.
Sargent Electric Company
Schindler Elevator
Schlaegle Design Build Associates, Inc.
Schnabel Foundation Company
Specified Systems, Inc.
Spectrum Environmental, Inc.
SSM Industries, Inc.
Swank Construction Company, LLC
T.D. Patrinos Painting & Contracting Company
Tarax Service Systems, Inc.
TRE Construction
Triple 3 Construction, LLC
Tri-State Flooring, Inc.
W.G. Tomko, Inc.
W.O. Grubb Steel Erection, Inc.
Wayne Crouse, Inc.
Worldwide Services LLC
Wright Commercial Floors
Wyatt Incorporated

## AFFILIATE MEMBERS

4CTechnologies
84 Lumber Company
A. L. Harding & Company
A.R. Chambers and Son, Inc.
ADMAR Construction Equipment and Supply
AEC Online Store
African American Chamber of Commerce of Western PA
Allegheny County Airport Authority - Pittsburgh International Airport
Alliant
American Contractors Insurance Group
American Producers Supply Company, Inc.
Amerisafe Group
AmeriServ Trust and Financial Services Company
Assured Partners of PA, LLC
Atlantic Engineering Services
Atlas Marketing
Atlas Wholesale Co., Inc.
AUROS Group
Babst Calland
Baker Tilly Virchow Krause, LLP
BDO USA, P.A.
Beemac Inc.
Beth-Hanover Supply Co., Inc.
Black Diamond Equipment Rental
Bowles Rice
Bronder & Company, P.C.
Building Point Ohio Valley
Burns & Scalo Real Estate Services, Inc.
Burns White, LLC
Cadnetics, Inc.
Case | Sabatini
CENTRIA
Chartwell Investment Partners
Chubb Group of Insurance Companies
Civil & Environmental Consultants, Inc.
Clark Hill PLC
Cleveland Brothers Equipment Co., Inc.
CliftonLarsonAllen LLP
Cohen and Company
Cohen Seglias Pallas Greenhall & Furman PC
Computer Fellows Inc.
Cozen O'Connor
CTR Payroll & HR
Dentons Cohen & Grigsby P.C.
DesignGroup
Desmone Architects
Dickie, McCamey & Chilcote, P.C.
Dingess, Foster, Luciana, Davidson & Chleboski LLP
Dollar Bank
DRAW Collective Architecture
Eckert Seamans Cherin & Mellott
ECS Mid Atlantic, LLC
EPIC Insurance Brokers & Consultants
EquipmentShare
Fahringer, McCarty, Grey, Inc.
FDR Safety, LLC
FieldForce Equipment Sales & Rentals, LLC
First National Insurance Agency
Fisher Phillips
Graystone Consulting Pittsburgh
H2R CPA
Henderson Brothers, Inc.
Henry Rossi & Co., LLP
HHSDR Architects/Engineers
Highway Equipment Company
Hillis Carnes Engineering Associates, Inc.
Huth Technologies LLC
IMA Corp
Intertek - PSI
J.S. Held
JLL
K&L Gates LLP
Karpinski Engineering
L & W Supply
LaFace & McGovern Associates, Inc.
Langan Engineering & Environmental Services
Liberty Insurance Agency
Liberty Mutual Surety
Lytle EAP Partners/Lytle Testing Services, Inc.
Maiello, Brungo & Maiello
Marsh
Marthinsen & Salvitti Insurance Group
McKim & Creed, Inc.
McNees Wallace & Nurick LLC
Meyer, Unkovic & Scott LLP
Meyers Company
Michael Baker International
Michael Brothers Companies
Milwaukee Tool
Mobile Air, Inc.
Mobile Medical Corporation
Morgan, Lewis & Bockius LLP
MSA Safety
MSW Supply
Multivista
NCI - Nursing Corps
New Millennium Building Systems
Newlons International Sales, LLC
NextEra Energy
Ohio Valley Drywall Supply
OVD Insurance
PenTrust Real Estate Advisory Services, Inc.
PGH Networks
Philadelphia Insurance Companies
Pietragallo Gordon Alfano Bosick & Raspanti, LLP
Pittsburgh Mobile Concrete, Inc.
R.J. Bridges Corporation
Reed Building Supply
Repco II
Republic Services, Inc.
RJR Safety Inc.
RW Supply & Design
Schneider Downs & Company, Inc.
Scotti Law Group
Seubert & Associates, Inc.
Solutions 21
Sprague Energy
Stanley Black & Decker
Stephany Associates, Inc.
Steptoe & Johnson, PLLC
Suburban Propane
Sunbelt Rentals, Inc.
The Gateway Engineers, Inc.
The Sherwin-Williams Co.
Tom Brown, Inc.
Travelers Bond & Financial Products
Triangle Fastener Corporation
Triumph Modular
Tucker Arensberg, P.C.
UBS Financial Services, Inc.
United Rentals
UPMC Work Partners
USI Insurance Services
Werner Co.
White Cap
Willscot-Mobile Mini
WNA Engineering, Inc.
WTW - Willis Towers Watson
Zurich NA Construction

# **CLOSING** OUT

BY JEFF NOBERS

The Bipartisan Infrastructure Law, signed into law two years ago, created a surge in construction projects. During 2023 alone, 192,000 construction jobs were added, according to the U.S. Bureau of Labor Statistics.

But the urgent need for skilled workers can't keep up with the demand. Part of that problem is the number of willing workers kept out of the job market for one reason: they lack the math, reading or digital skills to succeed in the workplace. This is a problem the state can solve, and one it must solve.

**Fundamental skills**

Alarmingly, nearly 18 percent of Pennsylvania adults fall into this category. For too long, Pennsylvania has neglected this vital part of the education and workforce system. Adult literacy programs serve as a lifeline for a substantial percentage of Pennsylvania adults who lack fundamental skills essential for meaningful participation in the workforce. Increasing adult literacy will not only help many workers but many different industries, not just construction.

The Builders Guild of Western Pennsylvania, which I direct, joins with Literacy Pittsburgh and other organizations offering these essential programs in urging a $15.5 million increase in the Department of Education's Adult and Family Literacy line item in the Commonwealth's FY24 budget. We also urge the creation of the $15 million Adult Education and Workforce Development Recovery Fund for short term flexible dollars to address the urgent need for skilled workers.

The Adult and Family Literacy line item was cut in half in 2008 and remained level-funding until the current budget's modest $2.8 million increase. Meanwhile, costs have climbed along with compliance requirements, reducing the value of the state's investment over time.

Additionally, the need for more skilled workers comes at a time when the pool of available workers continues to shrink, making reading and math training even more critical.

**New and innovative**

The Adult Education and Workforce Development Recovery Fund proposal will enable adult and family literacy providers and others to apply for one-time grants to expand capacity. It encourages new and innovative programming to help employers find skilled workers and help more Pennsylvanians get back to work.

Specifically, the fund would support partnerships with job training programs and employers, digital skills training, career services, and support for post-secondary costs – all issues identified by employers, job seekers, and adult education providers across the Commonwealth.

In Allegheny and Beaver Counties, the Builders Guild of Western Pennsylvania has collaborated with Literacy Pittsburgh, founded in 1982, to prepare hundreds of pre-apprentices for careers in the construction trades. Literacy Pittsburgh teaches Math for the Trades, enables individuals to attain a high school credential, teaches vital computer skills, and is developing a curriculum geared to specific union apprenticeship exams.

This is precisely the kind of partnership that helps fill the skilled trades talent pipeline with more prepared candidates. When the Commonwealth invests in adult and family literacy education, it invests in helping the construction industry and others find qualified candidates.

**Prioritizing adult education**

Literacy Pittsburgh has prepared thousands of local adults for work for over 40 years, helping them go from learning to earning and contributing to our region's prosperity. Additional resources will enable these programs to serve more adults needing improved skills, thus accelerating their ability to attain and retain the jobs employers need to fill.

A well-educated, skilled workforce drives economic growth. By prioritizing adult basic education, the Commonwealth can bridge the gap between workforce demand and supply, ensuring a sustainable, thriving future for Pennsylvania's industries.

*Jeff Nobers is executive director of the Builders Guild of Western Pennsylvania and PGH Works Together. He can be reached at jnobers@buildersguild.org.*

# Do

## your commercial real estate financing with us.

We offer comprehensive options for commercial real estate owners and developers.

Multi-family, industrial, retail, office and residential lot development.

New construction, renovation/conversion, refinance, acquisition financing, tax credit investments for affordable housing and bond financing.

**John Casile**
Senior Vice President
casilejp@dollarbank.com
412-261-8929

**Becky Yago**
Senior Vice President
yagora@dollarbank.com
412-261-4288

**Matt Bright**
Vice President
brightms@dollarbank.com
412-261-8959

DollarBank®
**Commercial Real Estate**