Commercial Real Estate Development WINTER 2019/2020

Development

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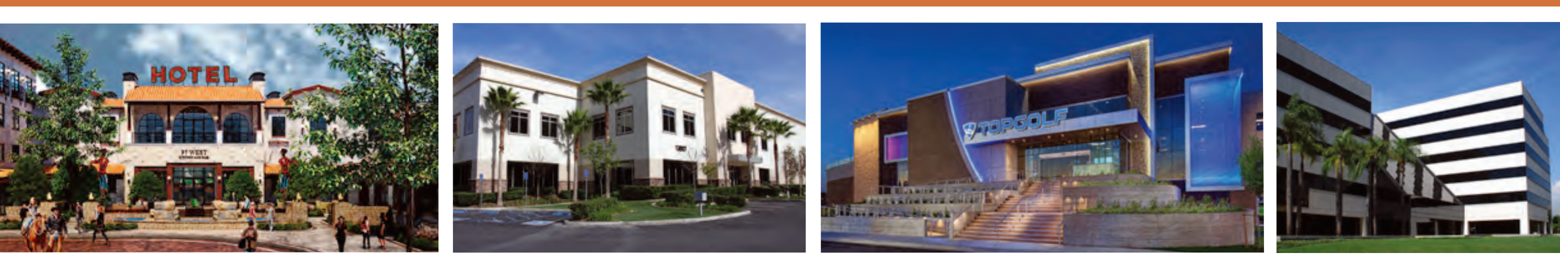

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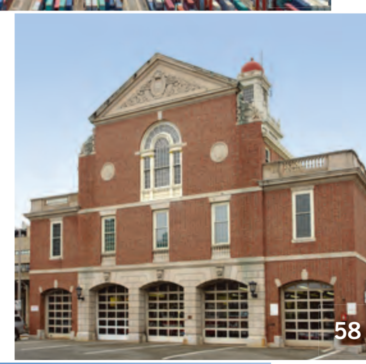

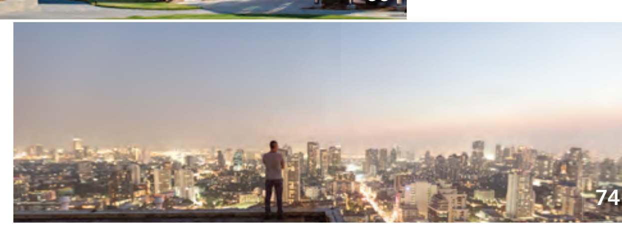

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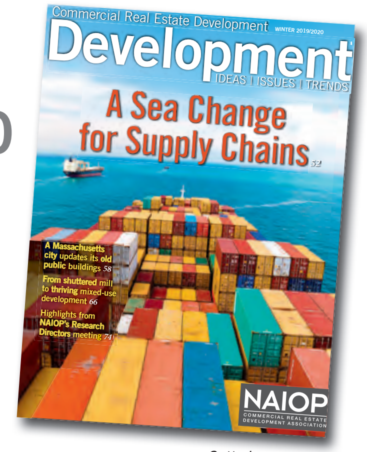

Getty Images

Global supply chains and transportation networks are facing rapid change thanks to technological advances and new consumer demands.

COLUMNS

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A Note From the Editor

Cautious Optimism Going into 2020

Despite signs pointing to an economic slowdown, the commercial real estate industry remains cautiously optimistic about what lies ahead. According to the NAIOP Sentiment Survey and Index, respondents expect continued growth in rents and a steady availability of capital.

Jennifer LeFurgy

This attitude was reflected in the sessions at NAIOP's CRE. Converge conference in Los Angeles in October (**see page 30**). Attendees discussed how the changing dynamics of the global and domestic markets, as well as the rise of technology, are influencing short- and long-term opportunities. A common topic of conversation was WeWork's recent troubles, yet many agreed that coworking and flexible-space business models will endure.

Stay informed,
Jennifer LeFurgy, Ph.D.
Editor-in-Chief

Rapid technological changes and new consumer preferences are reshaping supply chains and transportation networks around the world. What will be the impact on industrial real estate? (Page 52)

Preserving and maintaining older public buildings is an ongoing struggle in many municipalities. Cambridge, Massachusetts, recently adopted a citywide facilities improvement plan that addresses this problem. (Page 58)

An adoptive-reuse project at a 100-year-old textile mill in North Carolina shows how dormant historic properties can be transformed into vibrant mixed-use destinations in urban settings. (Page 66)

In October, NAIOP's Research Foundation gathered industry research directors for a discussion of city tier rankings, the future of coworking in the wake of WeWork, and other industrial and office trends. (Page 74)

Autonomous vehicles might not be speeding down roads anytime soon, but the commercial real estate industry needs to prepare for the implications of this driverless revolution. (Page 48)

Prohibition-era alcohol laws are still on the books in many parts of the country, and they have a negative impact on development. NAIOP chapters across the U.S. are working to change many of these antiquated regulations. (Page 82)

Offices that provide maximum flexibility for different work groups can improve employee engagement and boost productivity. A case study from Microsoft shows what that can look like. (Page 34)

Labor shortages are affecting 81% of contractors across the country, according to a new survey. That, in turn, is impacting delivery times for projects and raising costs. (Page 10)

Future NAIOP Events

- **2020 Chapter Leadership and Legislative Retreat**, February 3-5, Washington, D.C.
- **I.CON Spring 2020: The Industrial Conference**, April 1-3, Huntington Beach, California
- **2020 National Forums Symposium**, April 29-May 1, Boston
- **I.CON Summer 2020: The Industrial Conference**, June 3-5, Jersey City, New Jersey
- **CRE.Converge 2020**, October 6-8, Las Vegas

Most Popular From Fall 2019

1. **"Retail-to-Warehouse Conversions Gain Momentum"** (www.naiop.org/19retailtowarehouse, page 72)
2. **"Alexandria Real Estate Equities, Inc.: People, Passion, Purpose"** (www.naiop.org/19doy, page 56)
3. **"Port Covington: Building for Baltimore's Future"** (www.naiop.org/19portcovington, page 78)
4. **"How to Reposition a Building to Meet Changing Expectations"** (www.naiop.org/19buildingrenewal, page 28)
5. **"The Mezzanine Structured Finance Market is Here to Stay"** (www.naiop.org/19mezzaninefinancing, page 40)

Ware Malcomb CEO Lawrence R. Armstrong shares some of what he's learned about commercial real estate during his decades at one of the industry's leading design firms. (Page 32)

"Seamless" concrete floors are being installed in more industrial properties, but developers need to know the pros and cons of this product. (Page 16)

The NAIOP Research Foundation's latest report, "Profiles in the Evolution of Suburban Office Parks," examines how developers in the U.S. and Canada are modernizing older parks with new uses and amenities. (Page 80)

Pop-ups and other short-term uses for property are common across the country, but owners and tenants need to exercise caution when it comes to approvals, leases and other legal arrangements. (Page 19)

CRE.Converge 2019 in Los Angeles generated a lot of fascinating sound bites — and not just from Apple Computer co-founder **Steve Wozniak**, the event's keynote speaker. Review some of the comments from real estate professionals who were in attendance. (Page 30)

NAIOP's Developing Leaders Awards honor young professionals in the commercial real estate industry. The 2019 winners were recently recognized for their outstanding professional accomplishments, strong leadership and community involvement. (Page 90) ■


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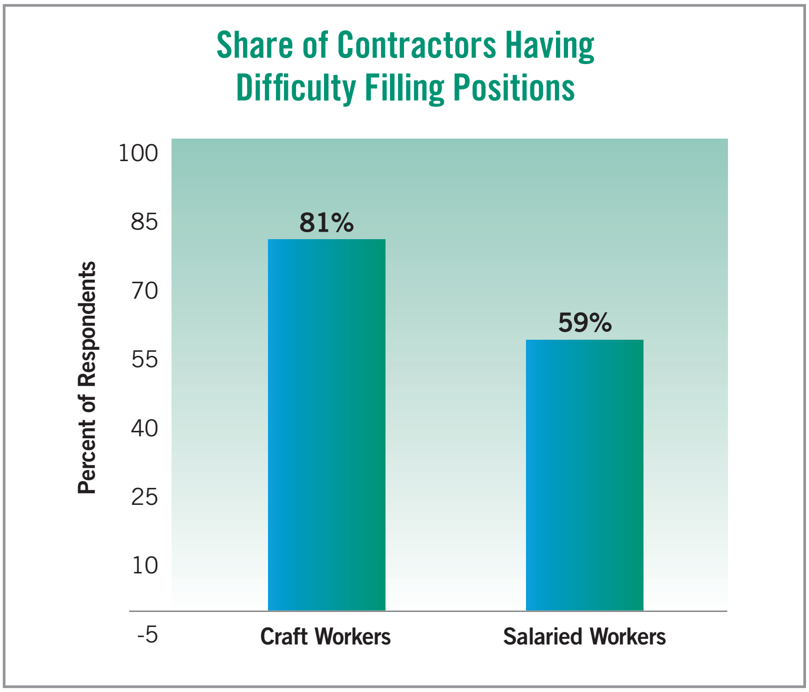
Workforce Woes Threaten Project Pricing, Timelines

Labor shortages affect 81% of contractors across the U.S. — and they don't see the problem improving any time soon.

Ken Simonson, Associated General Contractors of America

Commercial project developers and owners may need to brace themselves for higher prices and extended delivery times due to shortages of qualified construction labor, even though other costs have remained subdued.

The 2019 Autodesk-Associated General Contractors of America Workforce Survey, which AGC released in August, showed that contractors overwhelmingly expect to continue hiring in the new year but also that filling most hourly craft positions is getting more difficult. As a result, many firms have run into unanticipated costs and longer project completion times, and they are now adjusting bids for new projects accordingly.



Source: Associated General Contractors of America

Difficulty Filling Positions

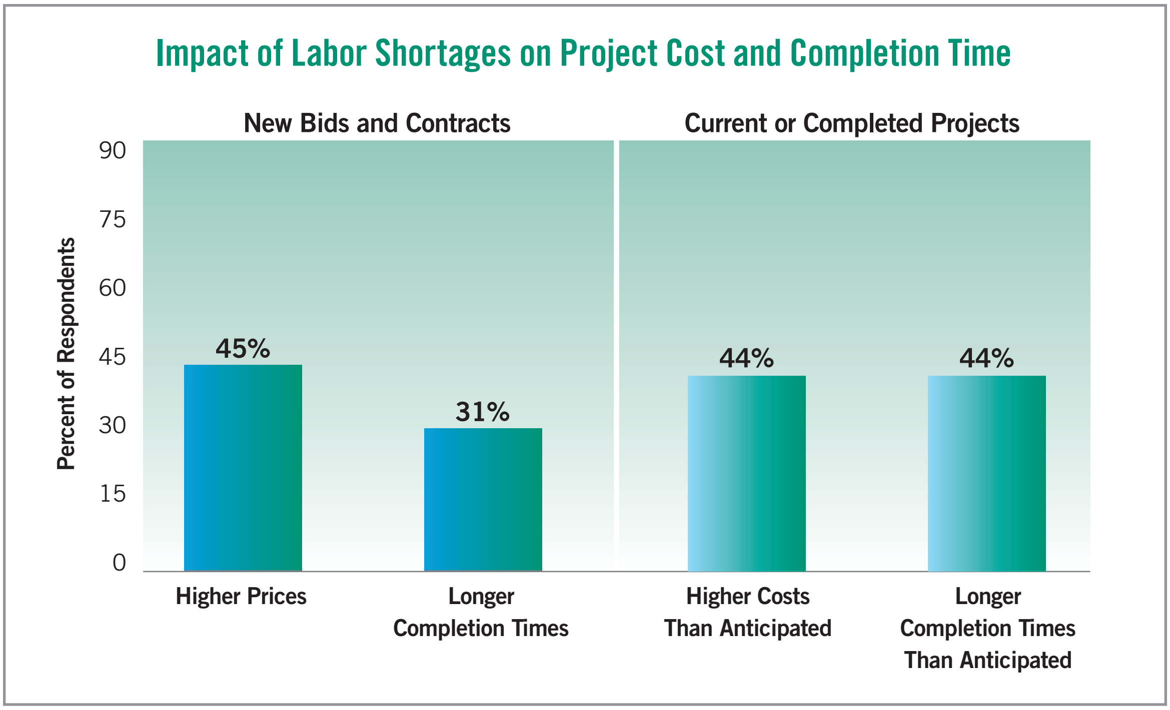
The survey gathered input from nearly 2,000 contractors nationwide that perform every type of construction other than single-family, including 994 respondents whose firms do building construction. Of those firms, more than nine out of 10 expect to hire hourly craft personnel in the next 12 months (77% for replacement and 15% for expansion). But roughly four-fifths of the respondents (81%) say they are having a hard time filling craft positions, while three-fifths (59%) say the same about salaried positions.

The worker shortages were pervasive across occupations. Respondents were asked about 20 specific craft positions. For all but one (traffic control personnel), building contractors reported that positions were harder to fill than a year ago. Nearly half (49%) of building construction firms also said project managers or supervisors were harder to find than a year earlier.

Contractors do not expect relief any time soon. Three out of four building contractors (74%) say they expect it will continue to be hard to hire craft workers or will become harder to do so in the next 12 months. More than half the respondents (57%) say salaried personnel will be as hard or harder to hire.

These results are consistent with government data. Bureau of Labor Statistics (BLS) reports show that the number of job openings in construction (including single-family) has set a record for each month so far in 2019. At the same time, the number of unemployed workers with recent construction experience has hovered near a 20-year low for each month. (The data is not adjusted for seasonal variation, so openings and unemployment

The worker shortages were pervasive across occupations. Respondents were asked about 20 specific craft positions. For all but one (traffic control personnel), building contractors reported that positions were harder to fill than a year ago.



Source: Associated General Contractors of America

in a given month should be compared only to the same month in prior years, not across months.)

In fact, the 373,000 openings in construction at the end of July exceeded the 361,000 job-hunters with construction experience in August. In other words, even if every one of those job-seekers had been in the right location with the right qualifications, contractors would still have had unfilled openings.

It's no wonder, then, that 44% of the building contractors in AGC's survey that were experiencing staffing challenges said costs had been higher than anticipated, presumably because they were spending more to recruit, train and retain workers and more on overtime to make up for the unfilled positions. An identical percentage said projects had taken longer than anticipated. In reaction, 45% said they had put higher prices into their bids or contracts, and 31% had quoted longer completion times.

PPI Reveals Rising Prices, Too

Another BLS series, the producer price index (PPI) for nonresidential buildings, also shows bid prices are climbing. BLS constructs the index by asking a fixed group of contractors each month what they would charge to erect the same set of school, warehouse, office, industrial (manufacturing) and health care buildings. That index has been rising at a 5.6% year-over-year rate in recent months. Indexes covering new repair and maintenance work by subcontractors are also rising significantly.

The takeaway is that contractors are struggling to find qualified workers in an increasingly tight and aging labor market. They expect those difficulties to continue, if not intensify, and they are passing along their higher labor-related costs to owners who are developing or renovating buildings. ■

Ken Simonson is the chief economist for the Associated General Contractors of America. He may be reached at simonsonk@agc.org.

It's no wonder, then, that 44% of the building contractors in AGC's survey that were experiencing staffing challenges said costs had been higher than anticipated, presumably because they were spending more to recruit, train and retain workers and more on overtime to make up for the unfilled positions.

District Center: A Downtown D.C. Office Reborn as a Smart Building

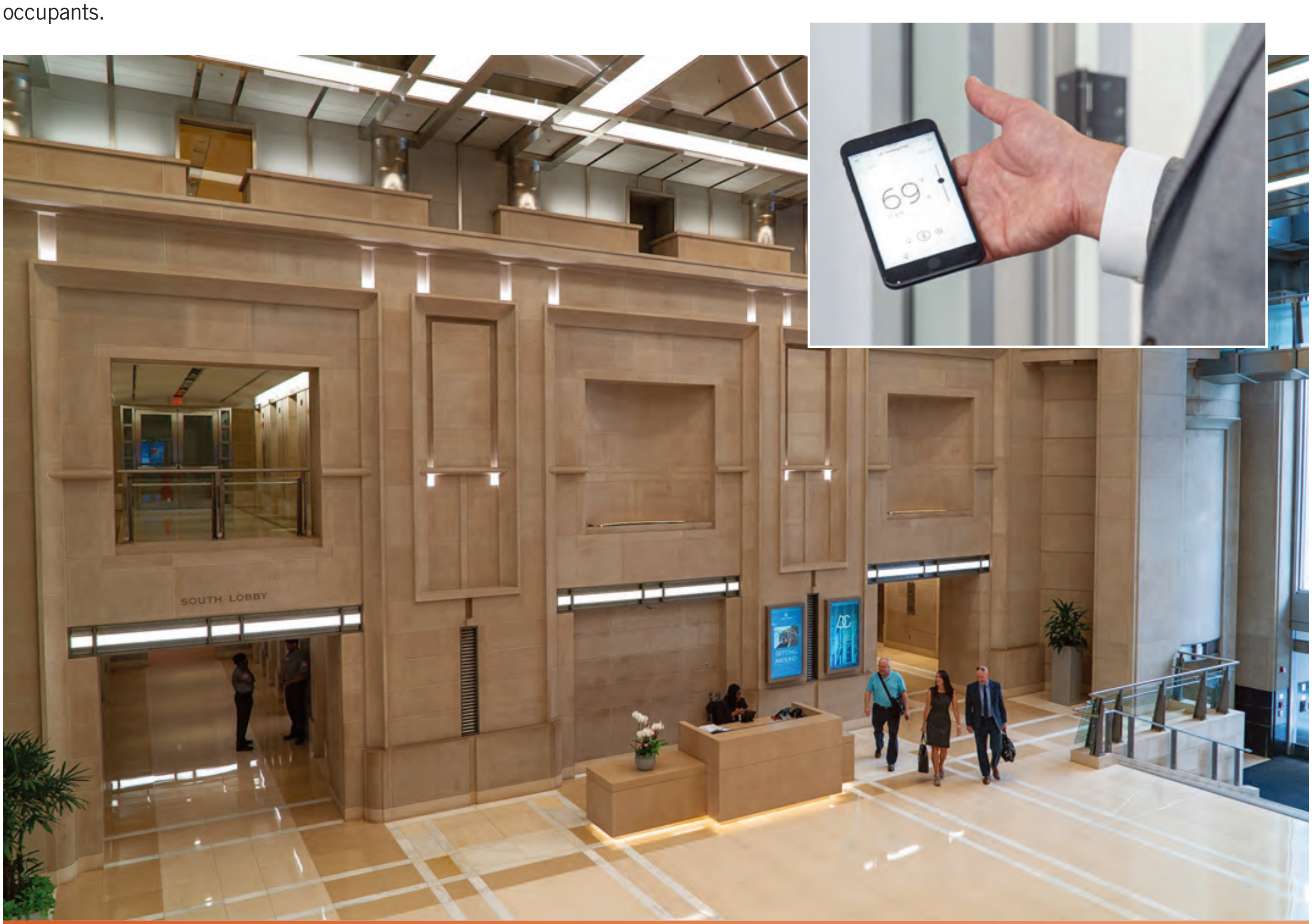
A 1990s-era workplace has been reinvented with technology to boost the tenant experience.

By Trey Barrineau

According to Dell and Intel's 2016 "Future Workforce Study Global Report," 55% of workers expect to be in a smart and connected office by 2023. The recent transformation of District Center, a 1990s-era building in downtown Washington, D.C., shows what that future might look like — and also how these technological advances can benefit both building owners and occupants.

"We will always manage a building as a cost center, but what if we were also thinking about a building as a strategic asset?" said **Laurent J. Vernerey**, president of Acuity Brands, which supplied the connected-building products used in District Center. "Think of it as an asset that allows the people inside a building to go about their business in a frictionless environment."

MetLife Investment Management and Norges Bank Investment Management purchased the 12-story, 910,000-square-foot property for approximately $505 million in 2014. Constructed in two phases between 1994 and 1998 and covering an entire city block, the new owners wanted to use technology to make it stand out in a competitive market. To do that,



District Center in Washington, D.C., offers multiple high-tech amenities to tenants, including ample digital signage and a dedicated app that can control lighting, room temperature and other environmental aspects.

MetLife engaged JLL's Smart Buildings Team to create a cutting-edge connected office.

"There were new buildings going up around the area that had the luxury of starting from scratch, but they wanted this building to be special, and they felt they could do that with technology," said **Yann Palmore**, vice president of JLL's Smart Buildings Program, during an event at District Center in June. "Tenants are changing the way they think about the buildings they want to be in, and our hope is that visualizing it in ways like this really does differentiate District Center and make this a more attractive place."

Because of the technology upgrades that JLL and its partners installed, District Center was recently named a "showcase project" by the Better Buildings Initiative of the U.S. Department of Energy (DOE). (Figures from the agency show that energy usage fell 33% in the building from 2014 to 2018.) Only 66 commercial buildings across the country have received that honor.

"The energy savings in my view are a great benefit and a reason to do it," said **Journey Williams**, vice president with SmartBT, the company that served as the project's system integrator. "But the main reason to do it is for the tenants and the occupants. It can help them integrate their work and personal lives."

The Platform

District Center's transformation began in 2017. The first step was the selection of a digital platform to oversee the systems in the building.

"To have a smart building, you have to have systems that can talk with one another, and they need to talk a common language so they can start sharing information and enable new sequences and new intelligence," Palmore said.

New & Noteworthy

719,000 sq. ft.

Capstone Development and **Quadrangle Development Corporation** recently opened **Columbia Place**, a 719,000-square-foot **mixed-use development** in **Washington, D.C.**, adjacent to the Washington Convention Center. The project is comprised of a 504-room dual-branded Courtyard by Marriott and Residence Inn by Marriott, 214 luxury apartments known as The Lurgan and retail on a 1.6-acre urban site. The project incorporates and reactivates eight historic buildings with a ground level-restaurant, retail, meeting spaces and hospitality suites.

460,000 sq. ft.

KDC, a developer of corporate build-to-suit projects, recently wrapped up construction on **Frost Tower** in downtown **San Antonio**. It covers 460,000 square feet of office space. Construction on the 23-story tower began in March 2017. The **Class AA office tower** is the first to be built in downtown San Antonio in 30 years. Cullen/Frost Bankers will lease approximately 60% of the tower. The building also includes a 400,000-square-foot wrap-around parking facility at its base, 20,000 square feet of ground floor retail and 10,000 square feet of tenant amenity space, including a fitness center.

405,420 sq. ft.

Scannell Properties recently started construction on two **speculative industrial buildings** in **Elgin, Illinois**. The first, a 36-foot-clear 325,020-square-foot structure, includes four drive-in doors, 367 auto parking spaces and 56 trailer parking stalls. The cross-docked building will accommodate up to 70 loading dock positions and can be subdivided to accommodate multiple tenants. The second building has 32-foot clear heights and spans 80,400 square feet. It includes two drive-in doors and 93 auto parking spaces. The building can accommodate up to 19 loading docks and up to three tenants.

"You need a platform in place that will scale with you and allow this communication to happen."

This platform, or Supervisory Control Management System (SCMS), can "aggregate the data from each of the systems into a common interface" so that different user groups can interact with the technologies in the building, according to the DOE Better Buildings Initiative. Palmore said the systems in District Center communicate via a secure IP network that is air-gapped, or not connected to outside networks.

Next came upgrades to the building systems. District Center needed new HVAC and lighting controls, new energy metering systems and a new security system. (The security infrastructure includes new systems for access control and video surveillance.) Built into the lighting are more than 1,000 multisensors powered by the internet of things (IoT).

True to their name, these multisensors perform multiple functions. They track occupancy levels for code compliance, check daylighting and artificial light levels, and measure temperature and air quality. Compared to older products, Palmore said their functionality is much more integrated.

"What's really been interesting through this project is how much of this happens on pretty much the same hardware," he said. "In the past, a lot of this would be very siloed. Now it's all happening in very similar hardware. That gives you a lot of flexibility and the ability to do some interesting things."

For example, each multisensor has a Bluetooth beacon for wayfinding and location-based services through a smartphone app. Target stores use the same technology to help customers find their way around.

Serving Up the Information

District Center's multisensors gather vast amounts of data, but not all of it is relevant to the different groups that use the building. For example, tenants need information that helps with their work, while operators and owners need analytics about building operations and maintenance.

"We boiled it down to two major interfaces for the tenants," Palmore said. "Digital screens via a dedicated smartphone app and digital signage throughout the building."

Palmore said the screens — both handheld and wall-mounted — convey personalized information that improves the occupant experience.

"For people who like to work and move around, there is a thermal map that shows the temperature gradient across a floor," he said. "So a warm-bodied person might choose to work in a colder area. The platform can expose all sorts of data that can be visualized on a screen."

Occupants can control lighting and temperature, reserve rooms and prepare them for presentations, raise and lower blinds, order food, track transportation options and much more through the smartphone app or wall-mounted screens throughout the building. The app even grants employees access.

"The days of carrying your badge around are gone in this building," Palmore said. "You use your mobile phone as your badge. That's one less thing you have to keep up with."

Challenges and Costs

As expected, putting a high-tech amenities package into an existing building presented unique challenges.

"Technical coordination and alignment between the various subcontractors and vendors can be challenging on projects with a high degree of systems integration," Palmore said. "It is important to have a technology representative on the project who understands the holistic view of the various systems and applications and can help the team work through issues as they arise."

The project also generated higher costs. While JLL didn't provide exact figures, DOE noted that the smart-building upgrades at District Center increased project costs by 15%. However, Palmore said costs for similar projects of this scope can be highly variable.

"With the right technical advisor and some initial time invested in developing a technology strategy, there exists numerous opportunities to modify project specifications in a way that have no impact to costs," he said, adding that other presentations from the MetLife team noted that the incremental costs to build "smart" were about 10% higher.

About District Center

NOTABLE: District Center was originally known as the Thurman Arnold Building when it opened in the 1990s. It is listed in the American Institute of Architects' "AIA Guide to the Architecture of Washington," which spotlights more than 400 notable properties in D.C.

LOCATION: The LEED Gold building is at 555 12th Street Northwest, less than a mile from the White House in the heart of Washington's business district. It is steps away from a major stop on D.C.'s Metro system.

AMENITIES: Fitness center, rooftop terrace, underground parking garage, secure bike storage, restaurants, spa services and shopping.

AWARD: District Center won the Unified Project of the Year for 2019 from Distech, a company focused on energy-management solutions in the built environment. Presented every two years, the award "singles out the commercial building project that best leverages connected lighting technology and intelligent building solutions," according to a release. ■

Looking Ahead

According to Williams, the new digital infrastructure "backbone" at District Center has the flexibility to adapt to the next generation of technology.

"It's very easy and cost-effective now to bring in new systems, and as new tenants and occupants come in, add new features and capabilities and leverage new data," he said. "This system pre-positions each tenant to add their existing systems and reduce the cost of adding all the futurist features without the normal cost of entrance into the experience."

Williams believes that is one of District Center's biggest selling points.

"Each floor already has a lighting system in place," he said. "A new tenant or an existing tenant doesn't have to invest in that base hardware and that base programming to extend it into their space. They can plug in to the existing network that MetLife already funded and at a lot less cost to them. That's really what I applaud this team for."

District Center's ability to adapt to new technologies and provide a pleasant work environment should help tenants attract and retain younger workers. That, in turn, should continue to make it an attractive property for the owners.

"If we look at the next generation coming onto the market and their expectations, and if you look at the mobile apps that are popping up on a daily basis, those are redefining our expectations as individuals," said **Scott Hamilton**, executive vice president of sales with Distech. "We're really able to allow our clients to change their buildings from ordinary spaces to something that's really more strategic, and that allows them to optimize their business." ■

Trey Barrineau is the managing editor of Development magazine.

New & Noteworthy

367,808 sq. ft.

Meridian Design Build recently broke ground on a 367,808-square-foot multitenant **speculative industrial building** for **Exeter Property Group** in **Indianapolis**. The new facility is located on a 31.6-acre redevelopment site. The 36-foot clear height building is designed to accommodate up to 80 dock positions, four drive-in doors, 304 auto parking stalls and 41 exterior trailer stalls. Architectural services are being provided by JRA Architecture. Banning Engineering is overseeing the civil engineering work.

337,856 sq. ft.

Transwestern Development Co. will develop a two-building **industrial project** encompassing approximately 337,856 square feet of Class A warehouse space in **Eastvale, California**. The project is expected to be completed by late summer 2020. Both structures will provide fenced and secure truck courts, ESFR fire suppression and extra yard trailer storage. Building 1 will total 267,652 square feet and have 36-foot ceiling clearance, with Building 2 encompassing 70,704 square feet and a 32-foot ceiling clearance. The site is in the Inland Empire West submarket, which is home to the busiest rail corridor in the U.S., served by Union Pacific and BNSF.

176,000 sq. ft.

RAL Development Services (RAL) has announced **Zero Irving**, a new mixed-use development that will bring 176,000 square feet of amenitized, newly constructed Class A **office space** across 14 floors to **New York's Union Square**. The project also includes a technology training center and incubator, coworking spaces, state-of-the-art event space and a street-level food hall on the seven floors beneath. Zero Irving is fully financed and currently under construction, with delivery expected in late 2020.

Are 'Seamless' Floors a Smooth Choice for Industrial Properties?

They can ease movement inside facilities, but they also come with design challenges.

By Kevin MacDonald, Beton Consulting Engineers

Bump bump. Bump bump. Bump bump.

This sound is common in a warehouse or plant where forklifts are in operation. Each of those bumps is an impact as the wheels cross the joints. It's also the sound of damage — to the slab, the vehicle and possibly the operator as well.

In recent years, more interest has focused on developing "seamless" or near-seamless floors, particularly for use in industrial and distribution facilities. These products need less repair and provide smoother surfaces for forklifts and other vehicles. They also ensure that goods stacked on pallets don't fall over.

Reducing or eliminating joints yields savings in various ways. For example, the joints do not deteriorate, the vehicles traveling across the slab do not receive as much vibration and impact, and the entire slab is available to resist loads, not just the areas defined by the joints.

They are safer for workers, because they can prevent forklifts from tipping over or wire-guided lifts from coming off track. They can also reduce trip-and-fall injuries. Both are among the biggest hazards in warehouse settings. According to the Occupational Safety and Health Administration, about 85 forklift operators are killed in accidents each year, and nearly 100,000 are injured. Statistics from the National Safety Council show that more than 12,000 workers in warehousing and transportation were injured in falls in 2017, and 47 died.

However, it's important to note that the advantages of seamless floors can be difficult to achieve in practice, and they demand careful design and construction.

Getty Images

Smooth floors in warehouses and logistics facilities can make the movement of vehicles and workers easier and safer.

The Advantage of Seamless

Soil-supported concrete represents almost a third of all concrete used in real estate. Much of it is for pavement and interior slabs that distribute vehicle, storage and machine loads, and it is found in a wide range of commercial properties.

Slabs typically come with sawn or preformed joints spaced 24 to 36 times the slab thickness. Spacings larger than this can lead to uncontrolled cracking between the joints.

Even if that does not occur, the joints themselves are cracks. Joints address the shrinkage that occurs in concrete as it dries, resulting in stresses as the slabs are restrained. Where these stresses exceed the tensile strength of the concrete, the concrete will crack. Cracks also occur due to bending of the slab under loading, which is dependent on the stiffness of the concrete and the soil below. The cracks can act as hinges, reducing the stresses caused by loads.

These joints and cracks cause problems with the maintenance of the facility and equipment, as well as with the health and safety of the building's users. The maintenance occurs at the joints where loads move across them. In warehouses, these joints exacerbate forklift maintenance and repetitive-stress injuries among workers, and they can also be a tripping hazard. Additionally, the presence of incompressible materials in the joint such

In "seamless" or near-seamless floors, the joint spacing extends to 100 times or more the slab thickness. The reduction in the number of joints means the slabs need fewer repairs. This reduces joint impacts as well.

as small pebbles can cause raveling (progressive failure of the joint) and joint damage.

In "seamless" or near-seamless floors, the joint spacing extends to 100 times or more the slab thickness. The reduction in the number of joints means the slabs need fewer repairs. This reduces joint impacts as well.

Two Ways to Go

While there are several technical approaches to create seamless floors, there are two main methods to specify the floors. Each has benefits and risks.

The first is a traditional approach in which the building plans specify technical details in the documents and contractors submit bids in a traditional manner. The second approach is to highlight the slab areas in the site plan, indicate the loading conditions and require a specialized design/build operation to install a slab that meets the performance requirements.

The advantage of a detailed prescription specification is that the owner can exert a high degree of control. This

New & Noteworthy

163,056 sq. ft.

LBA Realty recently wrapped up the **LBA Promenade Warehouse** in **Corona, California**. The new, 32-foot clear tilt-up **industrial building** is comprised of 163,056 square feet, including 5,000 square feet of office space and a 2,500-square-foot wood mezzanine. Located in an M-1 Light Industrial Zone, the building includes a full concrete yard, 20 dock-high roll-up dock doors and an ESFR sprinkler system. The new urban infill facility replaces an obsolete metal building.

138,400 sq. ft.

C.W. Driver Companies recently completed the new **student services building** at **California State Polytechnic University, Pomona**. The three-story, 138,400-square-foot structure consists of two buildings beneath an undulating roof that uses natural solar power to regulate the building's temperature and energy efficiency. The structure's roof design by CO Architects helped the project achieve its LEED Platinum Certification. Without using mechanical or electrical devices, the roof collects, stores and distributes solar energy in the form of heat in the winter and rejects solar heat in the summer.

104,000 sq. ft.

Crescent Communities will start development on a **flex office and industrial facility** in **Fort Mill, South Carolina. Stateline Logistics Center** will offer 104,000 square feet of single-story shallow bay commercial space with 24 feet of clear height. The project will include 26 trailer parking spaces in addition to surface parking. Stateline Logistics Center is located within Lakemont East Business Park and offers immediate access to both Interstates 77 and 485 with direct visibility to I-77.

approach is best when the designer has familiarity with the systems and the teams doing inspections. It's riskier, though, because the designer is responsible for the performance.

A performance-based specification is a metric such as crack frequency, extent or width that defines how well the concrete works. The advantage of this approach is that the owner does not need a specialist engineer, and expectations are clearly mapped out. However, the costs can be higher.

Construction Techniques

Several methods can maintain the stresses in the slab below the failure point. These include reducing shrinkage, reducing curling stresses, increasing the tensile strength of the slab and improving the distribution of stresses. Some projects employ more than one method. Regardless of the method, proper soil support is critical, because the curling stresses increase as the span between joints increases.

The simplest method of joint extension is to reduce the shrinkage of the concrete. Low-water-content mixtures or admixtures can reduce shrinkage, along with two-course wet-on-wet systems such as Ductilcrete that can extend the joint spacing up to approximately 50 feet.

Slabs can be post-tensioned so that they are in compression at all times under load. This method is best specified by indicating the required forces for post-tensioning and leaving the stressing to the contractor.

Adding fibers can increase the concrete's tensile strength and boost joint spacing by up to 100 feet. Low-modulus fibers don't have enough stiffness to carry more load than the concrete they replace, so they have little effect. Stiffer polymer fibers are more effective, as are steel fibers. Special equipment can place the fibers into ready-mix plants or trucks without balling, and the use of water reducers helps in distribution.

Regardless of the construction method or the technologies employed, it's possible to build large-span slabs that provide all the strength of conventional slabs without any issues arising from the use of joints. If facilities need to expand, the slabs can be added on to as readily as any conventional slab.

The most effective way to avoid shrinkage is to design cement that expands upon setting. When constructed properly, it works well. However, the placement of individual reinforcing steel bars and the detailing requires a degree of effort that is far higher than what is normally seen in slab construction. That's why specialist contractors do most of this work.

Specialized Products

Systems exist that can be placed with essentially no limit on the span between joints. The combination of shrinkage-compensating concrete and steel fibers has shown promise in execution.

These are often installed as proprietary systems. Examples include Ductilcrete or the Primx system. They remove some of the risk of using seamless joints by passing on the design and construction requirements to specialized contractors.

Many of these systems have specific warranties. Some products are more generic, supported by admixture or ready-mix concrete providers, and they can be specified as bid-build installations. These systems can be installed at nearly the same cost as traditional slabs in projects where the design takes advantage of the reduced curling stresses to provide a thinner floor with the same strength.

Regardless of the construction method or the technologies employed, it's possible to build large-span slabs that provide all the strength of conventional slabs without any issues arising from the use of joints. If facilities need to expand, the slabs can be added on to as readily as any conventional slab.

However, there are bigger risks associated with these slabs than those encountered in normal slab construction. Where joints are installed, some out-of-joint cracking can occur without affecting the performance of the slab in any meaningful way. Where there are no joints, and the slab begins to crack due to design or construction errors, there can be frequent and extensive cracks. This can have a major impact on the performance of the slab and its maintenance costs.

Anecdotally, it seems that these installations are either very successful or very problematic. This typically occurs because either the designer or the installer is not aware of the fundamental aspects of the structure's performance. An important factor in avoiding poor performance is to have both designer and contractor aware of the key performance requirements and how to measure and achieve them. ■

Kevin MacDonald is the founder and president of Beton Consulting Engineers.

Solving the Pop-Up Puzzle: Tips for Owners and Short-Term Tenants

There are a lot of reasons for developers to embrace these temporary spaces, but due diligence is required.

By David Schneider and Herman Lipkis, Holland & Knight LLP

Pop-ups and short-term uses for commercial property have grown from a trendy concept into a means of monetizing vacant or underused spaces. Moreover, as improved and varied amenities have become a priority for commercial and residential tenants, real estate developers are starting to reframe how they think about existing and future development.

Creating an environment is as much an art as it is a science, and achieving it requires rethinking decades-old philosophies on return on investment. The benefit of these activations may be difficult to quantify, but their importance to creating a place is unquestionable.

However, establishing a pop-up haphazardly could make short-term uses unjustifiably expensive and risky. Done right, short-term uses can breathe new life into any development.

To successfully incorporate short-term uses into a development, due consideration must be given to any approvals needed by the local government, as well as the drafting and negotiation of the lease or license agreement.

Zoning and Regulatory Considerations

Before negotiating with the potential short-term user, it is critical to know

New & Noteworthy

40,000 sq. ft.

H. Hendy Associates recently completed a new **corporate office** in **Irvine, California**, for **Paciolan**, a provider of entertainment event ticketing, fundraising, marketing and analytics solutions. To enhance business operations and create opportunities for cross-functional work, the first floor features an open office layout including 14-foot-high ceilings and numerous work and meeting spaces. Key elements include sit-stand workstations; on-demand collaboration zones with white boards and HDTVs; huddle rooms, and small, glass-enclosed conference rooms.

25,621 sq. ft.

CommonGrounds Workplace, a coworking company, recently opened its first Texas location in downtown **Fort Worth**. The 25,621-square-foot **workplace** encompasses the entire ground floor below a multistory parking garage. The entry wall features a black and white hand-painted mural by local artist **Marnie Vollenhals**, with a nod to Fort Worth's historic stockyard roots. With windows on all four sides, the location provides an abundance of natural lighting and multiple live plant walls. An INVITA barista offers Italian coffee beverages for members.

23,000 sq. ft.

Construction has wrapped on a new **headquarters office building** for **Forest Group** in **Vaughan, Ontario**. The new three-story, 23,000-square-foot office building was built adjacent to the company's existing office building. The ground and second floors were designed as multitenant office space, while the third floor was designed for Forest Group as a single-tenant user. A two-story tenant lobby features a striking staircase between floors. ■

Do you have a new and noteworthy project in the planning, design or construction stage that you'd like to share with fellow real estate professionals? Send a brief description and high-resolution rendering to developmentmagazine@naiop.org.

what type of short-term uses are allowed in your jurisdiction. The analysis should begin with understanding whether the use is permitted by right or whether some form of approval or entitlement is necessary. For example, if a restaurant is allowed within your building by right, then adding a pop-up restaurant is only a question of the duration of occupancy and not use.

Short-term activations are popular in planned unit developments, which strive to establish a sense of place and often encourage activations. However, some jurisdictions limit uses to only what was agreed upon in the development approvals. Many older planned developments that are now looking to revitalize may not include a provision allowing short-term uses in their approvals.

Adding a new structure or use may require amendments to the underlying entitlement, which can be costly. Even if there are no immediate plans for temporary uses, developers currently in (or planning to engage in) the entitlement process should consider incorporating flexible approvals that allow for temporary uses to prevent the need for amendments later.

To successfully incorporate short-term uses into a development, due consideration must be given to any approvals needed by the local government, as well as the drafting and negotiation of the lease or license agreement.

Courtesy Tysons Biergarten

The Tysons Biergarten in Tysons, Virginia, a suburb of Washington, D.C., is an interim use occupying a vacant building that will eventually be demolished to clear the way for the construction of a high-rise building.

Given the positive financial impact of these short-term activations, economic development groups in various jurisdictions are becoming more attuned to the rise of pop-ups. They can advocate for streamlined or simplified processes. This is particularly true in jurisdictions with zoning ordinances that have not been updated in decades. In addition, landlords should investigate whether there are administrative solutions, such as obtaining a determination from a jurisdiction that the proposed temporary use is in substantial conformance or compliance with the underlying entitlement.

Before interacting with the local jurisdiction, try to ascertain the duration of the use. Everyone has a different definition of "temporary." Some view an activation as a weekend event, while others consider it a land use until the ultimate planned development is delivered, which could take years. Some zoning ordinances will include provisions that allow for temporary permits, which are subject to less scrutiny, if the activation is limited to a few weeks.

Even if zoning approval is not necessary, most jurisdictions will still require site plan and building permits. While zoning may be a gray area that can be negotiated, jurisdictions will typically not waive or modify health, building and fire code requirements. Seeking exceptions from these public safety codes can add costly and long delays. It is essential to give attention to what will be required to satisfy these codes up front during the zoning process. Some codes do not distinguish between temporary uses. Therefore, certain issues, like limitations on land disturbance that trigger other requirements such as stormwater management, may be triggered if not contemplated upfront.

Drafting Considerations for Pop-Up License Agreements

In addition to municipal code requirements, owners and potential tenants should pay particular attention to the drafting of the terms and conditions of the lease or license agreement.

Many pop-up arrangements use license agreements rather than retail leases. A license agreement provides the licensee the right to occupy a space temporarily while possession of the property remains with the licensor. If the parties intend to enter into a license agreement, they must pay particular attention to the drafting as courts often ignore titles and review the language carefully in determining whether a document titled "license agreement" is actually a lease.

Unlike a conventional retail lease, license agreements are typically short and avoid many controversial issues, eliminating the time and expense of lengthy negotiations. For example, common-area maintenance expenses are not practical for short-term pop-ups operating for a few hours or days. Moreover, the time it would take a tenant or licensee to set up utilities and other services may exceed the term of occupancy.

Short-term activations are popular in planned unit developments, which strive to establish a sense of place and often encourage activations to help the whole development. However, some jurisdictions limit uses to only what was agreed upon in the development approvals.

Businesses entering into license agreements must understand that landlords will likely resist accepting certain tenant-friendly provisions common in leases, such as alteration, assignment, sublease and holdover rights. Landlords have limited remedies for defaults in license agreements and should require considerable security deposits, guarantees and indemnifications from the licensee, which will survive the termination of the agreement or term of occupancy.

Since a license agreement may not include operating expense provisions typically found in a retail lease, landlords must carefully consider their own costs as well as the proposed licensee's needs in determining the license fee. Landlords should afford themselves a comfortable cushion when factoring maintenance, insurance, taxes and other costs into the license fee calculation. Conversely, pop-up licensees should request and review a detailed breakdown of the property's operating expenses to assist them in negotiating the license fee and other payments.

Responsibilities of the Licensees

Many pop-ups do not have time to perform a detailed property inspection and may have to accept a space "as-is." However, licensees should demand that the landlord deliver the space in good condition and free of any violations that could negatively affect the licensee. Licensees can request that landlords represent in the agreement that the space complies with all applicable municipal and zoning codes, and they should review the property's certificate of occupancy, if available. Landlords should approach such representations with caution since a licensee's intended use may raise questions of compliance with local zoning.

Even though it may not have the resources of a long-term tenant, a pop-up business should perform as much due diligence on a property and the owner as possible. Licensees should beware of red flags, such as a property or owner with a long history of municipal violations, litigation or complaints from neighbors. Conversely, a pop-up operation is not necessarily as invested in a property as a long-term tenant. Therefore, landlords should demand liberal access to the space to monitor for damage, environmental hazards and other violations.

Temporary retail and other pop-ups have grown into a multibillion-dollar industry that continues to evolve. Before pursuing such activations, both developers and pop-up operators should understand and obtain any necessary governmental approvals and carefully draft their lease or license agreement to ensure their interests are properly protected. ■

David Schneider is a land use and zoning attorney in Holland & Knight LLP's Tysons, Virginia, office. **Herman Lipkis** is a real estate and hospitality attorney in Holland & Knight LLP's Fort Lauderdale, Florida, office.

Landscape Architecture Can Help Reboot the Suburban Office Park

Activated outdoor spaces boost employee engagement and well-being.

By James Heroux, Copley Wolff Design Group

Expensive housing in urban areas is sending millennials back to the suburbs, and they're bringing refined expectations and lifestyles with them. At the same time, employers are questioning the rising costs of their own downtown office spaces, and they're seeking more affordable locations.

As a result of the movement back to the suburbs, office parks are making a comeback, but this time with a modernity embraced by former city dwellers who prioritize lifestyle and community. (**See related article on page 80.**) Landscape architecture can play a vital role in the new suburban office park.

The Shifting Economy and The Talent Search

From 2007 to 2009, the recession drove many companies to abandon or downsize their suburban campuses for urban cores. With lively 24-hour amenities and high degrees of walkability, these downtown zones were considered ideal for attracting younger workers. This sought-after group, fresh out of college campuses also full of around-the-clock amenities, tended to prefer smaller living footprints and proximity to services that allowed more time for entertainment and exercise.

Flash-forward to today. The growth of cities has manifested itself in higher square footage costs for businesses and residents, pushing both to consider more economical options. Combined with the maturing of the millennial workforce, this is driving the need for more space, especially as this age group starts families.

Many office park owners recognize this trend and understand that their properties must provide the same convenience and energy found in urban settings to place themselves ahead of their competition.

Suburban Reboot: Energizing Through Amenities

Today's suburban office parks are no longer isolated indoor spaces where workers clock in and out. They are multipurpose destinations with amenities and connected green spaces. Many industries are updating their campuses to include workout facilities, eateries, personal and childcare services, and community spaces for entertainment, social gatherings, food trucks, art markets and more.

Sun Life Financial's suburban campus in Wellesley, Massachusetts, is an example. The company built its corporate headquarters there in the early 1970s. Changing work patterns, shifting demographics and a diversified technology-based workforce drove the company to rethink a single-use campus and transform the property into a multitenant community. The campus, rebranded as Park 9, includes four buildings and a structured parking garage set in a detailed landscape.

Copley Wolff Design Group worked with Sun Life Financial, JLL and Bentall Kennedy to rebrand the campus, with the goal of achieving a modern outdoor space anchored by all four buildings.

Photo courtesy Anthony Crisafulli

Software developer Mathworks, based in Natick, Massachusetts, created a unified campus plan for its headquarters that added new walking trails and outdoor collaboration spaces.

Completed in 2018, the landscape architecture firm improved the employee experience at the office park by designing a central outdoor amenity courtyard for gathering, working, taking breaks and hosting events. This feature gives employees more space in which to collaborate and unwind.

To encourage people to bring their work into nature, a custom-designed pergola protects employees from the sun at outdoor workstations with electrical connections. Stone walls and plantings separate users from

As a result of the movement back to the suburbs, office parks are making a comeback, but this time with a modernity embraced by former city dwellers who prioritize lifestyle and community. And landscape architecture can play a vital role in the new suburban office park.

roads and parking areas that may be disruptive.

The open lawn that links the buildings together provides space for recreational activities such as cornhole, Jenga, yoga and more. Tenants can also hold large events there such as parties, retirement celebrations and other activations. Ambient lighting provides an ideal evening atmosphere.

Connecting Healthy Spaces

In the past, stand-alone office parks were the norm. Today, there is a newfound desire to integrate these properties into their neighborhoods, incorporating biking and walking paths and places for exercise. Greenspace itself is beneficial to employees' health and well-being.

To be relevant, today's suburban office parks are no longer isolated indoor spaces where workers clock in and out. They are multipurpose destinations with amenities and connected green spaces.

MathWorks, a software developer, created a unified campus plan with new buildings, parking garages and distinctive common space in Natick, Massachusetts. Planning for this project began in 2008, and the project was completed in 2014.

Copley Wolff Design Group provided planning and design services for the exterior spaces, which includes new pedestrian open spaces, outdoor collaboration spaces and dining plazas that recall traditional campus yards. The outdoor spaces provide a social atmosphere for MathWorks' software writers and developers.

To accentuate the nature onsite, increase walkability and improve the overall aesthetic, extensive buffers

were created to mitigate the impact of the campus' vertical structures on the neighbors. Many of the plantings for the buffers were harvested from the existing site. Additionally, the first level of the five-level West Parking Garage is below grade to lower the height of the building.

The landscape design also includes a trellis fencing system on the eastern façade of the parking structure. It is planted with clematis and conceals cars traveling through the campus. To reduce maintenance costs, most of the lawns were converted into field grasses and wildflowers, which allows for beautiful seasonal change on the landscape.

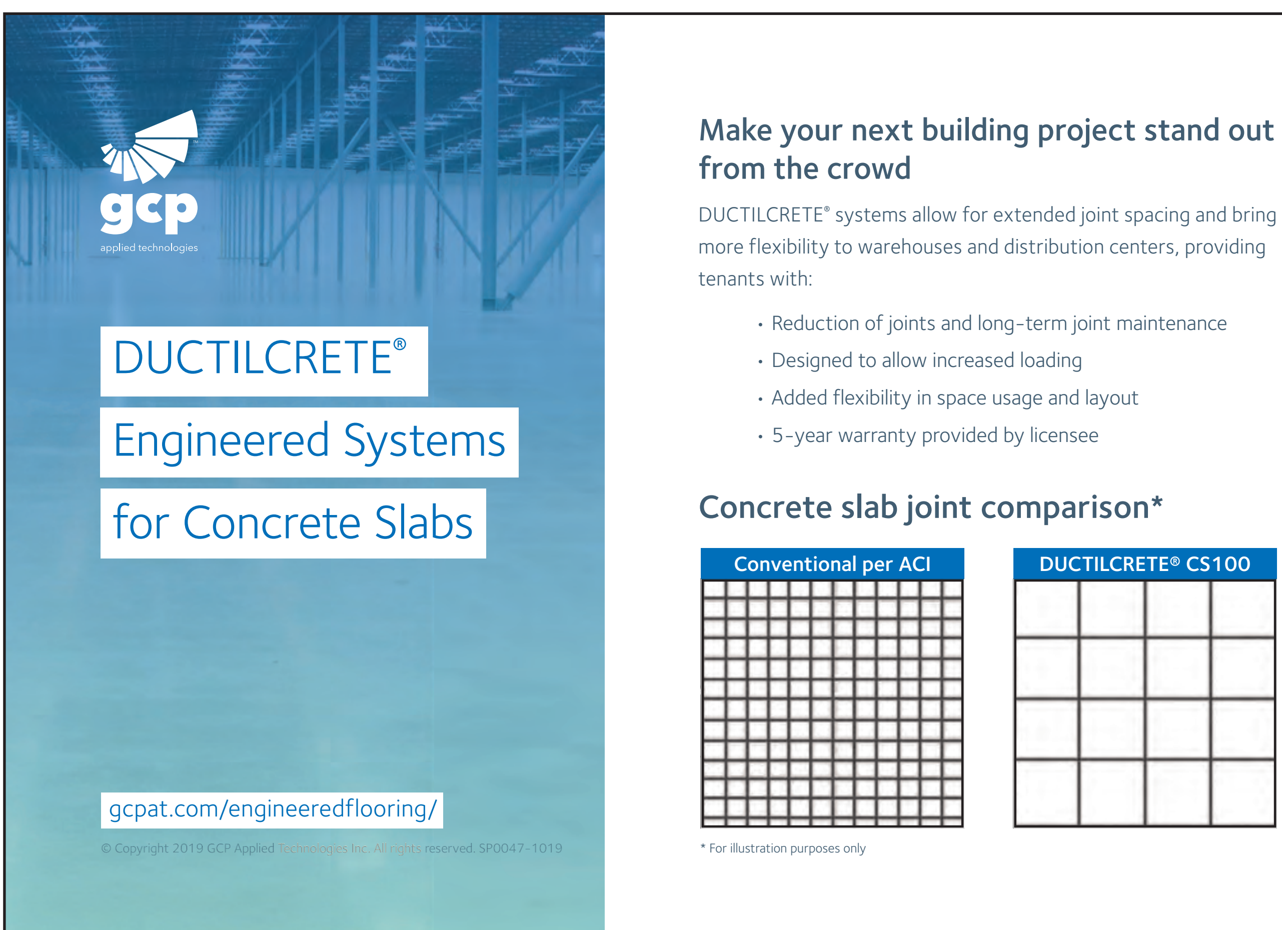
With the ebb and flow of workers from the city to the suburbs driven by costs and personal needs, companies increasingly accommodate new lifestyle expectations at work.

Bringing it All Together

With the ebb and flow of workers from the city to the suburbs driven by costs and personal needs, companies increasingly accommodate new lifestyle expectations at work. That includes placing more of a priority on the outdoor spaces surrounding office buildings.

Landscape architecture not only plays a crucial role in designing functional and attractive office parks, it also can enhance a company culture that embraces community, wellness and flexibility. ■

James Heroux is a principal with Copley Wolff Design Group.



A Unique Water Feature for Any Climate, Any City

Artificial lagoons can bring white sand beaches to surprising locations.

By Alec Templeton, AE7

Developers are going to extreme lengths to create unique destinations. In what some have termed an "amenities arms race," features like indoor gyms, swimming pools, movie theaters and resident lounges are no longer enough to distinguish one development from another.

Crystal Lagoons' contribution to this trend is unique: beachfront property anywhere in the world. The company's artificial lagoons are large, irregularly shaped pools offering acres of water for swimming, water sports, swim-up bars and floating stages.

The company says it has more than 600 projects in some stage of planning or development worldwide; at least 16 development projects in the U.S. have already licensed the Chilean company's proprietary technology.

Artificial lagoons are highly customizable. Designers can calibrate everything from the depth of the water to the features along the shoreline. They can create shallow inlets for playing with children, kayaking or paddle boarding; deeper areas suited for sailing; and sand-filled banks for lounging.

However, developers and designers face several important design and master-planning considerations to maximize the social, environmental and economic impact of these beaches.

These have been tested while planning and designing Crystal Lagoons around the world, including the first-ever all-season lagoon, planned for Millcraft Investment's mixed-use Esplanade project in Pittsburgh.

Design a Regional Attraction

A perfect white sand beach in a Midwestern city is almost unimaginable, but when the lagoon opens in Pittsburgh in 2023, it has the potential to be an important destination for locals and visitors alike.

Before deciding on a lagoon for the project, the developers considered other amenities for the mixed-use site in the Chateau neighborhood on Pittsburgh's North Side. The lagoon was the one thing that jumped off the page for Millcraft's team — they were

Courtesy AE7 Pittsburgh

Millcraft's mixed-use Esplanade development in Pittsburgh will feature a lagoon adjacent to the Ohio River.

Artificial lagoons are highly customizable. Designers can calibrate everything from the depth of the water to the features along the shoreline. They can create shallow inlets for playing with children, kayaking or paddle boarding; deeper areas suited for sailing; and sand-filled banks for lounging.

searching for something that could make the 15-acre living and recreation space stand out.

Not only will the lagoon differentiate the project, but access to it can be monetized through implementation of the Paid Access Lagoon (PAL) model.

Revenue from the lagoon can further enhance the financial feasibility of the project while providing a scaled-down version of beach life to a larger community. In Wesley Chapel, Florida, for example, the Epperson Lagoon offers day passes for $20 and provides various amenities such as cabanas and chair rentals.

Pittsburgh's Crystal Lagoon will be both the first urban and the first all-season lagoon, with a partial winter transformation into an ice rink and thermal baths for year-round enjoyment by the public. The Millcraft lagoon is part of an effort by the city of Pittsburgh and local organizations to revitalize the edge of the Ohio River, which for years was dominated by the region's heavy industries.

The project links up with the bike path that runs along the river's edge and offers tenants access to the Ohio River and a nearby marina, restoring a connection to Pittsburgh's waterfronts. While the lagoon is separated from the river, the package that the developers have proposed provides views and access to this natural body of water. That aligns the project with citywide movements to reinvigorate the riverfront.

Consider the Context

How do designers integrate a lagoon with an urban site?

Lagoons are rare features, and it is important to consider how a development containing one connects to the adjacent neighborhoods. Paramount to the development's success will be

Courtesy AE7 Pittsburgh

In the winter, the lagoon at the Esplanade development in Pittsburgh can be transformed into an ice rink and thermal baths.

welcoming neighboring residents and workers through architecture, material selections, open space and everyday amenities.

Millcraft's development in Pittsburgh will include hundreds of residential units, a large office building, a hotel, and additional entertainment attractions such as an aquarium and spa. The 1.47-million-square-foot development with approximately 300,000 square feet of rentable office space is expected to include a mixture of boutiques and restaurants along with a variety of stores serving the community, including a small grocery store, drugstore and dry cleaner.

After collaborating with Crystal Lagoons on previous projects, AE7 was hired to situate complementary amenities around the lagoon. Achieving the right balance of scale, programmatic density and use distribution required a significant amount of interaction between the developer and design team to craft a tightly bounded site that still contains adequate public space.

Because there is no zoning code for "artificial lagoons," developers might encounter the question of interpreting what a lagoon is. If it is considered a pool, codes might require fencing, for example.

To achieve the balance of scale and programmatic density, it's important to consider a balance of density with flexible open space. In the Esplanade, the team chose to incorporate hardscape areas around the lagoon that could be multifunctional.

Transit connectivity is also key in an urban site. In Pittsburgh, AE7 worked to join the site to local transportation systems, including the bus network, the Three Rivers Heritage bike trail and a marina that facilitates water taxi connections. It is also near a future light rail extension.

In any lagoon project, developers will need to work with architects to coordinate the site constraints, along with the significant footprints of buildings that support the water activities. Most lagoons become long rather than round during the design process, and a designer will be able to guide a team through the process of shaping the malleable features with some basic guidelines in mind.

For example, the deepest portion of the lagoon will be in the center, becoming shallower toward beaches on the north and south sides. Designers can calibrate landscaped edges or buffers for a lagoon that will add more security and privacy for the site.

Lower the (Environmental) Cost

While the idea of a multiacre artificial lagoon may seem excessive, there are some surprising efficiencies built into the model that help recoup the upfront costs.

Lagoons are extremely customizable, and so are the costs. Variables that influence the construction costs include size, shape and beach entries.

"A major portion of construction cost is in the concrete used, and that is determined on the linear foot of the perimeter wall as well as the amount of beach entries planned for each lagoon," said Crystal Lagoons' **Stephanie Fischmann**.

In 2018, a two-acre lagoon in Balmoral, Texas, reportedly cost $3 million to build. Construction time is similarly dependent. The Balmoral lagoon near Houston reportedly took eight months to build, while a 14-acre lagoon project elsewhere took about a year.

The Crystal Lagoon can provide relatively low construction and maintenance costs, which are integral to the financial viability and success of the project. Whereas typical pool construction consists of a concrete or shotcrete basin, Crystal Lagoons use a polyurethane liner set out on compacted sand or clay. Concrete construction is reserved for the sloped approaches and side walls.

Lagoons are rare features, and it is important to consider how a development containing one connects to the adjacent neighborhoods. Paramount to the development's success will be welcoming neighboring residents and workers through architecture, material selections, open space and everyday amenities.

Because it requires almost 100 times less chemicals than a normal pool and uses only 2% of the energy needed for a conventional pool filtration system, a lagoon's water quality is maintained through the injection of additives. Necessary adjustments are determined electronically by sensors that calibrate all Crystal Lagoons worldwide.

Because of the stringent water-quality standards, the lagoon's characteristic clear water is safe for swimming.

Lagoons utilize fresh, salt or brackish water, all naturally abundant. In comparison to other large-scale amenities, Crystal Lagoons use up to 30 times less water than a golf course and 50% less water than a similarly sized park.

"In a pool, the water turns around four and a half times a day," said **Chris**

Souza, a former regional manager for Crystal Lagoons. "In Crystal Lagoons, you're only turning water around two times a day."

Water conservation is further enhanced by the lagoon's closed-circuit loop and technology that allows rainwater to be captured to offset the amount lost to natural evaporation. That evaporation is further controlled by the use of control film that cuts it by up to 50%.

To keep the water warm during cold weather, Pittsburgh's lagoon will utilize heat recovered from the surrounding buildings. Similarly, placement of the lagoon in relation to wind patterns and sunlight on the site will help maximize the cooling effect of the water in the summer.

The efficient use of chemicals and energy can help contribute to low maintenance costs compared to traditional swimming pools. Operating costs vary by the size of the lagoon, programming and types of users, which would determine the amount of staff needed for daily operations.

Ready to Take the Plunge?

Souza said the average uptick in property value is 20% after installing a lagoon, which can help recoup the cost quickly. Home sales in Balmoral's aptly named Amenity Village are reportedly strong, reflecting excitement about the lagoon.

If designed well, lagoons offer a great opportunity to bring public life into a private development, particularly in urban areas. These water features can provide designers a new tool to activate a space and create a strong synergy between development goals and the community. ■

Alec Templeton is a senior design architect with AE7 in Pittsburgh.

"Worth Repeating"

Sound bites from NAIOP's CRE.Converge, held October 14-17, 2019, in Los Angeles:

"I don't like to look at 5G and IoT as the key to understanding things — it's understanding what people need. … **Elon Musk** built an electric car that is going to change the world. Electric cars have been around for decades, but what was the difference? [Musk] designed something he wanted, he needed. If you are the market, and there are others like you, you win." — **Steve Wozniak**, *co-founder, Apple Computer, Inc.*

Apple co-founder Steve Wozniak, a pioneer in the development of personal computers, was the keynote speaker at CRE.Converge.

"But are we headed into a recession? My answer to that would be maybe, maybe not. We are so fixated on that one question. Trying to time a recession is not feasible, but diversification is far more effective than waiting on the sidelines." — **Hessam Nadji**, *President and CEO, Marcus & Millichap*

"The U.S. competing with China is a very popular bipartisan issue. China is being cast as the adversary. I call this a 'manic moment' for the U.S. We are waking up to this competition with China. Regardless if the Democrats or the Republicans are in the White House in 2020, the tech war is here to stay, so I don't see much of a shift when it comes to the fundamental issue of where geopolitical risk is coming from."— **Reva Goujon**, *Vice President of Global Analysis, Stratfor*

"Customers see 'workplace as service' as a more permanent real estate solution, which in some ways creates a competitive dynamic between landlords and coworking providers. We've now moved to a partnership where we can be on the same side as our landlord partners." — **Katharine Lau**, *Senior Director of Real Estate, Industrious*

"The T.J. Maxxes, the Marshalls, the Michaels, the Rosses, those guys are on fire right now. … We will make a concession to get the right tenant in to increase traffic at the [retail] center. We are willing to make a bigger investment than in the past." — **Larry Casey**, *President and COO, Donahue Schriber Realty Group*

Worth Repeating

“Developers, you should feel confident today to push the regional distribution model to sell overnight products. Smaller warehouses are important as there is a new layer of predictive analytics where products come into the ports and are quickly delivered to customers. Amazon and Walmart are working to enhance this type of technology.” — **Micah Mallace**, *Director Regional Sales, South Carolina Ports Authority*

“There's a huge dollar value people will pay in order to have convenience in their life. More than 60% of tasks on Taskrabbit are for Ikea assembly. That could be a natural partnership — brick and mortar meeting an app service.” — **Karen Strack**, *Senior Vice President, Tenant Coordination & Lease Documentation, Unibail-Rodamco-Westfield*

“When Amazon bought Whole Foods in 2016, 15% of people in the U.S. said they were comfortable ordering their groceries online. Now that number has climbed to 40%. While not all of them are shopping this way, they're increasingly comfortable with it.” — **David Egan**, *Senior Director, Global Head of Research, CBRE*

“The unique thing about autonomous vehicles is the destination for the occupant and vehicle are different. The premium for parking is effectively going away. … Reduction in parking opens up flexibility for development. It lets the market decide what the ratio for parking should be.” — **John Cadenhead**, *Director of Design, Powers Brown Architecture*

“I believe we're in the early stages of demand, and the market (for data centers) will continue to move for this asset class. With AI, blockchain and so much data in the medical field and beyond … there is so much more information out there that we're still in the early stages of storing and using.” — **George Rogers**, *Principal, Skyline Capital Advisors, LLC*

“The youth (ages K-12) aren't necessarily aware of what opportunities are available in commercial real estate, and we need to do a better job of conveying that. At the college level as well – many folks are undecided as they start in school and can be educated on what's out there and what training they need to do to get there.” — **Joe'Mar Hooper**, *Wisconsin Market Leader, CommonBond Communities*

“Wellness is now moving into well-being in the workplace. When you do that, you have happy employees who engage more and collaborate more, and that improves productivity. Tenant improvements are expensive, but people are more expensive than that.” — **Deanne Erpelding**, *Principal, NELSON* ■

CEO on Leadership:
Lawrence R. Armstrong, CEO, Ware Malcomb

The head of this international integrated design services firm offers his perspective on the industry and what's ahead for his company.

By Ron Derven


Lawrence R. Armstrong

Ware Malcomb is a leading design firm focused on commercial and corporate real estate with 22 offices in the U.S., Canada, Mexico and Panama. Founded in 1972 by **Bill Ware** and **Bill Malcomb**, its services include architecture, planning, interior design, branding, civil engineering and building measurement.

In 1990, CEO **Lawrence R. Armstrong** and retired President **Jim Williams** acquired ownership of the firm. Today, Ware Malcomb is led by Armstrong and Executive Vice Presidents **Jay Todisco** and **Kenneth Wink**.

Development: *What led you to a career in architecture?*

Lawrence R. Armstrong: The inspiration for my architectural career came about when I was seven years old. My father bought a vacant lot next door to our small ranch house in Northeast Ohio and had a new home built on it for our family. After that, I knew I wanted to be an architect, and I am very fortunate for that.

Development: *Could you briefly describe how Ware Malcomb has managed its growth since its establishment in 1972?*

Armstrong: Our focus was on diversifying the business, making it resilient to recessions and growing the company beyond Southern California. We have structured the firm to service our clients wherever they need us. Most of our expansion across North America has been driven by our clients asking us to expand into new markets with them. This in turn fuels our team members' growth and provides excellent opportunities for professional development.

Development: *Where will you take the company over the next five to 10 years?*

Armstrong: We have developed strategic goals in our long-term plan, which provides geographic target locations as well as the growth goals for our business units and product diversifications. The goal is to maximize the market share in every region we operate in and in each product offering we provide.

Development: *What is your primary role as CEO of Ware Malcomb?*

Armstrong: My primary role is to provide the vision, oversee growth and the overall operations for Ware Malcomb. I challenge our leaders to continue to grow in their professional abilities so we can reach our strategic plan goals.

Development: *What do you see as your greatest leadership challenge as CEO today?*

Armstrong: As the firm continues to grow, it is important to ensure our company culture is thriving and the strategic vision is carried out. Each of our offices across North America needs to operate together like a fleet of ships and quickly respond to change as necessary. With this mindset, we are all on the same path, but we move in a quicker, more nimble manner when the course shifts.

Development: *What do you look for when hiring a senior staff person?*

> **"Anticipating and embracing change has become more important than ever before. Understanding and deciding what to change, what not to change, and when, is the art of business."**
>
> *— Lawrence R. Armstrong, CEO, Ware Malcomb*

“As the firm continues to grow, it is important to ensure our company culture is thriving and the strategic vision is carried out. Each of our offices across North America needs to operate together like a fleet of ships and quickly respond to change as necessary. With this mind-set, we are all on the same path, but we move in a quicker, more nimble manner when the course shifts.”

— *Lawrence R. Armstrong, CEO, Ware Malcomb*

Armstrong: When hiring senior team members, we look for certain qualities to ensure the individual is a good fit in our culture. Among those qualities is embracing the rapid pace of change. Anticipating and embracing change has become more important than ever before. Understanding and deciding what to change, what not to change, and when, is the art of business. So is developing a strong team and fostering relationships. Strong teams are a reflection of leadership and are the key to growth and success. Developing meaningful relationships with team members and clients is important in every aspect of business.

Development: *What is your company doing to prepare for the inevitable downturn in our industry?*

Armstrong: We always take a conservative approach to our business to safeguard against any economic turns or uncertainty. Our firm’s focus on diversification remains within the commercial and corporate real estate umbrella. Service initiatives include building measurement, interior design, workplace strategy, branding, surveying and civil engineering. Market initiatives include health care, science and technology, advanced manufacturing, retail, hospitality and more.

Development: *What will have the greatest impact on the commercial real estate industry over the next few years?*

Armstrong: We are seeing a growing need to consider future-proofing in new real estate properties. Our team members specialize in using the latest design and technology trends to provide flexibility and adaptability in our client’s properties to maximize long-term real estate value. Although this is seemingly a newer industry trend today, this is not a new concept at Ware Malcomb. Since the firm’s founding, one of our core business philosophies has been to design our projects with long-term real estate value in mind, which in essence is future-proofing.

Development: *What advice would you give someone entering the profession today?*

Armstrong: Engage in whole-brain thinking. Do not define yourself, or your business, too narrowly. Be open to new opportunities and consider if they are a good fit in your overall vision. Understand every aspect of the business you are in, especially those functions that aren’t your area of expertise. Round out your knowledge and understanding of your business in every way possible to continuously improve. Hire the best people you can find. They need to fit the company culture and buy into the vision. Empower your team members to craft strategies to help achieve the vision.

Development: *Did you have a mentor early in your career? What did they teach you?*

Armstrong: My father was my first and best mentor. He taught me that you should always work hard, give your best and never be ashamed of the result. That is a guiding philosophy I still live by today. I also learned a great deal from **Bill Ware** and **Bill Malcomb**, the founders of Ware Malcomb. Early on in my career they taught me about business, and I learned valuable knowledge and sound commercial real estate expertise working alongside them.

Development: *How do you de-stress?*

Armstrong: I stay active as much as possible. I work out with a trainer regularly, do Pilates, and I am an avid skier and golfer. I am also actively involved in the community and give back by volunteering my time and efforts. I am proud to serve as a Board Member of Orange County United Way, and I’m chair of the Leadership Council for United Way’s United to End Homelessness campaign. My wife, **Sandy**, and I are also proud to serve as co-chairs for the Kent State University Comprehensive Campaign to support our alma mater. In addition to staying active, I have studied and created art all of my life. I have been exhibiting my art publicly for the past 10 years. Outside of work, philanthropy and art, my wife and I are lifelong travelers. ■

Ron Derven is a contributing editor for Development magazine.

Designing a Workspace for Software Engineers

Detailed input helped Microsoft move from a one-size-fits-all approach to one that works for this critical group of employees.

By Matt Ayres

For years, market forces steered many real estate professionals into designing and building one-size-fits-all workplaces. The real estate group at Microsoft has been working to change that. The goal is to create agile workspaces that flex to accommodate different-sized teams, instead of teams that flex to fit into their workspaces.

There are many ways to achieve a flexible workspace, but Microsoft's real estate team begins with the same first step: Learning what users need. Over the past two years, this has been accomplished in a variety of ways. Passive data is gathered from sources like badge swipes, meeting-room data and wireless triangulation. From this, information on attendance, room usage, occupancy and workflow patterns can be derived without the use of sensors. The real estate team conducted interviews and focus groups with the software engineers, who were willing to work closely with them on solutions.

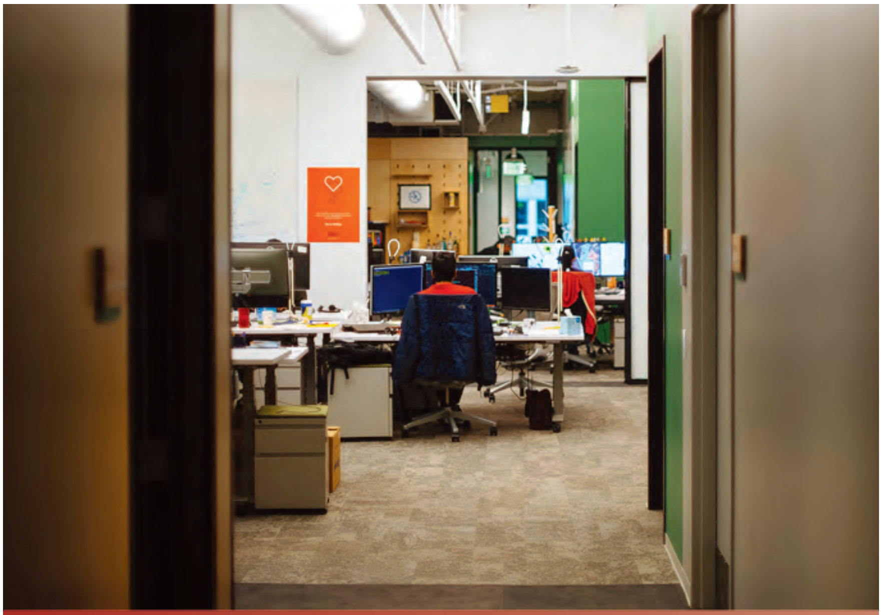


Photo courtesy of Microsoft

Microsoft created new workspaces for its software engineers based on data gathered in a variety of ways.

Direct Feedback

These engineers became the core of Microsoft's first Engineering Advisory Panel. Right off the top, the panel identified a needed improvement — team area sizing. Microsoft was at the time transitioning from private offices to the collaborative team spaces it now uses — but some of the spaces were proving too large for the engineering teams. Spaces were being built for groups of up to 16 when many of these engineering teams numbered closer to half that. Data also indicated that these spaces functioned better when sized to accommodate a single team in its entirety.

While the engineers generally liked the look and feel of their buildings, many said that their work-station needs hadn't been prioritized. Public spaces had been thoughtfully designed in handsome materials like reclaimed wood, but the individual work areas needed more attention. (At Microsoft, these are called Individual Work Points.)

The real estate team conducted interviews and focus groups with the software engineers, who were willing to work closely with them on solutions.

Indeed, the engagements with engineers revealed that Individual Work Points were the most important aspect of their workplace — and they needed improvement. These desks were meant to be fully portable, in order to enable workspaces to be as flexible and reconfigurable as possible. But when fully laden and fitted with their CPUs, monitors and power and data cabling, the desks proved tough to move. Because of CPU mounting on the underside of the desk surface, the height-adjustable desks struggled to move up and down, wobbling in some configurations.

The real estate team worked to adjust and align the team space model

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accordingly. On the Puget Sound campus, the work began by adjusting the size of team spaces to accommodate smaller teams while increasing the space allotted to each individual. It turned out that there were ways to flex the size of the space to accommodate team sizes of eight, 12 or 16, using movable connecting partitions between team spaces, and layouts that position dedicated small meeting spaces between teams.

Manufacturers were brought in to test prefabricated, movable meeting rooms for two to four people to enhance flexibility and allow a degree of customization. Microsoft has now deployed these as a pilot in one of its buildings. Finally, much attention was given to the Individual Work Point furniture, including desks with larger wheels for greater ease of movement, more secure mounting of CPUs, monitor arms with a greater range of adjustments, and moveable desktop power/USB cubes for laptops and personal devices.

Small Changes, Big Impact

These small adjustments to the Individual Work Points made a huge difference for the engineers who use them. The tweaks were so valued that the Individual Work Point became known to the advisory panel as "the Square of Awesomeness." That's because users were consulted through the entire process.

In time, one Engineering Advisory Panel became two — one for software engineers, one for devices. Both convened regularly, surveying spaces, consulting with engineers or tinkering in The Hive, the real estate team's workplace-testing laboratory where new ideas are workshopped and pressure-tested. The panels have even taken external benchmarking tours, visiting other tech companies to check out their workplace solutions.

All this work is ongoing as part of the Microsoft real estate team's learning curve, which is about opening up to user input and best practices for workplace solutions from both inside and outside the company. When optimal workplace environments can be created that support team performance, it's a win for employee productivity — and a win for satisfied employees. ■

Matt Ayres is the workplace research and innovation lead at Microsoft.

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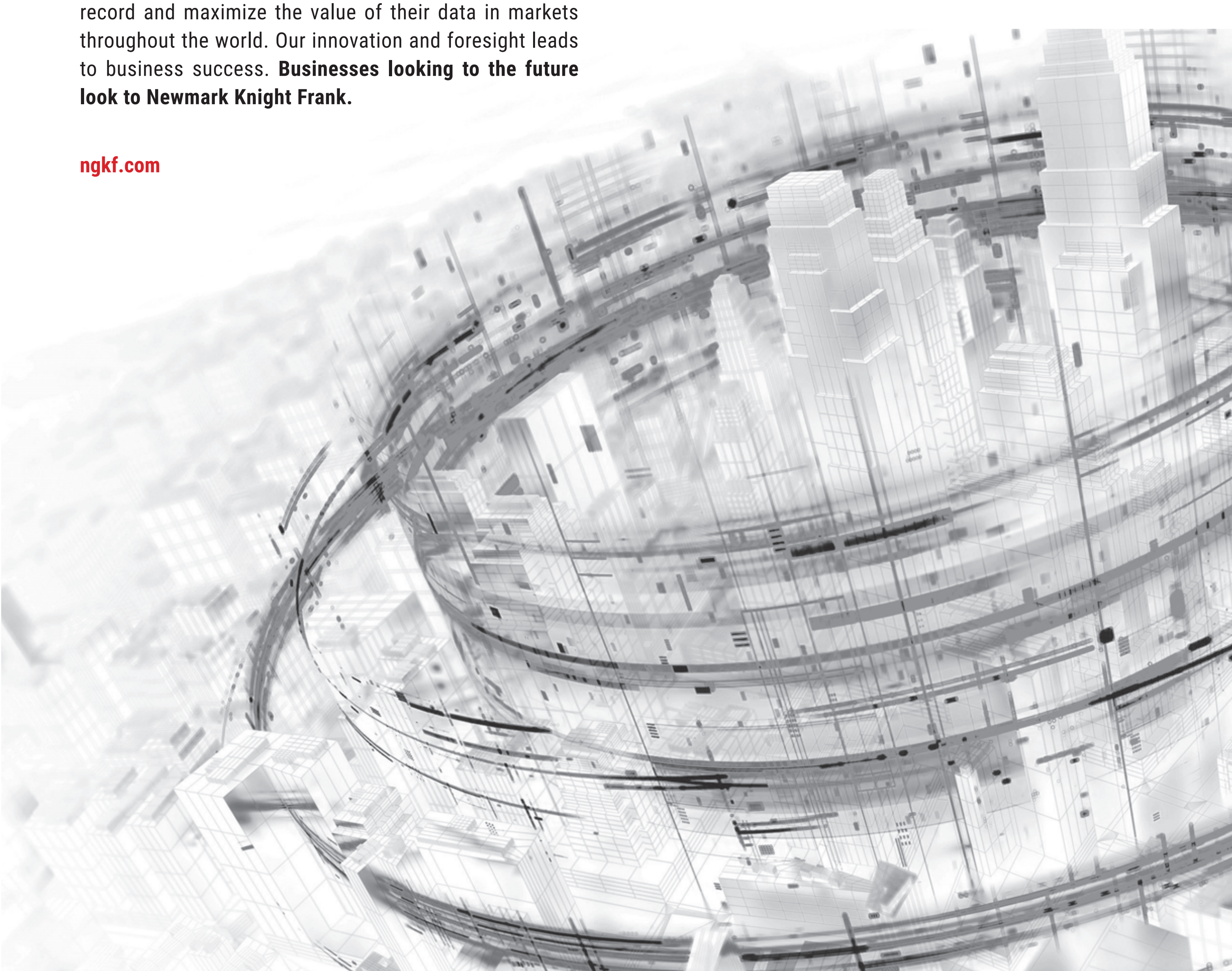


Commercial Real Estate's Economic Environment Has Been Nearly Perfect

Inflation and unemployment remain low, but how long will these conditions last?

By Anirban Basu, Sage Policy Group

The economic environment for owners of commercial real estate has been extremely favorable for the past few years. The strong economy has produced a healthy leasing environment and allows for reliable increases in rent per square foot.

The U.S. economy is in the midst of its lengthiest expansion cycle in history. Approximately 21 million net new jobs have been created to date since the end of the Great Recession in 2009. Unemployment has hovered around a 50-year low for months. Consumers have been especially active, helping to keep brick-and-mortar retail going even as fulfillment centers tied to the burgeoning e-commerce economy sprout up in metropolitan and rural areas alike.

The Current Situation

But a strong economy represents only one element of this nearly ideal environment. Despite a strong labor market that is delivering its fastest wage growth in roughly a decade, inflation has remained benign. That has helped keep borrowing costs low. A prominent measure of inflation, the Core Personal Consumption Expenditure (PCE) Deflator, indicates that inflation over the past year has been meaningfully below 2%, the Federal Reserve's stated target.

In response to a weakening global economy, a recently inverted yield curve and concerns regarding the economic impacts of ongoing trade disputes, the Federal Reserve has already cut interest rates three times in 2019 after raising them nine times between December 2015 and December 2018. They now range from 1.75% to 2%. The reduction in rates makes it more likely that investors will continue to look for opportunities to generate investment yield, including through ongoing investment in commercial real estate.

Ironically, the weak global economic environment and the prevalence of negative interest rates in Japan and in much of Europe has induced considerable global capital to flow into the U.S. Last year, global investors infused New York's commercial real estate market with nearly $17 billion based on a report by Real Capital Analytics. On a per-capita basis, few if any metropolitan areas have experienced as much foreign investment intensity in commercial real estate as the Washington, D.C., metropolitan area. In 2018, foreign investment totaled $83.6 billion per 100,000 residents in the region. New York was close behind with $81.7 billion for every 100,000 residents, followed by the San Francisco Bay Area with $65.4 billion.

Despite a strong labor market that is delivering its fastest wage growth in roughly a decade, inflation has remained benign. That has helped keep borrowing costs low.

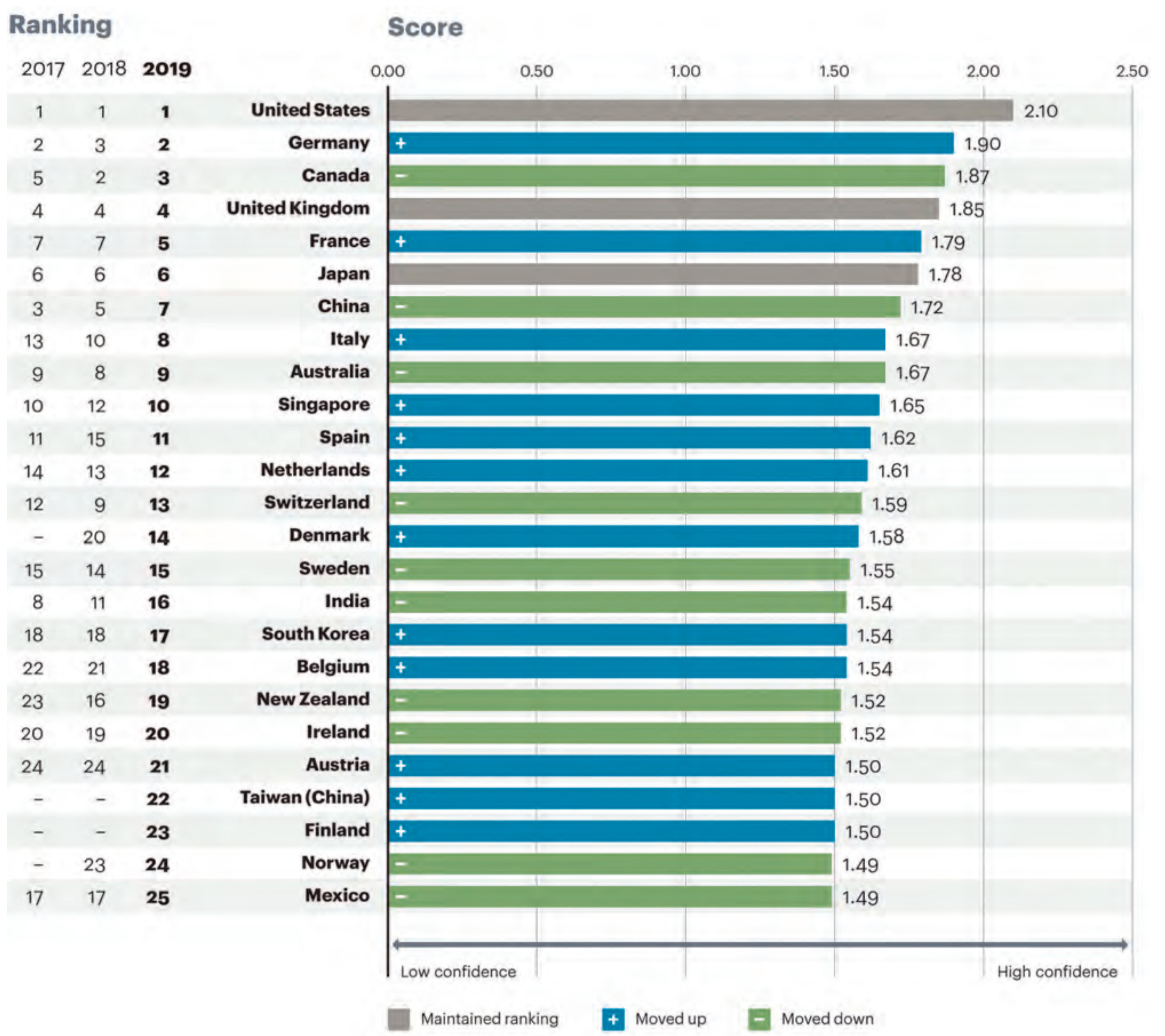
Foreign interest in U.S. assets has been dispersed across asset classes. A.T. Kearney, a global management consulting firm, produces the Foreign Direct Investment (FDI) Confidence Index. Based on a survey of top executives from Global 1000 companies, the U.S. ranks first in the world in terms of generating confidence among foreign investors once political, economic and regulatory factors are taken into account. Germany ranks a distant second, and Canada is third. America has held the top spot for seven years running because of its "sustained and robust economic expansion in recent years," according to the FDI report.

Foreign investors haven't been the only actors expanding demand for commercial properties. Real estate investment trusts, insurers, pension funds, private equity firms, hedge funds and others searching for yield in the context of low interest rates around the developed world have also played important roles. Because of that, capitalization rates have been low as buyers appear willing to fork over significant sums in the continuous search for income.

According to CBRE's "North America Cap Rate Survey H1 2019," capitalization rates remained modest during the first half of 2019. For industrial properties, cap rates fell 5 basis points to 6.27%.

"Strong market fundamentals — low vacancy, robust e-commerce-driven tenant demand and rent growth — continue to attract investors to industrial assets, increasing values and leading to sustained cap rate compression," **Jack Fraker**, CBRE's global head

The 2019 A.T. Kearney FDI Confidence Index®



Note: Values are calculated on a 0 to 3 scale, with 3 being the highest level of confidence in a market as a future destination for FDI.
Sources: A.T. Kearney Foreign Direct Investment Confidence Index (2017, 2018, 2019)

of industrial and logistics, recently told the McMorrow Reports. "Due to high competition for core properties, investors remain interested in assets with a higher risk profile. Investors are looking beyond year-one cap rates and to the increasing returns provided by predictable rental rate growth throughout the life of the deal."

In response to a weakening global economy, a recently inverted yield curve and concerns regarding the economic impacts of ongoing trade disputes, the Federal Reserve has already cut interest rates three times in 2019 after raising them nine times between December 2015 and December 2018.

Among central business district (CBD) office properties, cap rates fell 4 basis points to 6.67%, while cap rates for suburban properties stood at 7.91%, falling by a basis point.

"Office cap rates should remain stable for both CBD and suburban properties over the next six months, supported by strong tenant demand for space, favorable investment sentiment, and expectations for stable or decreasing interest rates," says **Christopher Ludeman**, CBRE's global president of capital markets, in the company's "North America Cap Rate Survey H1 2019."

> **But perhaps the greatest risk emerges from next year's presidential election. The risk is not necessarily the election's ultimate result, but the fact that one is going to happen.**

Looking Ahead

Risks to commercial real estate and the broader economy are growing, threatening today's ideal environment for commercial markets. Many forecasters predict the onset of a recession in approximately one year's time. There are many factors at work, including the trade war with China, concerns regarding the vulnerability of elevated asset prices, lingering inflationary fears and a steadily weakening global economy.

But perhaps the greatest risk emerges from next year's presidential election. The issue is not necessarily the election's ultimate result, but the fact that one is going to happen. The policy differences between the incumbent and any conceivable challenger are significant. The result will be an elevated level of uncertainty, likely translating into many economic actors postponing major purchases and investments.

Combined with other sources of vulnerability, the election may be enough to put an end to the longest expansion in American history. ■

Anirban Basu is the chairman and CEO of the Sage Policy Group in Baltimore.

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When Wellness Meets Commercial Real Estate

New research indicates a healthier indoor environment can help attract and retain employees — and make properties more attractive to investors.

By Alice Devine

When the new hire arrives at Webcor's San Francisco offices, he hangs his commuter bike on the rack outside reception and ducks into the office's freshly tiled shower. Later, he passes a living green wall, heads into the light-filled kitchen for a healthy breakfast, and moves to an adjustable standing desk designed for ergonomic comfort.

His employer recently embarked on an office renovation, investing in changes that earned a WELL building certification. The wellness attributes on display speak to the company's underlying values of sustainability and health — and also to the competition among employers to lure and keep talent. In the evolving world of the wellness movement, both landlords and tenants strive to provide a healthy environment and to gain a market edge.

Measuring Success

While wellness features may create a pretty aesthetic, do they really improve worker health and productivity? Research shows that they can.

At the 5,500-square-foot Well Living Lab in Rochester, Minnesota, a collaboration between The Mayo Clinic and Delos, scientists study an array of indoor conditions and compile results into actionable items for healthier indoor environments. The lab, which can simulate open or private office spaces, monitors users via multiple sensors and wearable biometrics.

The research at the facility provides valuable information to those who design, build, pay for, occupy and manage space. For example, in one study, the lab found that temperature affects employees' ability to complete work in open environments more so than noise or lighting.

Landlords (and tenants) often wrestle with calculating the return on their wellness investments. Among wellness features, thermal comfort, air quality and design elements provide the greatest impact, according to an October 2018 report from stōk, a real estate service company that focuses on high-performance buildings (HPBs). The study, "The Financial Case for High-Performance Buildings," finds that a $20-per-square-foot HPB investment renders a conservative 3% greater profit to companies "due to productivity enhancement." The lion's share of profit derives from employee productivity related to reduced absenteeism

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Productivity Enhancement from High-Performance Buildings

	LOW	ESTIMATE	HIGH
Average revenue per employee	$540,000	$540,000	$540,000
Enhancement in productivity	1%	3%	9%
Revenue gained per employee	$5,400	$16,200	$48,600
Profit margin	10%	10%	10%
Profit gained per employee	$540	$1,620	$4,860
Number of employees	820	820	820
Total profit gained per HPB	$443K	$1.33M	$3.9M
Office size	150,000 SF	150,000 SF	150,000 SF
Profit gained per SF	$2.95/SF	$8.86/SF	$26.57/SF
NPV of profit gained per SF over 10 years	**$1.58/SF**	**$44.80/SF**	**$174.33/SF**

A 2018 study from stōk shows estimates of productivity enhancement from investments in high-performance buildings (HPBs).

Source: stōk, LLC (2018). The Financial Case for High-Performance Buildings.

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(43%) and retention (41%), with wellness (7%) utility savings (7%) and maintenance savings (2%) making up the balance.

One might argue that absent stronger data, wellness strategies are a type of window dressing without their purported health or productivity effects. But market support for such spaces must be addressed. According to the National Green Building Adoption Index (published by CBRE in partnership with Maastricht University), 38% of U.S. urban office space now has green attributes. Chicago leads the way with 66% of its central core office space certified sustainable.

Another Shade of Green

A sister to sustainability, the wellness movement focuses on the individual's experience within the indoor environment. While sustainable construction, led by the United States Green Building Council and its LEED certification program, tends to concentrate on the building envelope and systems, wellness focuses on interior space.

"We were designed to be outside," says **Phil Williams**, executive vice president for building and human performance at Delos, which created the WELL Building Standard. "The environment we provide inside is a compromised environment."

In the wellness world, the International WELL Building Institute has emerged as a leader with its standards and measurable criteria. It provides certification via a rating system that addresses 10 key areas: air, water, light, nourishment, movement, sound, comfort, materials, mind and community. For example, devices can provide a modest hum of background sounds to obscure more distracting noises. And desktop monitors can track air quality so that if the quantity of oxygen drops below threshold levels, a message is sent to building management for HVAC adjustment. Best practices also include recommendations for paints that release minimal compounds and cafeterias that display fruits and vegetables.

The wellness movement is growing, both domestically and abroad. According to Delos' Williams, five years after WELL's introduction in October 2014, the standard is in use in more than 20,000 projects totaling over 340 million square feet around the world, in both new buildings and existing property portfolios.

The underlying notion is that humans thrive in environments that mimic nature. The wellness movement strives to replicate natural conditions while using metrics to assess such spaces in order to optimize human experience and performance.

Consider streaming natural light, which isn't just for the partner in the corner office anymore. For example, 13-foot-tall windows maximize daylight in Facebook's new Menlo Park, California, high-rise offices. Open configurations and narrower bay depths (the distance from window line to core) extend natural light across the entire floor plate.

Of course, too much of a good thing means that designers must account for glare with shades or tinting. And they do, easing strain on eyes and allowing the quality of light to change, depending on task and time. When Facebook employees tire of coding, they can head to an adjacent multistory fitness center.

So whether via sunlight or swimming, companies try to improve an occupant's daily life. After all, happy and healthy employees tend to stick around. The same dynamic holds true

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Healthy buildings improve employee retention, which can reduce costs for businesses.

Source: stōk, LLC (2018). The Financial Case for High-Performance Buildings.

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for tenants that remain with landlords who provide spaces designed for occupant comfort.

The Battle for Talent

The expanding wellness movement has struck a chord in a world that's increasingly hungry for talented, skilled employees. Companies compete for the best workers with packages that extend beyond salaries and bonuses. Amenities such as cafes that feature locally sourced food, ample fresh air and rooftop gardens play a pivotal role.

According to stōk, wellness attributes can boost productivity through employee retention. For companies that rely heavily on intellectual capital such as professional or financial services, the retention effect is even stronger.

In turn, landlords reap the rewards of thriving tenants. At the 2019 National Association of Real Estate Editors' conference, panelist **Mike Leipart** of The Agency Development Group called wellness "the last great frontier" of real estate. Leipart, along with many others, sees tremendous opportunity as companies and consumers are willing to pay more for places that encourage healthier and longer lives.

Landlords (and tenants) who can incorporate wellness features distinguish themselves in their respective real estate and employer marketplaces. Landlords typically announce a WELL building — and often LEED certification, too — at first sight, with placards at the lobby entrance.

Property management and leasing staffs learn to present wellness features in marketing literature and in conversation with tenants, existing or prospective. Buildings with health-conscious adaptations command rents at the upper end of the local spectrums. A 2017 study by **Nils Kok** of Maastricht University and **Rogier Holtermans** of the University of Southern California reported that green-certified buildings enjoy rents 1.5% to 2.3% higher than non-rated buildings. While the study addressed Energy Star and LEED certifications, the trend indicates similar economic benefits for WELL certification.

If a building doesn't have wellness features, landlords and property owners should seriously consider the potential of failing to keep pace in a market that is heading in the other direction.

Finally, as wellness practices become the norm, tenant expectations follow suit. So to the extent that buildings don't offer these features, properties will be less in demand and consequently, lose value.

Despite difficult-to-measure results, the competitive nature of real estate would seem to require a wellness strategy. The ability to attract and retain tenants (and subsequently, employees) remains the litmus test for wellness features.

And with metrics that indicate the correlation between high-performance workplaces and improved productivity, increased retention and less absenteeism, tenants and landlords can embrace features that make the built environment better, increase occupant satisfaction and lead to profitable leases. ■

Alice Devine is the author of "Suite Deal: The Smart Landlord's Guide to Leasing Real Estate," the 2019 Bruss/Robinson Book Award winner from the National Association of Real Estate Editors.

What Defines a High-Performance Building?

Here are the attributes of high-performance buildings (HPBs) according to the stōk report "The Financial Case for High-Performance Buildings," released in October 2018:

Enhanced Occupant Experience
"Thoughtfully embedding human health, wellness, and comfort into every aspect of the design, construction, and operations of a building or space within a building."

Optimized Resource Efficiency
"Providing greater value with less input by using the Earth's finite resources without risking the future generation's ability to utilize those same resources."

Minimized Environmental Impacts
"Using strategies from design to demolition that significantly reduce or eliminate negative impacts on the natural environment without jeopardizing the intention or function of the building."

Embedded Resiliency
"Building in the capacity for spaces, buildings, landscapes, communities, and regions to adapt to changing conditions and to maintain or regain functionality and vitality in the face of stress or disturbance."

Improved Financial Performance
"Delivering a higher financial return than traditional buildings of the same use type due to thoughtful integration of sustainable design principles." ■

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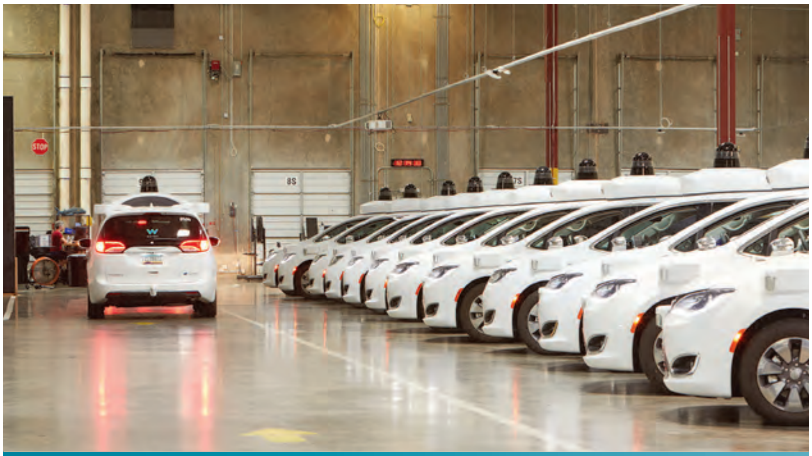
Fully Autonomous Vehicles Are in the Distance, But Now is the Time to Prepare

Sooner or later, real estate will have to adapt to this fast-gaining transportation revolution.

By Elizabeth von Goeler and Alykhan Mohamed, Sasaki

As autonomous vehicle (AV) technology rapidly improves, the idea of driverless cars rolling on city streets is turning from fantasy to reality. From Audi to Volvo, almost every major auto manufacturer is investing significant resources into AV research. Many are developing in-house expertise through dedicated R&D groups such as Audi's Urban Future Initiative and Nissan-Renault's Future Lab.

So AVs should be on roads any day now, right? Not so fast. The technology may be starting to take shape, but mass adoption probably won't be happening anytime soon.



Source: Waymo

Waymo, a self-driving technology company, recently partnered with the city of Chandler, Arizona, to provide an autonomous vehicle ride-hailing program for city workers.

Ambitious Plans Meet Reality

Tesla projected that a million self-driving taxis would be on the road by 2020. However, that timeline might not be realistic as technology and safety measures need to be refined. A few early pilot programs are emerging, but these are in highly controlled, extensively mapped "geofenced" areas.

The Brooklyn Navy Yard Development Corporation, for instance, introduced a geofenced AV shuttle service in partnership with the technology company Optimus Ride. Bergstrom Airport, in Austin, Texas, is running a six-month pilot service, with six-person AV shuttles transporting passengers within the airport's parking garages. AVs will most likely be available as shuttles contained to private campuses, airports and other areas with limited access for at least another decade.

But even if the technology moves out of testing, the densely populated northeastern U.S., for example, probably won't see AVs take to narrow, winding, snow-covered streets for some time. The timeline increases when factoring in the massive changes needed for current infrastructure and government regulations.

Implications for CRE

Even if AVs are further off than first thought, commercial real estate developers should begin thinking about an AV-filled future. Early adopters who design and build in anticipation of AVs could boost their bottom line.

For example, fully autonomous vehicles will be able to self-park. An implication for garage design includes potentially lower ceilings at car height rather than standing human height. That could mean lower building costs and more compact parking. Overall demand for parking could diminish as fleet-based AVs will pick up and drop off passengers at the curb rather than using garages.

Ever try to hail a shared ride service at a U.S. airport only to find complete chaos at the curb amid a throng of waiting passengers? This is also happening at office buildings and residential towers, and it's an area where planning, development and design lag the pace of technological adoption.

Over the long term, municipalities can cultivate solutions like wider streets and centralized pick-up or drop-off zones akin to today's bus stations. But in the short term, developers should think about making interim solutions that accommodate immediate ride-share needs and future AV use.

While rethinking the layout and design of an entire ground floor, including facades and lobbies, may seem like a big investment, their evolution could follow a simultaneous trend: the advent of hospitality-oriented amenities within

continued on page 50

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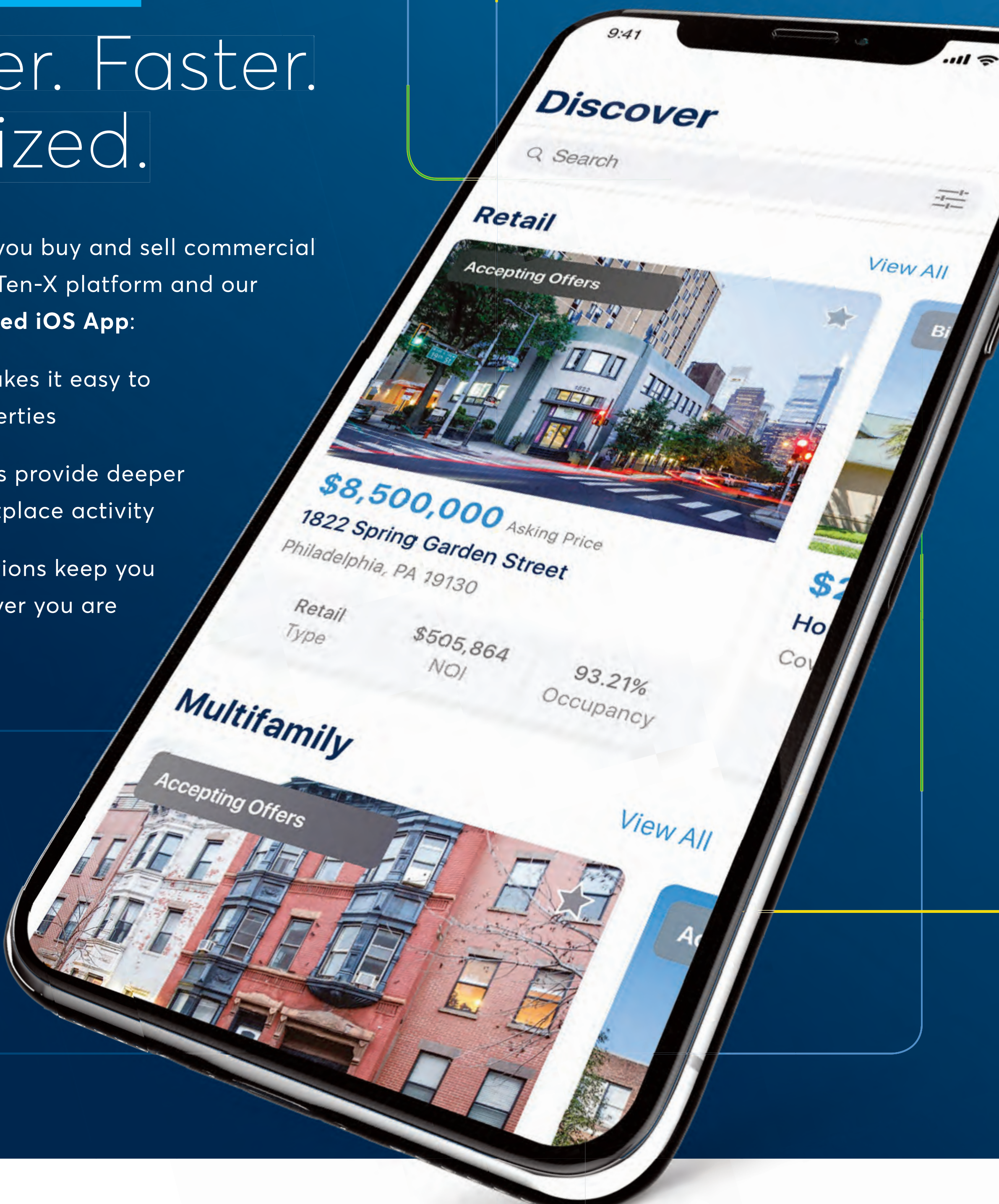

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continued from page 48

multifamily and office buildings. There is an opportunity to rethink how the ground levels of commercial real estate properties are used, and how they interface with the street.

The re-envisioned ground floor could feature new spaces where multimodal pick-up and drop-off can occur safely and seamlessly. Like many hotel lobbies today, entrances could become covered, temperature-controlled indoor/outdoor driveways with clearly designated areas for pick-up, drop-off and waiting that coexist with traditional first-floor welcome, information and security desk needs. Electronic message boards with live travel updates interspersed with advertising, food and beverage vendors, lifestyle amenities, fitness facilities and spas could also enhance this service. Imagine how much easier it would be to use a gym membership if parking a car or being outside in the rain or snow were not a factor.

Taking a big-picture view on how to migrate building design toward ride sharing and eventual AV integration may seem risky due to the trade-offs in available rentable space. However, the transition could yield untold payoffs in the perceived service value and ease of building access for the end-user — especially since ride-sharing appears to be here to stay.

While rethinking the layout and design of an entire ground floor, including facades and lobbies, may seem like a big investment, their evolution could follow a simultaneous trend: the advent of hospitality-oriented amenities within multifamily and office buildings.

'Streetcar Suburbs' of the Future

Perhaps the greatest opportunity area for AVs is the elevation and reconnection of outer-ring neighborhoods. These areas of cities are not quite suburban or urban in character, and they typically do not have convenient access to public transportation. Ride sharing has allowed many of these neighborhoods to become more accessible, thereby increasing their desirability. AV integration could amplify this trend.

Shared AVs have the potential to transform car spaces into people spaces in these outer-ring neighborhoods. It helps that in many outer-ring neighborhoods, developers are already building five- or six-story buildings. These building types are ripe for gradual evolution, as the steel-framed ground floor can serve as a parking garage entry if the building's use turns to above-ground parking, or perhaps retail or pick-up/drop-off zones down the road.

Surface parking in these neighborhoods could transition to green space or other community amenities that only improve the character of these areas. Many cities are already converting parking spaces into delightful and unexpected parklets — a concept that can serve as an inspiration for new types of green spaces in both urban and suburban areas should AVs free up space once dedicated to personal vehicles.

For example, in June, parking lots next to the unused RFK Stadium in Washington, D.C., reopened as The Fields at RFK Campus. It has three soccer fields, an outdoor events venue and a playground.

Development in outer-ring neighborhoods often needs dedicated space for surface or structured parking to address market demands or meet parking requirements. While building parking structures in a way that facilitates conversion to leasable space is one strategy to provide flexibility, conversion will likely be expensive and offer limited configurations. A complementary strategy would be to anticipate the growing demand for shared and micromobility options while minimizing the amount of structured parking. Many cities, eager to reduce reliance on cars, have introduced Transit Demand Management programs. These provide incentives or exemptions in exchange for amenities that support multimodal transportation and discourage car ownership.

Rather than wait for cities to build these amenities in the public realm, developers could benefit by integrating amenities or ground-floor configurations that encourage and accommodate ride-sharing and, eventually, AVs. Just as having a high walk score can be a way to attract tenants, proximity to a mobility hub that provides easy access to bike shares, scooters, ridesharing and fleets of AVs could be a desirable amenity one day.

What Lies Ahead?

The question of how and when AVs will be integrated into our cities and lifestyles is uncertain. Will autonomous cars contribute to an urban dystopia of long-distance commutes through sprawling cities, or a sustainable future where convenient and affordable mobility contributes to the vitality and economic success of cities?

The reality is likely to be somewhere in between, but it will take a collaborative, forward-looking approach between municipalities, developers, urban planners, designers, entrepreneurs and engineers to harness the potential benefits of AVs over time. Developers and investors who take a proactive approach, working with cities to develop new products that respond to new types of mobility, have much to gain as early adopters. ■

Elizabeth von Goeler is a principal at design firm Sasaki, and **Alykhan Mohamed** is an associate.


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Change Accelerates in Supply Chains and

How advancements in transportation, technology and construction continue to converge.

Getty Images

Cargo containers are stacked up for shipment in Hong Kong. The global supply chain is undergoing rapid transformation thanks to technology, changes in consumer behavior and other factors.

Industrial Real Estate

By Aaron Ahlburn

Global economic uncertainty, rapid technological advances and pressure from e-commerce are forcing radical innovation in supply chains. With transportation and the movement of goods and materials making up a significant portion of total logistics operating costs, these innovations are altering the logistics landscape. They allow supply chain and transportation managers to focus on cost efficiency, profitability and service to clients.

However, changes in individual sectors of logistics are not progressing at the same pace. Some are being deployed. Others may not live up to expectations. As trends such as faster e-commerce fulfillment, more urban deliveries, and autonomous trucking and robotics continue to converge, what will be the impact on industrial real estate?

Conceptually, these trends can be segmented into a few different categories: those affecting transportation and the movement of goods; geographic and site-selection trends; innovations in warehouse design and development; and other technological innovations that can bring greater operational efficiency to logistics operations.

Longer-term, secular shifts toward new technology adoption may change the site-selection calculus on location decisions and network optimization for tenants. Likewise, for investors seeking diversification or developers seeking new opportunities, these tectonic changes in supply chain management practices could alter many segments of the industrial real estate market in years to come.

Trends Across Transportation

Trucking will continue to be the primary means of goods movement in the U.S., says **Ben Conwell**, senior managing director and practice leader of the Logistics & Industrial Services Group at Cushman & Wakefield.

In 2018, trucking constituted 71.4% of all U.S. freight transportation and 80.3% of revenues, according to the American Trucking Association's "ATA Freight Transportation Forecast: 2019 to 2030," published in August 2019.

And while total freight tonnage is projected to grow 25.6% from 2019 to 2030, trucking's relative proportions of tonnage and revenue are expected to dip slightly as other modes of transport battle for market share. Intermodal rail, air and domestic waterborne transportation should see modest growth.

At U.S. seaports, containerized import volumes keep trending upward. The four largest port gateways (Los Angeles/Long Beach, New York/New Jersey, Savannah and Seattle/Tacoma) handled 65% of the national total in 2017. Importers increasingly use these ports in their "Four Corner" international supply chain risk management strategy, with a major seaport on the north/south ends of each coast creating connectivity throughout the country, according to **Walter Kemmsies**, managing director for JLL's U.S. Ports, Airports & Global Infrastructure Group.

Container imports from Asia are the dominant volume handled by U.S. ports. Los Angeles/Long Beach has the largest share, with 40% of its imports transported to the Midwest by intermodal rail, Kemmsies says. And while tariff uncertainty has created anxiety within global supply chains, it has been a boon for industrial real estate on the West Coast as companies attempt to get ahead of tariff levies, according to **Jon Pharris**, co-founder and president of CapRock Partners.

It takes more than 11,000 one-way truck trips to load and unload a 14,000 TEU (20-foot equivalent unit) shipping vessel, Kemmsies says. With congestion an ever-present obstacle, inland ports are viewed as a potential solution to supplement long-haul trucking while reducing container dwell times at packed marine terminals. According to Kemmsies, railroads and private developers initiate most inland port developments. Others are springing up around emerging clusters of distribution centers. Port authorities in Georgia, South Carolina, Virginia and New York/New Jersey are also investing in inland ports.

Driver shortages in trucking compound shipping dilemmas. Rising freight volumes have only made the

Rendering Courtesy of Ware Malcomb

Shifts in e-commerce are forcing distribution centers to change their designs. For example, 640 Columbia is the first multistory logistics facility on the East Coast. The three-story structure is located in Brooklyn, New York.

shortage more acute. According to the American Trucking Association's "2019 Truck Driver Shortage Analysis," published in July, the industry was short roughly 60,800 drivers in 2018, up nearly 20% from 50,700 in 2017. If current trends hold, the shortage could exceed 160,000 by 2028, according to the report.

Is autonomous trucking a solution? It continues to evolve, but technological limitations persist around sensors and LIDAR (light detection and ranging), the laser technology that enables driverless vehicles to "see" the roadway and other vehicles. Regulatory and public sentiment hurdles remain significant as well, Kemmsies says.

"We won't see purely driverless long-haul trucks, but more likely drivers will use autopilot on highways and sit in the back of the cab so the HOS (hours of service) regulations are suspended," he says. "They can augment labor productivity, but not eliminate it."

Despite that, companies continue to invest in the technology. For example, UPS has funded autonomous driving company TuSimple. It will test self-driving tractor trailers on a single route in Arizona to determine if the vehicles can improve service and efficiency.

Conwell says the potential for growth in air freight is an untold story right now. Speed-to-market pressure will boost demand for this service during the next five to 10 years. Growth will come not just for cargo inbound into the U.S., but also outbound. Leading the way will be high-end goods that are in demand around the world from growing economies. Kemmsies adds that volumes may also increase for short shelf-life goods and urgent-delivery parcels such as medications.

Amazon continues to build out its Amazon Air freight fleet, leasing an additional 15 Boeing 737-800 cargo aircraft in mid-2019 from GE Capital Aviation Services (GECAS).

"By 2021, Amazon Air will have a portfolio of 70 aircraft flying in our dedicated air network," says

> **"We won't see purely driverless long-haul trucks**, but more likely drivers will use autopilot on highways and sit in the back of the cab so the HOS (hours of service) regulations are suspended. They **can augment labor productivity, but not eliminate it."**
>
> *— Walter Kemmsies, managing director, JLL's U.S. Ports, Airports & Global Infrastructure Group*

Dave Clark, senior vice president of worldwide operations at Amazon.

Sustainability is another important trend in transportation. The IMO 2020 regulations from the International Maritime Organization, an agency of the United Nations, will limit the release of sulphur oxides to improve air quality in port cities and reduce ocean acidification. That could lead to higher fuel prices, says Kemmsies, as well as "the implication that in the future, even larger ships will be preferred to smaller ones due to economies of scale, and trains will be preferred to trucks. We are in the early stages of migrating to larger ships and trains to move a lot more of our cargo."

In the United Kingdom, UPS is introducing a new hybrid delivery truck fleet as emissions regulations tighten. While purely electric trucks have range limitations of about 100 kilometers (62 miles), their Range Extended Electric Vehicles (REEVs) use a dual fuel system that allows them to go four times farther. This will improve connections between inner-city distribution hubs and out-of-town depots.

Additionally, the costs associated with requirements for electronic logging devices in trucking have helped shift highway cargo from Mexico to ocean cargo in Florida, says **Eric Olafsun**, director, Global Trade & Business Development at PortMiami. He adds that other technology and expertise, such as RFID on containerized shipments, satellite tracking and advances in refrigerated containers, creates greater port connectivity. This means more seamless shipping and better partnerships throughout the supply chain.

This is especially true as e-commerce delivery turnaround times speed up, and major port-centric markets are benefiting, says Olafsun. The need for more climate-controlled shipping is leading to cold-storage requirements, as consumers push for organic and fresh produce.

And as companies innovate last-mile deliveries, more automation and robotic concepts are being tested and adapted. While drone delivery is still in the early stages of testing, look for parcel delivery bots to be scaled more quickly than widespread air deliveries. According to Conwell, they'll be deployed from a step van onto sidewalks.

In August 2019, Postmates received approval from San Francisco to begin testing its Serve delivery robot on city streets, according to a report from TechCrunch. And Supply Chain Dive reports that Ford has partnered with Agility Robotics to test Digit, a two-legged autonomous delivery robot that will pair up with an autonomous delivery vehicle. Digit can carry up to 40 pounds and navigate stairs.

Meanwhile, delivery drones are beginning to receive FAA approval. Amazon received permission to test its Prime Air drone in June 2019. Google's Wing was approved in April 2019.

Right Place, Right Time

Multiple factors are driving innovation in logistics, including transportation cost pressures, accurate shipping timeframes and constricted delivery windows. But one of the biggest is increasing demands from e-commerce consumers for "instant gratification" that is even more instant.

"Never has demand for optimal location selection been more important, having goods in the right place at the right time," Conwell says. "For some retailers, too much of the focus on transportation costs is on the outbound side to consumers. However, inbound transportation costs are garnering increased attention as companies look to optimize decisions. There is a relentless focus on optimizing delivery costs and where a facility in a distribution network should be located. These are complex decisions that are not done in a vacuum."

Retailers are facing especially strong demand in cities and urban areas. They are building facilities close to customers to minimize transportation and congestion costs, even though the real estate might be more expensive.

According to **Michael K. Bennett**, principal at Ware Malcomb who is responsible for leadership of its northeast region, there is "a definite trend toward urban locations to service last-mile or just-in-time delivery, to be closer to consumers. And that can be a balancing act, making multiple outbound delivery runs in box trucks and sprinter vans while replenishing via semi-truck traffic."

When choosing between satellite distribution centers or urban depots, companies are considering

> **"There has been a persistent paradigm shift in proper labor availability, quality and predictability** – either in a pure distribution center or in an omni-channel facility and especially around holiday seasons or other surges. **More complex and deeper-dive labor analytics have become an increasingly important aspect of the site selection process."**
>
> *— Ben Conwell, senior managing director and practice leader, Logistics & Industrial Services Group, Cushman & Wakefield*

multiple options, Bennett says. But it is also important to consider locations that can house urban truck fleets and to design sites around parking needs.

"E-commerce companies have been incredibly strategic about distribution center locations and the need to be near major, dense populations centers," Pharris says.

There is pressure to grow distribution networks beyond the legacy top distribution hubs such as the Inland Empire in Southern California, Dallas-Fort Worth, Atlanta, Miami, Northern New Jersey or Chicago, adds Conwell. Now, "historically alternative" markets are drawing significant occupier and investor interest, including places like Nashville, Salt Lake City, Kansas City or Greenville/Spartanburg, South Carolina, to name a few.

Once location decisions have been made, says Kemmsies, there are sunk costs on real estate, truck shipping and labor. "Does this mean a shift to rail-served markets or a focus on more automation?" he adds. "It is about finding the right balance in network optimization models."

"There has been a persistent paradigm shift in proper labor availability, quality and predictability — either in a pure distribution center or in an omni-channel facility and especially around holiday seasons or other surges," Conwell says. "More complex and deeper-dive labor analytics have become an increasingly important aspect of the site selection process."

Inside and Outside 'The Box'

Shifts in e-commerce are also changing the design and layout of distribution centers.

Outside the building, there is more demand for truck and trailer parking, as well as for dedicated areas for truck staging, parking and loading. This requires efficient yard management systems to control traffic flow and ensure the proper speed for throughput activities. If autonomous vehicles are circulating outside a distribution center in the future, another layer of management will likely be needed.

Urban logistics facilities can affect FAR (floor-to-area) ratios, but because many urban sites may have once been manufacturing plants or zoned for other uses, they often already have higher ratios, Bennett says. However, they do allow for more creative solutions, such as parking above truck courts and speed bays.

"As design moves into four or five stories, you can introduce even more solutions for parking," he says.

Pharris adds that clear height requirements will affect not only multistory design across markets, including the number of levels and new parking accommodation constraints, but also the range of goods that common U.S. trucking can deliver due to the steeper grade of ramping. There are zoning, FAR, coverage and truck-circulation considerations that must be worked out in different municipalities.

Distribution centers are getting taller, too. Many are moving toward 40-foot clear or potentially higher, especially e-commerce facilities. They require more power for conveyors, robots, connectivity and other automated processes, and additional clear heights allow for more mezzanine and multilevel picking and packing operations.

Moreover, more companies are partnering to create and test new technological innovations.

"It is a quantum leap in adaptability," said Conwell. "There is a surging collection of developers putting potential solutions on the market. Within urban logistics, innovation is underway around driverless vehicles and also final delivery bots. Multiple automakers are partnering up with tech companies, joined in large measure by food delivery companies. Food delivery is a low-risk prototype function, as surveys find a significant share of the U.S. population is not comfortable enough to ride in driverless vehicles, but they are comfortable with their dinner order riding in one."

New partnerships are being enabled along every mile of the supply chain as well, from the ports to shipping lines to third-party logistics operators, says Olafsun.

According to a recent article in Supply Chain Dive, robotics companies are beginning to offer robotics-as-a-service solutions (RaaS) to help companies mitigate the heavy capital investment and learning curve

> **"Workers are a priority for industrial tenants**, so that means designing buildings with more glass lines, higher finishes, better break rooms and EV charging station, as well as LEED certification."
>
> *— Jon Pharris, co-founder and president, CapRock Partners*

for automated deployments. The Supply Chain Dive report references a study from ABI Research showing that RaaS will grow from 4,442 units in 2016 to 1.3 million in 2026, and annual revenues will increase from $217 million in 2016 to nearly $34 billion in 2026.

And while power requirements have been going up for highly automated users when compared to bulk distribution, those needs may level off as automation becomes more prevalent and efficient, Bennett says.

"There is a trade-off in energy usage, with the potential for lower lighting levels in more mechanized facilities that have less floorspace occupied by people, as well as differing needs for climate control, heating and cooling for people vs. machines," he says.

Bennett also sees the potential for geofencing in the property and in the yard to improve operational efficiency. This technology would help drivers with sensors in their vehicles plan delivery trips better.

"It ties into the term 'full visibility logistics,' with companies becoming more able to self-perform or use third-party logistics while understanding real-time stock movements and implementing an elaborate warehouse management system (WMS)," he says.

However, labor availability has remained tight for warehouse and fulfillment centers, and companies are seeking a better work-life balance for warehouse employees.

"Workers are a priority for industrial tenants, so that means designing buildings with more glass lines, higher finishes, better break rooms and EV charging station, as well as LEED certification," Pharris says.

The Digitization of Supply Chains

A growing assemblage of technology and software innovations touches the logistics market. However, fragmentation of data and systems continues to limit transportation supply chains. Manufacturers, shippers and clients often lack unified data and systems, which creates limitations on end-to-end visibility.

Through artificial intelligence, data automation or systems integration, technology providers continue to advance "big data" solutions to help companies optimize operations, from route planning to sensor technology. Transportation management systems (TMS) could become more sophisticated with greater data integration, and freight matching or freight APIs (Application Programming Interface) are continuing to push the boundaries of shipping efficiency.

Blockchain implementation continues to evolve rapidly in the supply chain, but it still faces limitations in its early stages of development. It continues to be an important tool to advance traceability, accountability, transparency and safety within the supply chain. While it cannot track all SKUs for a company, it can follow boxes or shipping containers, according to Kemmsies.

An Open Playing Field

As e-commerce continues to permeate the consumer economy, innovation in transportation logistics will likely accelerate. However, many of these advances remain fragmented into silos. Until they draw closer to one another, it could be years before practical solutions are in place.

"No one has the visibility yet," Kemmsies says of disconnected trends in shipping technologies, both domestically and globally. "Innovations have to be diffused easily across countries and around the world, or else they fail. There have been many attempts to initiate change in containerized trade, but many efforts have failed because solutions in one economy don't always work in another."

And that has significant implications in the near-term future for industrial real estate site selection and development in the U.S.

"Physical and digital information infrastructures need to be aligned," Kemmsies says. "There needs to be realism in what to expect. You can't just jump from 1% to 100% implementation on any new trend that fast."

Pharris notes that the commercial real estate industry needs to consider how to future-proof new construction. There is no clear idea yet what that requires, especially in a rapidly changing environment that must consider parking accommodations, clear heights and power requirements, to name only a few.

Despite that, the next few years should be interesting and exciting as these technologies evolve and create increased sophistication in logistics operations and new "physical" real estate requirements from warehouse occupiers. ■

Aaron Ahlburn is a real estate researcher and writer based in California.

Preparing a **Large Property Portfolio** for the Future

Cambridge, **Massachusetts, has launched** an ambitious **program to update** its historic **public buildings.**

By Chris Kelly

For municipalities across the U.S., the maintenance of public buildings has always been a necessary — and underfunded — task. But today, with the impacts of energy costs, unpredictable weather and other factors, maintaining the status quo is no longer enough. America's aging building stock should be updated thoughtfully and proactively to meet both current and future challenges.

It's not easy. Municipal facilities run the gamut from administrative office buildings to police and fire stations, public gathering spaces to youth and senior centers, city halls to libraries, and more. Each of these buildings has unique needs; some may date back centuries, while others are just decades old but require ongoing maintenance and have equipment that is nearing the end of its useful life. In many cases, costs can quickly exceed budgets, and coordinating the maintenance of buildings at various stages of disrepair becomes overwhelming.

The city management of Cambridge, Massachusetts, knows this well. Cambridge, first settled in 1631, is one of America's oldest cities. And while its municipal building stock may not date back to the 17th century, over half of its municipal portfolio (excluding schools) is historically significant and has considerable deferred-maintenance needs. The regular work required to maintain the structures is time-consuming and expensive, and the costs of heating and cooling them are increasing.

In 2013, the city established a task force to figure out how Cambridge could become a "Net Zero community," with sharply reduced energy needs met primarily via renewable sources. Composed of residents, business and property owners, developers and representatives from local universities, the task force ultimately drafted a Net Zero Action Plan, which was approved and adopted by the Cambridge City Council in 2015. The city was now

Getty Images

The fire department headquarters for the city of Cambridge, Massachusetts, is among 43 municipal buildings that the city is renovating as part of a multiyear project.

officially committed to improving energy efficiency in its public buildings and supporting the development of renewable energy sources.

The city established funding and sent out a RFQ seeking to develop a Municipal Facilities Improvement Plan (MFIP). The partnership of Arup, the New Buildings Institute and Boston-based ICON Architecture had the winning bid. **Rebecca Hatchadorian**, LEED AP, BD&C, WELL AP, who oversees sustainability efforts at Arup Boston, and **Ned Collier**, AIA LEED AP, principal of the Education Studio at ICON, began the effort of developing and implementing the MFIP. In 2016, **Julie Lynch**, AIA, became the Municipal Facilities Improvement Plan Project Manager for the City of Cambridge Department of Public Works (DPW).

Development magazine spoke with all three about the process of assessing the condition of Cambridge's municipal buildings — from energy use to structural concerns, developing a plan to achieve immediate and more far-reaching goals, and issues and solutions encountered along the way.

The Work Begins

Forty-three buildings were included in the MFIP's initial assessment package. These included seven firehouses and the city's main fire headquarters, six libraries, five youth centers, two senior centers, a police/public safety building, a cemetery administration building and chapel, Cambridge City Hall and City Hall Annex, Department of Public Works buildings, several parking garages, a golf course clubhouse, a park comfort station and more. While the city's school buildings were not officially part of the plan, two schools were included to

Cambridge MFIP Project Scope

This chart describes all the properties in the Cambridge Municipal Facilities Improvement Plan.

Type of Building	Area (Square Feet)	Historically Signifcant?	Community Use?
Other	1,923	**Yes**	No
Office	2,874	**Yes**	**Yes**
Office	3,591	**Yes**	No
Garage	1,830	No	**Yes**
School	127,302	No	**Yes**
Other	8,418	**Yes**	No
Office	11,542	No	No
Public Safety	17,093	No	No
Public Safety	11,213	**Yes**	No
Public Safety	30,389	**Yes**	**Yes**
Other	4,610	**Yes**	**Yes**
Other	1,696	No	**Yes**
Office	12,550	No	**Yes**
Public Safety	19,080	**Yes**	No
Public Safety	6,525	**Yes**	No
Office	21,808	**Yes**	**Yes**
Garage	44,547	No	No
Library	3,300	**Yes**	**Yes**
Youth Center	19,405	No	**Yes**
Public Safety	9,643	**Yes**	No
Public Safety	16,728	**Yes**	No
Youth Center	20,059	No	**Yes**
Office	31,240	**Yes**	**Yes**
Office	33,909	**Yes**	**Yes**
School	108,989	**Yes**	**Yes**
Public Safety	16,187	**Yes**	No
Library	277,185	**Yes**	**Yes**
Office	61,731	**Yes**	**Yes**
Public Safety	162,547	No	**Yes**
Other	8,909	No	**Yes**
Library	6,427	**Yes**	**Yes**
Library	1,955	No	**Yes**
Youth Center	10,537	**Yes**	**Yes**
Youth Center	31,586	No	**Yes**
Garage	378,000	No	**Yes**
Library	15,447	No	**Yes**
Senior Center	27,999	**Yes**	**Yes**
Youth Center	14,837	No	**Yes**
Library	4,566	**Yes**	**Yes**
Senior Center	3,623	No	**Yes**
Other	4,319	No	No
Garage	110,884	No	**Yes**
Office	58,318	**Yes**	**Yes**

Cambridge, first settled in 1631, is one of America's oldest cities. And while its municipal building stock may not date back to the 17th century, over half of its municipal portfolio (excluding schools) is historically significant and has considerable deferred-maintenance needs. The regular work required to maintain the structures is time-consuming and expensive, and the costs of heating and cooling them are growing.

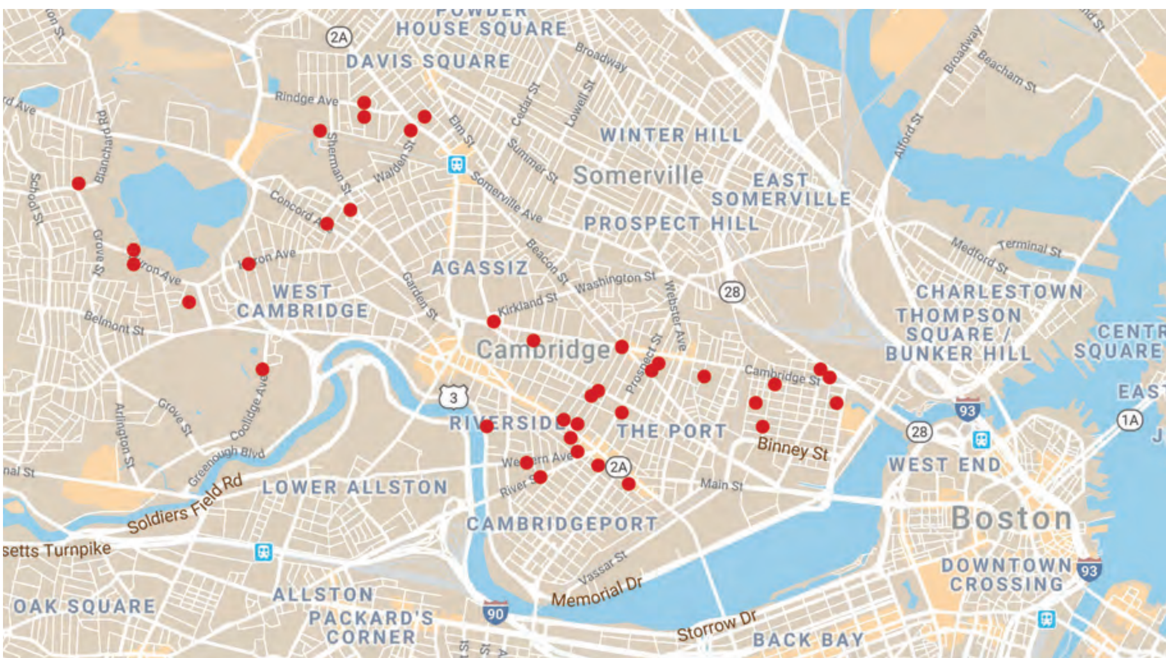


Image courtesy of ICON Architecture

Buildings included in the Cambridge Municipal Facilities Improvement Plan were located throughout the city.

help the team compare and provide information to Cambridge Schools leadership.

The assessment process kicked off with multidepartment work sessions facilitated by the San Francisco-based New Buildings Institute (NBI) and Arup.

"Holding a series of workshops with representation from every department in the city was an important step," says Hatchadorian. "We had roughly 50 people discussing goals and priorities, and helping to determine whether we'd focus on just energy and carbon or set a larger list of priorities."

Ultimately, recalls Collier, "a number of targeted issues raised in the workshops did result in a broader set of priorities." These included life safety, comfort, accessibility and historic preservation. The team determined that these additional initiatives would be pursued as vigorously as the energy concerns.

The historic-preservation aspect was a crucial concern. Seven of the city's buildings included in the MFIP were built in the late 1800s, and more than 90% were built prior to 2000. In all, 56% of the MFIP portfolio was identified as historically significant.

Another concern was resiliency.

"Resiliency — making buildings stronger and more robust — was certainly an emphasis," says Hatchadorian. "We utilized the Vulnerability Assessment the city has already completed, looking at flood risk and heat, and pulled the results for individual buildings into our assessment. By putting all relevant information in one place, we could quickly and easily determine whether resilience should be prioritized for a particular building and project."

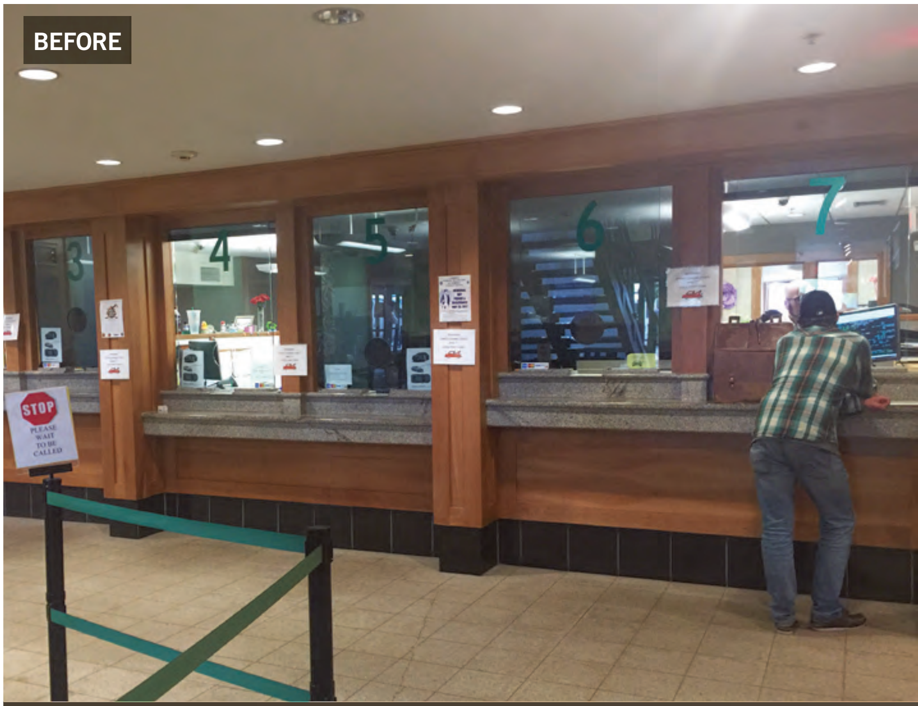
Under Arup's direction, ICON conducted site assessments in each building. They examined the condition of the building envelope, including the roof, windows and walls, and the indoor environmental quality.

The University of California at Berkley Center for the Built Environment's Indoor Environmental Quality Survey was also used to assess the portfolio. It provided occupant feedback to complement the walk-throughs and energy analysis.

In conjunction with the city, they used a standardized seven-point assessment scale for each of the seven assessment categories, with rankings from -3 to +3, to allow for variation in scoring on given topics. The definition for each score was developed collaboratively between the team members.

Assessors provided scores in multiple categories, including energy use intensity (determined by dividing the sum of all energy used annually in the building by its total square footage), greenhouse gas emissions (including carbon dioxide, methane, nitrous oxide, and ozone), indoor environmental quality in terms of lighting, acoustics, air quality, layout and more, as well as a careful review of exterior and interior architecture, and structural, mechanical, electrical and plumbing systems.

Sources for each building's energy supply were also calculated, detailing, for example, the amount of energy provided through grid electricity vs. solar PV electricity.



Before it was renovated, the reception desk at the Cambridge Traffic Department wasn't easy for people with disabilities to use. After the renovation, the addition of vanity lighting on the inside of customer service windows helps those with visual impairments or who need to read lips see the faces of staff members more easily.

Using software provided by the New Buildings Institute, the team got an in-depth read into issues facing each of the included buildings. For example, in the NBI's report on the 33,909-square-foot City Hall Annex, cooling efficiency was rated "good," while heating and ventilation efficiency received a "poor" rating.

"We looked at the thermal performance of the envelope, the air tightness and what's called thermal bridging — where interior and exterior sections connect," explains Collier. "These areas are notorious for allowing heat and cold to travel in and out."

In its summary report, the NBI listed buildings it saw as strong candidates for "whole-building deep energy retrofits," with others as prospects for "zero-net-energy retrofits." Some were recommended for further investigation in the categories "high total energy use," "high electric baseboard," "shell & ventilation related efficiency" and "unusually high summer gas use."

Each building received a list of action steps with estimated costs. Work was also done to determine regulatory codes and building compliance. Arup developed a standardized site assessment report for each building, including a preliminary list of immediate and long-term needs.

"To no one's surprise, after the initial assessments, there were no scores that reached +3. The +3 was extremely aspirational," Hatchador-

Images courtesy of ICON Architecture

ian says. "For instance, on carbon, it was not just carbon neutral but carbon positive. For accessibility, it wasn't simply compliance with MAAB/ADA standards, it was achieving Universal Design standards. Ultimately, we had a few buildings that reached +1. Those were the top ranking. On the other hand, the lowest rankings were -2's."

"Our consultant team didn't know these buildings as well as the city did, so there were some surprises after we developed the scores and presented them to the city," Hatchadorian adds. "There were some preconceived notions about the condition of certain buildings that led to some surprises in the results. For example, our assessments showed that some of their newest buildings weren't among the best performing. One of the things that quickly became apparent was that the needs far outweighed the budget."

Costs and Challenges

Now the team faced the challenging task of prioritizing — and paying for — improvements.

"We don't have enough money and staff to do everything, so we chose our projects carefully," says Lynch. "People expected scores to drive our plans, but there were other considerations, including how many people use the building. Some of these buildings have 100 employees, others have just one. Also, we're renovating occupied buildings, which is adding another layer of costs. Another question we had to consider: Does the facility support community use, making it a higher priority?"

The project is expected to extend over multiple years. Funding via bonds and property taxes will be ongoing. For example, Cambridge's budget for 2020 seeks $29 million for MFIP projects.

Site visits and building surveys highlighted another pressing issue: in many cases, substantial deferred-maintenance work was needed before deeper improvements could be considered.

"The firehouses, which are generally the oldest buildings, were in

The project is expected to extend over multiple years. Funding via bonds and property taxes will be ongoing. For example, Cambridge's budget for 2020 seeks $29 million for MFIP projects.

the worst condition," says Lynch. "The first building I went to was a firehouse, and it was in such bad shape. I was shocked by the level of deferred maintenance."

Because the initial budget hadn't anticipated the breadth of needed improvements, the team began working closely with Lynch to manage costs and find funding.

It was here that the team recognized a core benefit to the multi-building improvement approach while establishing material, equipment and detailing standards: the ability to consolidate projects and save money, time and materials in the short term, and to establish a more streamlined maintenance approach in the long run.

"What needs do we see in multiple buildings that we can put out as one bid? That sort of review allows us to do the bid process just once, saving time and effort," says Hatchadorian. "We can also provide the city consistent products and materials and simplify construction by working with a singular contractor, saving money in construction as well. Also, replicable projects, meaning projects that maybe we don't bid as one, but where we do work on one building and then do it again in other buildings. In these cases, we can be more efficient down the line, and when buildings receive the same mechanical systems, it gives the city a more streamlined way of maintaining them."

Lynch agrees.

"In terms of standardization across the city, we worked with Arup, ICON, other designers and other city departments to develop standard specifications for HVAC control, lighting, audio visual, wayfinding and signage supporting Universal Design, glazing, keying, door hardware and plumbing fixtures," she says. "For example, all HVAC equipment is tied into the existing Building Maintenance Systems (BMS) based on the HVAC controls standard, including two recent cooling tower replacements and an air source heat pump system. That makes it easier for our HVAC vendors and city technicians to ensure all of them are working as efficiently as possible."

Hatchadorian recalls another project that streamlined maintenance through coordination and standardization: the purchase and installation of a standardized fire alarm notification system across multiple buildings, making servicing them much simpler.

The team identified more cost-saving solutions.

For example, the Massachusetts Green Communities Act, which was first passed in 2008, "put in place several mechanisms to encourage the implementation of energy efficiency and renewable energy projects, including streamlined procurement pathways for energy conservation measures and energy management services," according to Boston's Metropolitan Area Planning Council.

"It can simplify municipal procurement for energy efficiency projects by working with the local utility, in this case Eversource, which has competitively selected design/build firms," says Lynch. "A municipality can contract for projects up to $100,000 with these firms. It's a tool, and we've used it to contract on LED lights, heat pump projects and insulation."

The team soon recognized that smaller, "one-off" projects weren't always quick, and that an anticipated "small" project could rapidly lead to larger issues.

"We began taking a more holistic approach, trying to determine the big picture first," says Hatchadorian.

Taking this wider overview of each project allows the team to schedule similar work at one time, and sometimes, to accomplish a variety of solutions at once.

Zooming In on Net Zero

Although deferred-maintenance projects occupied the team's attention initially, energy concerns have been a core focus throughout the process.

"Keeping the city's net-zero goals in mind, we've installed four solar PV projects," says Hatchadorian. "We're looking to supplement that work with grants from the state for energy storage feasibility studies."

The city's inefficient firehouses have also received attention, with insulation added in multiple facilities.

City Hall Annex and its unexpected energy issues has been another major focus.

"We've done a fair amount of work on City Hall Annex, which got LEED Gold certification back in the early 2000s," says Collier. "However, we

It was here that the team recognized a core benefit to the multibuilding improvement approach while establishing material, equipment and detailing standards: **the ability to consolidate projects and save money, time and materials in the short term, and to establish a more streamlined maintenance approach in the long run.**

discovered that it's never performed to those standards in terms of energy usage — it's chronically fallen short. The building envelope underperforms, which overtaxes the mechanicals system."

Solutions that the team has so far identified include repointing the annex's brick exterior and replacing or reinstalling windows.

Human-Centered Design

But beyond anticipated energy, sustainability and resiliency solutions, ensuring that these facilities are well-designed and utilized has been another focus of the process.

"The city's commitment to achieving Universal Design standards that go beyond the Massachusetts Architectural Access Board and the Americans with Disabilities Act requirements has impressed me," says Collier.

He points to a relatively small improvement suggested by the team at Boston-based Institute for Human Centered Design: adding vanity lighting on the inside of customer service windows so that people with visual impairments or who need to read lips can see the faces of staff members more easily.

Considering the needs of 43 buildings at once has also allowed the city to better focus on the use of those spaces.

"The MFIP has really helped us determine whether we are using our existing buildings to the best of their ability," says Lynch. "We discovered things like the top floor of the Inman Square Firehouse has been abandoned for decades. The building needs an elevator and new stairwell to allow us to take advantage of that space, so now we have one more thing to accomplish, but at least we're aware of it."

Other space issues were easier to resolve.

"One of my favorite projects was our renovation of the basement in the Coffin Building," says Lynch. "We were able to relocate two social service groups, the Center for Families and Baby University, two highly utilized community services. These groups had been scattered across the city. When we turned that space over to them, they were so thrilled that we'd provide a centralized, well-designed space for them."

Lessons Learned

The MFIP's progress is being watched by other municipalities, as well as by commercial real estate owners and developers who might be seeking a template for their own building concerns.

"For public- and private-sector owners, the question is the same," says Hatchadorian. "How do I make investments in the buildings I own and best use those funds to achieve multiple goals? This plan has demonstrated the benefits of visualizing issues and having the ability to plan, so you're not just blindly stabbing at problems."

"Anyone who has a large portfolio of properties, whether they're a municipality, an owner of multifamily housing buildings, a school or university, or a commercial real estate developer, they are at an advantage over those who own one or two buildings, in terms of potential energy savings" says Collier.

Why?

"You're not looking at the buildings on a building-to-building basis, but it's more like an eco-system," he explains. "You're looking to the entire built environment to help you achieve your goals. You can compensate for the underperforming buildings by partnering them with net-positive, over-performing buildings that go beyond net zero and are actually able to put energy back into the system. Photovoltaics, for instance, aren't a good fit for some structures, like an historic property, but if you also own a newer building, that might be more fitting for installing photovoltaics and then sharing the energy among properties. You can achieve your overall goal with a large portfolio in a way that an individual owner can't."

For Lynch, there's been one more important benefit.

"The DPW and the rest of the city have common goals now," she says. "We're not all operating in our own silos. We've developed strong relationships across the city. People are working together, with shared goals and shared understanding of our needs." ■

Chris Kelly is the director of Fifth House Public Relations in Massachusetts.

At Optimist Hall, Things are Looking Up

The Plaid Penguin

Optimist Hall is the new name for a former textile mill in Charlotte that began life in 1892 as Highland Park Manufacturing Company's Mill No. 1. Today, it's a mixed-use development that offers retail and office space.

An adaptive-reuse project in North Carolina showcases the appealing possibilities of older industrial buildings.

By Anthony Paletta

There's cause for confidence in Charlotte's burgeoning Mill District, where the cheerily named Optimist Hall is the latest revitalization of a turn-of-the-century textile mill. The adaptive-reuse project adds a 22,000-square-foot food hall, 34,000 square feet of restaurant and outdoor space, and 91,000 square feet of office space to an increasingly vibrant neighborhood that faced dire prospects after the U.S. textile industry collapsed near the end of the 20th century.

A collaboration between Charlotte's White Point Partners and Atlanta's Paces Properties, Optimist Hall occupies the former Highland Park Manufacturing Company's Mill No. 1. Once one of the nation's largest gingham manufacturers, the facility was built and expanded between 1892 and 1930. The U-shaped structure houses the food hall in the east wing of its main level, restaurant and retail space in its west wing (along with a few lower-level spaces) and Duke Energy offices above.

Erik Johnson, co-founder of White Point Partners, had worked with **Merritt Lancaster** of Paces Properties previously when he was a banker and Lancaster was a multifamily housing operator. They decided to join forces once again to refurbish an old structure in Charlotte. Lancaster, who helped develop Atlanta's Krog Street Market food hall with Paces Properties, had an interest in replicating something similar in North Carolina's largest city — and he saw an opportunity as well.

"We compared the food scene in Charlotte to Charleston, Atlanta and Nashville and observed there was less competition," he said.

They were looking for a historic property from the start. Johnson said White Point Partners focuses on reusing historic buildings because they supply character that can't be replicated. Their search covered the Charlotte area and wasn't focused exclusively on the Mill District, but it proved a logical fit.

"It wasn't so much that we chased that market, but that's what was open," Johnson said.

An Area on the Rebound

Formerly a center of the textile industry, the Mill District stretches north of Charlotte's downtown, starting just across Interstate 277 from the city's business center and spanning a sliver about three miles long. It contains seven intact mills built between 1889 and 1940. Local textile tycoon **Daniel A. Tompkins** developed many of them, including the precursor to Optimist Hall. Tompkins built more than 250 cotton oil mills, 150 electric plants

The Plaid Penguin

The courtyard at Optimist Hall features plentiful outdoor seating and views of Charlotte's downtown skyline a short distance to the south.

and 100 textile mills across the South before he died in 1914.

The local textile industry and the surrounding neighborhoods began a long decline after World War II. Statistics from the Charlotte-Mecklenburg Planning Commission show how dire things became. As recently as 1987, more than 97% of the housing units in Optimist Park, the small historic neighborhood that surrounds the hall, were deemed dilapidated or deteriorated.

Fortunes have turned in the past decade, however. The neighborhood is attracting young professionals who are renovating the housing stock, and the long-shuttered mills have been repurposed or are in various stages of redevelopment. Highland Park Mill No. 3 is now Heist Brewing and Highland Mill Lofts. The Alpha Cotton Mill is now Alpha Mill Apartments. The Mecklenburg Cotton Mill is The Lofts at NoDa Mills. The Louise Cotton Mill is now The Lofts at Hawthorne

“Originally, the building had been scaled to the machinery. We scaled the environment to the individual without intervening in the design much at all.”

— Holden Spaht, architect, Square Feet Studios

Mill. The Chadbourn Hosiery Mills sold in August to a group planning an office and retail conversion. A final historic structure, the Johnston Mill, is expected to be developed into apartments.

A supply of historic buildings wasn’t the only incentive for the developers of Optimist Hall. The city’s recent Lynx Blue Line light rail extension runs alongside the project, and a station is located a quarter mile away from Optimist Hall.

Despite its name, the Mill District is not merely industrial — or all mill conversions, either. It contains industrial parcels along with a large residential population, especially near the Optimist Hall portion. One element it did not contain was offices.

“A lot of people said ‘this is not an office market — how are you going to lease office space?’ ” Johnson said.

Standard market analysis showed that the demographics of the area weren’t ideal, but its central location and proximity to light rail, along with plenty of housing nearby (there are 1,200 to 1,500 apartment units within a half mile of the property), helped sway the decision to add office space.

Lancaster added that the neighborhood didn’t quite match the stereotypical millennial demographic ideal of the food hall market, either — but that was OK with the development team.

“If you end up in a market that’s too highly focused on the modern apartment dweller, that’s just a sliver of the market,” he said.

The Mill District is more affordable and mixed.

“It’s much more diverse, and you have a good mix of single-family housing and rental housing, and for us that’s a very important thing,” Lancaster said. “We like to be in neighborhoods where someone could spend their whole life.”

A Lot of Work, and Surprises

Optimist Hall wasn’t much to look at when the project began in 2014. Bricked-over windows covered the façade, and barbed wire surrounded the property.

“The west wing was a pretty scary space,” Lancaster said. “It looked like it could be the backdrop to a horror movie.”

There were lots of problems endemic to historic structures.

There had been a partial fire at some point, a significant amount of rot, and the sub-flooring required a lot of work. Some structural supports were a source of concern. Removing brick from the windows prompted worries about undermining the building’s structure. Internal wooden structural beams had to be replaced with steel in several places.

“It’s an old mill, and we found all sorts of surprises,” Lancaster said. “It was interesting to disassemble and reassemble.”

A cryptic surprise was an immense locked safe, a relic of the building’s past that will live on.

“It will sit there and be a mystery,” Lancaster said. “I don’t think it’s been moved. It weighs about 1,500 pounds”

Overall, though, the fundamentals of the structure were extremely sound.

“You couldn’t really tell from the outside, but when we saw the old building from the inside, the bones were all still there,” Lancaster said. “The floor is so thick. It’s built out of hard pine. I think it’s got the fire rating of a steel building.”

The old building required modern insertions such as HVAC and electrical infrastructure, which developers worked to confine to the crawl space.

The Plaid Penguin

"Mr. Tompkins designed this building to bring in a lot of natural light," said Holden Spaht, an architect at Square Feet Studios who worked on the interior of Optimist Hall. "We wanted to make sure we didn't cover up any of those windows."

Challenging Financing

The renovation of Optimist Hall might have been fairly straightforward, but paying for it was not.

"Capital-wise, it's the most complicated deal I've ever been involved with," said Johnson, noting that it required work with the City of Charlotte, Mecklenburg County and national authorities. Financing involved common equity, preferred equity, a mezzanine loan, a senior loan, federal historic tax credits, state historic tax credits and a bridge loan.

The Federal Historic Preservation Tax Incentives Program, also called the Federal Historic Tax Credit program, gives a 20% federal tax credit to property owners who substantially rehabilitate a historic commercial building for income-producing uses. North Carolina offers a 10% historic state tax credit for properties that qualify for the federal tax credit and cost between $10 million to $20 million to develop. And the Charlotte-Mecklenburg Historic Landmarks Commission offers a 50% property tax deferment for qualifying historical properties.

In the end, it cost $12 million to acquire the property, and the process involved buying 30 different land parcels from 28 different owners — one of whom was incarcerated at the time.

"Yes, we even had to go to jail for a signature," Johnson said.

Tenants Line Up

While financing was complicated, attracting a major office tenant in Duke Energy was the easy part of the process. The historic and distinctive quality of the building offered something different from most suburban or downtown spaces in the Charlotte market.

> **“There are some mills that have been lost, but what’s really striking is how many remain, which is a testament to their quality.** If you leave them alone, they just sit there and wait for someone to do something to them. They’re very well constructed.”
>
> *— Dan Morrill, consulting director, Charlotte-Mecklenburg Historic Landmarks Commission*

“Duke Energy is focused on employee retention,” Lancaster said. “But if you’re working downtown, nobody gets out of a 40-story building.”

An environment different from the glassy corporate-tower confines of city center was just what some employees wanted most.

“We’ve been told there were employees who lobbied Duke Energy to work in this location,” he said.

In fact, he said Optimist Hall had more office suitors than it could accommodate, because the developers weren’t going to expand beyond the historic building’s footprint.

“We showed it to companies who said they needed the ability to expand, and we couldn’t give them that,” Lancaster said.

Food hall tenanting was a different story. It was a relatively new format for the Charlotte market, and it was in an unconventional location. Like holding a party, it requires a sense that a few desirable guests must show up to attract anyone at all.

“You get the first people to sign on, and then you can get everyone on board,” Lancaster said. “It can be a terrible feeling when you have 30,000 feet of restaurant space and you haven’t filled it. Once we had a couple of people that were circling, that’s when we could breathe.”

Lancaster stressed that they weren’t looking for just any tenants.

“We’re very selective,” he said. “We don’t put signs up and wait for people to come down. We spent a lot of time and energy researching and getting the best local chefs we can get. Sometimes we had to go out of the market.”

Currently, 16 of 19 spaces in the food hall are leased, as are seven of nine commercial slots elsewhere in the building. Tenants include the first local location of Atlanta-based Honeysuckle Gelato, the second location of Chicago cocktail bar Billy Sunday, the third location of Winston-Salem’s Village Juice Company, the first local outlet for Charleston-based fried chicken chain Boxcar Betty, the first Charlotte branch of Dallas-based Velvet Taco, and the first Charlotte location of Atlanta-based Archer Paper Goods.

Some local businesses are expanding here, including Undercurrent Coffee, Suarez Bakery and others. Fonta Flora Brewery is located in the lower east wing.

Interior Design That Aimed to be ‘Respectful’

The design of the food hall spaces, including the stall layout and the courtyard dining area, was entrusted to Atlanta’s Square Feet Studios. **Holden Spaht**, an architect at Square Feet Studios, noted that they wanted to be respectful of the building’s history while creating an engaging food hall. They commenced after work on the historic envelope wrapped up.

“We were brought in after a lot of the historic-preservation nuts and bolts had been worked out,” Spaht said. “They conceived of the food hall as a set of interventions that operated within that field.”

The most important renovation task, Spaht explained, was to respect the integrity of the building’s 100-year-old shell.

“Mr. Tompkins designed this building to bring in a lot of natural light,” Spaht said. “We wanted to make sure we didn’t cover up any of those windows.”

By the same measure, the renovation was unique in that the building was originally designed to accommodate massive textile looms, not humans.

"Originally, the building had been scaled to the machinery," Spaht said. "We scaled the environment to the individual without intervening in the design much at all."

All food stalls are in the middle of the space, with the only exceptions being a common bar and some stalls that line the partition between the food hall and the Duke Energy space. That also was designed with care, Spaht explained.

"It doesn't feel like a wall; it feels like a porous edge," he said.

The stalls were also created to have a light footprint.

"They feel like they've been inserted under the shell of a historic building with a very light touch," Spaht said. "They're not attached. The additions were designed with low impact in mind. It doesn't ask the building to do anything that it wasn't already doing."

He explained other solutions:

"Picnic tables made of reclaimed heart pine factory flooring integrate with an overhead armature to create smaller dining spaces within the larger building," Spaht said. "Repurposed old factory windows found

Optimist Hall Project Summary

Optimist Hall is a 147,000-square-foot redevelopment of a former gingham mill that features a food hall complemented by retail, restaurant and creative office space

Project Location	1115 N. Brevard Street Charlotte, NC 28206
Type of Site	Urban
Development Type	Redevelopment, Adaptive Reuse
Transportation Modes	Car, Transit, Pedestrian
Mix of Uses	Office 91,000 SF Retail/Restaurant 34,000 SF Common Space (Food Hall) 22,000 SF
Number of floors	2
Parking	Surface
Site Dimensions	147,000 SF Total

Office and/or Retail Tenants

- Ava Pizza - Stall 17 - 495 SF
- Archer Paper - Suite F - 2,172 SF
- Bao & Broth - Stall 5 - 560 SF
- Billy Sunday - Suite R102 - 1,425 SF
- Botiwalla - Suite 203 - 2,727 SF
- Boxcar Betty's - Suite 13 - 565 SF
- Duke Energy - 91,000 SF
- Dumpling Lady - Stall 8 - 500 SF
- El Thrify - Suite R202 + R204 - 8,817 SF
- Felixs' Empenadas - Suite 3 - 324 SF
- Fonta Flora Brewery - Suite D - 2,660 SF
- Honeysuckle Gelato - Stall 1 - 665 SF
- Papi Queso - Stall 2 - 645 SF
- Pet Wants - Stall 10 - 509 SF
- Spindle Bar - Stall 19 - 659 SF
- Suarez Bakery - Stall 4 - 1,007 SF
- Undercurrent Coffee - Stall 7 - 500 SF
- Velvet Taco - Stall 11 - 511 SF
- Village Juice - Stall 9 - 509 SF
- Zukku Sushi - Stall 18 - 525 SF

Development Team

Paces Properties + White Point Partners + Confluence Real Estate

Developer	White Point Paces Partners
Project Architect	Perkins & Will
Interiors Architect	Square Feet Studio
General Contractor	Barnhill Contracting Company
Leasing Agent	**Shelbi Bodner** - Paces Properties

Municipal Funds or Tax Incentives

Historic Tax Credits

Timeline

Phase I Completed	9/30/2019
Total Project Costs	Over $80 million

“They’re so easily convertible because you’ve got these large expanses of open space that can easily be divided by partition walls into offices, condominiums, lobbies and anything you’d like.”

— Dan Morrill, consulting director, Charlte-Mecklenburg Historic Landmarks Commission

in the basement, along with light-translucent woven scrims, create partition screens around intimate 8-foot-by-8-foot ‘micro lounges,’ utilizing the building’s original structural modules that were designed to fit common weaving and spinning equipment of the time. Decorative lighting in the food hall is entirely composed of reclaimed factory pendants, also found in the basement. They were rewired but otherwise largely left in their found and aged condition.”

New ductwork was painted to match the historic palette of the building.

The courtyard plan features 16 8- to 9-foot-tall magnolia trees planted in herringbone-patterned wood planter boxes. Cypress and painted metal furniture appears in this space.

‘A Testament to Their Quality’

Dan Morrill, consulting director of the Charlotte-Mecklenburg Historic Landmarks Commission, praised the work at Optimist Hall.

“They did a good job,” he said. “It was a sensitive job.”

Morrill pointed out that the idea these structures had any utility is fairly recent.

“When I first got involved in preservation work here, none of the old mills had been converted,” he said. “Some of them were in use, some were used as warehouses, and some were empty.”

Ironically, the fact that the Mill District wasn’t of much interest to anyone turned out to be a boon to its historic architecture.

“There are some mills that have been lost, but what’s really striking is how many remain, which is a testament to their quality,” Morrill said. “If you leave them alone, they just sit there and wait for someone to do something to them. They’re very well constructed.”

Their location next to rail lines was once ideal for shipping products. Now it’s ideal for moving humans on the light rail extension. Their expansive floor plans also lend themselves to nearly any use.

“They’re so easily convertible because you’ve got these large expanses of open space that can easily be divided by partition walls into offices, condominiums, lobbies and anything you’d like,” Morrill said.

While quality tenants are obviously essential, the key to the success of a food hall is not that any individual tenant is the destination but rather the full venue itself.

“In a perfect world, the experience of being there is your favorite part, not picking pizza or sushi or such,” Lancaster said. “People go to Optimist because they want to go to Optimist, not because of a specific thing.”

The food hall has been booming thus far, Lancaster observed.

“They are very busy — I’m not sure operators fully expected it,” he said.

This bet on a formerly shuttered site appears to be paying off. It’s revitalized a historic property while providing occasion for profit.

“You’ve got that character that people will pay extra for,” Johnson said. “We’re doing this to make money, but we’re also excited about doing something for the community.” ■

Anthony Paletta is a freelance writer based in New York.

What's on the Horizon for Commercial Real Estate?

In October, NAIOP gathered national research directors for an in-depth discussion of city rankings, the future of coworking and other vital topics.

By Shawn Moura, Ph.D.

In October, the NAIOP Research Foundation's National Research Directors Meeting brought together NAIOP Distinguished Fellows and research directors from national real estate brokerage, data and investment firms at CRE.Converge 2019 in Los Angeles. Attendees discussed current Foundation research and trends in industrial and office development.

Market Tiers and Rankings: Clear as Mud?

Maria Sicola and **Charles Warren** of CityStream Solutions presented the initial findings of a white paper sponsored by the NAIOP Research Foundation that describes how the commercial real estate industry currently sorts metropolitan markets into tiers or rankings. Sicola and Warren based their findings on interviews with industry researchers, consultants and academics, plus published reports that utilize or examine market tiers and rankings.

Sicola observed that most people who develop and interpret market-tier models tend to use them to evaluate risks and opportunities in different markets, not to predict

Getty Images

their future performance. Market tiers have historically been organized around market size, with larger markets usually perceived as less risky. However, in recent years there has been "a movement away from size in and of itself to measures around price, cap rates, velocity and volatility," she said. Some researchers have branched out further to look at measures such as walkability or whether a market is anchored by an 18- or 24-hour city.

This expansion in the number of variables that analysts consider has led to more variation in the market-tier rankings developed by different firms. Product type — whether categorizing industrial, office or multifamily markets — also has a significant effect on which markets emerge as primary, secondary or tertiary markets. The intended audience for a tier-ranking system can further affect how an analyst sorts markets, as conservative investors and yield-seeking investors will prioritize risk and potential return differently.

The profusion of different methodologies and resulting categories

Comparing Rankings for U.S. CRE Markets

Market [1]	Population [2]	All Jobs [3]	Office Jobs [4]	TAMI Jobs [5]	Warehouse Jobs [6]
Los Angeles - CA	1	3	2	1	8
New York – NY	3	2	1	2	
Chicago – IL	2	1	3	3	3
Dallas-Fort Worth - TX	4	4	5	9	2
Washington - DC	7	5	4	8	
Boston – MA	10	8	6	6	
Philadelphia - PA	8	6	8	10	7
Houston – TX	5	7	10		10
Northern New Jersey - NJ	6	9	7		5
Atlanta – GA	9	10	9		4
San Francisco - CA				4	
San Jose – CA				5	
Seattle – WA				7	
Inland Empire – CA					1
Columbus – OH					6
Indianapolis – IN					9

Notes: [1] Market definitions provided by CoStar, in most cases using Census MSA boundaries; [2] U.S. Census total population estimate for June 1, 2018; [3] U.S. Census County Business Patterns estimates for all NAICS codes, based on 2016 data (latest available); [4] County Business Patterns for four-digit NAICS codes defining industries likely to use office space ; [5] County Business Patterns estimates for four-digit NAICS codes in TAMI (Tech, Advertising, Media, and Information) categories. These are a subset of Office Jobs category; [6] County Business Patterns estimates for four-digit NAICS codes in Wholesale and Warehousing categories.

CityStream Solutions

This table shows that the largest markets by population align closely with those that have the largest number of jobs and office-using jobs. However, there is less overlap between these markets and those with the highest concentration of tech, advertising, media and information (TAMI) jobs or warehouse jobs. This divergence helps to illustrate why market tier rankings are rarely identical, but often overlap.

can lead to significant confusion for those trying to make sense of conflicting reports. Their task is further complicated by the tendency for analysts to offer explanations of their methodologies that are "clear as mud," as **Jeanette Rice**, writing for CBRE, observed in 2016.

Using data from CoStar, Warren demonstrated how market rankings can be affected by variables measuring size, price and liquidity, as well as by product type. He then previewed an alternative approach to market tiers that CityStream has been working on.

One weakness of the many approaches that analysts use in developing tier models is that they reduce all their variables into a one-dimensional outcome that places an individual market in a higher or lower tier. Warren described an alternative model, similar to the way Morningstar is known for rating stocks, which categorizes markets using two dimensions — size and risk/return characteristics. Hypothetically, this type of model would allow users to more easily identify if a market is in the "first tier" for their own particular investment goals and strategy.

Feedback to Sicola and Warren's presentation was generally positive. Attendees agreed that different types of investors and developers will look for different types of markets, but the creation of a descriptive model for real estate markets that could be widely shared across the industry would be beneficial.

Sicola and Warren's proposal for a two-dimensional model also generated significant interest. While there was little disagreement about categorizing markets by size, attendees focused their feedback on the proposed risk/return dimension.

Frank Nitschke, executive director of investment research and strategy at PGIM Real Estate, argued that for a new model to be widely accepted, categories based on risk/return characteristics should be based on clearly defined quantitative measures rather than qualitative judgments. **Joshua Harris**, vice president of strategy at Skanska USA, maintained that a dimension measuring risk/return would be most useful if it clearly measured a continuum of volatility. **Adam Brueckner**, vice president of re-

… most people who develop and interpret market-tier models tend to use them to evaluate risks and opportunities in different markets, not to predict their future performance. Market tiers have historically been organized around market size, with larger markets usually perceived as less risky. **However, in recent years there has been "a movement away from size in and of itself to measures around price, cap rates, velocity and volatility."**

Participants

Ian Anderson
Senior Director of Research
CBRE
Philadelphia

Adam Brueckner
Vice President, Research
Oxford Properties Group
Toronto

John Chang
Senior Vice President, Research Services
Marcus & Millichap
Phoenix

Sarah Dreyer
Vice President, Head of Americas Research
Savills USA
Washington, D.C.

Shawn Gilligan
Associate, Research & Strategy
QuadReal Property Group
Toronto

continued on page 79

search at Oxford Properties Group, added that it could be useful to label the risk/return dimension using the familiar "core," "value" and "opportunistic" categories.

Sicola and Warren plan to follow up with meeting attendees as they conclude their research.

Coworking in WeWork's Wake

Turning to a discussion of recent trends, attendees had a lot to say about WeWork's recent difficulties and their expectations for the real-estate-as-a-service market. **Dean Violagis**, vice president of research at CoStar, agreed with other attendees that WeWork's problems reflected a flawed approach to long-term leases and aggressive expansion. "Leasing 100,000 square feet here, 100,000 square feet there was not going to be sustainable," he said.

However, the concept of flexible office space remains appealing.

"A lot of landlords are getting involved because they see it as a good option to have in their properties," he said.

Shawn Gilligan, research and strategy associate at QuadReal, said WeWork and other coworking operators that focus on servicing high-end customers with high-cost space had adopted a high-risk business strategy. If there were an economic downturn, operators stuck in expensive long-term leases would find it difficult to sell desk space at a sustainable price when market rates declined. Coworking firms can significantly reduce their risk by leasing low-cost space in Class B or C office buildings.

Several attendees noted that companies with a business model like Convene, which shares risks and returns with building owners, are likely better positioned to weather the next recession.

Despite WeWork's shortcomings, **Raymond Wong**, vice president of data operations at Altus Group, noted the company's transformative role.

"Coworking space has been around for years," he said. "They made coworking space cool."

The success of WeWork and other coworking operators at providing high-quality flexible office space

Several attendees noted that **reverse logistics presents unique challenges** to manufacturers, retailers and distributors.

. . . **environmental sustainability mandates** in cities like New York and D.C. are likely to further **contribute to the obsolescence of older buildings,** which can be expensive to retrofit.

Participants *continued from page 77*

Joshua Harris
Vice President, Strategy
Skanska USA
New York

Jack Kern
Director of Research and Publications
Yardi Systems
New York

Frank Nitschke
Executive Director
PGIM Real Estate
Madison, New Jersey

Maria Sicola
Founding Partner
CityStream Solutions
Fort Myers, Florida

Mark Stapp
Professor in Real Estate
Arizona State University
Tempe

gives companies a new way to attract and retain talent.

Harris and **Mark Stapp**, a professor in real estate at Arizona State University, observed that office building owners increasingly see coworking as a revenue-generating amenity that allows traditional office tenants to increase or decrease their use of office and meeting space as needed. **Sarah Dreyer**, vice president and head of Americas research at Savills, added that coworking brings hospitality services to office space, making real estate as a service more attractive to tenants who employ highly skilled workers.

Stapp noted that space-utilization studies show that leased space designated for an individual worker is only occupied less than a third of the time.

"Corporations ask 'Why are we leasing all of this space when it's utilized only 30% of the time?' " he said. "And so I do think this is going to continue to be a strategic tool."

Harris predicted that if WeWork breaks its leases, the quality of the spaces it leaves behind should make them easy to re-lease with minimal tenant improvements. He went further to note that a broader shift to real estate as a service could help building owners significantly reduce costs associated with the tenant-improvement cycle. Owners stand to benefit in the long run if tenants become accustomed to trading customized buildouts for flexible high-quality office space.

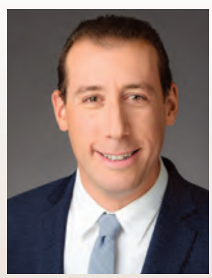
Other Trends in Office and Industrial Real Estate

Attendees closed the meeting with a discussion of other emerging trends in commercial real estate.

Violagis observed that there is still a high level of activity in industrial real estate, with developers continuing to build large fulfillment centers. Although e-commerce is leading to strong growth in fulfillment and distribution centers, **Jack Kern**, director of research and publications at Yardi Systems, has seen an increasing trend for retailers

Ian Anderson, senior director of research at CBRE, opened a conversation about the current state of office development by noting that owners of **older Class A office buildings in markets like midtown Manhattan and Washington, D.C., appear to be struggling with higher vacancy rates amid an excess supply of office space and competition from coworking operators.** By contrast, lower-cost Class B properties have recently experienced the strongest rental growth rates.

Dean Violagis
Vice President, Research
CoStar Group
Washington, D.C.



Charles Warren, Ph.D.
Founding Partner
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Raymond Wong
Vice President, Data Operations, Data Solutions
Altus Group Limited
Toronto

Anthio Yuen
Director, Research and Strategy
Vancouver, BC, Canada ■

to carve out storage spaces within their stores to facilitate omnichannel distribution.

Several attendees noted that reverse logistics presents unique challenges to manufacturers, retailers and distributors. Stapp said a staggering volume of returned merchandise is being landfilled. By contrast, Kern noted that returned merchandise often finds a second life on eBay.

Ian Anderson, senior director of research at CBRE, opened a conversation about the current state of office development by noting that owners of older Class A office buildings in markets like midtown Manhattan and Washington, D.C., appear to be struggling with higher vacancy rates amid an excess supply of office space and competition from coworking operators. By contrast, lower-cost Class B properties have recently experienced the strongest rental growth rates.

Harris indicated that environmental sustainability mandates in cities like New York and D.C. are likely to further contribute to the obsolescence of older buildings, which can be expensive to retrofit. Gilligan observed that the problem of obsolescence and oversupply is market-specific. Demand is sufficiently robust in some Canadian markets like Toronto and Vancouver that owners of older Class A buildings only need to "sweep the floors" before leasing space to a new tenant.

Several attendees also discussed how a continuing trend toward multinodal urban development — a response to traffic congestion and the expansion of public transit networks — is affecting office markets. In some cases, central business districts in traditional urban cores are losing office tenants to the suburbs as inner- and outer-ring suburbs become more urbanized. Suburbs can be particularly attractive if the cost of living and office rents are particularly high in an urban core, or when locating an office in a suburb will lower commute times for most employees. ■

Shawn Moura, Ph.D., is the director of research for NAIOP.

Breathing New Life into Old Office Parks

By adding new uses and amenities, older properties can be remade into magnets for younger skilled workers.

By Shawn Moura, Ph.D.

The suburban office parks built in the 1980s and early 1990s were once desired, cost-efficient corporate destinations. But as skilled workers migrated to urban cores, corporate campuses lost favor.

However, a new trend in office demand has emerged as a growing share of skilled workers are now moving back to the suburbs in search of affordable housing and quality schools. This shift has renewed interest in redeveloping older office parks to attract a new generation of office workers.

The NAIOP Research Foundation has published a new report titled "Profiles in the Evolution of Suburban Office Parks," by **Dustin Read**, Ph.D. Through five case studies, it examines how developers in the U.S. and Canada are modernizing older parks with new uses and amenities to attract new tenants and boost profitability.

Understanding the Appeal of Older Office Parks

The concentrated economic opportunities, dynamism and amenities in major cities have attracted younger skilled workers for a long time, but rising housing costs and commercial rental rates in recent years have made urban core areas less attractive to workers and employers. As millennials grow older and form families, the affordable housing and quality public schools that many suburbs offer become more appealing. However, many of these workers are accustomed to workplaces with amenities and proximity to transit and retail, and suburban office parks that offer similar conveniences are more likely to attract them.

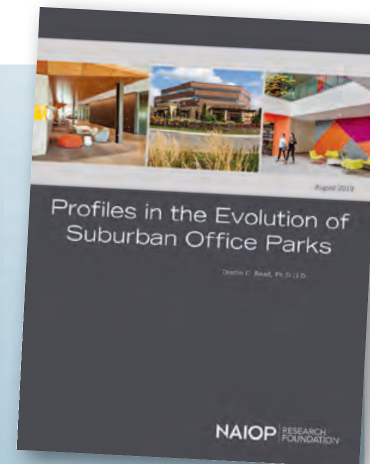
The report reveals that a growing number of developers see older office parks as attractive opportunities for redevelopment. They are often able to add value to these properties by increasing densities, improving space utilization, and adding new uses and amenities. This is particularly true for buildings that previously served a single large tenant and office parks with large surface parking lots that exceed current parking requirements.

In cases where a property has sat vacant, developers often find that municipal officials are amenable to proposals that revitalize the property. Some older office parks are also located in markets with high barriers to entry for new development as the limits of urban development have expanded significantly since they were first built.

What Developers Need to Keep in Mind

While older office parks offer substantial opportunities for redevelopment, they also present significant risks. The report's case profiles reveal the unique challenges that developers face with office park redevelopment.

For instance, a strong understanding of the area's market conditions, demographics and the preferences of workers, employers and public officials is critical to a successful office park redevelopment project. When older office parks struggle to attract tenants, it is often because the design no longer meets local needs, or they do not offer adequate amenities. Market research can help developers identify which features and uses to include in a redeveloped property. Similarly, developers



Get the Report

To view and download "Profiles in the Evolution of Suburban Office Parks," visit www.naiop.org/Research/Our-Research.

The report reveals that a growing number of developers see older office parks as attractive opportunities for redevelopment. They are often able to add value to these properties by increasing densities, improving space utilization, and adding new uses and amenities.

While it is important to develop a comprehensive plan for repositioning a property prior to acquisition, these plans also need to be flexible enough to allow developers to adapt to unforeseen circumstances.

must cultivate an understanding of local officials' priorities so that they can show how redevelopment will benefit the community and in turn obtain the entitlements needed for significant improvements.

While it is important to develop a comprehensive plan for repositioning a property prior to acquisition, these plans also need to be flexible enough to allow developers to adapt to unforeseen circumstances. Some of the profiled developers had to adjust their initial redevelopment plans to suit a new anchor tenant or to accommodate local officials' expectations for the property. It is also not uncommon to encounter unexpected structural or environmental challenges when redeveloping an older building. Moreover, developers can adapt to unexpected challenges by actively seeking out lenders who will offer flexible loan terms that allow for significant changes to initial design plans and project timelines.

All the developers profiled in the report noted the importance of creating a new sense of place and a brand that was distinct from the original property. Developers can use design, technology and shared amenities to build a property's sense of community. Rebranding a property to match its new uses and aesthetics also helps the surrounding community recognize a redeveloped property's value.

Collectively, the report's case profiles provide developers with a roadmap to locate and redevelop promising properties. They also suggest that office park redevelopment will remain an effective strategy for the foreseeable future. ■

Shawn Moura, Ph.D., is the director of research for NAIOP.

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Liquor License Policies Can Boost Real Estate Growth

NAIOP chapters seek to loosen Prohibition-era restrictions.

By Rich Tucker

It's a Friday afternoon, and you're planning to meet up with friends to chat and unwind after a full week of work. Where are you going to go? Chances are to a restaurant or bar where you can have a beer, glass of wine or a mixed drink.

Even in an age when many people are health conscious, alcohol remains a key to bringing people together — especially young adults, the demographic that business owners are trying to attract.

"Restaurants have proven to be desirable anchors for redevelopment projects, magnets for other businesses and an amenity for a population that is dining out more than ever," notes **Michael McGuinness**, CEO of NAIOP New Jersey.

However, in his state, there simply aren't enough liquor licenses available for every establishment that wants one.

Getty Images

Many states maintain antiquated laws and regulations regarding the sale and consumption of alcohol, and these outdated measures are hampering development opportunities.

Few Licenses in New Jersey

The Garden State's liquor license laws date back to the Prohibition era; the number of permits was and still is linked to the number of residents within a jurisdiction. Back then, of course, there were fewer people and therefore less need for liquor licenses. Yet even as the state's population has grown across the decades, the number of licenses in use has declined.

That's because many of those who hold liquor licenses are not currently using them. These holders treat the license almost as a financial investment, treating it like a stock and possibly selling it after it increases in value. There are roughly 2,000 inactive liquor licenses at any given moment in New Jersey, and this creates scarcity and drives up costs, simply because laws prohibit the sale of liquor licenses beyond municipal borders and limit the number of licenses based on the resident population.

The Garden State's liquor license laws date back to the Prohibition era; the number of permits was and still is linked to the number of residents within a jurisdiction.

Selling a license to someone who will use it can be lucrative, with the prices reaching six figures.

"For the privilege of serving an alcoholic beverage, you've got to come up with a million dollars in some places," Assemblyman **John Burzichelli**, D-3rd District, tells NJBIZ. "What chance does the little guy have of going into the business?"

Burzichelli has taken steps to fix the problem by making more licenses available. In a previous legislative session, he introduced a bill that would have created a new type of liquor license. This restricted restaurant license would allow the sale of any alcoholic beverages for consumption on the premises. It would also create restricted beer and wine licenses that would allow the sale of only beer or wine by the bottle

continued on page 84

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Breweries put Milwaukee on the map, but a lack of liquor licenses is a problem in Wisconsin. Similar to New Jersey, the state doles out licenses through a quota system based on the population of a municipality.

continued from page 82

or can. These licenses would only be available for restaurants that occupy between 1,500 and 6,000 square feet with a full-service kitchen that covers a minimum of 500 square feet. Fees would be affordable, too, ranging between $1,500 and $10,000.

Municipalities would be allowed to introduce an unlimited number of these licenses. McGuinness supports the measure.

"Safe and affordable places to live with access to a 24/7 live/work/play environment offering transit, recreational facilities, places to congregate, and a variety of culture, dining and drinking establishments are the recipe for success," he testified before the Assembly. "This bill will help the state deliver these types of locations."

The bill has passed two Assembly committees and stands ready to be considered by the full Assembly, which will be back in session in January.

"NAIOP is very encouraged by this action," **Anthony Pizzutillo**, NAIOP New Jersey's government affairs consultant, said after the bill was referred to the Assembly Appropriations Committee. "It sends a signal to the market that the Legislature is responding to attitudinal changes and market changes in New Jersey for allowing towns to be creative in attracting young people, millennials and the young labor market to live, work and play in the state."

The legislation could provide an economic boost across the state.

"Many areas could benefit, such as Fort Monmouth in Eatontown, the Hoffman LaRoche site in Nutley and Clifton, Sanofi campus in Bridgewater, Bell Works in Holmdel, abandoned airports and dozens of other redevelopment sites," McGuinness notes. "Imagine them becoming cool places where the younger generation would cluster to live. Investors and new businesses would quickly follow as 'capital chases talent.'"

A Problem in Wisconsin, Too

New Jersey isn't alone in facing this issue.

Breweries put Milwaukee on the map, but a lack of liquor licenses is a problem in Wisconsin. Similar to New Jersey, the state doles out licenses through a quota system based on the population of a municipality.

"There is a cap on licenses," NAIOP Wisconsin CEO **Jim Villa** says. "That's causing a limitation in development opportunities in places where we have seen a growth in food and beverage components."

In the previous legislative session, NAIOP lobbied successfully for passage of Assembly Bill 612, which made it easier for municipalities that were not using licenses to sell them to nearby areas that are growing. But the state needs further reform that makes more licenses available overall.

Commercial real estate developers are working to give Americans places to work, live, play and relax. State and local governments can help by improving and modernizing their permitting processes to meet local needs. ■

Rich Tucker is NAIOP's director for public policy communications.

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Chapter Profile: NAIOP Northern Nevada

Reno and the nearby region is known for casinos and resorts, but developers are also betting on a wide range of properties in this fast-growing area.

By Trey Barrineau

NAIOP's Northern Nevada chapter is focused on real estate development in Reno and the surrounding areas. In early 2019, it was named NAIOP's Chapter of the Year in the Small Chapter category. Board President **Matt Harris** of Avison Young and Education Committee Chair **Andrew Tourin** of First Centennial Title Company answered a few questions about what is going on in commercial real estate in this bustling region of the country.

Development: *How are the market conditions for member companies in your chapter?*

Matt Harris and Andrew Tourin: Northern Nevada continues a strong growth cycle initiated in 2012. We've added 48,000 new jobs in the past five years, a job growth rate of 3.5% per year. This job growth equates to an increased need for commercial and residential properties. This region is one of the fastest-growing markets in the fastest-growing state in the country. Opportunities are abundant for industrial product, office and retail development.

Development: *What are the biggest challenges you're facing in either the business or regulatory climate in your area?*

Harris and Tourin: Our member companies are all struggling to fill the labor pool necessary to meet the demand fueled by the region's explosive growth. Developers and general contractors are actively searching outside of our traditional labor markets to bring in additional skilled subcontractors to assist in completing projects on time. Similar to the national economy, Northern Nevada is facing higher material costs, increased development fees and other public utility pricing increases. Our speed to market has been our unique selling point for some time now, and it is still one of the fastest in the country comparatively. One- to three-month delays for special-use permits related to site grading and stormwater retention have become the norm as we expand outward into the foothills of our region.

Development: *What are the biggest opportunities in commercial real estate in your area right now?*

Harris and Tourin: Both industrial and office product are in high demand in the region and are being absorbed quickly. Rents for new product reflect the current cost of construction but have not deterred absorption. Market average rents for industrial are $6.95 per square foot, a 5% increase over 12 months. That's currently about 20% lower than the national average. Big box industrial asking rents average $4.60 per square foot. Office asking rents average $20.75, and retail asking rents average $18.10. Currently there are more than 3 million square feet of industrial product under development, and some exciting new office and hotel projects are planned for the downtown Reno core and South Reno markets.

Development: *What are some of your chapter's legislative or regulatory priorities?*

Harris and Tourin: A rapidly growing region brings with it a rising "anti-

Getty Images

The region around Reno, Nevada, added 48,000 jobs in the past five years, and demand is strong for industrial, office and retail properties.

NAIOP Northern Nevada At a Glance

Year founded: 2006

Number of members: 127

Number of companies represented: 69

Website: naiopnv.com

> **"Our member companies are all struggling to fill the labor pool necessary to meet the demand fueled by the region's explosive growth. Developers and general contractors are actively searching outside of our traditional labor markets to bring in additional skilled subcontractors to assist in completing projects on time."**
>
> *— Matt Harris and Andrew Tourin, NAIOP Northern Nevada*

growth" sentiment among some residents. Our most important public policy mission is to ensure that our elected officials understand the need to provide well-thought-out developments where residents can work, shop and live. As such, NAIOP Northern Nevada has created good relationships with both local and state elected officials as well as their staff. We pride ourselves on the way we've worked with those bodies to craft sensible regulation and identify unintended consequences of proposed legislation or ordinances that weren't thoroughly vetted. Being a resource for best practices in development for our local municipalities is our No. 1 priority. The Government Affairs (GA) committee's most recent success was defeating a development moratorium in one of our fastest-growing submarkets, the North Valleys area. City of Reno officials heard testimony from our GA Chair **Elizabeth Fielder** of Fielder Law, current chapter president **Matt Harris** with Avison Young and several concerned members on the importance of continued development in the area. The final vote was close, but the Reno City Council made the right decision in the end.

Development: *What are some notable projects in Northern Nevada?*

Harris and Tourin: Northern Nevada's economy is being driven by logistics and distribution companies taking advantage of the region's strategic location, and now advanced manufacturing companies are following suit. Panattoni is currently building more than 2 million square feet of spec industrial product in our North Valleys submarket. Dermody Properties has also completed several other big-box projects in the North Valleys over the past 12 months. Emerging industrial markets include

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the town of Fernley, 30 minutes east of Reno/Sparks on Interstate 80 and along the Union Pacific rail line. This new park will include an intermodal trans-load facility for logistics and manufacturers. Google's 1,200-acre project in the Tahoe Reno Industrial Center is under construction and has yet to be officially announced. Speculation says it will be bringing in hundreds of high-paying engineering and tech jobs. All of this activity has led to a flurry of mixed-use developments like the project Reno Land is currently developing at the 38-acre Park Lane site in the center of the city. A former regional mall site is being transformed into luxury apartments, retail and office. Tolles Development Co. acquired land to also construct a retail and office project southwest of the Reno Tahoe Airport in the Meadowood submarket.

> **"Northern Nevada's economy is being driven by logistics and distribution companies taking advantage of the region's strategic location, and now advanced manufacturing companies are following suit."**
>
> *— Matt Harris and Andrew Tourin, NAIOP Northern Nevada*

McKenzie Properties has just announced Skypointe, a 200,000-plus-square-foot spec mixed-use project at the most traveled intersection in Reno. Downtown Reno is also experiencing significant redevelopment with a $1 billion, 20-block project by developer Jacobs Entertainment. Jacobs is expected to deliver more than 2,000 units including multifamily, hotel, retail and entertainment venues.

Development: *Is there anything you'd like to say to other NAIOP members?*

Harris and Tourin: NAIOP Northern Nevada invites NAIOP members from across the country to come see what our community has to offer. We are experiencing growth in advanced manufacturing from companies such as Tesla with its game-changing Gigafactory, data centers for Apple, Google and Switch, and state-of-the-art distribution facilities for Polaris, Ebay, Zulily, Amazon, Walmart and many others. There are numerous opportunities for developments of all types to meet these new market demands, and we would like our fellow NAIOP members to experience our unique community. ■

Trey Barrineau is the managing editor of Development magazine.

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NAIOP's 2019 Developing Leaders Award Recipients Discuss Big Wins and Simple Pleasures

Outstanding young members share what's gratifying about the commercial real estate industry.

By Marie Ruff

A career in commercial real estate can involve long stretches of hard work followed by a momentous success — landing a multimillion-dollar deal, completing a major project or finding a solution to a client's needs — but some of the most appealing aspects of working in this industry are found in the day-to-day.

NAIOP talked with the five recipients of its 2019 Developing Leaders Award to find out what they consider the most significant project or accomplishment of their career thus far, as well as what they believe to be the most rewarding aspects of their work. The Developing Leaders Award winners were honored in October at NAIOP's CRE.Converge 2019 in Los Angeles in recognition of their remarkable professional accomplishments, strong leadership and significant community involvement.

"I enjoy creating relationships and gaining the trust of my clients. The most rewarding aspect is getting a phone call I wasn't expecting from a client or a referral with a real estate challenge that needs to be solved."

— Nate Erickson, Senior Associate – Brokerage Services, Transwestern

Nate Erickson

Senior Associate - Brokerage Services, Transwestern
NAIOP Minnesota

Significant project or accomplishment: "I'm most proud of my role at Transwestern in Minneapolis, where I was recruited to help lead and grow the industrial group. Our leadership has supported our team to pursue new business relationships, recruit additional team members, put us in positions to succeed and be the face of the brand locally. That's been very gratifying, especially at this stage of my career."

Rewarding aspects of the job: "I enjoy creating relationships and gaining the trust of my clients. The most rewarding aspect is getting a phone call I wasn't expecting from a client or a referral with a real estate challenge that needs to be solved. That tells me I did my job well, they trust me, and they're willing to put their business in my hands. That sense of responsibility and trust reinforces my drive and dedication to them."

Elizabeth Goodwin

Director of Project Management, CBRE
NAIOP Nashville

Significant project or accomplishment: "My most significant professional 'win' was being on the team that was awarded Nashville's new minor-league baseball stadium. We worked for months on the procurement and then successfully completed the project in less than a year. The ballpark project was significant because it proved to me and others that I am capable of working under high pressure to deliver a top-quality product. It was a high-profile project that exposed me to many different parts of the industry and politics within Nashville. After this success, I began to take on more leadership roles inside and outside my company."

Rewarding aspects of the job: "The most rewarding aspect of project management is seeing the project near completion when you know that it was a success and that the client is happy. I also enjoy building a team and working with my teammates."

"The most rewarding aspect of project management is seeing the project near completion when you know that it was a success and that the client is happy. I also enjoy building a team and working with my teammates."

— Elizabeth Goodwin, Director of Project Management, CBRE

NAIOP's 2019 Developing Leader Award recipients (left to right) Matthew Hoyt, Elizabeth Goodwin, Spencer Perry, Nate Erickson and Blake Underwood at CRE.Converge in Los Angeles on October 15.

Matthew Hoyt

Senior Vice President, CommCap Advisors NAIOP Southern Nevada

Significant project or accomplishment: "The most significant accomplishment in my career was being named NAIOP Southern Nevada's Associate Member of the Year in 2018. There have been many fun projects that I've worked on that are memorable, but nothing like getting recognized by leaders and peers in the industry."

Rewarding aspects of the job: "The most rewarding aspect of my job is the flexibility in my daily schedule and knowing that I won't miss important time with family. When I chose a career in CRE, flexibility of schedule was a primary factor. Las Vegas is a 24-hour town, and it would have been easy to follow a career path that didn't provide for time off during holidays or even weekends. I sought a career where I'd never miss a play, recital or a soccer game. My parents were always in attendance at my events as a kid, and I wanted to do the same. We sacrifice a lot with our busy schedules, the stress of transactions and commission-based incomes, but knowing my career provides the flexibility to never miss an important event with family and friends is extremely rewarding."

"The most rewarding aspect of my job is the flexibility in my daily schedule and knowing that I won't miss important time with my family."

— Matthew Hoyt, President CommCap Advisors

Spencer Perry

Business Services Officer – Commercial Real Estate, BB&T
NAIOP Maryland

Significant project or accomplishment:
"I was able to provide financing for a multibuilding value-add office transaction immediately after BB&T had acquired another significant local lender. This sent a message to the market that the combined shop was here to do business and paved the way for multiple additional transactions in the coming years with this customer."

Rewarding aspects of the job:
"As a lender, I have the benefit of supporting projects across several different asset classes, from simple residential lot development loans to complex mixed-used construction projects, and have the opportunity to be exposed to many different perspectives. But the most rewarding aspect of my job is seeing the delivery of a project we've financed. There is something awe-inspiring about helping shape the world around us."

> **"But the most rewarding aspect of my job is seeing the delivery of a project we've financed. There is something awe-inspiring about helping shape the world around us."**
>
> *— Spencer Perry, Business Services Officer – Commercial Real Estate, BB&T*

> **"I really enjoy interacting with other industry professionals. There are many bright, charismatic, genuine people in our business, and it's fun to be around them on a daily basis."**
>
> *— Blake Underwood, Regional Director of Acquisitions, The Dilweg Companies*

Blake Underwood

Regional Director of Acquisitions, The Dilweg Companies
NAIOP Georgia

Significant project or accomplishment:
"The acquisition of 1375 Peachtree, a $75 million office asset in Midtown Atlanta in 2018. This was a tired, challenged asset that we saw as an opportunity to reposition into one of Midtown's most desirable and appealing creative office projects. This is significant for our team and me because we were truly able to transform an office building that, we believe, has improved the skyline in Midtown and is making our tenants' work environment a better place."

Rewarding aspects of the job:
"I really enjoy interacting with other industry professionals. There are many bright, charismatic, genuine people in our business, and it's fun to be around them on a daily basis." ■

Marie Ruff is a communications senior manager with NAIOP.

Hats off to Spencer Perry from your friends at BB&T

Congratulations to Spencer Perry on your well-deserved recognition as NAIOP's Developing Leader Award. We are proud to be a trusted partner you rely on as you continue moving forward with distinction. Your example enriches our community and inspires us all.

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Jennifer LeFurgy, Editor-in-Chief, September 16, 2019

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* *This is a listing of NAIOP members who are mentioned in this issue, as well as paid advertisers, which appear in bold.*

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Thank You for a Great Year as Chairman

What an exciting and eventful year it has been for me, our industry and our association. NAIOP is certainly operating on all cylinders as the industry continues to flourish amid the longest recovery on record.

Greg Fuller

For me, it has been an incredibly rewarding experience to serve as your chairman. I've truly enjoyed meeting members from all corners of the U.S. and Canada. Sharing what NAIOP has meant to me, and learning how it's shaped others' careers and advanced our industry, has been a meaningful opportunity.

The end of 2019 concludes the second year of our current strategic plan, which was developed by our board with the input of members via surveys and focus groups. We are already starting the research and member-input portion of the 2021-2023 plan. I encourage you to participate by offering your ideas and feedback so that we can ensure our goals align with your expectations and needs.

NAIOP has moved the ball forward on many of our strategic goals this year, which demonstrates the association's firm commitment to advancing the programs, research and services that benefit our members, including:

- For the first time, we hosted two I.CON industrial conferences in a single year. The fervor of the industrial market and NAIOP's recognition as the leader in industrial real estate helped drive the success of these meetings. Both were greeted with record crowds and sponsorship investments, and we'll look forward to hosting two I.CONs again in 2020. Additionally, we hosted a fantastic CRE.Converge conference in Los Angeles in October, where 1,300 of the industry's finest came together. The feedback NAIOP receives on the on-site dealmaking and networking prove that our conferences are truly recognized as can't-miss events.
- We've explored the addition of two new NAIOP chapters and hosted kick-off events to meet interested members in Ottawa and Austin. If you have colleagues or offices in these cities, encourage them to get involved.
- Both the National Forums and the Research Foundation continue to grow. New Forums are focusing on industrial opportunities and Developing Leaders, and the 66th governor has pledged to support the important work of the Foundation. These next-level opportunities drive thought leadership and long-term engagement with the association.

Sharing our wisdom and war stories is a meaningful way to help shape the industry for decades to come. Blending this knowledge with their optimism is powerful. It helps our industry create effective spaces that support economic growth and enhance communities. Isn't that a legacy we'd all like to leave behind?

- Legislatively, we've worked on federal issues including Waters of the United States and energy policies, as well as corrections to the tax bill. Our government affairs team has collaborated with chapters across the U.S. on such pressing issues as affordable housing, tax increment financing, regulatory and permitting processes and more. Much of the focus through the 2020 election will be on Proposition 13 in California, where NAIOP has joined forces with a coalition to defeat a ballot initiative that targets commercial real estate for tax increases.

An exciting achievement for the close of 2019 is the addition of our 20,000th NAIOP member. This is a huge triumph and one that clearly shows the value our members receive from NAIOP, both locally in chapters and across the organization through our research and events that help advance businesses and connect members.

I've been fortunate to visit 18 chapters as chairman, and from small to large, each chapter is thriving, and members really appreciate what NAIOP means to them and their businesses. I've particularly enjoyed getting to know the Developing Leaders and sharing how my NAIOP membership has been so valuable to me and my company thanks to the many relationships that have been created.

I'm pleased to pass the gavel to **Larry Lance**, our 2020 chairman. I know that our future is bright under his leadership and the many chairs who will follow. My thanks to the executive committee, board of directors, members and staff for your support and encouragement this year. ■

By **Gregory P. Fuller**, President and Chief Operating Officer, Granite Properties, Inc.
2019 NAIOP Chairman


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