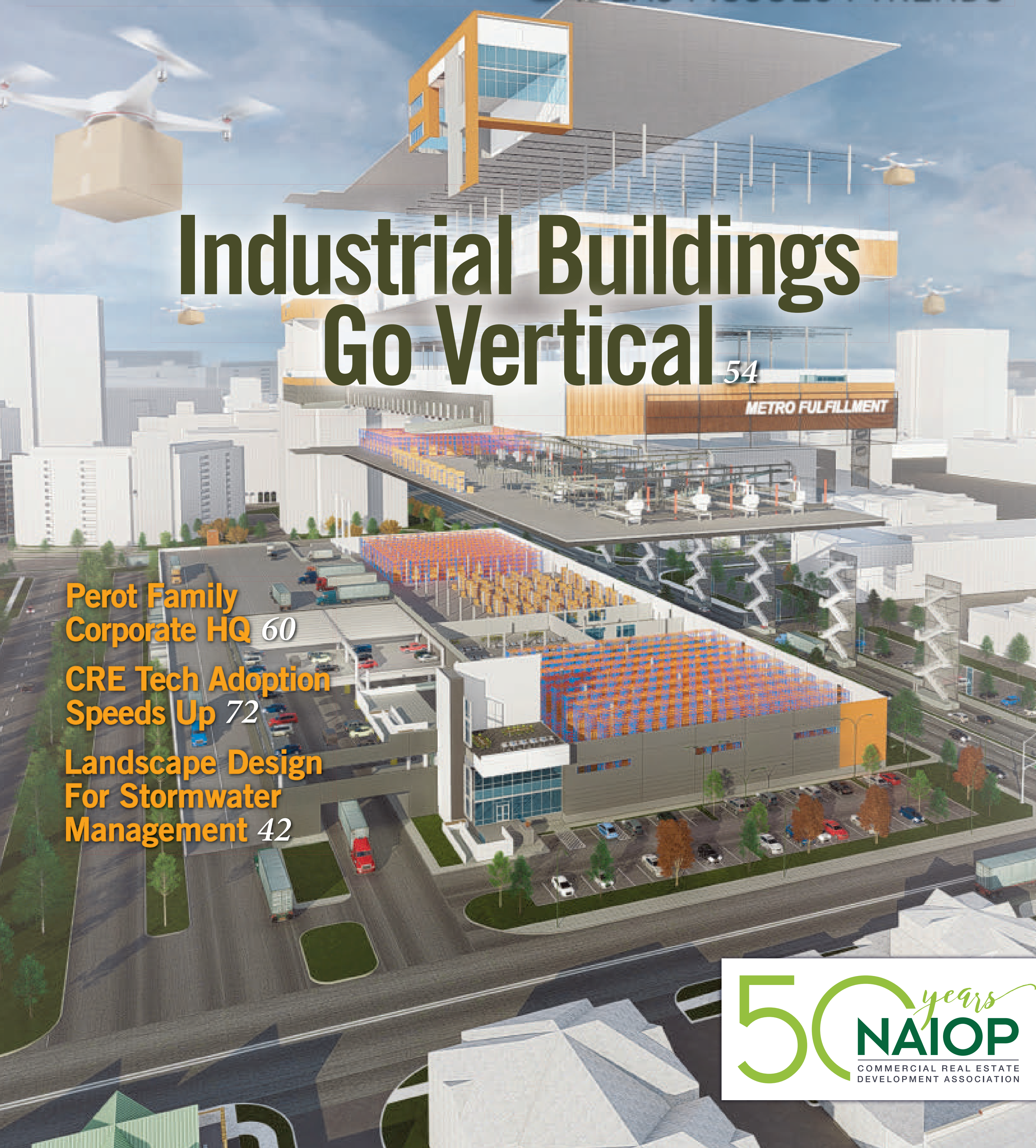
Commercial Real Estate Development WINTER 2017/2018

Development

IDEAS | ISSUES | TRENDS



Industrial Buildings Go Vertical 54

Perot Family Corporate HQ 60

CRE Tech Adoption Speeds Up 72

Landscape Design For Stormwater Management 42

50 years NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION


88 01
WE GO
BEYOND
REAL ESTATE
CenterPoint Properties is focused on the development, acquisition and management of industrial property and transportation infrastructure for supply chain efficiency.
CenterPoint
centerpoint.com


OUR
CAPITAL
INSIGHT.
YOUR
CAPITAL
ADVANTAGE.


OFFICE | BUD-e
BUD-e
60
THE WI-FI CONNECTED
SMART-BEER-FRIDGE
180 BEER
CAPACITY
100's of BEERS
to choose from
KEEPS YOUR
BEER at 32°
VISIT OFFICEBUD-E.COM
TO GET YOUR FREE OFFICE BUD-E TODAY!
© 2017 Anheuser-Busch, St. Louis, MO

Contents

Development® Winter 2017/2018
Volume XLVIII No. 4


54


60


66


72

Development on the Web

NAIOP COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION

Read Development® magazine anywhere, anytime at www.naiop.org!

Connect with NAIOP

facebook
www.facebook.com/NAIOPCorporate

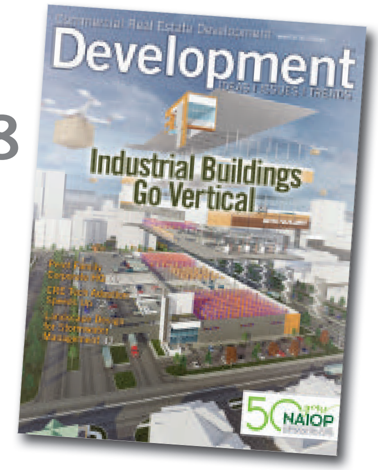
twitter
http://twitter.com/naiop

LinkedIn
http://bit.ly/9zYNI4 (NAIOP)
http://bit.ly/c5gNMO (NAIOP Developing Leaders)

YouTube
www.youtube.com/user/NAIOPCorporate

Contents

Development® Winter 2017/2018



Ware Malcomb's prototype design for a multistory fulfillment center will meet the need for "last-mile" logistics space with a high floor area ratio on urban tight sites, at an estimated cost of approximately $135 per square foot for the shell building and $23 per square foot for the parking deck.
Ware Malcomb

COLUMNS

Development®
(ISSN 0888-6067) is published quarterly and © 2017 by NAIOP, 2355 Dulles Corner Blvd., Suite 750, Herndon, VA 20171. 703-904-7100 FAX 703-904-7942

Subscription rate is $35/year for nonmembers. Periodicals postage paid at Dulles, Virginia, and additional mailing offices. POSTMASTER: Send address changes to DEVELOPMENT, 2355 Dulles Corner Blvd., Suite 750, Herndon, VA 20171.

Advertising for Development is accepted for quarterly issues: Spring, Summer, Fall, Winter. Insertion orders are due by the first of the month, two months preceding the month of publication. Rates are available upon request. NAIOP reserves the right to reject advertising that is inconsistent with its objectives.

Submit manuscripts that are educational and focus on industry trends, recently completed development projects and other issues of interest to NAIOP members. For more information, see www.naiop.org/magazine. Submit all inquiries to developmentmagazine@naiop.org.

Reprints and PDF files are available for a small fee; contact Gretchen Berg at berg@naiop.org for more information. You can also share your favorite articles with colleagues and clients via email and social media, with links to articles online (www.naiop.org/magazine).

Development Staff

Thomas J. Bisacquino
President and CEO

Marc Selvitelli
Publisher

Margarita Foster
Editor-in-Chief

Julie D. Stern
Managing Editor

Gretchen Berg
Circulation/Production Manager

Christopher Ware
Vice President, Business Development

Joel C. Stecura
Business Development Associate

Bonnie Schendell
Business Development Coordinator

Estasi Design Associates Design

Ron Derven
Contributing Editor

PRINTED WITH SOY INK

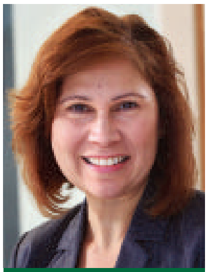
A Note From the Editor

Into 2018

AS 2017 COMES to an end, the costs of both construction materials and labor are escalating, creating concerns for the commercial real estate industry. In recognition of the importance of construction costs to development, this issue of Development magazine introduces a new "By the Numbers" column that will provide an outlook regarding the cost of materials and labor (page 10). The column will be updated in each summer and winter issue. This issue also features diverse topics that include multistory industrial facilities, technology and CRE, attractive design for stormwater management and innovative concepts for moving freight.

If you're pressed for time during this busy season, look here for key takeaways from each article, dig deeper by reading the articles that most interest you, or pass the magazine on to a colleague.

Enjoy the issue,
Margarita Foster
Editor-in-Chief


Margarita Foster

As e-commerce continues to grow and consumers expect ever-faster delivery, multistory distribution centers are becoming financially viable in some land-constrained North American markets. This issue's cover story presents a prototype design for these facilities (page 54).

Prologis is already building the first modern multistory logistics building in North America, a three-story, 590,000-square-foot fulfillment center known as Georgetown Crossing, near downtown Seattle (page 12).

The Perot family's new corporate headquarters in Dallas exemplifies a design approach that could be applied to many corporate campuses. It represents both the family legacy and an investment in the long-term health and well-being of the 300 employees of the family's 10 autonomous companies (page 60).

Northgate Distribution Center, the largest speculative distribution center in southern Nevada, is transforming North Las Vegas into an e-commerce mecca by meeting the growing demand for strategically located logistics facilities just outside California (page 66).

"Slow adopter" has been the term most commonly used to describe commercial real estate's incorporation of new technology, but that's beginning to change, as numerous CRE-related disciplines explore and recognize the value of using big data, cloud computing, the Internet of things, sensors, virtual reality and other innovations (page 72).

Legal agreements for mixed-use projects can be as complex as the projects themselves, and developers must be aware of key considerations such as subdivision and ownership structures, entitlements, management, security, risk management and more (page 30).

Health care tenants are injecting new life into ailing shopping malls by transforming retail space into clinics, labs, medical offices and other uses – and serving as anchors that attract new shoppers (page 36).

Structured investments can enable real estate investors to move into a new market or product type while limiting their risks (page 40).

Artful landscape design integrates a stormwater management system with public art and a playground area at a mixed-use project (page 42).

Innovative HVAC systems and lighting controls are featured in a real estate developer's new 16,800-square-foot, three-story headquarters that also includes a novel type of green roof (page 45).

Six innovative concepts for moving freight – truck platooning, autonomous trucks, hyperloops, floating warehouses, autonomous cargo ships and drones – could change how goods are transported in the future (page 48). ■

Future NAIOP Events

- Chapter Leadership and Legislative Retreat 2018, Feb. 5-7, Washington, D.C.
- 2018 CRE.Insights: The Last Mile, March 5-6, Seattle
- National Forums Symposium 2018, May 1-3, New York
- I.CON 2018: The Industrial Conference, June 7-8, Jersey City, New Jersey
- CRE.Converge 2018, Oct. 15-17, Washington, D.C.

Most Popular From Fall 2017

1) **"CRE Development Opportunities in Public-private Infrastructure Partnerships"** (www.naiop.org/publicprivate, page 76).
2) **"Trammell Crow Company: Timeless, Innovative, Entrepreneurial"** (naiop.org/trammelcrow, page 66).
3) **"From Obsolete Property to Modern Distribution Facility"** (naiop.org/moderndistribution, page 84).
4) **"Trends in Square Feet per Office Employee: An Update"** (naiop.org/sqftofficeemployee, page 10).
5) **"Reinventing the Mall Shopping Experience"** (naiop.org/mallshopping, page 12).

Construction Costs Outlook

Labor and materials concerns loom large.

By Ken Simonson, Associated General Contractors of America

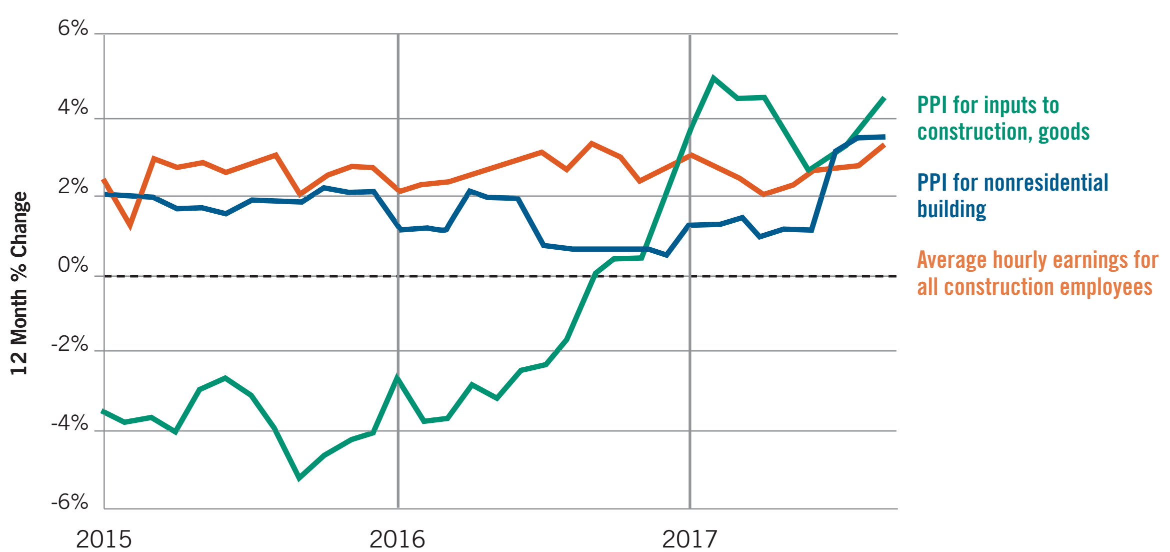
COMMERCIAL REAL estate developers and property owners who have enjoyed a long rest from worries about major price escalations for construction, repairs or maintenance may soon be awakened with a jolt. A tight market for skilled labor across a variety of trades, combined with strong demand for numerous materials, could soon send costs rising at the fastest clip in several years.

The annual rate of increase in the price for new nonresidential building construction jumped from a nearly flat 0.4 percent in 2016 to 3.5 percent in the 12 months ending in September 2017, according to the Bureau of Labor Statistics. BLS calculates this price through a two-step process. First, the agency gets information from a materials price-tracking service regarding the cost of the components needed for a specific type of building, including all of the materials and structural elements needed for the building itself, plus the cost of items used by contractors, such as diesel fuel. Next, a set of contractors is asked each month to estimate what they would charge to construct those particular buildings. By basing the price on a fixed set of actual buildings and a fixed group of contractors, BLS achieves a degree of consistency and rigor unmatched by most indexes.

The indexes cover the price that contractors say they would charge to produce five building types, all of which have experienced significant price escalation from September 2016 to September 2017. Industrial buildings are up 4.5 percent, warehouse buildings 4.1 percent, school buildings 3.8 percent, office buildings 3.2 percent, and health care buildings 2.7 percent. In addition, BLS posts indexes for a mix of new, repair and maintenance work on nonresidential buildings by four types of subcontractors. These labor indexes also are generally rising faster now than in recent years. The index for concrete contractors rose 3.9 percent in the 12 months ending in September 2017, electrical contractors 3.4 percent, plumbing contractors 3.3 percent and roofing contractors 2.7 percent.

Change in Costs for Buildings, Material Inputs and Wages

(Twelve-month change in percent, not seasonally adjusted, January 2015-September 2017)



Latest 12-mo. change: PPI for nonresidential building: 3.5%; PPI for inputs to construction, goods: 4.5%; average hourly earnings for all construction emplyees: 3.4%

Source: Bureau of Labor Statistics

The price increases reflect, in part, a pass-through of higher materials costs. In the 12 months through September, the price index for gypsum products, such as wallboard, climbed 8.0 percent. The cost of steel mill products rose 7.8 percent, while lumber and plywood prices went up 6.8 percent. The biggest leaps of all were in the producer price index for diesel fuel and copper and brass mill shapes, both of which soared 28 percent.

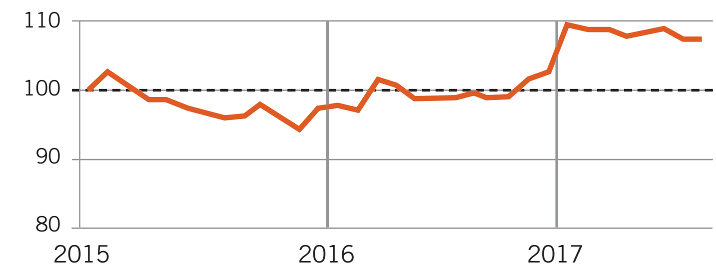
These increases, which were calculated from prices as of mid-September, may reflect the temporary supply disruption caused by port and refinery shutdowns around Houston during and just after Hurricane Harvey. Fortunately, none of the 2017 hurricanes caused lasting damage to any key production facilities for materials used in construction. While there will be a bump in demand for products used to protect, stabilize and repair the thousands of structures damaged in those storms, supply chains are more robust than they were following the hurricanes of 2004 and 2005. As a result, few projects outside of the hurricane-impacted areas are likely to experience delays or price spikes.

A bigger concern for anyone considering either new construction or repairs and maintenance is the scarcity of skilled workers. The Associated General Contractors of America's latest annual workforce survey, released on August 29, 2017, found that 70 percent of the 1,608 respondents reported difficulty in filling hourly craft worker positions. The shortages occurred among a wide variety of trades. The hardest slots to fill were for carpenters, with 58 percent of companies that employ them reporting difficulty. Next came electricians and bricklayers, both reported by 53 percent of firms that employ those trades; concrete workers 51 percent; and plumbers 50 percent. Among salaried workers, project managers and supervisors were the hardest to find, with 48 percent of respondents reporting difficulty filling those positions.

The scarcity of workers appears to be worsening. BLS reported in early October that construction industry job openings at the end of August were the highest August total since the series began in 2000, while the number of unemployed former construction workers was at the lowest ever for August. Consequently, firms will be paying more to attract and retain experienced workers, more for overtime when they can't fill a slot, and more for recruitment and training to find and develop new workers. These costs may not show up in direct compensation costs; BLS's measure of average hourly earnings for the construction industry has shown fairly steady increases of 3 percent per year or less. But developers and property owners will feel the effects. ■

By **Ken Simonson**, chief economist, Associated General Contractors of America

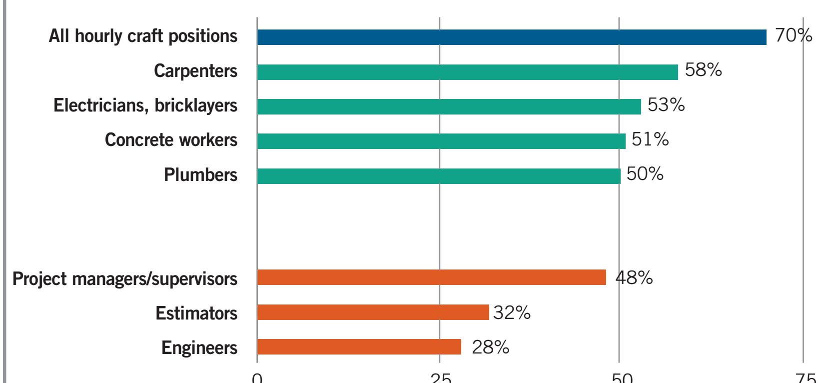
Producer Price Index for Gypsum Products
(January 2015-September 2017; January 2015=100)



Latest one-month change, 0.1%; 12-month change, 8%

Source: Bureau of Labor Statistics

Hardest Positions to Fill
(Percent of respondents having trouble filling each type of position)



Source: AGC Member Survey, 2017

The First Modern Multistory Logistics Building in North America

Prologis Georgetown Crossroads, a three-story, 590,000-square-foot logistics building, is now under construction in the heart of Seattle's transportation network.

By Dan Letter, Prologis

IN THE FUTURE, goods will flow much more quickly than they do now. Same-day delivery is already morphing into same-hour delivery in some places. In lockstep with this trend, consumers are insisting on a broader selection and availability of goods.

In this environment of "faster and broader," supply chains will become increasingly important. With "last-touch" delivery foremost on retailers' minds, logistics real estate has evolved into a business-critical decision that favors prime locations in or near dense urban centers.

To outpace the competition, solve for selection and service, and maximize efficiency, retail and logistics companies must operate from locations much closer to the end consumer. There's a hitch, however: How can they do this in land-constrained cities, where available land is virtually nonexistent? The solution: Go vertical.

Although population density and land scarcity have made the multistory warehouse commonplace in Asia, it's a brand-new concept in the 21st-century U.S.

Bolstered by state-of-the-art innovation and a long-term view of consumption patterns, Prologis is bringing the multistory warehouse stateside with Prologis Georgetown Crossroads, designed by Craft Architects and now under construction near downtown Seattle. The first of its kind in the U.S., Georgetown Crossroads will be a three-story, 590,000-square-foot fulfillment center in the heart of the city's transportation network. Prologis broke ground in April 2017 and anticipates completion in summer 2018.

Prologis Georgetown Crossroads, now under construction in Seattle, will be the first modern three-story industrial warehouse in the U.S. It will feature truck ramps leading to loading docks on the second level and a third floor, served via forklift-accessible freight elevators, for lighter-scale operations.
Rendering courtesy of Prologis

Prologis' goal for Georgetown Crossroads was ambitious: to build a multistory logistics building with the functionality to service a variety of customer needs. The company faced some challenges unique to multistory construction required in the U.S. Floor loading was one; ground-floor loading capacity had to be replicated on the upper floors. Prologis also had to solve on-site traffic issues; a long truck and trailer must be able to access the second story, and this meant adding gradual ramps. Truck courts also needed ample depth to allow for turning and maneuvering into the bays of both the ground and second floors.

continued on page 14

> **"As an owner/operator of Class A logistics buildings around the world, Prologis is confident in this new model for logistics real estate in urban centers."**
>
> *Dan Letter*

continued from page 12

Levels one and two will feature 239,000 and 170,000 square feet of fulfillment space, respectively, with 50 by 45-foot column spacing and ESFR sprinkler systems. Both floors offer the potential for build-to-suit office space in several locations. Level one will have up to 62 dock-high doors and two drive-in doors, a 28-foot clear height ceiling, and 130-foot truck courts with 60-foot concrete aprons. Level two will have up to 38 dock-high doors and two drive-in doors; a 24-foot clear height ceiling; and an elevated, 130-foot truck court served by two ramps designed to accommodate full-size 53-foot-long trailers.

Level three will feature 180,000 square feet of "maker space" suitable for light manufacturing, creative office, laboratory and/or production uses, with a 16-foot clear height ceiling and wide corridors. Two shared exterior loading docks will be served by three freight elevators with forklift capabilities.

As an owner/operator of Class A logistics buildings around the world, Prologis is confident in this new model for logistics real estate in urban centers. It chose to develop this project in Seattle because of the city's affluent consumer base. Down the line, other cities will also see a rise in multistory logistics facilities; think San Francisco, New York/New Jersey, parts of Los Angeles, Chicago and Miami.

With consumption patterns and consumer habits showing no signs of shifting course, multistory industrial will play a central role in the future flow of goods. ■

By **Dan Letter**, managing director, Prologis

Note: For a virtual tour of this project, see prologisgeorgetown.com/experience-vr/.

A Second Set of Leading Indicators for the Future

CRE should focus on indicators that may foretell technology's impact on the industry.

■ By Kathleen Farrell, SunTrust Banks, Inc.

THE CYCLICAL nature of commercial real estate requires industry leaders to constantly read the proverbial tea leaves to help them stay ahead of the economic curve. Everybody is looking for a competitive edge, or at least forewarning of a negative trend.


Kathleen Farrell

Economic data, however, may not encompass the full range of factors, driven largely by technology, that are poised to impact CRE, especially over the medium and long term. From self-driving cars to wearable tech and emerging generational preferences, CRE will need to adapt to the ways that people and technology are rapidly changing. The industry needs to pay attention to a second set of leading indicators that may signal when major shifts in tenant behavior are around the corner.

These indicators should augment, not replace, economic data, and act as a kind of radar, one that is constantly searching for subtle signals that suggest major trends. CRE professionals may never be able to define the precise contours of these changes before they fully emerge. But the industry can improve its ability to recognize their existence and plan for their arrival.

The list of leading indicators below is intended to start a conversation about the types of predictive tools to be added to the CRE executive's toolbox.

Teleworking Trends

Are Americans teleworking more, or less? The commercial real estate industry could learn a lot from teleworking trends, especially whether the share of work performed at home will continue to rise or has reached a new equilibrium. According to the Bureau of Labor Statistics, the share of workers doing some or all of their work at home grew from 19 percent in 2003 to 24 percent in 2015. What will this figure be in 10 years?

Office landlords are already feeling the impact of reduced space needs that has resulted from sophisticated technology and more flexible work conditions. North America may be in the midst of an office space paradigm shift, but how much further will this shift go? If workers increase their mobility and spend more time working remotely, whether at home or in a coworking center or coffee shop, the impact on office property will be seen not only in lower demand but perhaps in completely new designs. Industry experts should be asking many questions: What is the appropriate ratio of square feet per employee and square feet per executive? How much common area space is needed? Will the parking mix need to change?

Some companies are aiming to reverse this trend by requiring remote employees to come into the office more often. Others are abandoning permanent full-time remote work in an effort to spur collaboration, idea generation and better communication. The traditional office building lobby may have to give way to collaboration centers and coffee shops in response to these trends.

Car Ownership

Is the average number of cars per U.S. household declining? Much has been written about car-sharing and ride-hailing services, and whether they will become viable alternatives to owning a car. The challenge for the commercial real estate industry is determining whether this trend will mature, or if car-sharing and ride-hailing will remain a convenient second option for car owners.

One way to measure the impact of these services is to follow the number of cars owned per U.S. household. According to Statista, a statistics and analytics company, the number of vehicles per U.S. household has declined over a recent eight-year period, falling from 2.14 in 2006 to 2.09 in 2014. Statista credits the shift to waning interest in car ownership among millennials (those born between the early 1980s and the mid-1990s). While this decline is hardly precipitous, it could signal more changes ahead if Gen Z (those born in the mid-1990s to the mid-2000s), which is growing up familiar with Uber and Zipcar and is comfortable with the sharing economy concept, embraces ride-hailing and car-sharing wholeheartedly.

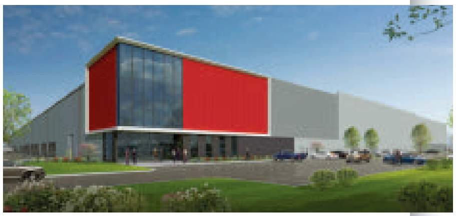
New & Noteworthy

4.5 million sq. ft.

DivcoWest began construction in October 2017 on the first building in Cambridge Crossing (CX). The 4.5 million-square-foot project will be developed within the Boston area's 45-acre NorthPoint site, where Cambridge, Somerville and Boston converge. The developer bought the parcel in 2015 and has broken ground on a 430,000-square-foot spec science and technology hub, which it is promoting as "the next Kendall Square." At buildout, CX will include 2.1 million square feet of office and lab space in five buildings, 100,000 square feet of neighborhood retail space, and as many as 2,400 condos and apartments, in addition to the site's existing 2,500 residences. The project, which will be served by two MBTA transit lines, will also feature 11 acres of open space. Plans are still moving through the approval processes in all three cities, so a definitive timeline has not yet been set.

1 million sq. ft.

CRG, on behalf of landowner John Hancock Real Estate, is developing a 1 million-square-foot spec industrial building in the Atlanta suburb of Locust Grove, Georgia. When completed in February 2018, Locust Grove Distribution Center 1 will offer a 36-foot clear height ceiling, 146 dock-high doors, an ESFR sprinkler system, all-concrete paving and LED lighting, as well as parking for 236 trailers or 379 cars. The building is being constructed on a 79-acre site located 1 mile from Interstate 75.



742,000 sq. ft.

Crescent Communities and Ally Financial Inc. have entered into a lease agreement for Ally Charlotte Center, a new mixed-use building that Crescent will develop in Uptown Charlotte, North Carolina. Construction is scheduled to begin in the first quarter of 2018. Ally, formerly known as GMAC Inc., plans to occupy approximately 400,000 square feet of the 26-story, 742,000-square-foot tower, which will also include a full-service hotel, a garage and a ground-floor plaza surrounded by shops and restaurants. Ally will relocate its Charlotte-based employees from other offices to the new building when it is completed in 2021.

A Look Ahead

Widespread adoption of these services as alternatives to car ownership would have serious implications for all types of commercial real estate. The impact would be especially pronounced in urban centers. Residential developments in these areas could conceivably be built with significantly reduced parking in the near future. This could free up additional space for more housing units or other uses, or for new amenities that could improve tenant retention. (See "Ride-hailing Becomes a CRE Amenity," Development, fall 2017.)

Autonomous Vehicles

What are regulators signaling about autonomous vehicles? Legislatures and regulators are among the best sources of early signals about the viability of autonomous cars and trucks. Billions of dollars have been poured into developing this technology, and investors will want these investments to begin paying dividends soon.

The National Conference of State Legislatures reports that the number of states evaluating autonomous driving legislation increased from 12 in 2014 to 33 in 2017. The focus on this issue signals that technology may be closer to entering the mass market.

How autonomous vehicles will impact consumer choices remains to be seen, but the possibilities are endless. Will more people consider suburban or even rural lifestyles if their cars become mobile offices and media centers that allow them to maximize the time they spend commuting? Will fully autonomous vehicles supercharge the sharing economy by allowing people to rent their vehicles to car-sharing services while they're at home or work, reducing the total number of cars that the economy needs to meet demand? Both of these scenarios have implications for commercial real estate design and development. (See "Impacts of Autonomous and Driverless Cars on CRE," Development, fall 2016.)

Drone Deliveries

Will the FAA allow companies to test drone deliveries in urban areas? Like autonomous vehicles, the decisions that regulators make regarding drones could impact various aspects of the CRE market. The widespread availability of same-day delivery for consumer goods could further depress brick-and-mortar retail developments, many of which are already struggling. In contrast, drone delivery could be a boon for industrial properties near urban centers if online retailers accelerate the trend of moving their fulfillment centers closer to their customers. Rooftop pools or terraces in multifamily properties could be replaced by drone delivery pads, requiring a shift in how building amenities are designed.

As the drone delivery process is perfected, regulators could signal a willingness to test drones in highly populated areas. This would be a clear indication that the technology is ready for widespread deployment. Forward-thinking CRE executives should watch this closely and think about the impact on all sectors, including retail, multifamily and industrial.

Barometers of Change Don't Have to Be Perfect

The CRE industry has watched how Amazon has dismantled retail, Airbnb has challenged the hospitality industry and Uber has shifted how people commute. The old adage "location, location, location" may prove to be less valid as physical location becomes less relevant and technology becomes more relevant.

While the list of trends cited here is not exhaustive, it should prompt CRE professionals to begin identifying and refining a new set of leading indicators that will help the industry stay ahead of the curve. Economic indicators are not perfect, but they help CRE professionals understand where the economy is moving. The same will be true of indicators that measure the impact of social and technological change. Business leaders can avoid costly mistakes if they try harder to peer into the future. ■

By **Kathleen Farrell**, head of Commercial Real Estate, SunTrust Banks, Inc.

New & Noteworthy

224,000 sq. ft.

The Pizzuti Companies has broken ground on a spec industrial building in SouthPark Industrial Center, a 350-acre master-planned park in Grove City, Ohio. Work is underway on SouthPark XX, a 224,000-square-foot building designed to meet the needs of either a single tenant or multiple tenants. Located on a 10.6-acre "last-mile" infill site with access to Interstates 71 and 270, the structure will offer a 30-foot clear height ceiling, parking for 141 cars and LED lighting approximately 5 miles from Columbus' central business district. It has received a 15-year, 100 percent real estate tax abatement and is scheduled to be completed in the first quarter of 2018.

184,000 sq. ft.

JPI is developing a new $103.5 million luxury apartment community on the former site of a Cadillac dealership adjacent to Mission Bay Park in San Diego. Designed by Carrier Johnson + Culture, Jefferson Pacific Beach will feature 172 apartments (approximately 170,000 square feet) and 14,000 square feet of ground-floor retail and creative office space. Unique amenities will include a DIY surfboard repair station and storage space for watersports equipment. The developer broke ground on the nearly 3-acre site in September 2017.

120,000 sq. ft.

Rendina Healthcare Real Estate is designing, developing and constructing a new, approximately 120,000-square-foot facility for Campbell Clinic on the health care provider's existing Germantown, Tennessee, campus. Preliminary plans call for a new four-story medical office building that will include outpatient orthopedic clinical space, expanded physical therapy and imaging suites and an ambulatory surgery center with eight operating rooms. A portion of the building may be leased to third-party tenants. The city's planning commission has approved the final site plans. Construction is expected to begin in mid 2018.

Ten Industrial Trends to Watch

Industry experts discuss trends that will impact industrial facilities in 2018 and beyond.

By Ron Derven and Margarita Foster

AS THE LONG AND steady industrial growth cycle continues, a number of key trends regarding industrial properties emerged at NAIOP's I.CON '17: Trends and Forecasts conference in Long Beach, California in June.

1) City halls across North America need to focus on the need for last-mile industrial facilities within their jurisdictions. Ben Conwell, senior managing director and practice leader, ecommerce & electronic fulfillment, Cushman & Wakefield, and **Larry Kosmont,** president and CEO of Kosmont Companies, both addressed the concern that local officials have not yet done so.

"Cities are being forced by [states] to focus on greenhouse gas emissions," said Kosmont. When cities look at accelerated truck deliveries within their boundaries, last-mile delivery seems, on the face of it, to be taking cities in the opposite direction of where they need to be, he noted. At the moment, cities are focused on retail, placemaking, mixed-use development and transit. They do not seem to understand that last-mile industrial facilities are part of a new retail paradigm that includes e-commerce.

Cities that do take a closer look at modern warehouse and distribution centers are finding a lot to like, according to **Mike McCrary**, managing director, industrial services, JLL. McCrary noted that Ontario Mills Mall in Ontario, California, attracts more visitors each year than Disneyland. Although the mall produces an estimated $6 million in tax revenue for the city, $4 million of that probably pays for police, fire protection and other expenses related to the mall – costs that an industrial facility would not generate – for a net of $2 million.

"The city of Ontario recently rezoned 200 acres of land just north of the airport [for industrial use]," McCrary added. "With a stroke of the pen, QVC signed a lease on a 1 million-square-foot building there. From the sales generated at the building, the city will get about $5 million in tax revenue." He stressed that the industrial building increases the tax base for the city without appreciably adding to the cost of police and fire protection.

2) Urban warehouses are becoming "the new retail." The classic method of conducting a retail market study has been to count rooftops; that is, the number of residential units in a targeted geographic area. Now, developers of and investors in urban infill industrial projects are also counting rooftops when building or buying new infill industrial facilities, underscoring the fact that these developments are becoming the new retail. **Gray Bouchillon**, president and chief investment officer, Evergreen Industrial Properties, said: "It's about diving in at that granular level and knowing the market we want to be in: Who is our base? Not just the user base, but the consumer base. We're constantly asking ourselves: where are the rooftops? Who are we distributing to?"

3) Differentiate between "good" and "bad" retail real estate. Chris Riley, vice chairman of CBRE, asked a panel addressing the capital markets about opportunities to replace or remake obsolete retail into last-mile facilities. **Dayton Conklin**, director,

New & Noteworthy

19,000 sq. ft.

Vision Real Estate Partners and Rubenstein Partners are developing a 19,000-square-foot stand-alone amenity hub at the 820,000-square-foot Warren Corporate Center in Warren, New Jersey. Tenants will have access to high-end indoor and outdoor dining options, multifunction conference areas, a fitness center with locker rooms and a full basketball court. A green roof will offer seating and event space for social and business gatherings. Construction is underway and scheduled to be completed by mid-2018. The facility will complement the campus's existing amenities, which include three full-service cafeterias and three fitness centers.

300 units

Wheeling Town Center, a new transit-oriented mixed-use development in suburban Chicago, broke ground in July 2017. The project, which was designed by the Chicago office of CallisonRTKL, is being built under a partnership agreement between The Lynmark Group and the village of Wheeling. It will feature 300 luxury apartments above 100,000 square feet of retail and entertainment offerings set around a pedestrian-friendly plaza. The project, which will offer easy train access to and from downtown Chicago, is expected to be completed in late 2018.

260 acres

World Oil Corp. and Trammell Crow Company have unveiled plans for Bakersfield Commons, a new pedestrian-oriented, master-planned mixed-use community in the heart of Bakersfield, California. The 260-acre project received the unanimous approval of the city council in December 2016, with fully approved entitlements that include 400,000 square feet of office space, 300,000 square feet of retail space, 280,000 square feet of light industrial facilities, more than 1,000 residential units and a 200-bed hospital. Construction will begin in 2018, with the first development pads scheduled to be delivered in late 2018. Phase I – 220,000 square feet of retail space, 120,000 square feet of office space, 325 resort-style residential units, a 130-key hotel and 2.2 miles of walking paths – is expected to deliver in 2019.

Clarion Partners, responded that his firm is assessing a mall it owns in the Northeast for this type of transition. **Scott Strauss**, executive director, JP Morgan Asset Management, however, offered words of caution about such undertakings: "Bad real estate is bad real estate," he asserted. "A lot of retail that is falling apart right now should never have been developed in the first place. People think that retail is getting crushed today, but it is the bad retail that is getting crushed today; A-class retail is doing very well."

4) Institutional investors may need to lighten up on due diligence to secure industrial properties owned or developed by smaller firms. Strauss added that sellers of well-located small industrial facilities are often "scared off" by the due diligence that the institutional buyer undertakes. "Sellers of this type of space tend to not be institutional and quite frankly we scare them away with our due diligence standards and some of the contract requirements, [which can be] 80 pages long. We understand that to grow our industrial book, we need a DNA change."

5) The best secondary and tertiary markets for industrial space are shifting. Evergreen's Bouchillon likes the fundamentals of Charlotte, North Carolina. **David Levine**, principal, The Blackstone Group, looks for secondary and tertiary industrial markets in geographies with good weather, because it suggests better population growth and job growth. He recommends the Gulf Coast Southeast. JP Morgan's Strauss points to central Florida and Charlotte. Conklin of Clarion Partners likes Las Vegas and Nashville, and noted that Nashville has quickly grown from a market of 50,000- to 100,000-square-foot tenants to one with 400,000- to 600,000-square-foot tenants.

Merit Partners Inc. and Sunbelt Holdings received NAIOP's 2017 Industrial Project of the Year Award for this REI fulfillment center in Goodyear, Arizona. REI uses the facility to ship products both to its stores and directly to its customers.

6) Multistory warehouses of three or more stories will start to rise on expensive infill sites. In expensive infill markets like Southern California, single-story warehouse structures will no longer generate enough income to justify the investment. **Jay Todisco**, AIA, LEED AP, executive vice president, Ware Malcomb, reported that while his firm is designing multilevel industrial projects for a dozen developers around the U.S., it has discovered that two-story facilities won't perform much better than single-story ones. Urban infill industrial structures need to be at least three stories high to make sense financially. (See Todisco's cover story, "Industrial Goes Vertical," page 54.)

John Pharris, president, CapRock Partners, LLC, pointed out that North American developers and investors need to look to Asia, where land constraints long ago forced companies to erect multistory warehouses. Some of those structures now rise as high as 11 stories, he added.

7) The pendulum is swinging from distribution back to manufacturing. The advent of the 3-D printer will shift the current emphasis on distribution back to manufacturing, predicted **Gregory Healy**, executive managing director, supply chain and logistics, Colliers International. He predicted that consumers will soon be able to order products that will be manufactured locally on a 3-D printer and then delivered to their doors, which will reduce inventories and speed delivery, much as e-commerce has done. Healy added that Amazon is seeking a patent on a vehicle that will collect orders, manufacture products and then deliver them directly to the customer.

8) A shortage of qualified employees is presenting challenges for industrial tenants. Finding skilled employees who can pass a drug test is becoming increasingly difficult. JLL's McCrary said that industrial tenants are asking four questions when considering a new location: 1) Where do prospective employees live? 2) Can they pass a drug test? 3) Are they bilingual? 4) Can they operate the forklift's computer?

9) Hybrid distribution/fulfillment centers will both deliver goods to consumers and replenish inventory in stores. Curtis Spencer, president, IMS Worldwide, Inc., described a new REI fulfillment center in Goodyear, Arizona, from which the company delivers products to online customers as well as to stores. In a typical warehouse, he noted, "you have pallets [coming] in and cartons [going] out to stores." In a typical fulfillment center, products arrive on pallets and single items are shipped out to customers. REI is using its Goodyear facility "to ship products to its customers as well as to its stores."

"This is new," added Spencer. "It's brilliant." He predicted that other retailers will follow REI's lead.

10) Closing the exports "value gap" will be critical for the U.S. economy. The nation needs to build export infrastructure if it hopes to close the yawning "value gap," noted **Walter Kemmsies**, Ph.D., managing director, economist and chief strategist, JLL Ports, Airports and Global Infrastructure.

According to Kemmsies, the U.S. needs to realize it is now part of a global economy. "We import consumer goods, which have a high value per ton, and we export industrial goods, which have a low value per ton." Tonnage wise, the U.S. is almost balanced, he explained, but value wise, it's not even close.

"The real tragedy of all of the investment we've made in our port industry is that we export almost as many empty containers as we do loaded containers," he asserted. "Something is wrong here. The White House complains that trade agreements are causing a trade deficit. As a logistics person, what I see is that America is the only country that signs trade agreements and then doesn't invest in export-oriented infrastructure." ■

By **Ron Derven**, contributing editor, and **Margarita Foster**, editor-in-chief, Development

Note: For more news from this conference, see "Worth Repeating" on page 26 and naiop.org/icon17trendsresources.

New & Noteworthy

105 units

Texas-based Caddis is developing Heartis Village North Shore, its first senior living community in Wisconsin. The 96,800-square-foot senior living community in Glendale, about 9 miles north of Milwaukee, will feature 105 assisted living and memory care apartments. Amenities will include large, secured courtyards; game and activity rooms; a wellness suite; and a library, media room, dining room and beauty and barber shop. Designed by Katus, the community will be managed by Pathway Senior Living LLC. It is expected to be completed in early 2019.

88 units

Walters Group is constructing 11 new income-restricted two-story apartment buildings in Jackson, New Jersey. The Ponds at Jackson 21 will offer 88 one-, two- and three-bedroom apartments ranging in size from 854 to 1,172 square feet. Part of the development is being funded by the federal Low-Income Housing Tax Credit (LIHTC) program. Local residents who were displaced by or suffered severe storm damage from Superstorm Sandy will be given priority when the apartments are leased. The community is being built to LEED and Energy Star standards, and is expected to be completed in October 2018. Occupancy will begin at the end of March 2018.

47 stories

Graywood Developments has begun selling studio to three-bedroom condos at Peter & Adelaide, a new mixed-use tower that it plans to develop in Toronto's Entertainment District. The site wraps around three historic properties, with frontages on both Peter and Adelaide streets. The brick, metal, concrete and glass tower, which has been designed by Brisbin Brook Beynon Architects, will be a contemporary interpretation of the city's old warehouses, which dot the district. A 17th-story outdoor amenity space will include swimming and reflection pools as well as cabanas and lounges. Additional common areas on the third floor will offer additional outdoor spaces as well as a gym, a demonstration kitchen, a dining room and a lounge plus a communal work space. The tower is expected to be completed in 2022.

Research Directors Identify Trends

At their annual gathering, research directors considered retail, office, technology, data and investment trends.

By Jennifer LeFurgy, Ph.D.

THE NAIOP RESEARCH Foundation hosted its annual meeting of research directors from national real estate brokerage, data and investment firms on Sept. 14, 2017, to discuss industry trends and share insights for the coming year.

"The Death of Retail": Myths and Facts

Guest speaker **Mark Mathews**, vice president for research development and industry analysis at the National Retail Federation, began the discussion by exploring the myths surrounding the media's widespread declaration that "retail is dead." He emphasized that the retail industry is evolving rather than declining. One of the most prevalent misconceptions, according to Mathews, is that if brick-and-mortar stores are closing, then retail jobs must be disappearing at an alarming rate. "Retail employment is higher now than it was before the recession," he reiterated, adding that the confusion results, in part, from the way employment data are collected. The North American Industry Classification System (NAICS) classifies employees based on the physical location in which they work, not by the company that employs them.

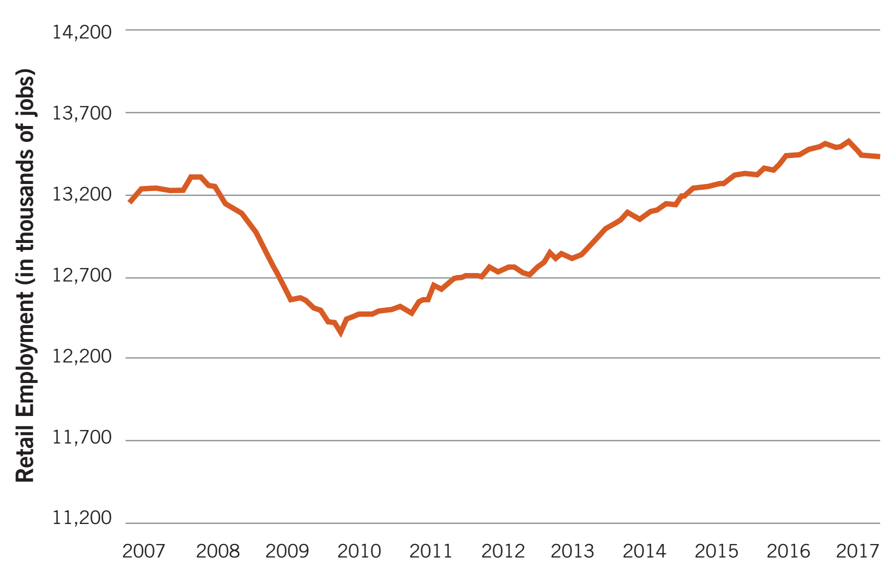
E-commerce fulfillment centers, retail company headquarters, call centers and factories are not considered places that house retail jobs. Yet these are, in fact, the locations that have the highest-growing number of retail-related jobs. **Jim Costello**, senior vice president at Real Capital Analytics, surmised, "This shift [in retail workplaces] may not be a sign of an Armageddon for retailers, but may be an Armageddon for retail space." To this point, **Dean Violagis**, vice president of research at CoStar Group, Inc., mentioned the emerging trend of repurposing declining shopping malls into other uses such as schools and call centers.

Mathews went on to say e-commerce is not "killing" traditional retail, but rather is forcing it to adapt. E-commerce companies have easier access to investment capital than brick-and-mortar retailers and therefore can innovate more freely. Mathews added, "It is incumbent on traditional retailers to connect their brand to the consumer," and to create memorable experiences. Many shoppers no longer browse in traditional retail stores but visit them to do what they cannot do online: interact with and touch specific products. Mathews and the group agreed that e-commerce has already penetrated most of the traditional retail market and predicted that the next frontiers will be groceries and automobiles.

Office Densification

Attendees were asked if densification of the office environment has reached a tipping point. After a lively discus-

Retail Employment: A 10-year View



Source: Bureau of Labor Statistics

sion, the consensus among participants was that, on the whole, office densification is either approaching or has already reached a tipping point, as most larger office space users have already downsized and the smaller ones that have yet to do so are not expected to "move the market."

Sarah Dreyer, director of research, Washington, D.C. region, for Savills Studley, believes that office densification will vary by industry. Tech firms, for example, might continue to shrink their office footprints, but other industries will continue to experiment with the amount of space they need. **Elizabeth Norton**, managing research director for Transwestern's mid-Atlantic region, noted that many larger firms have already restructured, but when one considers that average lease sizes range between 8,000 and 10,000 square feet, she believes it may not be possible for smaller firms to contract further, given that they are starting from such a low basis.

Another participant noted, however, that there may still be some room for contraction among public sector tenants. "Current federal government offices are still relatively large, but new leases are smaller by 15 to 20 percent," said **Revathi Greenwood**, Americas Head of Research at Cushman & Wakefield. "There is still room for densification within the federal sector and with some Washington, D.C., law firms as they move their libraries online."

Costello and **John Chang**, first vice president of research at Marcus & Millichap, believe that going forward, continued contraction among office

New & Noteworthy

19.7 acres

Johnston Properties has entered into a joint venture agreement with IPA/Liv Communities to develop Epicenter, a mixed-use project with an Arizona-themed retail element, on 19.7 acres in Gilbert, Arizona, next to Johnston Properties' Agritopia and Barnone developments. Epicenter will feature 55,000 square feet of ground-floor retail space below 300,000 square feet of residences (287 units), which will range from 500-square-foot studios to 2,000-square-foot three-bedroom apartments. About half of the estimated 30 retail tenants will be food-based concepts; others will provide health and wellness services and all will be Arizona-based companies. The project broke ground in fall 2017 and is expected to be completed in 2019. ■

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.

space users is unlikely. They noted that for some employers building out new space, individual workstations are smaller but collaborative spaces are larger, resulting in no overall loss or gain of square footage as new leases are executed.

Participants also noted that densification can lead to decreased productivity and stretch the limits of building systems, including HVAC and restrooms. Numerous landlords are now facing these challenges. "I think there's still some room in the marketplace to densify, but at what cost?" asked **Ray Wong**, vice president at Altus Group in Toronto. "Productivity and densification need to balance. Densification for [the sake of] densification doesn't make sense."

The densification of the workplace has, in some cases, led companies to engage with coworking companies such as WeWork. Employers sometimes use coworking space to house temporary employees such as summer interns or as satellite offices to attract employees who are unable to work at the company headquarters. Chang commented on not only the rapid growth of companies like WeWork, but also the dramatic changes in shared working space that have taken place in the recent past. Coworking space is now, "designed for socialization and collaboration; … gone are the days of it being simply a place to plug in your laptop." Previous arrangements provided one desk per worker, but the new model encourages more users in a flexible environment and is, therefore, more cost effective.

Several attendees observed a burgeoning relationship between commercial brokers and WeWork. Although many brokers were initially wary of WeWork, the growth of coworking has encouraged some to try out WeWork locations to get a feel for how those spaces may fit clients' needs. Brokers are beginning to see the advantage of the WeWork model for emerging companies and startups. According to **Robert Hartley**, director of research for the Washington, D.C., metro area at Colliers International, "Coworking space has provided a tremendous opportunity for tenants to establish their brand and their model for sustainable success before making the move to more

Participants

Aaron L. Ahlburn
Senior Vice President and Managing Director, Industrial & Logistics Research
JLL
El Segundo, California

John Chang
First Vice President, Research Services
Marcus & Millichap
Phoenix, Arizona

Jim Costello
Senior Vice President
Real Capital Analytics
New York, New York

Sarah Dreyer
Director of Research, Washington, D.C., Region
Savills Studley
Washington, D.C.

Revathi Greenwood
Americas Head of Research
Cushman & Wakefield
Washington, D.C.

Robert Hartley
Director of Research, Washington, D.C., Metro Area
Colliers International
Vienna, Virginia

Mark Mathews
Vice President, Research Development and Industry Analysis
National Retail Federation
Washington, D.C.

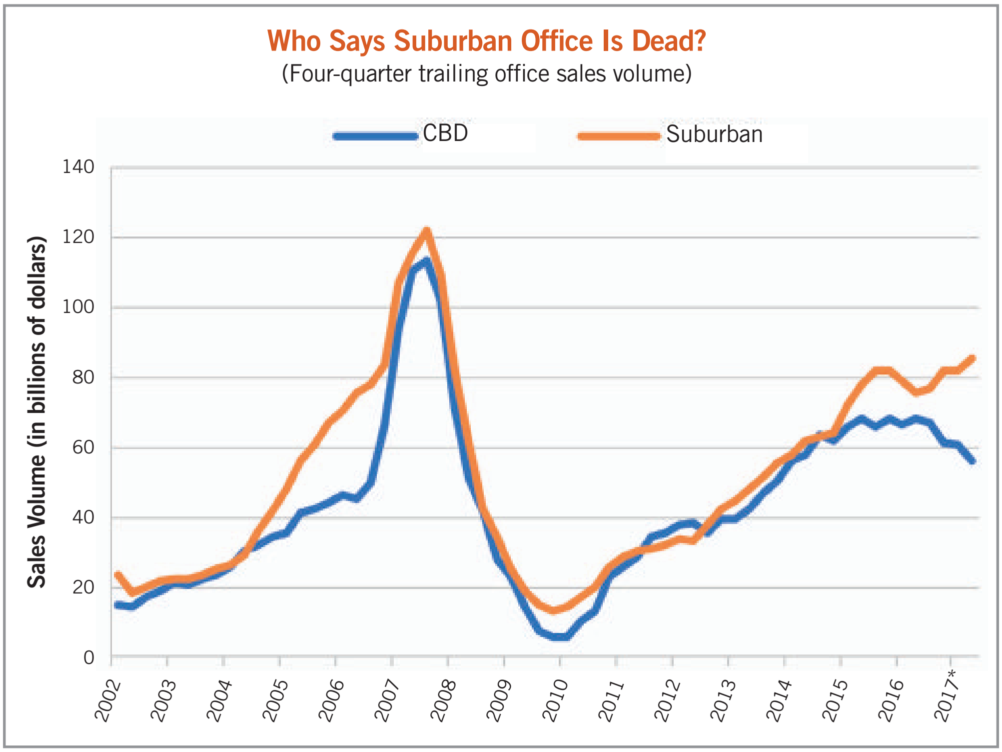
Frank Nitschke
Executive Director, Investment Research
PGIM Real Estate
Madison, New Jersey

Elizabeth Norton
Managing Research Director, Mid-Atlantic Region
Transwestern
Washington, D.C.

Carlos Ortea
Assistant Vice President, Research
Bentall Kennedy
Boston, Massachusetts

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

Raymond Wong
Vice President, Data Solutions
Altus Group Limited
Toronto, Ontario, Canada



**As of Sept. 30, 2017*
Source: Real Capital Analytics

traditional office space." Brokers can continue to help these companies find new space as they grow.

Another consequence of the changing nature of office space is the emerging trend of repurposing building common space as an amenity. **Margarita Foster**, NAIOP's vice president for knowledge and research, presented a preview of the Foundation's recent report, "Activating Office Building Common Spaces for Competitive Advantage" (naiop.org/common-spaces), which describes how landlords have taken inspiration from the sharing economy by converting underutilized parts of office buildings into shared spaces that foster health, community and collaboration. Making outdoor spaces more usable with high-speed Wi-Fi, offering exercise classes, hosting food trucks and providing comfortable lounge areas are just a few examples of how landlords have been investing in more lively common spaces. Landlords surveyed for the report indicated that they must do this to remain competitive, and that these amenities improve leasing velocity and, in some cases, rental rates.

Big Data

The research directors were asked how they are managing, sharing and integrating data within their firms. The consensus was that they are currently integrating data at the local level but not enterprisewide, because of the complexity of this type of endeavor. Multiple siloed data sets and platforms will need to be merged in order to expand this effort. Integration is further complicated by privacy issues and the industry's reluctance to make widespread changes. When employees realize tangible benefits, however, they quickly embrace change. For example, when one firm mandated the use of asset management software (developed by Hightower and VTS, which merged in late 2016), the resulting efficiencies were immediate. Users clearly preferred the new technology.

Among the data integration challenges identified by the group were the time and expense of both training employees on new platforms and establishing a foundational system that can accommodate broad sets of data from different platforms. Participants, many of whom are just beginning the process, estimated that it will take three to four years to implement their data integration plans. They noted that when formulating these plans, firms must consider cost implications, what elements are better outsourced, warehousing, the quality of external data, the value of older data and security issues.

Autonomous Vehicles

Despite the enthusiasm for autonomous vehicles (AVs), some participants believe they will not have a large impact on the built environment in the immediate future. Although they recognize their potential for ride-sharing, reduced parking and deliveries, AVs might not directly affect real estate in the foreseeable future. Because of local, state and federal regulations, it will take decades for AVs to be fully implemented. Driverless trucks, for example, are more of a near-future possibility, although they also bring safety and regulatory concerns. (See "Six Innovative Concepts for Moving Freight" on page 48.)

2017 Market Overview

During his market overview presentation, Costello reported that the industrial sector is leading sales growth and suburban office investment is up. He added that the industrial sector is the only product type not posting declining investment sales volume in 2017. Industrial growth on the portfolio level, in Costello's opinion, is resulting from the expansion of the e-commerce and logistics sectors.

Conservative lending practices have hampered retail sector transactions, and sales volume is down in the office sector as well, mostly because REITs have been retaining or repurposing their properties rather than selling. Costello noted that suburban office space is, "tracking higher than CBD" because of higher yields. Overall, the decrease in investment sales seems to be a restriction on supply, as owners hold on to their properties, and not necessarily a sign of an impending economic correction. ■

By **Jennifer LeFurgy,** Ph.D., director of research, NAIOP

"Worth Repeating"

Sound Bites From NAIOP's National Research Directors Meeting, Sept. 14, 2017, in Herndon, Virginia:

"There's still some room in the marketplace for offices to densify, but at what cost? Densification for [the sake of] densification doesn't make sense. There has to be a workplace strategy that enables [increased] productivity." **Ray Wong**, *vice president, Data Solutions, Altus Group Limited*

"Efficiently collecting, integrating, sharing and visualizing data is an iterative process that evolves over decades. It is a necessity that will now be a constant part of a real estate firm's DNA going forward." **Aaron L. Ahlburn**, *director of industrial research, JLL*

"REITs are actually net investors now. They're not just net buyers of existing property. They are buying and building more than they're selling as many REITs want to increase the quality of their portfolios." **Jim Costello**, *senior vice president Real Capital Analytics*

"We've heard for years that millennials don't buy homes or cars, but millennials are going to be our biggest home-buying group. We're going to start seeing a wave of millennials moving out to the suburbs." **Daniel Deuter**, *senior vice president, CBRE*

"I would tell young people [entering the real estate business] several things. … Come in early, stay late, respond to email and calls in a timely way and double check your work. … Also, be willing to speak up. Respect is always important, but sometimes deference can be over-rated. Challenge the status quo. … If you are willing to look at the world differently, you can have a very fulfilling career." **Jonathan Gray**, *global head of real estate, Blackstone*

Sound Bites From NAIOP's CRE.Converge 2017, Oct. 10-12, in Chicago:

"Suburban office that's just office is the dinosaur." **John Petrovski**, *senior vice president and managing director, U.S. commercial real estate, BMO Harris Bank*

"You can have great suburban locations as long as you have a great mix." **Rod Lawrence**, *senior advisor, JBG Smith*

"As we're future-proofing our business and portfolio, we're looking at distant technologies that will keep us progressive and ahead of the curve. There's a huge resilience benefit to this, in terms of both economic cycles and extreme weather events." **Jeannie Renne-Malone**, *vice president, sustainability, Prologis*

"Leadership is having an idea and bringing people along to make it happen." **Julie Benezet**, *founder and managing principal, Business Growth Consulting LLC*

"Intellectual capital is the currency of the future." **Michio Kaku**, *futurist* ■

CEO on Leadership:
Jordan Lott, President and Founder, Lake Washington Partners

The president of this Issaquah, Washington-based real estate management and development firm offers his perspective on being a developer.

By Ron Derven


Jordan Lott

JORDAN LOTT FOUNDED Lake Washington Partners in 2006, but his family's roots in the real estate industry and Seattle date back to the 1940s, when his grandfather, **Manny Lott**, an entrepreneur and community leader, invested in some of the city's most iconic real estate, including the Arctic Building, a landmark in downtown Seattle. Inspired and encouraged by his grandfather, Lott has successfully developed or acquired 7 million square feet of industrial and office properties nationwide, more than 1 million square feet of which is in the Seattle metro area.

Lake Washington Partners is a small, nimble firm with large capabilities. With a staff of roughly 25 people, the company has a broad and diversified foundation.

Development: *What is your primary role as president of Lake Washington Partners?*

Lott: My role is to make sure that my team has the tools they need to do their jobs. I don't micro manage. I hire great people and I trust them to execute. I constantly educate myself and try to apply best practices to the business so that we can expand and grow. I spend a lot of time looking at data and reports and drawing on my industry relationships to keep myself and the business informed. I am here to make sure that my people can do their jobs.

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

Lott: For us, it is all about cultural fit. I need and I want people who have the right attitude. I really like the quote, "You can't teach tall." That is, some people have the right core values and some people don't. We look at who you are as a person and whether you'll be a good fit for our team. The rest can work itself out.

"We look at who you are as a person and whether you'll be a good fit for our team. The rest can work itself out."

Jordan Lott

Development: *When one of your employees makes a mistake, how is it addressed internally?*

Lott: You can't "eat someone's lunch" for making a mistake; if you do, they'll never make a decision again. I always try to find a teachable moment and ask the person, "what can the organization learn from this?" I think that, in the end, people know when they've made a mistake. We learn from it; we move on.

Development: *What was one of the biggest mistakes your company made, and how did you find yourself making it?*

Lott: We've made a lot of mistakes. Hopefully, we've owned up to all of them. Our biggest mistake has been to hire the wrong person or the wrong vendor. If we don't have that great cultural fit, in the end it is going to be a problem.

Development: *While the commercial real estate industry has been experiencing tremendous transaction volume, how is your company preparing to weather the inevitable downturn?*

"The best piece of advice I received was 'the first one to market wins; know your markets.' I have tried to instill that in everybody I work with."

Jordan Lott

Lott: We have the same strategy in good years as we do in bad years. We're conservative investors; we have a very long-term time horizon. We try to find buildings and properties that we want to own 10, 20 or 30 years from now. We know that there will be recessions in that period of time. We know they are going to come, but we don't know when they will come. We don't have a boom-year strategy and a lean-year strategy.

Development: *Looking out three to five years, what do you see on the horizon that will impact the industry?*

Lott: There will likely be a recession within the next five years. When it comes, we will look at it as a buying opportunity.

Development: *What is the best advice you've been given over the course of your career?*

Lott: The best piece of advice I received was "the first one to market wins; know your markets." I have tried to instill that in everybody I work with. You've got to know the market; you've got to understand it.

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

Lott: The CRE industry is huge and it has lots of industries within it. If you know who you are as a person, you can better find a job that suits you. For example, brokers and managers are very different personality types, so you have to find the job that fits you as a person. Finding a job that fits you is what makes people the most successful.

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

Lott: Early in my real estate career, I spent a lot of time simply asking people questions and asking for advice. Frankly, it is something that I still do today. That's why I am involved in NAIOP and serve as a NAIOP Research Foundation Governor. I cannot imagine thinking that there is not more for me to learn. I really try to learn from people who are generous with their time.

Development: *How do you de-stress?*

Lott: I watch the Food Network. ■

By **Ron Derven**, contributing editor, Development

Legal Agreements for Mixed-use Projects

Anyone considering developing a mixed-use project should be aware of these key legal, design and management considerations.

By Paul N. Dubrasich, Cox Castle Nicholson LLP

MIXED-USE development projects of all types – including urban infill projects, transit-oriented developments and walkable lifestyle communities – have taken hold in urban centers and suburban areas across North America. Millennial consumers, as well as downsizing retirees, increasingly favor living within walking distance of stores, their favorite cycling and barre classes, restaurants and cultural venues, rather than having to drive to homes at the distant reaches of urban sprawl.

Local governments love mixed-use development for a variety of reasons. They put less pressure on infrastructure cost than more sprawling development, create accessible job opportunities, reduce traffic and help stimulate local commerce. Developers are responding to the evolving demographics and environmental forces driving these types of developments, not just in the urban core, but also in outlying areas, especially on sites close to public transportation.

"The differences between condominium projects and vertical airspace subdivisions are subtle but significant."

Paul N. Dubrasich

What Is Mixed-use Development?

"Mixed use" is a generic term for real estate projects that combine two, three or more product types. They often incorporate both residential and commercial components into a single building or podium structure. The different components of a mixed-use project are typically owned and operated by different entities, with interests that are not always aligned. This means that the legal, entitlement and management issues that are common to all developments must be examined even more closely in mixed-use developments. They may impact the project in a variety of ways, including the following.

Subdivision and Ownership

More often than not, building components in a mixed-use project are designed to be owned separately. A multifamily company may own the market-rate apartments, while a tax credit entity may own the affordable units. A block of residential units may be sold as condominiums, while retail, office, hotel or garage components may be operated by companies specializing in these uses. In these cases, the components of the project must be legally subdivided. This can be done either by dividing the project into condominium blocks or, if allowed by the state and local jurisdiction, creating a vertical airspace subdivision.

The differences between condominium projects and vertical airspace subdivisions are subtle but significant.

Paul N. Dubrasich

The management of condominium projects is usually highly regulated by state statutes, while vertical airspace subdivisions may not be. Condominium projects are governed by declarations of covenants, conditions and restrictions (CC&Rs) that create a management board and establish strict assessment requirements and use restrictions. A vertical subdivision is more likely covered by a reciprocal easement agreement (REA) that may be less formal but also addresses cross easements, management and cost sharing for the project as a whole.

Entitlements

Whether it is comprised of condominiums or vertical airspace parcels, the mixed-use development of the future will increasingly offer – or be located close to – live, work, play, shop venues in an all-inclusive setting. With brick-and-mortar retail suffering at the hands of e-commerce, stores may be downsized, specialized and/or narrowly focused on serving local residents and workers. Restaurants or hotels, rather than stores, may serve as project anchors, along with the residential units.

From an entitlement standpoint, developers must always contend with governmentally imposed conditions such as affordable housing, prevailing wage, energy efficiency, traffic management and sustainability requirements, to name just a few. Mixed-use development, however, adds another element of complexity, because it involves potentially incompatible uses in a confined area. Obviously, a nightclub or saloon may be unsuitable immediately below residences. Even restaurants may require special easements through the building for proper ventilation, odor mitigation or pest control. This is where REAs and CC&Rs come into play. Use restrictions in these documents must be strict enough to appease residents but flexible enough to make retail and other commercial spaces marketable.

"Use restrictions [in REAs and CC&Rs] must be strict enough to appease residents but flexible enough to make retail and other commercial spaces marketable."

Paul N. Dubrasich

Management

The differing interests of residential and commercial owners can lead to conflicts in management control, use restrictions and association dues. Simple concepts like the design review for project alterations or collection of reserve funds for future capital repairs or replacements can be a matter of dissent between commercial and residential owners. Who controls management and decision-making within the project is key, and the REA or CC&Rs need to carve out veto and special voting rights for decisions that impact one type of use in a material way. This is, in practice, not always a flexible decision, because condominium laws in many states require strict protections for residential owners that sometimes simply don't fit in the commercial or retail context.

Parking

Parking is almost always a concern in new mixed-use projects. The amount of allowable and/or required parking may be impacted by many factors, including supply and demand, local zoning and proximity to public transportation. How parking is allocated and whether it is assigned or unassigned, self-park or valet, free or fee-based, operated by a private company or an owners association, are all questions to be addressed early in the planning process. Trends such as the increasing use of electric and, in the future, driverless vehicles, as well as car-sharing and ride-hailing systems, also need to be taken into account.

Security

Mixed-use developments typically are designed to attract the public to their retail and commercial components but should also provide adequate privacy and security for residential owners and tenants. This should ideally include separate ingress and egress for residents. Developers should consider whether parking areas will be segregated or gated and whether common areas and amenities will be made available to users of different project components. Adequate lighting not only makes common sense, but may be a risk-management necessity to avoid future design liability.

Sales and Risk Management

In practice, commercial and residential properties are marketed differently. They are appraised by different methods and measured by different standards. They are sold under different types of sales contracts. This, however, is not always possible in mixed-use developments, because sales and marketing laws in many states do not distinguish between residential properties and mixed-use properties that include residential uses.

While retail and other commercial properties are rarely the subject of protracted construction defect litigation, this is not necessarily true when they are part of a larger mixed-use development that includes residential uses. From a risk management standpoint, developers should be vigilant about maintaining adequate insurance for completed structures. They are well advised to establish both construction claims procedures and alternative dispute resolution processes in all sales contracts, both commercial and residential.

All In

Well-designed mixed-use developments are essential to the revitalization of urban and, increasingly, suburban areas. They can, on a large scale, create vibrant and fulfilling living environments for both young and older residents. The rewards can be maximized by developers who pay close attention to the legal, design and management challenges associated with residential and commercial owners existing in close proximity and sharing the responsibility for property maintenance, security and operations. ■

By **Paul N. Dubrasich,** partner, Cox Castle Nicholson LLP

Mixed-use Design: Making the Mixes Work

Why do some mixed-use developments get the mixture so right, while others struggle?

By Eric Brown, AIA, and Rob Hagan, AIA, Prellwitz Chilinski Associates

ACHIEVING HARMONY within a mixed-use project designed for distinctively different and often conflicting user groups is never a simple proposition. One reason for this challenge is that large-scale mixed-use development (MXD) is relatively new. Unlike classic Main Street and downtown mixed-use environments that grew over time, today's MXDs typically require everything to come together at once. Tenants, buyers, customers and the host community each expect a level of compatibility that will ensure an instantly successful mixed-use experience.

While every MXD presents unique challenges, designers have learned that an early and concentrated focus in four important areas can set the foundation for long-term success.

Define Demographics

A valuable first step is to understand the demographic characteristics of your prospective residential and commercial users early on. A clear customer and tenant profile provides the foundation for resolving a series of potential conflicts before they arise. Knowing *who* a project is being designed for and *why* is critical to determining *what* will be designed.

For Boylston Properties' and The Wilder Companies' new Arsenal Yards in Watertown, Massachusetts, for example, facilitated focus groups and a dedicated website were used from the beginning of the planning process to answer a wide range of questions. Who would like to live there: empty nesters, millennials, families? What types of shops would they like to find in this neighborhood? What kinds of public spaces and amenities would they love to have?

Findings showed a demographic weighted toward young working professionals traveling to the site by car. The most attractive mix of uses for this group was determined to be a true "live, work, play" environment that retained the site's original focus on retail and restaurants while adding a movie theater, office space and pedestrian environments as well as a significant number of housing units needed by the community.

For DJ Properties' Washington Village, a new MXD in South Boston, the developer needed to appeal to a broader demographic, in order to ensure that current neighborhood residents – who initially were concerned about the impact of this large-scale project – felt welcomed. The development team solicited feedback on the proposed program through a survey and numerous meetings with neighborhood residents and those whose homes and businesses directly abutted the site, so that the development would reflect, enhance and contribute to the existing community.

Housing was determined to be the driving force for this urban neighborhood. Located adjacent to a rapidly developing "luxury focused" neighborhood with few options for middle-income residents and first-time homebuyers, Washington Village will become a six-block neighborhood with 656 new rental and condo units as well as 98,600 square feet of supporting retail space, including an on-site grocery.

Have a Clear Brand Strategy

Without a clear and engaging brand, MXDs struggle to stand out from the competition. Delaying the branding and identity process means a missed opportunity to engage the community, customers, tenants and even permitting agencies. The goal is to provide a clear identity early, so that people can easily understand and connect with the developer's vision.

Depending on the target buyer, tenant or customer, it may be beneficial to consider a distinct brand for the housing component, for example, and a separate brand for the office or retail component. Suburban developments may be better served by an overall brand for the entire site, while urban brands are often better seen as a collection of buildings that improve or reaffirm the existing community. Design can support the brand strategy with distinctive buildings, open spaces and amenities that help create community while easing or mitigating conflicts between uses.

Washington Village found its branding by looking to the rich history of the area. Reinstituting a name from the neighborhood's past, when General George Washington and his troops drove British Redcoats out of Boston, established the new development as an affirmation of past glory and an extension of an existing and vibrant community. This identity appeals to both current and prospective residents, acknowledging and honoring the past and all who have contributed to the development of this community.

Arsenal Yards in Watertown, Massachusetts, will feature a 52 percent residential, 32 percent retail, 6 percent office and 10 percent hotel mix of uses, each of which is expected to support and enhance the other components of the mixed-use neighborhood.
Prellwitz Chilinski Associates

Formerly known as the Arsenal Mall, Arsenal Yards is being revitalized with an overall branding related to the juxtaposition of Watertown's industrial past with the modern world. Within the 1.3 million-square-foot MXD, each residential building, retailer and the hotel will have its own "voice." The challenge is to prioritize brand visibility to satisfy the sensibilities and needs of disparate tenants, from retailers who require high visibility at ground level to residents who need to feel that they are being welcomed to a home, not a retail storefront.

Craft a Balanced Mix

Think of the mix in a strategic way. The right mix, tailored to a specific site and neighborhood, will create vibrant spaces and places that will appeal to the users, customers, and tenants you want to attract.

Arsenal Yards' mix of primarily residential and retail uses, with some office space and a hotel, is appropriate for its defined demographic. A new pedestrian "River Green" will make connections to the park and the Charles River. A courtyard with seating and gathering spaces will host food vendors, outdoor markets and other events, which in turn will help knit this new community together. Washington Village will be predominantly residential, which is entirely appropriate for a neighborhood lacking mid-range housing options and basic amenities such as a grocery, pharmacy or dry cleaning. Site work is currently underway, permits have been issued and construction documents prepared for several buildings, and construction is expected to begin in spring 2018.

Create a Sense of Place

Your initial "wish list" must be tested within the constraints of the site demographics and context. The collaborative master-planning process will be iterative, not linear, with adjustments made in density, height and overall mix, accommodating both vehicular and pedestrian access as well as permitting requirements. The goal must be to go beyond a simple pro forma, building rapport with the community and crafting a mix of uses, spaces and sensations that will engender a strong and lasting sense of place.

In the Long Run

Upfront thoughtful design and planning are critical, and always pay off

Concentrating Washington Village's 16-, 18-, and 21-story buildings on one part of the site leaves room for 1.5 acres of open space, which existing local residents will share with those moving into the neighborhood.
Prellwitz Chilinski Associates

in the long run. Washington Village's master plan is the product of more than five years of collaboration, listening and discussion with the neighborhood. This collaboration allowed all constituents to take ownership in the new development, making them part of the process. The strong community relationships that resulted from the developer's outreach, active listening and trust-building led to an extraordinarily quick 18-month approvals process with unanimous support from neighbors, local elected officials and the building trades. In a neighborhood of three-story buildings, the team gained unanimous approval for three buildings over 16 stories because they engaged the community and incorporated its wish list. Site work is underway; construction is expected to begin in October 2017 and completion of Phase 1 is scheduled for mid-2020.

According to management consultant **Peter Drucker**, "Efficiency is doing things right. Effectiveness is doing the right things." In mixed-use planning and design, succeeding with the people who will live, work, dine, shop and visit springs from knowing who they are, generating a thoughtful brand approach and then creating the right mix of "things" – the "great places" – that will convince them to come back again and again. ■

By **Eric Brown**, AIA, principal/partner, and **Rob Hagan**, AIA, associate, Prellwitz Chilinski Associates

Health Care Tenants Inject New Life into Ailing Shopping Malls

As health care providers seek to improve customer service by offering convenient access closer to where their patients live and work, they are discovering a hidden resource: the regional mall.

By Eric Johnson, Transwestern

EVOLVING CONSUMER habits are driving fundamental changes at U.S. regional malls. Today's stores tend to be smaller, freeing space for new tenants, and there is greater emphasis on drawing patrons to properties with "experiences." Restaurants, theaters and other entertainment offerings are becoming more prominent tenants, as are retailers that meet consumers' daily needs, like grocery stores and fitness centers.

There has also been some churn in mall ownership. Larger mall REITs are focusing on higher-end malls in core markets and disposing of lower-performing malls in smaller markets. Additionally, many of the anchor store chains that are shrinking their U.S. footprints and store counts, primarily Sears and Macy's, own their real estate. The anchor spaces they are selling typically trade to the mall owners, which can then divide the space and adapt it for other uses.

Despite ongoing store closures, malls as an asset class have for the most part successfully secured new tenants or adapted space for alternative uses. National mall occupancy has slowly declined since the recession but hovers at approximately 96 percent, and U.S. malls posted 4.2 million square feet of net absorption in the first half of 2017, according to CoStar. As the graph at right illustrates, mall vacancy stood at 4.25 percent at midyear 2017, down from a peak of 5.09 percent in 2010.

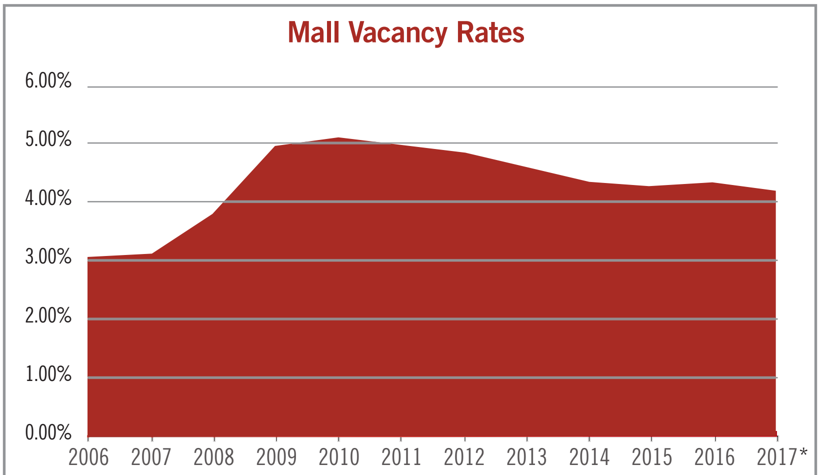
Formulas vary by market, location, demographics and, of course, investment dollars, but a growing number of leasing programs are bringing in bowling alleys, gyms and other alternative uses, as well as fresh new types of retail tenants, such as specialty grocers, fast casual restaurants and trendy apparel outlets that appeal to Gen X and Z shoppers.

Mutual Attraction

One of the most intriguing strategies to emerge from this re-imagining of the mall tenant mix has been the introduction of medical service providers to operate alongside conventional stores or, in some cases, to replace retailers entirely. Health care services fit today's leasing goals by bringing in patients as well as physicians, nurses and technicians who work at the property each day and frequent its restaurants and stores.

The trend has strengthened in part because mall owners have grown much more open to health care providers as tenants. As the pool of traditional retailers shrinks, retail landlords are facing the reality of adapting or dying, and health care uses can drive foot traffic and keep occupancy high. The most common challenge is local zoning, which may restrict or prohibit medical uses in retail spaces.

Medical leases tend to be long term because of the high capital cost of build-outs, the disruption associated with moves and the enormous expense of relocating specialized equipment. Once in place, landlords find that health care tenants have a strong motivation to stay put and are often willing to pay higher lease rates than the retailers that previously occupied the space.



*As of midyear.
Source: CoStar

The Bulfinch Companies transformed the former Atrium Mall in Chestnut Hill, Massachusetts, into the 286,000-square-foot Life Time Center, a facility dedicated entirely to health care and fitness uses. Tenants include Life Time Athletic, the Dana-Farber Cancer Institute, Newton-Wellesley Hospital and Colorado Center for Reproductive Medicine.
Courtesy of The Bulfinch Companies, Inc., © Peter Vanderwarker Photography

The cross-industry attraction among retail landlords and health care providers is mutual. In today's competitive market, hospital systems want access to patients where they live and work, so that their "customers" do not have to drive across town to a flagship hospital campus. These health care providers are establishing emergency rooms, clinics, labs and even microhospitals in underserved areas and near populations of existing and potential patients. In many cases, patient satisfaction scores improve when they do so, because a well-designed facility in a familiar location with easy parking reduces stress for patients and their families.

"Health care services fit today's [mall operators'] leasing goals by bringing in patients as well as physicians, nurses and technicians who work at the property each day and frequent its restaurants and stores."

Eric Johnson

Numerous Options

Physician practices and other health care providers seeking space today have a wide range of options, including multitenant medical office buildings, converted traditional offices, single-occupant structures and retail space. Malls can be an ideal solution for many health care providers, in part because of their exceptional vehicular access and ample parking.

Often located at the center of larger retail trade areas served by a variety of restaurants and other amenities, malls are typically centrally located within dense population clusters and often have large blocks of available space. Their large on-grade floor plates can accommodate heavy medical equipment at a lower cost than would be the case for a multistory building.

Main Line Health, for example, invested $4.5 million to turn 32,000 square feet of first-floor mall space into an ambulatory care center in Exton, Pennsylvania. The facility, which opened in January 2014 in Exton Square Mall, features massive and advanced MRI equipment designed for large and/or claustrophobic patients. Exton Mall's owner, Pennsylvania Real Estate Investment Trust, previously partnered with Mercy Suburban Hospital to open a two-story, outpatient care center in another of the REIT's properties. The $3.5 million facility opened in October 2012 in Plymouth Meeting Mall, in central Montgomery County, Pennsylvania.

Dimension Financial & Realty Investments Inc. is transforming the 380,000-square-foot Fiesta Mall in Mesa, Arizona, into Campus @ 60, which will include medical education space as well as other educational offerings and dining and entertainment venues.
Rendering by Ware Malcomb

Complementary Activities

Ongoing redevelopment can add to a mall's appeal for health care providers. As landlords parcel out excess surface parking for development of apartments, office buildings, hotels, restaurants and other uses, the resulting mix can echo the complementary activities that often emerge around major hospital campuses.

One Hundred Oaks Mall in Nashville, Tennessee, is an early example of how well a mall's available space, parking and location within a community can serve health care providers. Vanderbilt University Medical Center occupies nearly half of the 850,000-square-foot property, taking up the entire second floor, while the first floor remains a retail center, with shops and eateries that serve as amenities for the health care tenant's patients and staff. Occupancy in the facility, which opened in 2009, is near 100 percent, with a tenant mix that includes Guitar Center, Michaels, T.J. Maxx, PetSmart, Burlington, Ross Dress for Less, Chipotle, Logan's Roadhouse, Regions Bank, Panera Bread, Panda Express and Ulta Beauty. LaSalle Investment Management purchased the center in late 2012.

For some redeveloped shopping malls, retail may be pushed out entirely or be limited to a handful of restaurants or stores serving those drawn to health care and other nonretail facilities. The former Atrium Mall in Chestnut Hill, Massachusetts, for example, has been transformed into Life Time Center, a 286,000-square-foot wellness and medical center. The Bulfinch Companies Inc., a private real estate firm, closed the mall in 2013 and converted it entirely to health care and fitness uses, capitalizing on the mall's proximity to the Longwood Medical Area in Boston. The repositioned asset is almost entirely leased to a gym and wellness center called Life Time Athletic and the Dana-Farber Cancer Institute, which is scheduled to open a 140,000-square-foot clinic there in 2019 to serve as a satellite of its downtown Boston campus.

In May 2017, Dimension Financial & Realty Investments Inc. announced its acquisition of Fiesta Mall in Mesa, Arizona, and outlined plans for its $30 million redevelopment for medical education providers, along with eating and entertainment venues. The list of malls injecting health care into their tenant mix continues to grow, as these two seemingly divergent industries explore their common ground. ■

By **Eric Johnson**, managing director of health-care advisory services at Transwestern

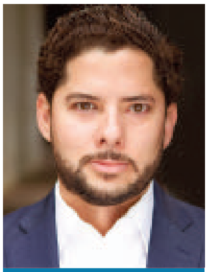

signature deals
Make your mark in
commercial real estate.
bofaml.com/commercialre
Bank of America
Merrill Lynch
The power of global connections™

Real Estate Diversification via Structured Investments

Structured investments can enable real estate investors to move into a new market while limiting risks.

By Gabriel Pozo, Advalurem Group

TODAY'S HIGH PROPERTY pricing is pushing real estate investors toward the outer limits of acceptable risk. According to Real Capital Analytics, the average cap rate for apartment properties nationwide was 4.9 percent in the first three quarters of 2017. As the market continues to face low property yields, pressure mounts for real estate investors to seek higher returns in alternative markets and/or asset classes where there is less competition. This is what happens, for example, when a multifamily operator moves into student housing, or when a local real estate company acquires a property in an unfamiliar market.



Gabriel Pozo

Moving into a new market or product type can be profitable, but it may also result in the investor taking on a disproportionate amount of risk for the expected increase in yield, especially as the real estate company drifts from its core competency into unfamiliar markets or asset classes. These inves-

"A preferred equity investment can be an effective way to achieve equity returns with some degree of downside protection, especially in today's economic cycle."

Gabriel Pozo

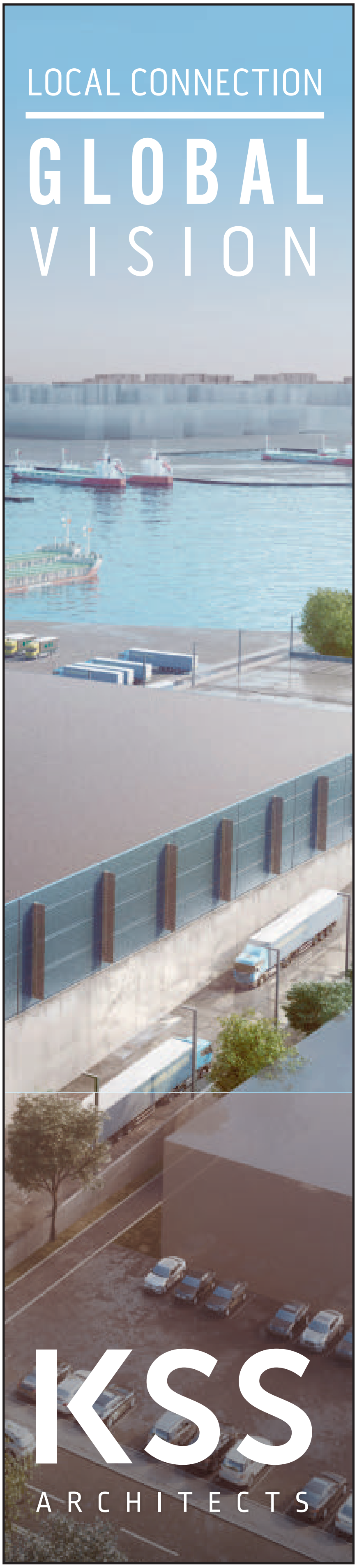
tors risk overpaying, carrying bloated expenses, missing revenue targets and, overall, underperforming relative to their peers who specialize in that location and property sector.

A relatively safer diversification strategy is to form and acquire different classes of ownership interests in real property within an investor's core market or product type. These structured investments, such as joint venture equity, preferred equity and convertible equity, among others, offer an opportunity for better overall risk-adjusted returns. For example, owning a preferred equity interest in a property may provide a built-in discount to market value and/or acquisition cost basis by having seniority over the common equity interest, providing investors with an added margin of safety. Of course, this type of investment would carry a lower return expectation compared to common equity. But a preferred equity investment can be an effective way to achieve equity returns with some degree of downside protection, especially in today's economic cycle.

For this strategy to work, however, a real estate investor must have disciplined underwriting, as well as structuring expertise. The latter is critical in arranging different classes of ownership interests, setting sequential payment terms, providing possible convertible features and establishing management control rights, among other requirements. Investors also need robust asset management capabilities to set strategy, oversee managers and work out unforeseen problems during ownership. Outside of an investor's core market, it is essential to form partnerships with local experts, with the aim of building a diversified portfolio of real estate across geographic locations and property sectors as well as types of investments.

When faced with a competitive market environment like today's, it is not enough for real estate investors to consider only in what product types and where to invest. They must also consider how to do so. Simply widening one's sectors and markets can result in unnecessary risk. Successful real estate investors who can pivot along the ownership/capital structure have a better shot at hitting the mark between risk and reward. ■

By **Gabriel Pozo**, principal, Advalurem Group



Artful Landscape Design for Stormwater Management

Stormwater management features became an asset for a mixed-use project in Columbia, Maryland.

By Brian L. Reetz and Emilie C. Carter, Design Collective

THE METROPOLITAN Downtown Columbia, one element in the master plan for Downtown Columbia, Maryland, is the first new mixed-use, multifamily project to be developed in the area, which eventually will incorporate a vibrant, walkable downtown that will complement what was formerly an inward-focused mall. Developed by Kettler, the six-story, 375-unit apartment building features ground-floor retail space that faces a 0.82-acre promenade.

While the primary goal for the landscape architects designing this promenade was to create an appealing open space, they faced several additional requirements and challenges, including the need to integrate a public art component, fulfill county requirements for a playground area and comply with state stormwater regulations. The design for the promenade, which was completed in summer 2015, incorporated an integrated micro-bioretention system, educational and interpretive signage, and abstract play sculptures. The result is an iconic open space lined by shops and restaurants that connects Downtown Columbia, the mall and the surrounding community. The roughly $1 million promenade also offers some valuable lessons for landscape architects and developers.

Stormwater planters along retail areas provide year-round interest and separate outdoor diners from people strolling along the promenade.
All photos, Jennifer Hughes Photography

Stormwater as an Amenity

The promenade transforms stormwater into an experiential, educational amenity. On a rainy day, restaurant patrons experience the stormwater management system at work. Water flows from scuppers in the building facade into exposed runnels, then spills into visible troughs that patrons can traverse. The runnels also feed long, linear stormwater planters along both sides of the lawn, with metal grate bridges crossing them, allowing patrons to see water collecting beneath their feet.

The stormwater management system is accompanied by educational signage that educates both children and adults about stormwater management and sustainability. Engraved quotes on low walls – which also serve as seating – and interpretative panels further communicate educational concepts to visitors. The simple, affordable and artistic design aims to increase sensitivity to and appreciation of environmental impacts.

A linear bioretention unit that runs parallel to the promenade's lawn and the stormwater planters captures runoff from surrounding sidewalks, streets and the lawn. This system created an opportunity to combine creative play space with environmental education to highlight stormwater management strategies while also separating children from adjacent traffic.

Interactive Sculptures

The county required the project to include a playground area; local regulations also required the developer to contribute 1 percent of the project for public art. Instead of using standard playground equipment, the landscape architecture team explored the simple concept of unstructured play. By focusing on how stormwater management could complement the play and learning experience, they created a design for the promenade that combined art, play and stormwater management in a single space.

Local artist **Mary Ann Mears** and writer/learning advisor **Susan Magsamen** collaborated with the landscape

continued on page 44

A linear bioretention unit that runs parallel to the promenade's lawn and the stormwater planters captures runoff from surrounding sidewalks, streets and the lawn.

Low concrete walls engraved with quotes also provide seating, while tall dynamic sculptures add visual interest

continued from page 42

architects to develop brightly colored, oversized, interactive sculptures that emulate the local environment and create engaging experiences. The sculptures, which are scattered throughout the site, inspire social interaction and provide opportunities for children to climb, chase, hide and explore.

The sculptures also serve as identifiable landmarks and a framework for additional interpretive art on the promenade. Interactive forms, including leaf forts and a giant tulip flower, celebrate native species. The sculptures activate the open space and meld with the surrounding environment.

Horticultural Design

The public perception of stormwater management sytems as unsightly presented another challenge for the design team. The landscape architects therefore focused on including plants that can survive extreme wet and dry environmental conditions while also providing year-round interest. Although the bioretention system contains perennials that become dormant in winter months, evergreen shrubs like Ilex glabra (Inkberry) and ornamental native grasses like Panicum virgatum provide structure and year-round appeal.

Current horticultural design trends aim to take advantage of interactions among plant species. This project provided the opportunity to utilize the interactive benefits of low-maintenance, self-sustaining plant communities. Baptisia australis, for example, has a large tap root and can survive harsh conditions by drawing water deep from within the ground, whereas Rudbeckia fulgida has shallower roots that capture surface water. Pairing complementary plants in the design utilizes the full soil profile.

Many landscape architects tend to use plants with high survival rates, resulting in a predictable, monotonous design. Integrating stormwater into landscape designs provides opportunities to use diverse, more naturalistic plantings. Clients who struggle with this shift in horticulture design must understand that stormwater management environments require a different aesthetic and composition of plant species. Although the design may seem a little different, it creates a more productive and sustainable landscape.

Interactive sculptures rather than traditional playground equipment encourage creative play.

In the past, most conventional stormwater management systems were buried below pavement as "gray infrastructure" or placed in large stormwater ponds, typically out of sight and out of mind. Today, regulations and site constraints often require stormwater systems to be integrated into a project's usable space. A comprehensive understanding of horticulture, combined with creative problem solving and landscape design expertise, can result in appealing, usable spaces that serve a variety of purposes. ■

By **Brian L. Reetz**, senior associate and landscape architect, and **Emilie C. Carter**, PLA, ASLA, landscape architect, Design Collective

A Real Estate Developer's Sustainable Headquarters

The Duffie Companies' new headquarters incorporates innovative HVAC systems, lighting controls, a green roof and more, targeting LEED Platinum certification.

By Mohamed Abaza, Capital Brand Group LLC

AS DEVELOPERS AND long-term holders of real estate, principals at The Duffie Companies wanted their new headquarters in Silver Spring, Maryland, to be a high-efficiency building. They also wanted its mechanical, engineering and plumbing (MEP) systems to be flexible enough to allow them to lease the ground floor of the new three-story structure to up to four individually metered tenants.

The companies set the challenging target of achieving both LEED Platinum Core and Shell and Commercial Interiors certification. To help achieve this goal, they retained the services of Capital Brand Group's Energy and Sustainability Division (CBG) to evaluate highly efficient building systems and renewable energy options. CBG utilized energy modeling and life cycle cost analysis tools to evaluate and select the best systems for the project.

The Duffie Companies' new 16,800-square-foot headquarters in Silver Spring, Maryland, completed in March 2017, is a cutting-edge high-efficiency building. The company, which has occupied the top two floors since April, plans to lease the ground floor to up to four tenants.

Photos by Mohamed Abaza, courtesy of The Duffie Companies

Innovative Systems

The building, which was completed in March 2017, incorporates innovative HVAC systems and a novel type of vegetative roof as well as cutting-edge LED lighting systems, high-density insulated exterior walls and low-E windows, as well as a still-to-be-installed on-site photovoltaic system and advanced metering. The facility is on track to achieve LEED Platinum Certification with a projected annual energy cost savings of 32 percent, compared to an ASHRAE 90.1 code compliant building.

The building's roof incorporates an innovative 4-inch-deep green roof system that significantly reduced the overall cost of the roof without affecting the performance of the green roof system and eliminated the need for rooftop irrigation. The rooftop also accommodates a Daikin VRV IV variable refrigerant flow and variable refrigerant temperature heat pump system.

The building's roof incorporates an innovative 4-inch-deep green roof system approved by the Maryland Department of the Environment that

The Duffie Companies Headquarters Project Summary

Location	57 Randolph Rd., Silver Spring, Maryland	
Type of Site	Suburban	
Use	Office	
Building Size	16,800 sq. ft. Three stories above grade 10.5 ft. floor-to-floor height	
Parking	70 spaces; 3 electric vehicle charging stations	
Energy-saving Features		
	LED lighting throughout Daylight, dimming and occupancy sensors Lutron Vive wireless lighting system, with central Hub master controller Daikin VRV IV variable refrigerant flow and variable refrigerant temperature heat pump system Rooftop dedicated outside air system unit with heat recovery wheel Innovative 4-inch-deep green roof system 5.04 kW photovoltaic (PV) system Advanced metering (for measurement and verification purposes)	
Development Team		
Owner/Developer/Property Manager/General Contractor		The Duffie Companies
Energy and Sustainability Consultants		Capital Brand Group LLC; HOK
Architects		SBK Architecture (base building) Grand Design Studio (fit-out)
MEP Engineer		RK Consulting
Civil Engineer		Design Engineering, Inc.
Interior Design		Alice Sydney LLC
Project Completion		March 2017
Total Construction Cost		$3.8 million

Incorporating recessed cassette units rather than ducts enabled designers to maximize the building's ceiling heights

is equivalent to a traditional 8-inch-deep green roof. Using this 4-inch system significantly reduced the overall cost of the roof without affecting the performance of the green roof. The system utilizes a coarse aggregate zone that is hospitable to sedums and related species but is hostile to weeds. A high-capacity water retention layer absorbs stormwater and irrigates plants, eliminating the need for any rooftop irrigation.

The HVAC system consists of an advanced Daikin VRV IV variable refrigerant flow and variable refrigerant temperature heat pump system. This offers superior performance and is more energy efficient than traditional HVAC systems. The refrigerant volume and temperature are varied based on space load requirements. This enables the system to provide the exact amount of cooling/heating for the space, producing an approximately 30 percent savings in operating costs. The system also allows some parts of the building to be cooled even as other areas are being heated, thereby improving occupant comfort.

Ductless systems maximize ceiling height by keeping the HVAC system components recessed within the building's structural framing. This enabled designers to increase the ceiling height by 5 inches, compared to a structure with a traditional ducted system. The HVAC system is controlled via a standard Daikin Intelligent Touch Manager, which monitors and controls temperature set points and set-backs.

A rooftop dedicated outside air system with a heat recovery wheel provides outside air to ventilate the building. The heat recovery wheel captures building exhaust heat to cool or heat incoming outside air. Reducing the need to cool or heat this air results in significant energy savings.

The project will also feature a pole-mounted 5.04 kW photovoltaic (PV) system, which is expected to be installed by December 2017 and to meet about 3.5 percent of the building's power needs.

Still to Come

An advanced metering system is also being installed for measurement and verification purposes. The system will include submeters connected to a data acquisition system. The main building utility meters, Daikin Intelligent Touch Manager and lighting control and monitoring systems will also be connected to the data acquisition system, which will collect, store, analyze and report data in 15 minute intervals. ■

By **Mohamed Abaza,** PE, CEM, LEED AP, executive vice president and director of energy and sustainability services, Capital Brand Group LLC

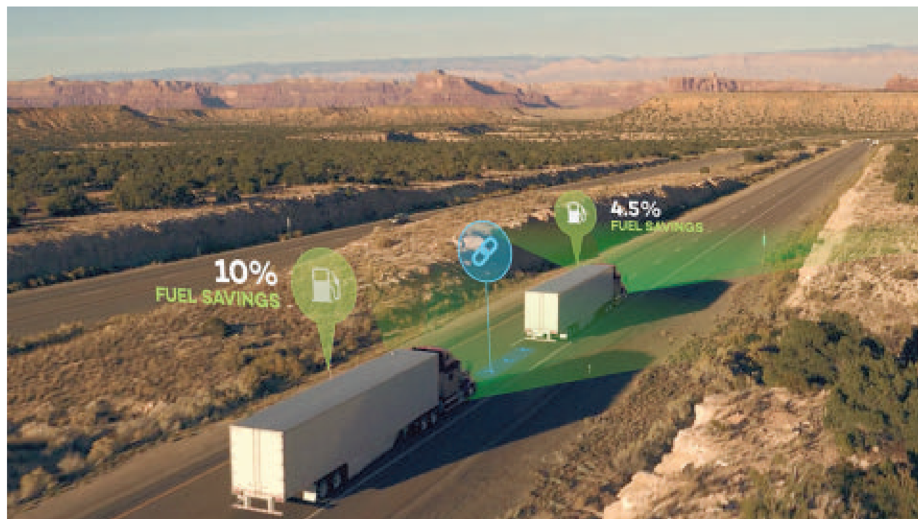
Six Innovative Concepts for Moving Freight

Some of these innovations may change how freight is moved in the future.

By Robert T. Dunphy

WHILE PUBLIC INTEREST in transportation focuses largely on commuting and personal travel, much of the future growth in transportation demand will involve moving freight rather than people. Some extraordinary technological developments in this area are already underway. Innovations currently under development include the following.

1) Truck Platooning. Fuel and safety are one of the biggest concerns in the trucking industry. Being able to connect two or three trucks together in a "platoon" reduces the distance between them to as little as 20 feet, allowing a following truck to take advantage of fuel-saving aerodynamics as it coasts in the wake of the lead truck. Peloton, an automated vehicle technology company that has developed a platooning system, estimates that cost savings could be approximately 10 percent for the second truck and 4.5 percent for the lead truck in a platoon. The company may have paired trucks on the road as early as 2018, according to an October 22, 2017 Washington Post article.



Peloton estimates that its truck platooning system will result in cost savings of about 4.5 percent for the lead truck and 10 percent for the second.
Courtesy of Peloton

An active safety system would wirelessly link the trucks, controlling acceleration and braking, while radar would detect potential dangers ahead. The linked trucks could react within a fraction of a second, compared to a standard reaction time of up to two seconds for a truck driver.

Other companies working on platooning systems include Navistar, Continental and Volvo. Daimler has received permission from the Oregon Department of Transportation to test its platooning technology on public roads; Volvo and its partners have already tested a partially autonomous platooning system at the Los Angeles Port Complex.

2) Autonomous Trucks. Self-driving trucks could reduce accidents and mortality as well as operating and labor costs. (See "Driverless Trucks," Development, summer 2015.) Several companies are leading the way in developing this technology. Otto, which has already built and tested autonomous trucks, was acquired in 2016 by Uber and has been rebranded under Uber's Advanced Technologies Group as Uber ATG. Otto made news in October 2016 when it completed its first paid delivery, a shipment of beer. It also appears to have run afoul of state regulations when it began testing its trucks on public roads in California in December 2016.

Starsky Robotics is designing an aftermarket retrofit kit that will give existing big rigs autonomous capabilities. Starsky says its ultimate goal is to use autonomous technology to allow truck drivers to work closer to home.

This technology suffered a possible setback in October 2017, when the Senate Commerce Committee passed the American Vision for Safer Transportation Through Advancement of Revolutionary Technologies (AV START) Act, which removed provisions for automated trucks and buses from the House's SELF-DRIVE Act.

3) Hyperloops. A hyperloop is a vacuum tube through which pods containing passengers or freight could, theoretically, travel free of air resistance or friction. This would enable the pods to move at extremely high speeds, floating on a layer of air. They would pull themselves along with a fan and get extra propulsion from

"Wal-Mart Stores Inc. has applied for a patent for a blimp-style aircraft that would fly at heights between 500 and 1,000 feet."

Robert T. Dunphy

Uber's Advanced Technologies Group continues to test autonomous trucks originally built by Otto.
Uber ATG

electromagnets in the tube's walls. In August 2013, Tesla and SpaceX CEO **Elon Musk** proposed the Hyperloop Alpha project for a route running from the Los Angeles region to the San Francisco Bay Area at an average speed of roughly 600 mph.

In July 2017, Musk raised eyebrows when he tweeted that he had "verbal government approval" for a Hyperloop route that he claimed would connect New York City and Washington, D.C., via Philadelphia and Baltimore, in less than 30 minutes. In October, Maryland's Department of Transportation gave conditional approval to the construction of a portion of the tunnel.

While Musk's proposed Hyperloop tunnels would transport passengers and cars, they could also conceivably carry freight.

4) Floating Warehouses. Wal-Mart Stores Inc. has applied for a patent for a blimp-style aircraft that would fly at heights between 500 and 1,000 feet, contain multiple launching bays, and be operated autonomously or by a remote human pilot. Amazon.com Inc. received a patent for a similar aircraft in April 2016. These floating warehouses could make deliveries via drones, which would transport products from the aircraft to consumers' homes.

Natilus is designing an 80-foot-long drone with a 20-ton capacity to fly cargo between Los Angeles and Hawaii. It would land at sea, then taxi into port, where cranes would unload its cargo.
Courtesy of Natilus

5) Autonomous Cargo Ships. The legendary "ghost ship" could become reality if two Norwegian companies, Yara International ASA and Kongsberg Gruppen, succeed in building the first crewless, autonomous ship. A July 2017 Wall Street Journal article reported that this electric vessel, dubbed the "Tesla of the Seas," will cost $25 million, three times as much as a comparable container ship. Its backers note, however, that without the need for fuel or a crew it promises to cut annual operating costs by up to 90 percent. The 100-container ship is scheduled to be in the water and delivering fertilizer in Norway in late 2018, although initially it will be tested with a human at the controls.

6) Drones. Much of the attention to the role of drones for deliveries has been focused on Amazon's announcement that it plans to use them to make short-distance deliveries directly to consumers. A possibly even more disruptive technology is being developed by Natilus, a company founded by aircraft designers and military drone specialists.

The firm has announced plans to build an 80-foot vehicle with a 20-ton cargo capacity designed to fly cargo between Los Angeles and Hawaii. Its drones are expected to initially be classified as vessels; they would land on the sea at least 12 miles away from a port, outside of FAA-regulated airspace, then taxi into the port, where cargo would be unloaded. The company claims it could deliver cargo 17 times faster than a standard cargo ship and at half the price of a Boeing 747.

While some of these innovative concepts may never be successfully implemented, they demonstrate an enthusiastic search for new ideas, backed up by research funding as well as interested users. Unlike in the past, there is little government funding involved; most of these efforts are being privately funded. This is a positive indicator for expanding the options available to move freight around the globe. ■

By **Robert T. Dunphy**, transportation consultant; adjunct professor, Georgetown University real estate and planning programs; and emeritus fellow, Transportation Research Board


VENTURE X
THE FUTURE OF WORKSPACE
The place where businesses launch, develop and grow.
Our unique combination of open space, mixed with higher revenue private offices allows for higher income opportunities.
Keep CALM and DRINK COFFEE
WHY VENTURE X?
ATTRACTIVE, FUNCTIONAL WORKSPACES
FULLY EQUIPPED MEETING ROOMS
CONCIERGE-LEVEL SERVICES
CONVENIENT, 24/7 ACCESS
CENTRALIZED CAFÉ & RECEPTION AREA
WEEKLY SOCIAL & NETWORKING EVENTS
ONLINE MEMBER NETWORK
Venture X is an exciting franchise opportunity that allows you to be a part of this growing trend.
By 2020, The Bureau of Labor Statistics estimates 65 million Americans will be freelancers, temps, independent contractors or entrepreneurs, making up a full 40% of the workforce. Venture X provides an attractive opportunity for those workers who want to benefit from a rich work community.
Venture X is a unique coworking opportunity and an outstanding franchise opportunity! It all begins with a simple discussion. Give us a call today, or email for more information.
866-567-8995
info@venturexfranchise.com | www.venturexfranchise.com
Part of the United Franchise Group family of Brands
Signarama
FULLY PROMOTED
TRANSWORLD
SuperGreen Solutions
experimac
Jon Smith SUBS
VENTURE X
PARAMOUNT

Envision the future of commercial real estate – *what does the future hold?*

As part of its 50th anniversary celebration, NAIOP invited its members to share their visions for both NAIOP and commercial real estate, specifically regarding the year 2042 (NAIOP's 75th anniversary), as viewed from the present.

> "The vast majority of commercial real estate properties will be **owned by institutions** (REITs, private equity funds, pension funds, endowments)."
>
> **David Starr, Northern Trust**
> *NAIOP Chicago*

> "The development of mixed-use public private partnerships in the context of integrated public facilities with commercial development will generate mutual opportunities to both the public and private sector and, importantly, **elevate the nexus of land use, transportation (mobility) and urban and urban-lite development** between the public needs and the private opportunities."
>
> **Jim Mulligan, Husch Blackwell, LLP**
> *NAIOP Colorado*

50 years NAIOP
COMMERCIAL REAL ESTATE DEVELOPMENT ASSOCIATION

“The cost of construction will force companies to **reuse brick and mortar assets.** Utilizing well-located retailers, such as Macy’s, as distribution points, will be a competitive advantage. Malls can be adaptively re-used to accommodate needs for affordable housing. **New construction costs make it difficult to produce product below Class A**. Brick and mortar retail will never fully go away, but it will be clustered more densely in key locations.

Owin Orr, University of Denver
NAIOP Colorado

”

“Instead of bulky, expensive parking structures hugging Class A office towers, **autonomous vehicles will park themselves in offsite lots** where space can be maximized given the exclusion of the human element. This allows more space for commercial development in sought-after locations and virtually eliminate the rules developers once played by: having to sacrifice valuable development space to adhere to strict parking ratios.

Paul Yoder, PMRG - American Realty Advisors
NAIOP SoCal

”

“**No more brokers!** Virtual touring will be the way people view spaces and leasing agents will facilitate. Demising walls in industrial warehouses will be movable to expand and contract based on tenant needs. A building will ‘know’ you. You will walk inside, the elevator will take you to your floor, your computer will prioritize your tasks/calls, and your coffee will be ready.

Alisa Timm, Ryan Companies US, Inc.
NAIOP Arizona

”

Industrial Development Goes Vertical

A two-level truck court and auto access ramps segregate vehicular access and enable multitenant occupancy. Straight, two-way ramps attached to the building provide efficient truck and car circulation, lower construction costs and increase net rentable area.

All renderings by Ware Malcomb

A prototype design demonstrates the viability of multistory distribution centers in land-constrained North American submarkets.

■ By Jay Todisco, AIA, LEED AP, Ware Malcomb

BY NOW, ALL commercial real estate professionals are familiar with the growth of e-commerce and its impacts on every aspect of retail sales and logistics, from a product's point of origin to the consumer's doorstep. CRE professionals – and the buildings they design and develop – must respond to these quickly evolving market demands.

Technology has completely redefined every facet of retail commerce, but commercial real estate has not fully responded. To date, the primary solution has been to provide space for e-commerce and third-party logistics providers in well-located existing and new industrial/distribution centers. This approach has resulted in rising land and building values in many submarkets. It has also generated strong demand for industrial facilities in urban areas, where land is scarce and expensive, to support "last-mile" delivery. (See "E-commerce 2.0: Last-mile Delivery and the Rise of the Urban Warehouse," Development, spring 2017.) The CRE industry must develop a new building type that will keep pace with the explosive growth of e-commerce. This is not a trend, but rather the next evolution of industrial building design and development. This innovative prototype will transform and reinvent how and where some new fulfillment centers are developed.

Multistory Prototype Design

Ware Malcomb is currently designing some of the first multistory warehouse facilities in major markets throughout North America. These facilities will predominantly be located in highly urbanized population centers close to seaports handling containerized cargo arriving from overseas. Developers are actively seeking out sites with these characteristics, and have engaged Ware Malcomb to assess site

> “Multistory industrial warehouses need to be **fully functional, divisible and leasable** without compromising the typical tenant’s operational requirements.”
>
> *Jay Todisco*

feasibility and functional planning options. These are not theoretical experiments, but rather realistic plans for functional buildings rooted in the basic design principles that define successful institutional grade industrial distribution facilities. Each of these proposed buildings is located in a market with great demand for multitenant fulfillment space.

The Goal

Several challenges make it difficult for developers and designers to keep pace with demand. Designers must significantly increase the amount of rentable area to justify the high cost of land and overcome the lack of development opportunities in the most desirable, land-constrained locations. The only way to increase rentable area on these sites is to build vertically; in other words, to “build a warehouse on top of a warehouse.”

Multistory industrial buildings are more common in Asian markets such as Japan and China. Tenants in these locations have accepted this type of building configuration without sacrificing functionality. The need to go vertical in these foreign markets is a direct result of the same market pressures now being faced in North America. The notable difference is that the rapid growth of e-commerce and the need to provide an efficient, expanding last-mile delivery network have further magnified the need and urgency to develop such facilities here.

The Challenge

Multistory industrial warehouses need to be fully functional, divisible and leasable without compromising the typical tenant’s operational requirements. Designers also must mitigate any perceived loss of efficiency by prospective tenants.

The greatest challenge for the multistory warehouse, however, is to become universally accepted by capital markets as an institutional-grade building. What will be the true measure of the success for this new design approach? An increased volume of rentable area, located precisely where the consumer demand for it exists, resulting in market acceptance of rent premiums over conventional one-story structures.

The Design

Ware Malcomb has consulted with some of the largest industrial brokerage firms and commercial real estate development companies in North America. Its designers have also engaged in collaborative discussions with structural engineers, general contractors and logistics consultants to produce a flexible prototype design that addresses the unique challenges of this new building type.

The design team has evaluated alternate building depths, bay sizes, structural systems and vehicular vertical circulation options. This holistic approach to building design has resulted in the most efficient, economical and creative strategies to increase building leasable area; circulate full-size, 53-foot-long tractor trailers on two levels; and park hundreds of cars without any loss of rentable space.

Coverage Is King. The total building size is defined by its floor area ratio (FAR), the relationship between the amount of usable square footage in a building and the total area of the lot on which the building sits. A higher FAR translates directly into more leasable floor area. Designers therefore need to devise ways to increase coverage wherever possible for this new building type to make financial sense. Two key functional elements of a multistory warehouse are truck ramps and automobile parking. Both requirements pose a challenge, as they significantly reduce the amount of net rentable area on a site. Designers need to develop a creative, “out of the box” design strategy to overcome the loss of coverage created by these two functional requirements.

Functional Design Considerations. Ware Malcomb’s prototype multistory distribution center has been

E-commerce capabilities and auto parking integrate into a two-level fully functional truck court (at left in rendering above). A parking deck inserted between the upper and lower truck levels creates a functional queuing area for last-mile delivery vehicles while also providing a large number of parking spaces.

designed from the inside out, using the design principle of "form follows function." Designers started by establishing a basic planning module of 4 feet 0 inches, which is the size of a standard single select rack. Single select racks represent 80 percent of all racking systems in use today, and therefore will be universally accepted by distribution center tenants and end users. Combining the rack and aisle dimensions (typically 9 feet 6 inches) creates the most efficient planning module.

The next key step is to design a structural system based on this planning module. The system must be as light and economical as possible, while still delivering uncompromised standard slab loading performance. The resulting functional layout will have the exact features that will be critical for tenants to readily accept a multistory industrial distribution facility. These features include racks, aisles, clear heights, speed bays, truck loading, dock door counts and more.

The Building Configuration

The building configuration for a multistory industrial building requires innovative features that will work on smaller infill sites.

Ramps. Large circular ramps are extremely costly and require a significant amount of land to allow for maneuverability of full-size tractor trailers. Even more importantly, they consume too much expensive land and reduce net rentable area. Straight, two-way ramps attached to the building provide the most efficient truck and car circulation, lower construction costs (primarily foundation costs) and increase the structure's net rentable area.

Parking. Last-mile buildings typically contain hundreds of workers and thus require significant amounts of parking. Parking structures are extremely costly, consume considerable land area and reduce net rentable area. Rooftop parking is not feasible from a functional standpoint, and would significantly increase the cost of the structure.

The most efficient and cost-effective way to provide large numbers of parking spaces is to insert a parking deck between the upper and lower truck yards. This creative design

> “The greatest challenge for the multistory warehouse, however, is to **become universally accepted by capital markets as an institutional-grade building.**”
>
> *Jay Todisco*

approach will result in reduced construction costs, large and efficient parking fields, and the separation of truck and auto circulation. It will also create a highly functional queuing area on a mezzanine level for last-mile delivery vehicles, which include panel trucks, smaller vans and cars operated by independent drivers.

Construction Efficiencies and Economics

Ware Malcomb has evaluated several alternate structural configurations and exterior skin systems in conjunction with the most efficient construction practices to arrive at a prototype design that will result in the lowest construction cost per square foot.

Floor Slabs on Grade. These floor slabs have been designed to minimize construction joints to mitigate future maintenance costs. Column diamonds will be saw cut after panel erection to produce smoother panel faces with less patching. The floor slabs will be utilized as casting beds, thereby eliminating costly waste slabs.

Upper-level Floor Slabs. These floor slabs, and the supporting wide flange steel supporting structural members, have been designed to minimize defection, reduce member depth and provide standard slab loading consistent with a typical on-grade slab.

Wall Panels. The exterior wall design incorporates a combination of non-load bearing concrete panels and metal insulated panels on the second and third levels. Concrete panels will be either site cast/tilt-up or precast, depending on which process is most economical locally. The site layout incorporates drive aisles on the building perimeter to facilitate efficient erection sequencing by standard 300-ton crawler cranes to maximize panel size and reduce the total number of panels.

Steel Structure. The building is designed with an independent steel structure and non-load bearing concrete wall panels. Wall panels can be fabricated and erected simultaneously with steel components that have longer lead times, thereby reducing construction durations and eliminating critical path schedule delays. This construction sequence will significantly reduce the amount of time it will take to erect the building, because the steel structure and the wall panels will be fabricated simultaneously and then erected sequentially. The goal is to design the most economical concrete panel height while keeping the weight to a manageable size – one that can be erected by a 300-ton crane.

A Last-mile Hybrid Building Model

Multistory infill distribution buildings will increase the rentable area in the most land-constrained locations targeted by e-commerce companies. These buildings will become hybrid facilities where a retailer’s sortation functions, as well as its last-mile delivery fulfillment operations, can happen more efficiently in the same building, usually on different floors.

Last-mile delivery centers don’t need 32-foot clear height ceilings; 15- to 20-foot clear heights work well for them. Credit tenants such as e-commerce retailers as well as FedEx, UPS Inc. and other third-party logistics providers will provide built-in demand. This will further increase the value of these assets because of their proximity to target customers.

Many critical design elements will still need to be addressed, based on each site’s size and access configuration. Building size will be a direct reflection of the structure’s proximity to a port; larger buildings of around 500,000 square feet closer to ports will serve third-party logistics providers, while smaller buildings of around 250,000 square feet will be located closer to densely populated locations.

Inspired by the "form follows function" design principle, this multistory industrial prototype was reimagined from the inside out. The vertical footprint, articulated building skin and massing features are designed for urbanized locations accessed from major arterial roadways.

Each site and municipality poses its own unique set of challenges. In urban cores with higher land costs and limited truck access, buildings will need to be more than two or three stories tall, with high-speed freight elevators, to produce the needed return on investment. City leaders will need to be educated to address specific zoning height limitations in exchange for the benefits of increased job creation and, in some cases, sales tax generation.

As an example, a minimum parcel size of 9 acres would accommodate a three-level building totaling 424,000 square feet, including truck ramps but excluding surface parking. A typical estimated cost for such a structure would be approximately $135 per square foot for the shell building and $23 per square foot for the parking deck.

As this new building type finds market acceptance, the next natural evolution may become a new way of looking at the rent structure. These specialized buildings may ultimately command a rent premium that could eventually evolve from renting space on a square foot basis to a cubic foot basis, not unlike the rent structure for cold storage and freezer buildings.

Capital Markets Acceptance

The multistory distribution building must be designed to produce the most cost effective solution, so pro forma expectations are met, yielding the highest possible return on investment. For a multistory industrial building design to become truly viable, it must meet all of the end user's functional requirements, be economical to build and be easily modified to conform to varying site configurations.

Ultimately, the key measure of the success of this new product type will be its complete acceptance by the capital markets. It must be viewed as an uncompromised institutional-grade building that will create long-term real estate value and fill the growing need for leasable space in the most highly sought-after and land-constrained locations. ■

Jay Todisco, AIA, LEED AP, is an executive vice president with Ware Malcomb.

For more information, attend NAIOP's CRE. Insights: The Last Mile 2018, March 5-6, in Seattle.

The Perot Family's New Corporate Headquarters

A Powerful Collaboration Between Architecture and Landscape

The Perot Family Offices building exterior is clad with glass and limestone to optimize daylight and reflect the geology and shimmering water of the adjacent Turtle Creek.
Photograph by Laura Wilson

By Dave Goldberg, Annie Rummelhoff and Dakota Keene, Mithun

THE MARQUEE headquarters being built today, including Apple's and Facebook's, are designed specifically to foster collaboration and emphasize outdoor spaces for employee health and wellness. Apple's immense glass ring of a building has a 30-acre park at its center, while Facebook's has a 9-acre rooftop park, complete with walking trails.

But headquarters on a smaller scale can also be similarly optimized. A prime example is the recently completed Perot family corporate campus in Dallas. Designed by Mithun, the high-performing 185,000-square-foot building brings together 300 employees from nearly a dozen different businesses under one roof and offers seamless integration between inside and outside.

The business enterprises of the well-known Texas family, which

The new headquarters for the Perot family businesses represents both the family legacy and an investment in the well-being of their employees.

include real estate development company Hillwood and nine others (see "Perot Family Business Units" on page 63), had offices in several locations across Dallas as well as in suburban Plano. The three generations of family represented in these enterprises wanted to bring the various businesses together to encourage cross-pollination and make it easier to share ideas. They also wished to highlight the legacy of **Ross Perot**, the well-known businessman and former presidential candidate. The headquarters needed to be a physical manifestation of the family's values, which include a sense of shared teamwork and the importance of relationships in building a successful business.

"The building serves as a powerful symbol of who we are and how we approach relationships and doing business," says **Ross Perot Jr.**, the CEO of Hillwood. "We wanted to build a highly collaborative, healthy building for tomorrow's generation of leaders that could shape and reinforce our culture."

Due Diligence

To determine the key requirements for their headquarters, family members toured a number of corporate campuses, including those of Goldman Sachs, the Bill & Melinda Gates Foundation, Google and Pixar. They were especially inspired by Main Street at Pixar headquarters, where employees enter the building at a central hub that is the heart of the campus. Pixar's Main Street includes a dining hall, restrooms, central stairs and a movie theater; it brings people out of different parts of the building, so they can meet with others and share ideas.

The Perot family also made a concerted effort to locate the building within a beautiful creek-side setting, to enable the workplace to connect to nature and its health benefits for employees. They picked a choice site, a 6-acre property located several miles north of downtown Dallas. Surprisingly verdant, given its close proximity to the urban core, the parcel is bounded on one side by Turtle Creek and Katy Trail, and by a popular bicycle/pedestrian trail on the other. Consolidating at this central location means the new headquarters building is both closer to the homes of current team members and more attractive to potential employees.

To design their headquarters, the Perot family chose to work with Seattle- and San Francisco-based Mithun. The firm brought its experience working with Silicon Valley's biggest names in flexible workspaces, allowing teams to form and re-form as needed and enabling both focused individual work and collaborative effort. Its multidisciplinary team was also well suited to the Perot family's goals for this particular building.

"Of the groups we interviewed, Mithun was the clear winner, primarily because of the design concept they delivered," says Perot Jr. "We liked how the building and surrounding grounds were incorporated and showcased the natural beauty of the site, and how they included landscape design as a part of the architecture team."

Mithun's integrated design team of architects, interior designers and landscape architects included two Dallas-based firms: architect-of-record BOKA Powell and collaborating interior designer Emily Summers Design Associates.

An Indoor-Outdoor Workplace

In contrast to the suburban corporate campuses of the 1960s and 1970s, where offices were surrounded by vast lawns, the design team, working with the clients, made sure that the landscape was an integral part of the building complex. Their plan placed all parking below grade and called for a three-story, concrete-frame building of 185,000 square feet, just 20 percent of what could have been built on the site. While the site was zoned for up to 1 million square feet and a height limit of 240 feet (18 stories), the family's goal wasn't to maximize the size of the building. Rather, they wanted the building to blend into the treetops and take full advantage of the lush creek-side property.

Research confirms that exposure to nature can result in a measurable reduction in stress levels and improvements in health. Limiting the building's height to three stories helped create a healthy workplace in two ways. It encourages employees to spend time outside by making it easier for them to step out for a break or hold a walking meeting. It also encourages them to use the stairs instead of the elevators, which are discreetly tucked away, since employees have only a few floors to traverse.

To bring the outside in, a glass curtain wall around the perimeter provides visual transparency as well as maximum daylight. Views into the surrounding tree canopy create a sense of being part of the landscape, which can materially enhance well-being. A 2003 study by Heschong Mahone Group found that customer service representatives with seated access to views of the outdoors experienced a 6 to 7 percent increase in productivity.

The abundant use of natural materials in the interior design also heightens the indoor-outdoor connection. Oak, a native wood, is the predominant species used for everything from the wood-slat ceilings and wide-plank floors to the treads of the central staircase. The lighting also helps reiterate the subtle patterns of nature. The dining area's ceiling of wood slats with integrated LED lighting is designed to mimic the dappled light that comes through the trees outside.

Perot Family Business Units

Perot Investments
Family investment and asset management office; invests in both traditional equities as well as entrepreneurial endeavors
Leader: **Steve Blasnik**
Team members: 15
Occupies 6,000 square feet

Perot Family Office
Responsible for managing family resources and operations
Leader: **Ike Robb**
Team Members: 23
Occupies 16,000 square feet

Hillwood Investments
Industrial and commercial real estate investment with expertise in multiple asset classes and management models
Leader: **Todd Platt**
Team Members: 20

Hillwood Investment Properties
Acquires and manages industrial properties across the U.S. and Europe; manages every stage of development from land acquisition through design and construction
Leader: **Tal Hicks**
Team Members: 51
Hillwood Investments and Hillwood Investment Properties together occupy 17,400 square feet

Hillwood Construction Services
Provides general contracting and construction management services, specializing in build-to-suit projects, e-commerce warehousing and distribution centers
Leader: **Jim Linden**
Team members: 30
Occupies 5,600 square feet

Hillwood Communities
Residential property developer; has developed over 80 master-planned communities
Leader: **Fred Balda**
Team Members: 22
Occupies 6,000 square feet

Hillwood Urban
Develops and manages large corporate office developments and mixed-use projects on both urban and suburban sites
Leader: **Mike Berry**
Team members: 12
Occupies 3,000 square feet

Hillwood Energy
Domestic and international energy exploration and production company
Leader: **Russell Freemen**
Team members: 8
Occupies 4,000 square feet

Hillwood Corporate Services
Provides business services and administrative support to all Hillwood divisions and entities
Leader: **Tom Mason**
Team members: 60

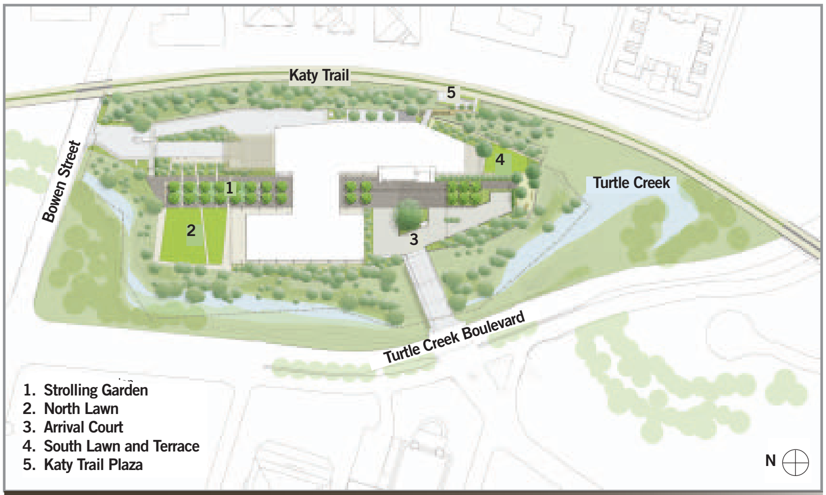
Hillwood Legal Services
Provides legal and contract support services
Leader: **Del Williams**
Team members: 8
Corporate Services and Legal Services together occupy 8,000 square feet

The campus is designed with an extensive series of outdoor spaces that serve as informal meeting areas and offer Wi-Fi service. Taking hot Texas summers into consideration, the design team minimized the contrast between interior and exterior, avoiding the extremes between a cool, darker indoor space and a brighter, harsh outdoor one. Outside the ground-floor cafe, mature trees and the building's portico shade a dining terrace, while a water feature that emulates the ebb and flow of Turtle Creek provides a cooling effect. A series of gardens and lawns draws people to edges of the site to enjoy the creek's natural beauty.

The east side of the building is set next to the Katy Trail, creating an intentional connection and providing an alternative to conducting business in a conference room. A bridge to the trail from the building makes it convenient for employees to bike or walk to work. Because the trail is so visible from the building, those inside see community members jogging, walking their dogs and cycling, and are reminded to get outside and be active. A yoga room and fitness center also face the trail.

While the building is targeted to LEED Silver certification, its outdoor areas also contribute sustainable strategies. A 100,000-gallon cistern collects stormwater that is used to irrigate native plants, and rainwater runoff from the arrival plaza is captured in a bioretention cell that slows and filters the water before discharging it into Turtle Creek.

The central gathering space known as the "Intersection" contains a variety of places where employees can meet and collaborate, including this ground-floor cafe and dining area.
Photograph © Bruce Damonte



Located several miles north of Downtown Dallas, the 6-acre project site is bounded on one side by Turtle Creek and on the other by Katy Trail, a popular bicycle and pedestrian trail.

Making Connections

In addition to creating connections to the outside, the headquarters design connects employees to one another. The most appealing spaces in the building are designed to be shared by the entire team. In a survey taken a few months after they moved in, an overwhelming majority of employees agreed that the building facilitates collaboration and communication.

The heart of the building is the "Intersection," a transparent circulation core that connects the two wings of the building. The 5,550-square-foot hub holds the building's central open staircase and also doubles as an event space for community and charity events. The in-house cafe featuring healthy options and a shared dining area brings people together at the base of the central staircase.

In lieu of separate meeting rooms and break rooms for each of the 10 business units, amenities are centralized around this circulation core, promoting a "stair culture" that prioritizes opportunities for chance encounters and unplanned interactions among employees, as well as cross-collaboration among the various businesses. Nearly 45 percent of the building is shared space, and this space intentionally includes circulation with adjacent spaces to create a Main Street atmosphere.

The entry sequence is also designed to encourage impromptu connections. Whether they are coming from the main entry court or the parking garage below, all visitors and employees arrive at the "front door." Here, a reception desk, made of live oak salvaged from the site, greets all visitors.

Balancing Flexibility and Autonomy

The offices themselves were designed to accommodate the needs of each business unit, providing choice and variety to support individual work styles, collaborative work and focused work. Since each business unit is an autonomous company, it was important to Perot Jr. that each had the ability to customize its own office space.

Mithun worked closely with the leaders of each business unit to discuss how they worked in order to design spaces that met their unique needs. Through in-person iterative discussions, focus groups and information gathered on forms, the design team determined necessary adjacencies, equipment needs and which business groups had high-growth potential.

The result was a mix of open, enclosed and hybrid workspaces. The hybrid workspaces, which became known as "boat slips," are enclosed on three sides but open facing the team area, to facilitate collaboration. (Hillwood Investments and Hillwood Construction Services had used these hybrid workstations at their previous location.) The majority of workspace in the building is enclosed or hybrid, reflecting Perot Jr.'s vision to provide focus space for the team to do their best work.

Glass-walled conference rooms and offices draw in daylight and offer a variety of workspaces.
Photograph © Bruce Damonte

The workspaces are based on a modular grid that will accommodate changing needs. Designers carefully studied each business unit to understand its growth needs and the likelihood of changes driven by market forces or acquisitions, for example. Each business group occupies contiguous space on a single floor. Flexibility was built in by including space between groups, enabling them to grow in one direction or another.

Perot Family Corporate Headquarters Project Summary

Location	Turtle Creek Blvd., Dallas, Texas
Type of Site	Urban
Development Type	Ground Up/New Development
Transportation Modes	Car, Pedestrian, Bicycle
Project Size	
Land Area	5.85 acres
Total Building Size	185,000 sq. ft. in two wings; includes common areas (cafe, fitness center, museum, conference center and gardens)
Height	3 stories
Structured Parking	430 spaces
Development Team	
Developer	Hillwood Urban
Project and Interiors Architect	Mithun
Architect of Record	BOKA Powell
Collaborating Interior Designer	Emily Summers Design Associates
General Contractor	Balfour Beatty Construction
Timeline	
Land Acquisition	July 2011
Initial Plans Submitted	2012
Phase I Completed	December 2015
Project Completed	March 2017
Hard Costs	Under $100 million, excluding land costs

Workstations throughout the building are comprised of the same modular office system, balancing needs for customized arrangements while easily accommodating future moves and rearrangements. Raised floors also promote flexibility, with access to electrical and data cabling contained in a space between the concrete slab floor and the office floor a few inches above. Within the grid system, walls can be easily removed or added, to create a conference room or two adjacent offices.

While the new Perot family headquarters is located on a unique site for such an urban setting, its design approach could be applied to many corporate campuses. By adhering to several guiding principles – connectivity to nature and fostering collaboration – the building supports a healthy, productive company culture that reflects the family's mission and values, and should prove a worthy long-term investment. ■

By **Dave Goldberg**, president and architect; **Annie Rummelhoff**, associate and interior designer; and **Dakota Keene**, associate principal and landscape architect, Mithun


PROPERTIES THAT PERFORM
Rockefeller Group is focused on developing properties that perform. That provide the most efficient access from port markets and inland distribution hubs to the nation's major population centers. Over the past five years we've completed 5 million square feet of industrial development projects for some of the world's leading distributors, with another 12 million square feet planned or underway. Combined with a Foreign Trade Zone Services division with decades of national expertise, we have become a partner of choice for leading businesses, investors and joint venture partners.
Optimus Logistics Center | Inland Empire, CA
ROCKEFELLER GROUP
INDUSTRIAL DEVELOPMENT
Brandi Hanback | 410.897.4858
bhanback@rockefellergroup.com

Northgate Distribution Center

The first five buildings completed at Northgate Distribution center include Amazon's 813,000-square-foot building (in foreground, with ample car and semitrailer parking).
All photos, Henri Sagalow Photography

The largest speculative distribution center in southern Nevada is turning North Las Vegas into an e-commerce mecca.

By Taylor Cole

The Fanatics office and other offices at Northgate Distribution Center feature abundant glass and are located at building corners, providing natural light and maximizing the number of dock doors.

IF SOMEONE HAD proclaimed just five years ago that North Las Vegas would become a clear contender for logistics and distribution center development, one might have thought they were confused because the recession had left the city on the verge of bankruptcy. Yet North Las Vegas has emerged as an e-commerce hotspot as a result of bold leadership from a pro-business mayor and city council as well as newly developed state-of-the-art e-commerce buildings, large blocks of distribution space and strong labor statistics. With a central location at the northern tip of the Las Vegas Valley, between Southern California, Arizona and Utah, North Las Vegas has quickly become an ideal and highly strategic location for fulfillment centers.

Developer VanTrust Real Estate LLC has been at the forefront of big-box development in North Las Vegas. In late 2014, after recognizing unusually high demand and historically low vacancies, the company started developing plans for Northgate Distribution Center on land it had previously purchased on the west side of Interstate 15 at the Lamb Boulevard exit. Just two years later the project would become the largest speculative industrial park in southern Nevada.

The company initially planned to build a 2.2 million-square-foot, seven-building park on 108 acres over five years. As tenant demand accelerated, exceeding projections, VanTrust purchased an additional 60 acres to accommodate an additional 1.3 million square feet of space. Building 3 was expanded to accommodate tenant requests; therefore the structures originally planned and numbered as Buildings 6 and 7 were eliminated. The 170-acre industrial park, featuring more than 3.4 million square feet of space, will be completed in less than three years.

The city of North Las Vegas supported VanTrust and Northgate from the start. According to North Las Vegas Mayor **John Lee**, "the city implemented efficient business, permitting and licensing processes, cut red tape, and created initiatives like the Self-certification Program to get projects like Northgate up and running quickly, which enables companies to save in carrying costs." (This program accelerates the traditional plan review process for eligible development projects.) In a December 2016 letter to VanTrust, Lee thanked the company for its leadership in making a speculative investment in the community.

"Northgate is creating new opportunities for some of North Las Vegas' brightest to put their experience to use, learn new skills and advance their careers," said Lee. "VanTrust is helping North Las Vegas diversify the Southern Nevada economy [by creating space for e-commerce tenants]. For too long, our region has been overly dependent on tourism, gaming and hospitality."

In August 2016, just four months after construction commenced on the first building, the park signed a 400,000-square-foot lease with its first nationally recognized e-commerce tenant, Fanatics, a global seller of official licensed sports merchandise. When the lease was announced, **Lonnie Phillips**, senior vice president of operations for Fanatics, said that as the company continued to grow, its strategic distribution system also needed to evolve. "We conducted a comprehensive search for the ideal location and we believed North Las Vegas was exactly the area we needed to be in to better serve our customers with faster delivery to the West Coast and Northwest."

According to **Kevin J. Higgins**, executive vice president of CBRE, the listing broker for Northgate, the increasing costs of labor and transportation in areas like California's Inland Empire, which leads the country in demand for distribution space, will continue to drive businesses to serve their regional bases from elsewhere, including places like Southern Nevada.

Shortly after the Fanatics lease was inked, two additional high-profile companies signed leases at Northgate. The Honest Company, a national consumer goods merchandiser, signed a lease for 575,000 square feet in September 2016. Shortly thereafter, Seattle-based e-commerce giant Amazon chose to occupy an 813,000-square-foot building as well as a second, 248,000-square-foot building at Northgate in November 2016. These lease sizes, particularly for speculative buildings, were unheard of in southern Nevada. "VanTrust is one of the earliest developers to build more than 400,000 square feet speculatively in town, and they certainly absorbed a large portion of the new wave of demand," says Higgins.

Dock areas feature full concrete aprons and trailer storage.

According to **Keith Earnest**, executive vice president of VanTrust, the company "anticipated large e-commerce users, but never envisioned the velocity of acceptance of this market by the best brands and companies in e-commerce."

Teamwork Matters

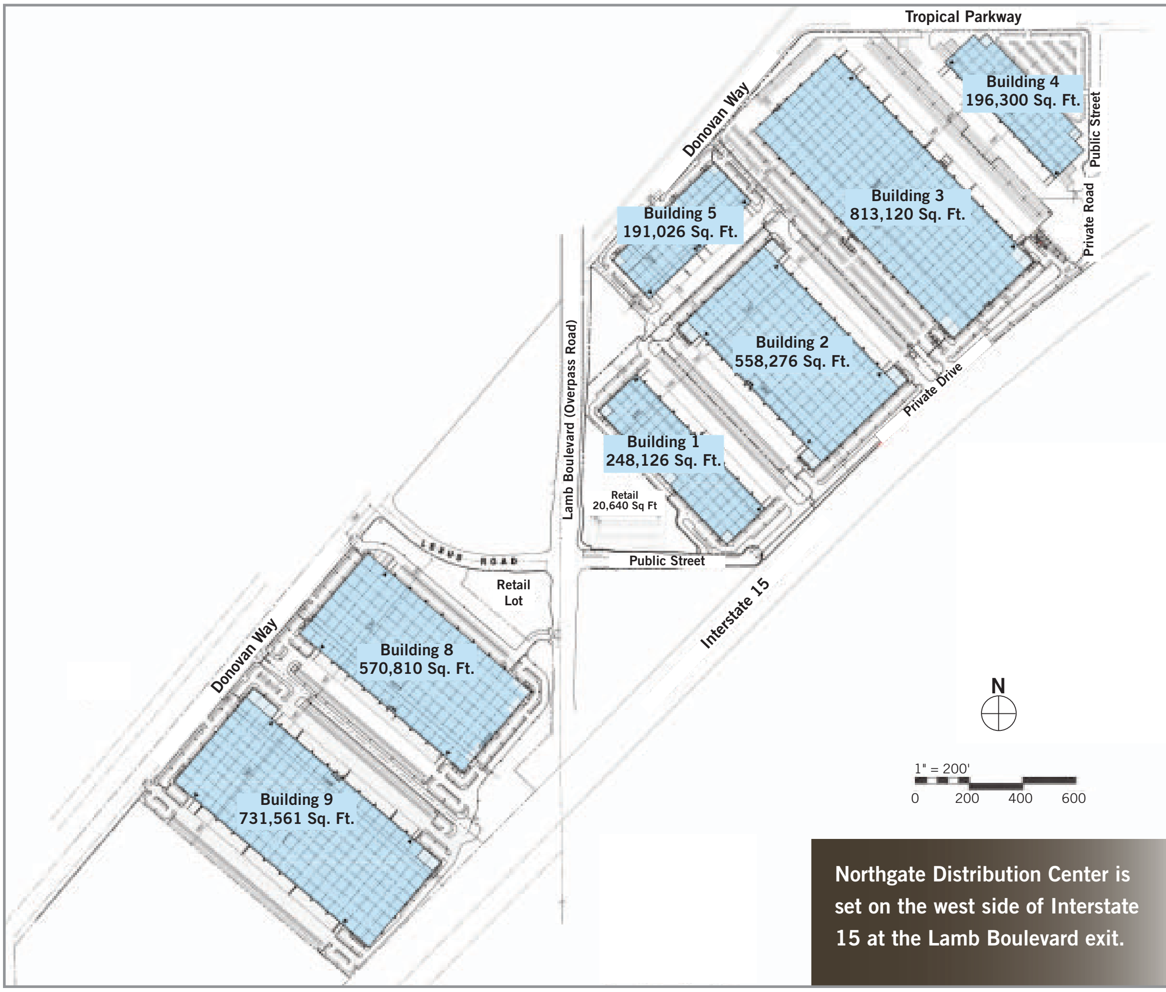
The JPMorgan Chase-financed project remains ahead of schedule. Construction of the final building at Northgate will begin in early 2018, two short years after construction commenced on the first building. According to **Guy Martin**, president of Martin-Harris Construction, Northgate's general contractor, critical factors in the development's rapid delivery include VanTrust's early engagement, a collaborative design and brokerage team, and the contractor's ability to pour its own concrete for the large tilt-panel buildings. "VanTrust exemplifies a hands-on owner that is all about building their projects as a team," said Martin. "We appreciate their attention to detail that manifests itself in one of the highest quality industrial projects we have ever built."

The rapid pace of construction and collaboration among the various team members enabled tenants to occupy and begin working within their spaces as early as September 2016, while building construction continued around them. The entire park is expected to support more than 4,500 new employees.

Overcoming Challenges

While the submarket's low vacancy rates, the demand for immediate space and the city's willingness to help created optimal development conditions, committing to and then achieving Northgate's leasing and delivery velocity required focused strategies. The land initially lacked necessary utilities and proper infrastructure, and those conditions, in part, "explain why this land was previously undeveloped," says **Steve Backman**, vice president of development at VanTrust. "Without the full cooperation of utility companies, we didn't have a chance. They were quick to realize their key role in bringing these large employers to town."

The site was not served by water, sewer, electricity or gas. The situation was further complicated by physical boundaries created by the existence of I-15 to the south



Northgate Distribution Center is set on the west side of Interstate 15 at the Lamb Boulevard exit.

and Union Pacific Railroad to the north. VanTrust invested enormous amounts of time and capital early on to ensure that when construction commenced in the fourth quarter of 2015, off-site improvements were the first to be completed.

"We had to be very creative in our ability to ensure delivery of all public improvements on a timeline that would meet tenant expectations," says Backman. "The challenges that our team had to overcome in the delivery of the utilities for this project, along with the permitting and negotiating with various agencies, is where the real magic occurred."

Looking northeast across the eastern section of the site, I-15 is on the right and Union Pacific Railroad is on the left. Building 1 is in the foreground, with Buildings 2 and 3 behind it and Building 5 on the left.

VanTrust worked closely with various reviewing agencies from the start to ensure that the infrastructure would be delivered according to tenants' extremely optimistic occupancy schedules. VanTrust expedited deliveries by having weekly meetings with each agency, creating milestone timelines to track progress and expending capital when needed to keep progress moving. When utility providers were not able to meet deadlines, for example, VanTrust and Martin-Harris Construction worked hand-in-hand with them to assist with additional crews so portions of the work could occur more quickly.

State-of-the-art building features include 36-foot clear height ceilings, accommodation of increased electrical loads, large parking and trailer storage areas, and plenty of building volume to optimize rack space. "All of these features are key to accommodating the needs of e-commerce users in today's evolving industrial market," says Earnest.

Flexible building designs enable the structures to meet changing tenant needs. Exterior dock locations, for example, are flexible enough to accommodate any tenant's product. Large parking areas will accommodate e-commerce tenants' large numbers of employees, but can easily be converted to truck storage, dock areas or even office space for current or future users.

According to Earnest, the majority of the buildings are typical cross-dock industrial products, but VanTrust included knock-out panels in the tilt-panel designs for additional docks in the future, added at-grade docks to allow for drive-in delivery and located the offices at corners to allow for the maximum number of docks on each building.

Fanatics moved into Building 2 in June 2017, while The Honest Company occupied Building 8 in July and Amazon moved into Buildings 1 and 3 in August.

Looking Ahead

Northgate Distribution Center will be completely built out in early 2018. As of late September 2017, the park was 95 percent leased; VanTrust is actively working to fully lease the remainder of the project. With strong interest from e-commerce and other industrial users in North Las Vegas, VanTrust will pursue additional industrial development in the area, but Northgate will always be viewed as a trailblazer for speculative industrial development in southern Nevada. ■

Taylor Cole is a commercial real estate writer with Small Giants LLC

Northgate Distribution Center Project Summary

Project Location		I-15 & North Lamb Boulevard, North Las Vegas, Nevada
Type of Site		Suburban, Greenfield
Development Type		Ground Up/New Development
Transportation Modes		Car, Truck, Bus (at project frontage)
Mix of Uses (as of September 2017)		
Warehouse		450,000 sq. ft.
Distribution		850,000 sq. ft.
Fulfillment		1.9 million sq. ft.
Surface Parking (at Buildout)		2,945 cars, 737 trucks
Tenants (as of September 2017)		
Amazon		1.06 million sq. ft.
The Honest Company		575,000 sq. ft.
Fanatics		400,000 sq. ft.
Lease Terms		5-10 years
Site Dimensions and Density		
Total Acreage		170 acres
Total Building Space Approved		3.2 million sq. ft.
Total Built to Date		2.1 million sq. ft.
Development Team		
Developer		VanTrust Real Estate
Master Planner/Landscape Architect/Architect		HPA Architecture
General Contractor		Martin Harris Contracting
Leasing Broker		CBRE
Financial Partner		
Construction Loan		JP Morgan Chase
Timeline		
Land Acquisition		March 2015
Planning Started		March 2015
Initial Plans Submitted		June 2015
Phase I Approval Obtained		February 2016
Major Revisions to Plans Submitted*		
	Phase I (Buildings 1 & 2)	N/A
	Phase II (Building 3)	July 2016
	Phase III (Building 8)	October 2016
	Phase IV (Building 5)	February 2017
	Phase V (Building 9)	February 2017
	Phase VI (Building 4)	October 2017
Major Revisions to Plans Approved		
	Phase II (Building 3)	October 2016
	Phase III (Building 8)	December 2016
	Phase IV (Building 5)	April 2017
	Phase V (Building 9)	April 2017
	Phase VI (Building 4)	January 2018 (projected)
Construction Completed		
	Phase I (Buildings 1 & 2)	December 2016
	Phase II (Building 3)	August 2017
	Phase III (Building 8)	September 2017
	Phase IV (Building 5)	October 2017
	Phase V (Building 9)	February 2018 (projected)
	Phase VI (Building 4)	June 2018 (projected)

**There is no Building 6 or 7.*

CRE Tech Adoption Speeds Up

Architects are using 3-D building information models and virtual reality presentations to enable clients to see and "walk through" projects during the design process, as at this virtual reality design review of the Albuquerque Rapid Transit project.

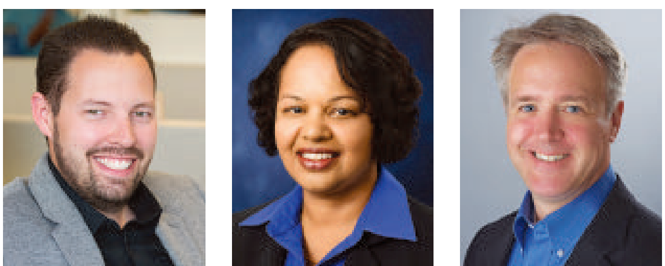
Photo courtesy of Dekker/Perich/Sabatini

By Ron Derven and Margarita Foster

THE COMMERCIAL real estate industry is reputed to be a slow adopter of digital technology, but with the quickening pace of innovation and the growing sophistication of investors and occupiers, that's all about to change, according to CRE tech experts. Overall, the term "technology" is used very broadly, and the impact of tech varies greatly among the many disciplines related to CRE. The descriptions below relate to a wide range of computing platforms, software and applications being explored and used by companies involved with all aspects of CRE.

Technology has swept through many businesses, but progress in the

Commercial real estate has been a slow adopter of new technology, but that's about to change.



Brandon Garrett Chandra Dhandapani Tom Sheraden

commercial real estate industry has been slow in recent years. Today, however, the use of digital platforms and data is accelerating at such a rapid pace that CRE practitioners who fail to fully embrace and understand what is happening will be left behind. Many major brokerage firms and developers have joined the race to invest in technology, which they believe will provide them with a competitive advantage.

Building Design In Transition

Brandon Garrett, AIA, associate/design technology leader at Dekker/Perich/Sabatini, notes that technology is playing a greater role both in his firm's architectural business and in the commercial buildings that it designs.

Over the past decade, according to Garrett, architects have transitioned from two-dimensional documentation using software like AutoCAD to 3-D building information modeling (BIM). "We are designing our projects virtually to better meet our clients' needs and to help avoid costly errors during construction," he explains. "BIM has provided us with a rich model that we can leverage for additional uses such as energy modeling and virtual reality." Virtual reality also enables prospective tenants to visually inspect "finished space" before a building is actually constructed, allowing them to determine whether the build-out will suit their business. "With virtual reality, we are finding new ways to immerse our clients into projects," Garrett adds.

One technology that has already arrived with unparalleled impact for the industry is the "internet of things," the interconnection via the internet of computing devices embedded in everyday objects, according to Garrett. Quoting from a 2014 Goldman Sachs study, "The Internet of Things: Making Sense of the Next Mega-trend," he predicts that there will be 28 billion connected devices on the IoT by 2020. In commercial buildings, these devices already include sensors that monitor the environment and measure temperature, humidity, water pressure, power consumption and more. He envisions a sensor for virtually everything in a building that an owner or occupier cares to monitor in the near future.

These sensors provide new insights into how buildings are actually performing, Garrett notes. "Retail clients will use sensors to generate heat maps of activity to see if their customers are actually approaching product displays. That same information can be used to inform the future placement of displays based on the data being collected." Today, he adds, the primary use of sensors in commercial buildings is to monitor and control lighting.

Machine Learning and Artificial Intelligence

Sensors can generate data continuously, Garrett notes. This data will increasingly be used by machine learning and artificial intelligence platforms. Google is already using machine learning and artificial intelligence to dramatically lower energy use and costs at its numerous data centers, says Garrett.

To describe just how Google is doing this, he explains that the company has developed AlphaGo, the first computer program to defeat a professional player in the ancient and highly complex Chinese game of Go. Google designed AlphaGo to think and strategize in response to its human opponents.

What does the game of Go have to do with commercial buildings? Google has applied the technological innovations in human intelligence and machine learning that it built into AlphaGo to its data centers. This technology has allowed the company to cut server energy costs by 40 percent, Garrett explains.

"What we will see in the next few years," the architect forecasts, "is a combination of the internet of things and machine learning, which will revolutionize how buildings are consuming energy." To optimize a piece of equipment in the future, the IoT and machine learning will not only look at that one piece of equipment; they will also examine thousands of installations of that equipment connected to the internet to optimize its use in a particular setting.

The Developer Perspective

Logistics real estate leader Prologis offers a look at how it is using new technologies throughout its portfolio and how it expects to deploy them in the future. **Tom Sheraden**, the company's chief information officer, points to three areas of technology – the internet of things, cloud storage and artificial intelligence – that are rapidly being adopted today, as well as a fourth, blockchain, that will have a profound impact in the future.

"If your building could talk, what would it say?" asks Sheraden. "The reality is that our buildings can tell us a lot, once we install sensors in them. They have the capacity to tell rich stories about how the buildings are operating and how they are being used."

Thanks to the IoT, explains Sheraden, the same technologies that are launching a revolution across other industries will allow building owners and occupants

"**We are designing our projects virtually** to better meet our clients' needs and to help avoid costly errors during construction."

Brandon Garrett

to capture more data than ever on how goods flow through buildings. "These insights will help our customers make smarter decisions on everything from energy use to overall sustainability, efficiency and employee health and well-being." He adds that Prologis' large scale creates unique opportunities for the company to collect huge amounts of data over long periods of time and incorporate it into advanced analytics analyses that will benefit its customers.

Prologis already uses sensors to "inform our efforts in sustainability and efficiency – monitoring solar panel operation and measuring air quality," Sheraden continues. In the future, Prologis could use sen-

Ted Brown of ReMax Island Properties and Ted Brown Real Estate Inc. (left) and Christian Perlini of Total Real Estate Consultants experience a virtual reality tour of Cypress Creek Medical Pavilion in Fort Lauderdale, Florida. Development partner ANF Group introduced the 360 degree tour, which enabled brokers to navigate through the building's interior and exterior, at a broker introduction breakfast.

Photo at left by Diane Diamantis, courtesy of WordWork PR for Cypress Creek Medical Pavilion; photo at right by Gilbert Alvarez, marketing director, ANF Group sors across its operations, providing customers with predictive data insights to help drive their businesses and operations. For example, sensor data could identify when and where building maintenance is needed, helping improve operations, boost safety and lower costs. Building owners will also be able to provide space optimization and utilization recommendations to customers more quickly and cost effectively.

"On a broader scale," Sheraden adds, "customers could use data insights to benchmark themselves against the industry and identify strengths and weaknesses in their operations."

Storing Big Data

While the IoT will help developers and occupiers gather incredible amounts of information, how and where will they store all that data? "Historically," says Sheraden, "it has been very expensive to acquire data, structure it and store it. " Today, Amazon, Microsoft and Google are all "delivering cloud-based data platforms that essentially let you pay as you go," Sheraden adds.

> "**If your building could talk, what would it say?** The reality is that our buildings have the capacity to tell rich stories about how the buildings are operating and how they are being used."
>
> *Tom Sheraden*

This cost savings allows a CRE company to save all of the data it collects, then figure out how to use that data later. A company can therefore accumulate huge amounts of data and then examine it "for patterns and relationships that will help you as a business move faster and serve customers better," Sheraden concludes.

CRE: Still a Relationship Business

While these technologies will have dramatic impacts on CRE, **Chandra Dhandapani**, chief digital and technology officer at CBRE, says that commercial real estate will continue to be a relationship-based business. She notes that people can now purchase products and services through numerous channels, in what is typically referred to as an omnichannel experience. In CRE, she adds, "we go through one channel, the human channel, what I call the phone-a-friend channel. Clients usually interact with CRE professionals, and that's how a transaction is made in this industry."

Dhandapani stresses that clients rely on trust to ensure that they are being properly advised and guided by those with whom they have professional relationships. In the future, she concedes, these relationships could involve more digitally enabled interactions. But those interactions will still be relationship based.

She adds that CBRE views technology along three dimensions. First, technology needs to solve an existing problem, rather than be treated as a solution in search of a problem, as is often the case. Second, technology is presenting CRE with a tremendous opportunity for growth, not simply innovation that leads to disruption. Third, companies that are able to leverage technology will

A Primer on New Technologies

Rapidly developing technologies are cutting into the costs of designing, developing and operating buildings as well as carrying out transactions, incentivizing CRE professionals to increase the speed of adoption.

Industry experts expect the following six technologies to have an impact on CRE in the near future:

The Internet of Things. The internet now connects sensors and other computing devices embedded in everyday items, from home washing machines to commercial HVAC systems. Many of these devices can be programmed to send and/or receive data daily, hourly or even continuously.

Big Data. The IoT is enabling the collection and storage of extremely large data sets, which can be collected and analyzed, both independently and in conjunction with other data sets, to reveal patterns, trends and associations.

Cloud Computing. Many companies and individuals now use a network of remote servers connected via the internet to store, manage and process data, rather than storing it all on their own local servers or personal computers.

Virtual and Augmented Reality. Computer-generated 3-D simulations and 3-D videos enable people to virtually "tour" properties remotely and even "visit" and "feel" projects still in the early stages of design or construction, using special equipment such as 3-D cameras, goggles and/or gloves.

Artificial Intelligence and Machine Learning. Computer systems can now perform many tasks that in the past would have required intervention from a human programmer. Some can also learn to make adjustments to changing circumstances, based on experience, without being explicitly programmed to do so.

Blockchain. This public digital ledger is similar to a relational database that stores transaction records in a series of chronologically connected "blocks." For example, if ownership of an asset is transferred on a blockchain platform from one party to another, the exchange is time stamped, sealed in a block and chronologically linked to previous transactions related to the asset. This process creates verified transactions with a clear timeline that cannot be pulled apart. ■

Prologis partnered with Bright Plain Renewables and D.E. Shaw Renewable Investments to design and build solar plants at Prologis-owned warehouses in Southern California. The three sustainably designed warehouses total over 1.3 million square feet and produce an estimated 9.8 kilowatt hours per year. D.E. Shaw owns the solar installations and leases roof space from Prologis, which uses sensors to monitor solar panel operation and measure air quality.
Photo courtesy of Prologis

"We go through one channel, the human channel, what I call the phone-a-friend channel. Clients usually interact with CRE professionals and that's how a transaction is made in this industry."

Chandra Dhandapani

quickly separate themselves from their less tech-savvy competition.

With more information available in the future, CRE developers and occupiers will be better able to make smarter location decisions, according to Dhandapani. "For office buildings, for example, you want a location where you have the most access to the right kind of talent and the right amenities for those people. Today, much of that process is manual. In the future, you will be able to do many of those things [more easily] with the right technologies."

Will Tech Level the Playing Field?

Will big data, cloud computing, the IoT and sensors that monitor virtually everything in a building help or hinder smaller developers, investors and property owners? According to Dhandapani, they are likely to help the smaller player. "The beauty of what people are referring to as the digital economy is that while scale obviously helps, it is not always required to win. There are a number of successful examples of small start-ups with six to eight people adding tremendous value in whatever industry they are in. I think size is beginning to matter less in this economy, and many of the technologies are either free or [available] at a much lower cost than in the past. You don't have to spend millions of dollars to build cutting-edge technology today. If you are a smaller developer … you can find the best way to solve [a problem] with technology without having to spend the kind of money that large companies have to spend."

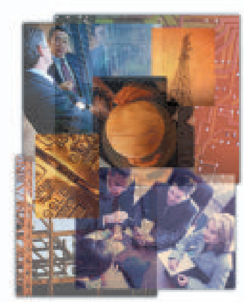
Prologis' Sheraden sees it differently. While every CRE professional must consider their own specific business case, he feels that scale is critical when it comes to technology. "This is why Prologis is uniquely positioned to take advantage of big data in our business. New technologies can improve efficiency in a single building, but the value rises exponentially with a network of facilities sharing information. Smaller developers might be able to mimic scale by partnering with other companies to share data, but a network is critical to drive insights for customers."

Will all of this new technological innovation become merely "table stakes" in the future? According to Sheraden, "The technologies themselves will inevitably become table stakes, but in the near term they will allow some [CRE practitioners] to stand out from the competition." Sheraden concludes that what matters most "is serving our customers and being a partner in their success. That won't go out of style." ■

Ron Derven is a contributing editor and **Margarita Foster** is editor-in-chief of Development magazine.

Note: This article is based on a session held at NAIOP's I.CON '17: Trends and Forecasts conference in Long Beach, California, as well as follow-up interviews with participants.

2018 NAIOP Buyers Guide



From accountants to architects to developers, contractors, and financial sources. Whatever you need, you're likely to find it and a lot more in our annual Buyers Guide.

Accountants

BKD, LLP
Todd Hege
thege@bkd.com
www.bkd.com
910 E Saint Louis St., Suite 400
Springfield, MO 65801
(417) 831-7283

BKD works with real estate investors, developers, brokers, agencies and owner associations. Whether your company owns a single piece of rental property, operates a n agency or has vast commercial holdings in several states, our team has the expertise and experience to help accomplish your goals.

Wipfli, LLP
John Schwab
jschwab@wipfli.com
www.wipfli.com
10000 Innovation Drive, Suite 250
Milwaukee, WI 53226

Wipfli ranks among the top 20 CPA and business consulting firms in the nation, providing insights and solutions to over 7,300 construction and real estate companies to help them meet their goals and stay profitable. For more information, visit wipfli.com.

Architects

AMO Architecture
Caveh Masum
caveh.masum@amo-arch.com
www.amo-arh.com
3302 Canal St., Suite 23
Houston, TX 77003-0000
(832) 821-8050

AMO aspires to create environments with an intentional awareness of essential human, urban, and environmental contexts. We strive to balance the use of advanced, innovative design techniques with a cost-conscious approach to meet the unique requirements of each project.

AE7
Tom White
tom.white@ae7.com
www.ae7.com
2840 Liberty Avenue
Pittsburgh, PA 15222
(412) 932-2044

AE7 is an international architectural and engineering firm specializing in the planning and design of mixed-use developments.

Bernardon
Neil B. Liebman, AIA, LEED AP
architects@bernardon.com
www.bernardon.com
425 McFarlan Road, Suite 200
Kennett Square, PA 19348
(610) 444-2900

Bernardon is an award-winning regional full service architecture, interior design, and landscape architecture design firm.

Bullock Tice Associates
John Tice
j.tice@bulltice.com
www.bullocktice.com
909 East Cervantes
Pensacola, FL 32501
(850) 434-5444

BTA is a planning, architecture, and interior design firm serving commercial developers throughout the Southeast. ARE YOU CONTEMPLATING DEVELOPING IN THE NORTH GULF COAST REGION? For a guide to help you optimize your development yield and mitigate risk, go to www.bullocktice.com

CBT
David Hancock
hancock@cbtarchitects.com
www.cbtarchitects.com
110 Canal St.
Boston, MA 02114
(617) 262-4354

CBT is a 50-year old firm working nationally and internationally on projects that range from urban district master planning to large-scale mixed-use developments, multi-family residential, hospitality interiors, corporate workplace, civic and academic projects.

CUBE 3 Studio, LLC
Nicholas A. Middleton
nmiddleton@cube3studio.com
www.cube3studio.com
360 Merrimack Street
Building 5, Floor 3
Lawrence, MA 01843
(978) 989-9900

CUBE 3 Studio is a dynamic and responsive design firm with the vision and capability to produce innovative design solutions. The firm has emerged as one of the fastest growing design firms in the United States while establishing a national reputation as a powerful design force. Uncompromising attention to detail allows us to create buildings and interior spaces that have lasting value. Our commitment and dedication to our work enables us to consistently deliver design excellence while remaining firmly grounded in economic reality.

Cuningham Group
Chad Clow, AIA, NCARB
cclow@cuningham.com
www.cuningham.com
201 Main Street, SE, Suite 325
Minneapolis, MN 55414
(612) 379-3400

Cuningham Group has earned a reputation for delivering excellence in architecture, interior design, landscape architecture and urban design in places where people live, work, play, heal and grow. Our more than 375 employees in ten offices are dedicated to creating design solutions that Uplift the Human Experience.

We see design as an opportunity to help our clients succeed in areas that matter most to them. Through a crafted design experience, we invest time to understand organizations – their vision, culture and goals – to craft meaningful spaces that perform at an exemplary level.

Eppstein Uhen Architects
Heather Turner Loth
heathertl@eua.com
www.eua.com
333 E. Chicago Street
Milwaukee, WI 53202
(414) 271-5350

Founded in 1907, Eppstein Uhen Architects' staff is passionate about bringing fresh ideas to complex problems. With our unique design skills, knowledge depth, and client-centered attitude, we partner with you to create designs that elevates your staff within their spaces.

EYP, Inc.
Leila Kamal
lkamal@eypae.com
www.eypae.com
470 Atlantic Avenue, 7th Floor
Boston, MA 02210
617-305-9800

EYP is an expertise-driven design firm nationally recognized for high-performance projects in the Corporate, Government, Higher Education, Healthcare and Science & Technology sectors. Our knowledge-based lifecycle approach leverages proprietary research and close client relationships – predesign through occupancy – to inform innovation.

GTM Architects
Nakia Wallace-Randall
nwallacerandall@gtmarchitects.com
www.gtmarchitects.com
7735 Old Georgetown Road, Suite 700
Bethesda, MD 20814
(240) 333-2000

Established in 1989, GTM Architects is an award-winning design firm that offers architecture, planning, and interior design services; committing to place the needs of our clients and their projects first.

Huitt-Zollars, Inc.
Kim Kemper
krkemper@huitt-zollars.com
www.huit-zollars.com
6501 America Parkway NE, Suite 550
Albuquerque, NM 87110
(505) 883-8114

Huitt-Zollars is a full-service multi-discipline AE firm with expertise in planning, design, program and construction management for commercial, retail and office development. The firm offers civil engineering, architectural, MEP, structural, surveying and landscape architectural services for public works, federal, urban development, transportation and buildings practice areas. Headquartered in Dallas, TX, the firm is ranked among the nation's top design firms by Engineering News Record.

Kirksey Architecture
Scott Wilkinson
scottw@kirksey.com
www.kirksey.com
6909 Portwest
Houston, TX 77024
(713) 426-7434

We're Kirksey — passionate about great architecture and all things sustainable. We've been shaping the Houston skyline since 1971 and in the past 10 years alone, Kirksey has completed over 80 office buildings totaling more than 18 million square feet. We are a group of designers and planners committed to our clients, our community, and our planet.

Korb + Associates
Jason Korb, AIA
jkorb@kaa-arch.com
www.kaa-arch.com
648 N. Plankinton Avenue, Suite 240
Milwaukee, WI 53203
(414) 273-8230

Korb + Associates Architects is driven by the principal of creating authenticity in our designs and relationships. We achieve this through an approach that is comprehensive and personalized. With every project, we embrace the opportunity to enhance communities and environments.

KSS Architects LLP
Edmund P. Klimek, AIA, NCARB
eklimek@kssarchitects.com
www.kssarchitects.com
337 Witherspoon Street
Princeton, NJ 08542
(609) 921-1131

Through great architecture, KSS creates meaningful and lasting change, for our clients, our firm, and our world. KSS Architects is an award-winning full-service architecture, planning, and interior design firm with offices in Princeton, NJ and Philadelphia, PA. As architects for commerce, our clients are leaders in their fields, representing the best in business, industry, education, development, community, and innovation. Founded in 1983, KSS has grown to a team of over 60 dedicated design professionals, passionate about creating built environments that stimulate the intersections of learning, commerce, and community.

Powers Brown
Desta Kimmel
kimmel@powersbrown.com
www.powersbrown.com
1314 Texas Avenue, Second Floor
Houston, TX 77002
(832) 856-5306

Powers Brown Architecture is a professional services firm practicing architecture, interior design and urban design. The firm, with offices across the country, has built a reputation for specialized design and technical superiority, producing award-winning work and gaining recognition from local, regional and national organizations.

S2 Architecture
Erwin Staniszewski
e.staniszewski@s2architecture.com
www.s2architecture.com
110-12th Avenue SW, Suite 900
Calgary, AB Canada T2R-0G7
(403) 670-7000

S2 is an established firm with over 20 years of history in design excellence. We are a full service architectural and interior design firm engaged in inspired and innovative design contributing to the built environment in our communities and cities.

Ware Malcomb
Lawrence R. Armstrong
mktg@waremalcomb.com
www.waremalcomb.com
10 Edelman
Irvine, CA 92618
(949) 660-9128

Ware Malcomb is an international design firm providing planning, architecture, interior design, branding and civil engineering services to commercial real estate and corporate clients. With office locations throughout the United States, Canada, Mexico and Panama, the firm specializes in the design of commercial office, corporate, industrial, science & technology, healthcare, retail, auto, public/educational facilities and renovation projects.

Asset Manager

Clarion Partners
Stacey Magee
Stacey.magee@clarionpartners.com
www.clarionpartners.com
1717 McKinney Avenue, Suite 1900
Dallas, TX 75202

A leader among U.S. industrial portfolio operators, the Clarion Partners Industrial Group is focused exclusively on the logistics sector, with particular emphasis on bulk warehouse/distribution facilities. The Group manages a 644-property portfolio (consisting of more than 126 million square feet and currently valued at more than $10.4 billion), located in 43 markets across the United States and Brazil. Besides closely monitoring the performance of existing assets with more than 1,300 diverse tenants, the Group has the expertise to develop new warehouse space on well-located land parcels held in its portfolio.

Brokers

Avison Young
www.avisonyoung.com
1 S. Wacker Drive, Suite 3000
Chicago, IL 60606
(312) 957-7600

Avison Young is the world's fastest-growing commercial real estate services firm. Headquartered in Toronto, Canada, Avison Young is a collaborative, global firm owned and operated by its principals. Founded in 1978, the company comprises 1,700 real estate professionals in 66 offices, providing value-added, client-centric investment sales, leasing, advisory, management, financing and mortgage placement services to owners and occupiers of office, retail, industrial and multi-family properties.

CBRE
www.cbre.com
321 N. Clark Street
Suite 3400
Chicago, IL 60654
(312) 935-1400

CBRE Group, Inc. (NYSE:CBG), a Fortune 500 and S&P 500 company headquartered in Los Angeles, is the world's largest commercial real estate services and investment firm (in terms of 2015 revenue). CBRE offers strategic advice and execution for property sales and leasing; corporate services; property, facilities and project management; mortgage banking; appraisal and valuation; development services; investment management; and research and consulting.

Colliers International
www.colliers.com
200 S. Wacker Drive, Suite 700
Chicago, IL 60606
(312) 648-9150

Colliers International is a global leader in commercial real estate services, with more than 16,300 professionals operating out of 502 offices in 67 countries. Colliers delivers a full range of services to real estate occupiers, owners and investors worldwide, including global corporate solutions, brokerage, property and asset management, hotel investment sales and consulting, valuation, consulting and appraisal services, mortgage banking and insightful research.

Cushman & Wakefield
www.cushwake.com
200 S. Wacker Drive, Suite 2800
Chicago, IL 60606
(312) 470-1800

Cushman & Wakefield is the world's largest privately-held commercial real estate services firm. Founded in 1917, it has approximately 250 offices in 60 countries, employing more than 16,000 professionals. The firm represents a diverse customer base ranging from small businesses to Fortune 500 companies. It offers a complete range of services within five primary disciplines: Transaction Services, Capital Markets, Corporate Occupier & Investor Services, Consulting Services, and Valuation & Advisory.

HFF
www.hfflp.com
9 E. Greenway Plaza, Suite 700
Houston, TX 77046
(713) 852-3500

HFF operates out of 22 offices nationwide and is a leading provider of commercial real estate and capital markets services to the U.S. commercial real estate industry.

JLL
www.jll.com
200 East Randolph Street
Chicago, IL 60601
(312) 782-5800

JLL (NYSE: JLL) is a professional services and investment management firm offering specialized real estate services to clients seeking increased value by owning, occupying and investing in real estate. JLL has more than 200 corporate offices, operates in 75 countries and has a global workforce of approximately 53,000. For further information, visit www.jll.com.

Lee & Associates Commercial Real Estate Services
lee-info@lee-associates.com
www.lee-associates.com
9450 W. Bryn Mawr Avenue, Suite 550
Rosemont, IL 60018
(773) 355-3000

Lee & Associates is the largest broker-owned commercial real estate firm in North America. We combine superior tools, resources and outstanding market intelligence to meet the specialized needs of our diverse client group inclusive of industrial, office, retail investment and appraisal.

NAI Global
www.naiglobal.com
One Oakbrook Terrace, Suite 400
Oakbrook Terrace IL 60181
(630) 932-1234

NAI Global is the single largest, most powerful global network of owner-operated CRE brokerage firms. NAI Global has 375+ offices located throughout the Americas, Europe and Asia Pacific, with 6,700+ local market professionals, managing over 380 million SF of property.

Newmark Knight Frank
www.ngkf.com
500 W. Monroe Street, Suite 2900
Chicago, IL 60661
(312) 698-6700

Newmark Knight Frank is one of the world's leading commercial real estate advisory firms. With more than 16,300 professionals operating from nearly 420 offices, we provide a fully integrated platform of services to tenants, owners, investors and developers of office, industrial and all property types.

Ten-X
www.ten-x.com
One Mauchly
Irvine, CA 92618
(949) 609-5376

Ten-X, the nation's leading online real estate marketplace, empowers consumers, investors and real estate brokers with unprecedented levels of flexibility, control, simplicity, and the convenience of transacting properties completely online – whenever they want and from wherever they are.

Building Amenities

Captivate
Andrea Upwood
aupwood@captivate.com
www.captivate.com
180 N. Lasalle, Suite 2220
Chicago, IL 60601
(312) 283-4124

As the #1 digital media amenity in North America, Captivate is highly valued by tenants who engage with customized, relevant content and actionable information via a network of 12,000 elevator and multipurpose displays in premier office buildings.

Consultants

Capstan Tax Strategies
Bruce Johnson
bjohnson@capstantax.com
www.capstantax.com
101 West Avenue, Suite 301
Jenkintown, PA 19106
(215) 885-7561

Capstan Tax Strategies collaborates with clients to identify tax savings opportunities related to Tangible Property and other Fixed Asset regulations. With a clear understanding of each client's business situation and goals, we deliver specialty tax strategies and engineering-driven solutions.

New Day Underwriting Managers, LLC
Jeff Slivka
jeff.slivka@newdayunderwriting.com
www.newdayunderwriting.com
2465 Kuser Road
Hamilton Township, NJ 08690
(609) 298-3516

New Day Underwriting Managers, LLC is a specialty intermediary serving retail insurance brokers and their clients by delivering optimal risk management solutions in the areas of environmental liability and construction-related professional liability for all industry types.

Pinnacle Engineering Group
Adam Artz
adam.artz@pinnacle-engr.com
www.pinnacle-engr.com
15850 W. Bluemound Road
Suite 210
Brookfield, WI 53005
(262) 754.8888

Pinnacle Engineering Group provides expert engineering services for a broad spectrum of private and public clients. Our engineering staff is experienced in a wide variety of professional services that allow us to provide creative engineering solutions to complex projects.

Contractors/ Construction

Balfour Beatty
Texas_marketing@balfourbeattyus.com
www.balfourbeattyus.com
3100 McKinnon Street
Dallas, TX 75201
(214) 451-1000

Balfour Beatty US is an industry-leading provider of general contracting, CMAR and design-build services for public and private sector clients. Performing heavy civil and vertical construction, the company is the US subsidiary of London-based Balfour Beatty plc (LSE: BBY)

Clark Construction Group
Bill Magruder
bill.magruder@clarkconstruction.com
www.clarkconstruction.com
7500 Old Georgetown Road
Bethesda, MD 20814
(301) 272-8100

Clark Construction Group is one of the most experienced and respected construction firms in the United States. For over a century, we have been transforming the ideas and visions of our clients into award-winning projects.

Ductilcrete Technologies
Cheryl Cappelli
cc@ductilcrete.com
www.ductilcrete.com
(224) 828-5986

Ductilcrete™ Technologies, provides, concrete slab systems utilized to create extraordinarily, durable floors and pavements that remain flat and level with virtually no curl. Our slabs have increased load capacities with reduced profiles, eliminating the need for additional reinforcing, all at cost competitive pricing. Up to 75% fewer joints translates into much lower life-time maintenance costs. We provide all of our customers with the industry's most generous warranty.

Grunley Construction Company, Inc.
Sonya Brown
sonyabrown@grunley.com
www.grunley.com
15020 Shady Grove Road, Suite 500
Rockville, MD 20850
(240) 399-2000

Grunley Construction Company, Inc. is an award-winning construction firm with expertise in high-profile projects for public and private sector customers. Headquartered in the Washington metropolitan area, Grunley specializes in new construction and renovations/ modernizations of large-scale commercial, institutional, and government buildings.

March Associates Construction Inc.
Bryan Murray
bryanm@marchassociates.com
www.marchassociates.com
601 Hamburg Turnpike
Wayne, NJ 07470
(973) 904-0213

March is listed as one of the "Top 400 Contractors" according to the Engineering News Record nationwide. Access to the key principals, efficient planning and strict adherence to schedules throughout the process are just a few reasons we have consistently completed our projects on time, on budget and to the highest standards. It is why the majority of our business is awarded on negotiated terms or through referrals with a consistent group of repeat Triple A clients.

McShane Construction Company
Milt Elmer
melmer@mcshane.com
www.mcshane-construction.com
6720 N. Scottsdale Road, Suite 270
Scottsdale, AZ 85253
(602) 508-6166

McShane Construction Company is a nationally recognized general construction, design/build and construction management firm headquartered in suburban Chicago with offices in Phoenix, Arizona, Irvine, California and Auburn, Alabama. Named 2015 Contractor of the Year by NAIOP Chicago, the firm's expertise includes the industrial, food processing, office, multi-family, senior and student housing, healthcare, recreational and mixed-use markets, among others.

Millie & Severson
www.mandsinc.com
3601 Serpentine Drive, Post Office Box 3601
Los Alamitos, CA 90720
(562) 493-3611

Millie and Severson is a licensed General Contractor in California serving clients since 1945. Our expertise spans Healthcare, Medical Office Buildings, Industrial, Institutional, Commercial Office Buildings and other niche markets, via offices in both Southern and Northern California.

PREMIER Design + Build
Brian Paul
brian.paul@pdbgroup.com
www.pdbgroup.com
1000 W. Irving Park Road, Suite 200
Itasca, IL 60143

PREMIER Design + Build Group, LLC is a national design + build firm specializing in industrial, medical, commercial and adaptive re-use projects. We handle tenant improvements and large-scale new construction projects, providing due diligence, full construction and out-sourced design services.

Russell
www.russellco.com
4600 E. 53rd Street
Davenport, IA 52807
(563) 459-4600

Russell is a professional services firm providing Planning and Program Management, Real Estate Development, Construction and Property Management services. Since its inception in 1983, the firm has remained committed to a client-centered approach; core ideologies of integrity, innovation and professionalism; appreciation for its team members and lasting community involvement.

Design Build

AMO Architecture
Caveh Masum
caveh.masum@amo-arch.com
www.amo-arh.com
3302 Canal St., Suite 23
Houston, TX 77003-0000
(832) 821-8050

AMO aspires to create environments with an intentional awareness of essential human, urban, and environmental contexts. We strive to balance the use of advanced, innovative design techniques with a cost-conscious approach to meet the unique requirements of each project.

ARCO Design/Build Midwest
Jim Vozar
jvozar@arcodb.com
www.arcodb.com
1100 E. Hector Street
Conshohocken PA 19418
(610) 234-0070

Arco Design/Build Ne Inc.is a turn-key design/build firm specializing in the industrial and commercial markets. Project types include warehouse distribution centers, office buildings, food processing facilities, tenant improvements, commercial renovation and more.

FCL Builders, LLC
Michael J. Boro
mboro@fclbuilders.com
www.fclbuilders.com
1150 Spring Lake Drive
Itasca, IL 60143
(630) 773-0050

FCL Builders is one of the nation's top leaders in the design and construction of industrial warehousing, cold storage and food processing facilities. With teams based in Chicago, Dallas, Atlanta, and Baltimore, FCL has a strong history of serving some of the country's top developers and end-user customers throughout the nation. Over the past ten years, FCL has delivered over 40MM square feet of industrial spaces for a diverse group of customers. FCL is proud to serve as its customer's trusted advisor, and most customers return to FCL time and time again because of its team's attention to detail and professional service.

Grunley Construction Company, Inc.
Sonya Brown
sonyabrown@grunley.com
www.grunley.com
15020 Shady Grove Road, Suite 500
Rockville, MD 20850
(240) 399-2000

Grunley Construction Company, Inc. is an award-winning construction firm with expertise in high-profile projects for public and private sector customers. Headquartered in the Washington metropolitan area, Grunley specializes in new construction and renovations/ modernizations of large-scale commercial, institutional, and government buildings.

March Associates Construction Inc.
Bryan Murray
bryanm@marchassociates.com
www.marchassociates.com
601 Hamburg Turnpike
Wayne, NJ 07470
(973) 904-0213

March is listed as one of the "Top 400 Contractors" according to the Engineering News Record nationwide. Access to the key principals, efficient planning and strict adherence to schedules throughout the process are just a few reasons we have consistently completed our projects on time, on budget and to the highest standards. It is why the majority of our business is awarded on negotiated terms or through referrals with a consistent group of repeat Triple A clients.

Developers

CenterPoint Properties
Christine Grant
cgrant@centerpoint.com
www.centerpoint.com
1808 Swift Drive
Oak Brook, IL 60523

CenterPoint is focused on the development, redevelopment, acquisition and management of industrial property and transportation infrastructure that enhances business and government supply chain efficiency. The company invests in major coastal and inland port logistics markets anchoring North America's principal freight lanes.

Conor Commercial Real Estate
Sven Tustin
stustin@conorcommercial.com
www.conorcommercial.com
6720 N. Scottsdale Road, Suite 270
Scottsdale, AZ 85253
(602) 845-5200

Conor Commercial Real Estate, a member of The McShane Companies, is headquartered in Chicago with regional offices in Phoenix, Irvine and Houston. The firm is active on a national basis in the development of master-planned industrial and office parks, medical office developments, multi-family properties and build-to-suit projects for lease or purchase.

Clarius Partners
Kevin Matzke
info@clariuspartners.com
www.clariuspartners.com
200 W. Madison Street, Suite 3410
Chicago, IL 60606
(312) 386-7150
Clarius Partners, LLC is a commercial real estate investment and development management company headquartered in Chicago with over $950 million and approximately 8 million square feet of land, office, and industrial development projects completed or under management in Illinois, Pennsylvania, Arizona, California and South Carolina.

CRG
Brittany Burke
burkebr@realcrg.com
www.realcrg.com
2199 Innerbelt Business, Center Drive
St. Louis, MO 63114

CRG is a leading North American real estate developer headquartered in St. Louis, Missouri with offices in Chicago, Sacramento, Atlanta, Pittsburgh and Northern New Jersey. The CRG team has developed more than 5,000 acres of land and delivered over 160 million square feet of commercial, industrial, multi-family and institutional assets exceeding $9 billion in value. For more information visit www.realcrg.com. CRG is the real estate service subsidiary of Clayco.

Molto Properties
www.moltoproperties.com
18W140 Butterfield Road, Suite 750
Oakbrook Terrace, IL 60181

Molto Properties is a privately held real estate investment and management company specializing in the acquisition and development of industrial properties in the Chicagoland and Midwest areas. Molto has built a strong team of professionals with extensive backgrounds in operating, acquiring and developing industrial real estate, enabling them to pursue a broad investment strategy.

Prologis
www.prologis.com
6250 N. River Road, Suite 1100
Rosemont, IL 60018
(847) 292-3900
Prologis is the leading global provider of industrial real estate, offering approximately 585 million square feet of distribution space in markets across the Americas, Europe and Asia, and is recognized for high-quality developments. The company's extensive land bank, construction expertise, and commitment to sustainable design are key reasons customers choose Prologis.

Tratt Properties
Jonathan Tratt
JT@trattproperties.com
www.trattproperties.com
4715 N. 32nd Street, Suite 102
Phoenix, AZ 85018
(602) 468-3100

Tratt Properties, LLC, headquartered in Phoenix, Arizona, is a dedicated and experienced real estate and financial team engaged in the acquisition and development of institutional grade logistics properties in key markets throughout the United States. We are focused on delivering flexible and scalable global supply chain real estate solutions that go beyond basic transportation, warehousing and distribution.

USAA Real Estate
www.usrealco.com
San Antonio, TX 78230

USAA Real Estate, with over $20 billion in assets under management, provides co-investment, acquisition, build-to-suit and development services for corporate and institutional investors and arranges commercial mortgage loans on behalf of affiliates. The portfolio consists of office, medical office, industrial/logistics, multifamily, retail and hotel properties. USAA Real Estate is a subsidiary of USAA, a leading financial services company, serving military families since 1922. For more information, visit www.usrealco.com.

Venture One Real Estate
Ryan Stoller
ryans@ventureonere.com
www.ventureonere.com
9500 Bryn Mawr, Suite 340
Rosemont, IL 60018
(847) 243-4300

Venture One is a real estate private equity fund manager, developer and operating company specializing in the industrial property sector. Venture One owns over 5.3 million square feet and controls over 1,100 acres of land in the greater Chicagoland area.

Wangard Partners, Inc.
Anne White
awhite@wangard.com
www.wangard.com
1200 N. Mayfair Road, Suite 310
Milwaukee, WI 53226
(414) 777-1200

Wangard Partners is a full-service commercial real estate company committed to excellence in development, investment brokerage and management, syndication as well as property and asset management.

Direct Lender

Envoy Net Lease Partners
Ralph Cram
rcram@envoynnn.com
www.envoynnn.com
1363 Shermer Road, Suite 309
Northbrook, IL 60062
(847) 239-7250

Envoy Net Lease Partners provides equity and high-leverage financing to developers of build-to-suit or redeveloped single tenant, net lease properties nationwide through four financing programs: Ground Lease A&D Loans, Construction Loans, Bridge Loans, JV Equity. Download program flyers at envoynnn.com.

Economic Developers

CANADA

City of Mississauga
Susan Amring
susan.amring@mississauga.ca
www.mississauga.ca/business
www.winthehumanrace.ca
300 City Centre Drive
Mississauga, ON L5B 3C1
(905) 615-3200 Ext. 5014

The knowledge economy is a human race – the competition between the best companies in the world for the brightest minds in business, science, technology and all manner of industry. Mississauga is where leading companies win that competition. To learn more visit: winthehumanrace.ca

County of Brant

Alison Newton
alison.newton@brant.ca
www.investinbrant.ca
66 Grand River Street North
Paris, ON N3L 2M2
(888) 250-2296

Providing a competitive business edge, the County of Brant is your ideal investment choice. Our serviced land availability, low cost of doing business, skilled labour force and a highly accessible location provides unparalleled strategic advantages.

ARIZONA

Arizona Commerce Authority

Kevin J. Sullivan, Senior Vice President Business Attraction and Expansion
Kevins@azcommerce.com
www.azcommerce.com
333 N. Central Ave., Suite 1900
Phoenix, AZ 85004
(602) 845-1261

The Arizona Commerce Authority is the state's leading economic development organization tasked with growing and strengthening Arizona's economy. The ACA attracts companies to the state, helps Arizona companies expand, and works with talented entrepreneurs to facilitate the creation of new technologies.

CALIFORNIA

City of Hesperia Economic Development

econdev@cityofhesperia.us
www.cityofhesperia.us
9700 Seventh Ave.
Hesperia, CA 92345
(760) 947-1909

Located in California's Inland Empire, Hesperia offers miles of available I-15 frontage, lucrative Enterprise Zone benefits, rail accessible property, and lower acquisition costs.

City of Moreno Valley Economic Development

Mike Lee
EDTeam@moval.org
www.moval.org
14177 Frederick Street
PO Box 88005
Moreno Valley CA 92552-0805
(951) 413-3460

Strategically located in Southern California's Inland Empire, Moreno Valley is aggressively pursuing warehouse and logistics development along with healthcare and wellness development to compliment the City's plan to be first to market and boost the economy.

Town of Apple Valley

Orlando Acevedo
oacevedo@applevalley.org
www.SelectAppleValley.com
14975 Dale Evans Parkway
Apple Valley, CA 92307
(760) 240-7915

Apple Valley offers certified industrial sites and boasts a transparent 120-day permit process for large-scale facilities in its 6,600-acre industrial specific plan. Located in one of the top pro-business air districts in California, Apple Valley's growing industrial market provides a low-cost, less-hassle solution just 35-minutes north of the Inland Empire along Interstate-15.

IOWA

Greater Des Moines Partnership

Mike Swesey
mswesey@desmoinesmetro.com
www.desmoinesmetro.com
700 Locust Street, Suite 100
Des Moines, IA 50309
(515) 286-4950

The Greater Des Moines Partnership is the economic and community development organization serving Central Iowa. Together with 21 Affiliate Chambers of Commerce and 5,700 business members, The Partnership drives economic growth and careers through innovation, strategic planning and global collaboration.

MARYLAND

City of Bowie Economic Development Office

John Henry King
jhking@cityofbowie.org
www.cityofbowie.org
15901 Excalibur Road
Bowie, MD 20716 (301) 809-3042

Bowie is one of the largest cities in Maryland. Bowie is also an excellent business location, easily reached from Washington D.C., Annapolis and Baltimore. Bowie's proximity to these major cities brings business and workforce into the area via Routes 3, 50 and 301. Bowie has more than 90 restaurants, 200 shops, and a dozen recreation opportunities. With this winning combination of location, access and amenities your business is certain to grow and succeed. The City's Economic Development Office is ready to help with your business and development location needs, whether it is current market information, introductions to key officials in the development or site location process, or just general information about business opportunities.

Frederick County Business Development & Retention

Helen Propheter
hpropheter@frederickcountymd.gov
www.discoverfrederickmd.com
12 East Church Street
Frederick, MD 21701
(301) 600-1058

The Frederick County Business Development & Retention (BDRD) Office serves as the primary contact for businesses who are interested in expanding and relocating to Frederick County. BDRD assists businesses with all facets of their projects including site selection, permitting, financial assistance and workforce issues.

NEW MEXICO

Albuquerque Economic Development, Inc.

Gary Tonjes
gary@abq.org
www.abq.org
851 University SE, Suite 203
Albuquerque, NM 87106
(505) 246-6200

AED's mission is to strengthen the Albuquerque metro area economy by recruiting export-oriented employers, and by assisting in the retention and expansion of existing business and industry.

NEW YORK

Buffalo Urban Development Corporation (BUDC)

Peter M. Cammarata
pcammarata@buffalourbandevelopment.com
www.buffalourbandevelopment.com
95 Perry Street, Suite 404
Buffalo, NY 14203
(716) 362-8361

BUDC's mission is to support urban economic development efforts through acquisition, remediation and management of distressed properties, and to engage in real estate development activities for the purpose of attracting and/or retaining new and existing businesses to the City.

Operation Oswego County

L. Michael Treadwell
ooc@oswegocounty.org
www.oswegocounty.org
44 W. Bridge St.
Oswego, NY 13126
(315) 343-1545, (315) 343-1546

Operation Oswego County, Oswego County's designated economic development organization, provides assistance with accessing special incentive programs, financial packaging, site selection as well as specialized research and technical assistance.

OHIO

Ohio's Electric Cooperatives

Dennis Mingyar
dmingyar@ohioec.org
www.ohioec.org
6677 Busch Boulevard
Columbus, OH 43229
(800) 282-6962

Ohio's Electric Cooperatives provides comprehensive economic development services to 77 of Ohio's 88 counties. A resource for 25 local electric cooperatives, Ohio's Electric Cooperatives provides site selectors and business owners with site location assistance. Contact Dennis Mingyar at dmingyar@ohioec.org or (614) 430-7876.

Team NEO/Cleveland Plus Business

Mary Cierebiej
mcierebiej@teamneo.org
www.teamneo.org
1111 Superior Avenue E., Suite 1600
Cleveland, OH 44114
(216) 363-5411

Team Northeast Ohio (NEO) is an economic development organization focused on creating jobs and helping businesses thrive. We serve as the JobsOhio affiliate working with Northeast Ohio's economic development partners

PENNSYLVANIA

Allegheny County Airport Authority

David Storer
development@flypittsburgh.com
www.flypittsburgh.com/development
Pittsburgh International Airport
Pittsburgh, PA 15231-0370
(412) 472-3880

The Allegheny County Airport Authority's role as an economic generator is two-fold: to provide high quality, competitive air service in and out of southwestern PA and to develop key properties which attract new industry and jobs.

Lehigh Valley EDC

Michael Keller
mkeller@lehighvalley.org
www.lehighvalley.org
2158 Avenue C, Suite 200
Bethlehem, PA 18017

Lehigh Valley is the 68th largest metropolitan region in the United States, with a $34.3 billion GDP that is larger than that of 104 nations, and is located 60 minutes north of Philadelphia and 90 minutes west of New York City.

Westmoreland County Industrial Development Corporation

Jason Rigone
wcidc@wpa.net
www.westmorelandcountyidc.org
Fifth Floor, Suite 520
40 North Pennsylvania Avenue
Greensburg, PA 15601
(724) 830-3061

The WCIDC has developed 17 industrial parks, leads public/private partnerships, and provides companies with one-stop-shop economic development service. Located within 30 miles of Pittsburgh, Westmoreland County is located within a 500 mile radius of 70% of America's total population. One premier development is the Westmoreland Logistics Park Rail Freight Terminal. It is one of just a few in the United States that is served by three Class I railroads, and helps provide rail service to the entire region.

SOUTH CAROLINA

Santee Cooper

Josh Kay
josh.kay@santeecooper.com
www.santeecooper.com
One Riverwood Drive
Moncks Corner, SC 29461-2901
(843) 761-7010

Santee Cooper is South Carolina's largest power producer, providing electricity to 2 million people and businesses directly and through the state's 20 electric cooperatives. By partnering our low-cost, reliable power and development opportunities with our state's attractive tax base, relocation incentives and an unparalleled quality of life graced with Southern hospitality, Santee Cooper powers South Carolina.

TEXAS

Allen Economic Development

Harry Whalen
hwhalen@allentx.com
www.allentx.com
700 Central Expressway South,
Suite 210
Allen, TX 75201
(972) 727-0250

The City of Dallas Office of Economic Development stimulates economic development and leads the City's business and real estate development efforts. Our staff facilitates access to City programs and services that assist in business expansion and/or relocation within the Dallas city limits. The office provides assistance in the following program areas: Corporate Site Selection, Business Expansion and Retention, Retail Recruitment, Redevelopment Initiatives, International Business, and Small and Minority Business Assistance.

Cedar Hill Economic Development Corporation

Allison J. H. Thompson, CEcD, EDFP
allison.thompson@cedarhilltx.com
www.cedarhilledc.com
285 Uptown Blvd., Bldg 100
Cedar Hill, TX 75104
(972) 291-5132 ext.5

Less than 20 minutes from downtown Dallas, Cedar Hill has Type A sales tax funds that can be used to attract businesses to the City and help local businesses expand. A beautiful natural environment, strong business climate, easy access to the Metro area, aggressive incentives, Triple Freeport Tax Exemption, available workforce, rail, and highways, as well as competitive prices are among the list of reasons businesses choose to locate in Cedar Hill.

City of Sugar Land

Robert Lung
rlung@sugarlandtx.gov
www.sugarlandecodev.com
2700 Town Center Blvd. N
Sugar Land, TX 77479
(281) 275-2229

The City of Sugar Land is one of the top locales for business relocation and expansion, due to a highly educated workforce, aggressive economic development program, excellent access to the Gulf Coast and one of the lowest tax rates in Texas. The Office of Economic Development has a number of resources to assist your new/existing business to grow, expand or relocate. Our highly qualified staff understand the importance of response requirements in the site selection process and deliver on time.

The Colony Economic Development Corporation

Keri Samford
edc@thecolonytx.org
www.thecolonyedc.org
6800 Main Street
The Colony, TX 75056
(972) 624-3127

It's hot in The Colony, where the Nebraska Furniture Mart/400-acre Grandscape is open. Named one of the Top 20 Places to Live in the U.S. and Top 10 for Most Affordable Housing in the U.S. by CNN/ Money Magazine, The Colony has plenty of prime light industrial, office-flex and office space including mixed-use centers like The Cascades and Austin Ranch. All just 25 minutes north of Downtown Dallas and close to DFW Airport.

Dallas/Fort Worth International Airport

Mark Witte
mwitte@dfwairport.com
www.dfwairport.com/landhere
PO Box 619428
DFW Airport, TX 75261
(972) 973-4657

With global connectivity, cost-efficient transportation, a central location, and a sophisticated infrastructure, DFW Airport is an ideal location for business. DFW Airport leases land for commercial uses such as industrial/ warehouse and distribution, and office and retail development.

Greater Ft. Bend Economic Development Council

Jack Belt, Jeff Wiley
jbelt@fortbendcounty.org
www.fortbendcounty.org
1 Fluor Daniel Drive
Sugar Land, TX 77478
(281) 242-0000

As a public-private partnership, we are the leading advocate of economic vitality, quality development, and quality of life issues in Ft. Bend County, Texas.

VIRGINIA

Loudoun County, Virginia Economic Development

Buddy Rizer, Executive Director
DED@Loudoun.gov
www.LoudounPossible.com
43777 Central Station Dr., Suite 300
Ashburn, VA 20147
1-(800)-LOUDOUN

Your Business Success is #LoudounPossible. If you're looking for (1) a new corporate headquarters; (2) Greenfield space near a Metro train station; (3) Access to one of the top 10 international airports in the U.S.; (4) A prime location in D.C.'s tech corridor; (5) Walkable mixed-use developments 25 miles from the nation's capital and 25 minutes from scenic farmland; it's #LoudounPossible. Contact us today to discover the possibilities.

WISCONSIN

Wisconsin Economic Development Corporation

Reed Hall
dobusiness@inwisconsin.com
www.inwisconsin.com
201 W. Washington Avenue
Madison, WI 53703
(855) INWIBIZ

The Wisconsin Economic Development Corporation (WEDC) leads economic development efforts for the state and nurtures business growth and advancement by fostering Wisconsin's positive business climate. WEDC provides tools and resources for businesses to start, expand or relocate their operations In Wisconsin. Visit inwisconsin.com, call 855-INWIBIZ or email dobusiness@inwisconsin.com.

Engineers

Advantage Engineers

Daniel Schauble, Jr.
dschauble@advantageengineers.com
www.advantageengineers.com
435 Independence Ave, Ste C
Mechanicsburg, PA 17055
(717) 458-0800

Advantage Engineers, a nationally-recognized specialty engineering firm, provides high level expertise, value, and responsiveness in geotechnical design and construction phase services to the industrial development market throughout the U.S.

Dunham

Jay Rohkohl
jay.rohkohl@dunhameng.com
www.dunhameng.com
50 South Sixth Street, Suite 1000
Minneapolis, MN 55402
(612) 465-7550

Dunham offers mechanical, electrical, and low voltage consulting engineering services for clients across the United States for commissioning + energy services, commercial, education, healthcare, hospitality, mission critical, and retail projects. We have teams of specialists in indoor air quality, thermal displacement ventilation, CFD modeling, fire protection, sustainable design, LEED certification, and system analysis that enable us to help our clients optimize the performance of their building systems. We hold professional registrations in all 50 states, the District of Columbia, Canada, and Puerto Rico.

EYP, Inc.

Leila Kamal
lkamal@eypae.com
www.eypae.com
470 Atlantic Avenue, 7th Floor
Boston, MA 02210
617-305-9800

EYP is an expertise-driven design firm nationally recognized for high-performance projects in the Corporate, Government, Higher Education, Healthcare and Science & Technology sectors. Our knowledge-based life-cycle approach leverages proprietary research and close client relationships – predesign through occupancy – to inform innovation.

Hillis-Carnes Engineering Associates, Inc.

Gina DePinto
gdepinto@hcea.com
www.hcea.com
10975 Guilford Road, Suite A
Annapolis Junction, MD 20701
(410) 880-4788

Hillis-Carnes is a Mid-Atlantic based, multi-disciplined consulting engineering firm specializing in Geotechnical Engineering, Construction Materials Testing/Inspections, Drilling/Subsurface Investigations, Environmental Consulting/Industrial Hygiene Services, Geostructural Engineering, Deep Foundations, Specialty Geotechnical Construction, Facilities Consulting, Construction Consulting/ Third Party Inspections, Geoscience, and Laboratory Testing.

Huitt-Zollars, Inc.

Kim Kemper
krkemper@huitt-zollars.com
www.huit-zollars.com
6501 America Parkway NE, Suite 550
Albuquerque, NM 87110
(505) 883-8114

Huitt-Zollars is a full-service multi-discipline AE firm with expertise in planning, design, program and construction management for commercial, retail and office development. The firm offers civil engineering, architectural, MEP, structural, surveying and landscape architectural services for public works, federal, urban development, transportation and buildings practice areas. Headquartered in Dallas, TX, the firm is ranked among the nation's top design firms by Engineering News Record.

Khachaturian Engineering Associates

Armen Khachaturian
armenk@keaengineers.com
www.keaengineers.com
33 Wood Avenue South, Suite 810
Iselin, NJ 08830
(732) 635-0047

Since 1984 KEA has been dedicated to providing MEP engineering services to its vast list of clients. We are committed to excellence, reliability, performance, accountability, and responsiveness. Our projects have included commercial, office, pharmaceutical, data centers, warehouses, retail, high rise, industrial, and residential projects. Our team of LEED certified and Revit trained professionals help our clients meet their objectives while staying within their financial goals. We are licensed and serve clients along the entire eastern coast as well as major metropolitan cities in the United States.

Kimley-Horn
www.kimley-horn.com
7740 N. 16th Street, Suite 300
Phoenix, AZ 85020

Kimley-Horn is a full-service consulting engineering firm with over 80 offices nationwide offering a range of services to our private and public sector clients. Our land development services include office, commercial, retail, industrial, mission critical facilities, residential, athletic facilities, higher education, hospitality, healthcare, and mixed-use projects.

Pinnacle Engineering Group
Adam Artz
adam.artz@pinnacle-engr.com
www.pinnacle-engr.com
15850 W. Bluemound Road
Suite 210
Brookfield, WI 53005
(262) 754.8888

Pinnacle Engineering Group provides expert engineering services for a broad spectrum of private and public clients. Our engineering staff is experienced in a wide variety of professional services that allow us to provide creative engineering solutions to complex projects.

RJC Engineers
Monica Silenzi
msilenzi@rjc.ca
www.rjc.ca
1816 Crowchild Trail NW, Suite 500
Calgary, AB T2M 3Y7
(403) 338-5819

RJC Engineers delivers solutions in structural engineering, structural restoration, building science, parking facility design and restoration and glass/façade engineering. Our network of offices in major city centres across Canada provides superior client service at the local level, backed by the depth and resources of a leading North American firm that is committed to creative thinking and practical results.

Wetland Studies and Solutions, Inc.
Amy Connelly
aconnelly@wetlands.com
www.wetlands.com
5300 Wellington Branch Drive
Gainesville, VA 20155
(703) 679-5600

WSSI is the leading natural and cultural resources consultant in the Mid-Atlantic. Our professional staff assists developers and public works agencies with the permitting process for land development projects and creates innovative solutions to water quality issues affecting the Chesapeake Bay Region.

Environmental

EFI Global, Inc.
Heather Suttle
heather_suttle@efiglobal.com
www.efiglobal.com
411 N. Sam Houston Parkway,
Suite 350
Houston, TX 77060
(800) 334-0200

EFI Global provides environmental services for projects associated with real property. Services include Asbestos/Lead, Brownfields, Cleanup Monitoring, Environmental Site Assessments, Indoor Air Quality/Mold, Petroleum Management, & Regulatory Compliance.

National Car Charging
Jim Burness
jburness@nationalcarcharging.com
www.nationalcarcharging.com
209 Kalamanth Street, Suite 3
Denver, CO 80223

National Car Charging has the widest selection and lowest prices for EV charging equipment in the country. Some of our brands include ChargePoint, AeroVironment, EV-Box, Siemens, Efacec, and more. Use our installer network or your own crew.

New Day Underwriting Managers, LLC
Jeff Slivka
Jeff.slivka@newsayunderwriting.com
www.newdayunderwriting.com
3465 Kuser Road
Hamilton Township, NJ 08690
New Day Underwriting Managers LLC is a specialty intermediary serving retail insurance brokers and their clients by delivering optimal risk management solutions in the areas of environmental liability and construction-related professional liability for all industry types.

RPS Gaia Tech
www.rpsgroup.com
135 LaSalle Street
Chicago, IL 60604
(312) 541-4200

RPS provides environmental, engineering and science solutions across the globe. We offer a comprehensive range of consulting services and technology solutions to support our clients working in the built and natural environment.

Wetland Studies and Solutions, Inc.
Amy Connelly
aconnelly@wetlands.com
www.wetlands.com
5300 Wellington Branch Drive
Gainesville, VA 20155
(703) 679-5600

WSSI is the leading natural and cultural resources consultant in the Mid-Atlantic. Our professional staff assists developers and public works agencies with the permitting process for land development projects and creates innovative solutions to water quality issues affecting the Chesapeake Bay Region.

Financial Intermediary

NorthMarq Capital
Lawrence Stephenson
lstephenson@northmarq.com
www.northmarq.com
3500 American Blvd West, Suite 500
Minneapolis, MN 55431
(952) 356-0100
NorthMarq Capital is a leading national mortgage banking firm headquartered in Minneapolis with 34 offices offering debt, equity and commercial loan servicing with an average of $9.5 billion in annual production volume and services a loan portfolio of over $42 billion.

Interior Design

abSketches
info@absketches.com
www.absketches.com
3198 East Market Street, Suite 200
York, PA 17402
abSketches is a visual creative studio developing conceptual environments. We work closely with our clients to create high-quality visual marketing products that will help sell ideas. Using state-of-the-art software enables us to bring your vision to reality.

AE7
Tom White
tom.white@ae7.com
www.ae7.com
2840 Liberty Avenue
Pittsburgh, PA 15222
(412) 932-2044

AE7 is an international architectural and engineering firm specializing in the planning and design of mixed-use developments.

Bullock Tice Associates
John Tice
j.tice@bulltice.com
www.bullocktice.com
909 East Cervantes
Pensacola, FL 32501
(850) 434-5444

BTA is a planning, architecture, and interior design firm serving commercial developers throughout the Southeast. ARE YOU CONTEMPLATING DEVELOPING IN THE NORTH GULF COAST REGION? For a guide to help you optimize your development yield and mitigate risk, go to www.bullocktice.com

CUBE 3 Studio, LLC
Nicholas A. Middleton
nmiddleton@cube3studio.com
www.cube3studio.com
360 Merrimack Street
Building 5, Floor 3
Lawrence, MA 01843
(978) 989-9900

CUBE 3 Studio is a dynamic and responsive design firm with the vision and capability to produce innovative design solutions. The firm has emerged as one of the fastest growing design firms in the United States while establishing a national reputation as a powerful design force. Uncompromising attention to detail allows us to create buildings and interior spaces that have lasting value. Our commitment and dedication to our work enables us to consistently deliver design excellence while remaining firmly grounded in economic reality.

Cuningham Group

Chad Clow, AIA, NCARB
cclow@cuningham.com
www.cuningham.com
201 Main Street, SE, Suite 325
Minneapolis, MN 55414
(612) 379-3400

Cuningham Group has earned a reputation for delivering excellence in architecture, interior design, landscape architecture and urban design in places where people live, work, play, heal and grow. Our more than 375 employees in ten offices are dedicated to creating design solutions that Uplift the Human Experience.

We see design as an opportunity to help our clients succeed in areas that matter most to them. Through a crafted design experience, we invest time to understand organizations – their vision, culture and goals – to craft meaningful spaces that perform at an exemplary level.

Korb + Associates

Jason Korb, AIA
jkorb@kaa-arch.com
www.kaa-arch.com
648 N. Plankinton Avenue, Suite 240
Milwaukee, WI 53203
(414) 273-8230

Korb + Associates Architects is driven by the principal of creating authenticity in our designs and relationships. We achieve this through an approach that is comprehensive and personalized. With every project, we embrace the opportunity to enhance communities and environments.

S2 Architecture

Erwin Staniszewski
e.staniszewski@s2architecture.com
www.s2architecture.com
110-12th Avenue SW, Suite 900
Calgary, AB Canada T2R-0G7
(403) 670-7000

S2 is an established firm with over 20 years of history in design excellence. We are a full service architectural and interior design firm engaged in inspired and innovative design contributing to the built environment in our communities and cities.

Ware Malcomb

Lawrence R. Armstrong
mktg@waremalcomb.com
www.waremalcomb.com
10 Edelman
Irvine, CA 92618
(949) 660-9128

Ware Malcomb is an international design firm providing planning, architecture, interior design, branding and civil engineering services to commercial real estate and corporate clients. With office locations throughout the United States, Canada, Mexico and Panama, the firm specializes in the design of commercial office, corporate, industrial, science & technology, healthcare, retail, auto, public/educational facilities and renovation projects.

Envoy Net Lease Partners

Ralph Cram
rcram@envoynnn.com
www.envoynnn.com
1363 Shermer Road, Suite 309
Northbrook, IL 60062
(847) 239-7250

Envoy Net Lease Partners provides equity and high-leverage financing to developers of build-to-suit or redeveloped single tenant, net lease properties nationwide through four financing programs: Ground Lease A&D Loans, Construction Loans, Bridge Loans, JV Equity. Download program flyers at envoynnn.com.

Sitex Group

Cary Goldman
cgoldman@sitexgroup.com
www.sitexgroup.com
9525 W. Bryn Mawr Avenue, Suite 955
Rosemont, IL 60018

Sitex Group, LLC is a fully integrated private equity firm that specializes in industrial real estate investment and development. Our core objective is to acquire, redevelop and develop industrial real estate located in core markets across the United States.

Talos Capital

www.taloscapital.com
1 Westbrook Corporate Center, Suite 830
Chicago, IL 60154
(708) 593-3510

Talos Capital is a best-in-class national industrial real estate investment firm headquartered in Chicago with regional offices in California and New Jersey. Each and every Talos investment must stand on its own merit and be insulated from idiosyncratic market risk. Our mission is to maximize return for investors while providing unsurpassed service to our tenants.

Land Planners

JSD Professional Services, Inc.

Rich Wagner, PE, RLS
Rich.Wagner@jsdinc.com
www.jsdinc.com
N22 W22931 Nancy Court, Suite 3
Waukesha, WI 53186
(262) 513-0666

JSD Professional Services, Inc. (JSD) was established in 1998. Today we employ professional engineers, stormwater management and water quality professionals, planners, landscape architects, land surveyors, construction managers, technicians, and support personnel. Our qualified staff enables us to provide complete services in planning & development, civil engineering, transportation engineering, municipal engineering, structural engineering, water resources, landscape architecture, construction services, surveying & mapping, ecological/environmental services for sustainable developments.

Landscape Architects

Cuningham Group

Chad Clow, AIA, NCARB
cclow@cuningham.com
www.cuningham.com
201 Main Street, SE, Suite 325
Minneapolis, MN 55414
(612) 379-3400

Cuningham Group has earned a reputation for delivering excellence in architecture, interior design, landscape architecture and urban design in places where people live, work, play, heal and grow. Our more than 375 employees in ten offices are dedicated to creating design solutions that Uplift the Human Experience.

We see design as an opportunity to help our clients succeed in areas that matter most to them. Through a crafted design experience, we invest time to understand organizations – their vision, culture and goals – to craft meaningful spaces that perform at an exemplary level.

Owner

Clarion Partners

Stacey Magee
Stacey.magee@clarionpartners.com
www.clarionpartners.com
1717 McKinney Avenue, Suite 1900
Dallas, TX 75202

A leader among U.S. industrial portfolio operators, the Clarion Partners Industrial Group is focused exclusively on the logistics sector, with particular emphasis on bulk warehouse/distribution facilities. The Group manages a 644-property portfolio (consisting of more than 126 million square feet and currently valued at more than $10.4 billion), located in 43 markets across the United States and Brazil. Besides closely monitoring the performance of existing assets with more than 1,300 diverse tenants, the Group has the expertise to develop new warehouse space on well-located land parcels held in its portfolio.

Railway

BNSF Railway

Darrell Coffey
darrell.coffey@bnsf.com
www.bnsf.com
2650 Lou Menk Drive
Fort Worth, TX 76131-2830
(817) 867-6588

BNSF's rail network spans 32,500 route miles in 28 states and three Canadian provinces. We transport the products and materials that help feed, clothe, supply and power communities. And, we move those goods more safely and efficiently, on significantly less fuel, and with fewer emissions than all-highway alternatives.

REIT

First Industrial Realty Trust
info@firstindustrial.com
www.firstindustrial.com
311 S. Wacker Drive, Suite 3900
Chicago, IL 60606
(312) 344-4300

First Industrial Realty Trust, Inc. (NYSE: FR) is a leading fully-integrated owner, operator, and developer of industrial real estate with a track record of providing industry-leading customer service to multinational corporations and regional customers. With a 65-million-square-foot portfolio across the nation's top markets, our local market experts manage, lease, buy, (re)develop, and sell bulk and regional distribution centers and other industrial facilities.

Roof Servicing

Rooflifters
Marty Shiff
mart@rooflifters.com
www.rooflifters.com
2525 Ponce De Leon Blvd, Suite 300
Coral Gables, FL 33134
(416) 631-6150

ROOFLIFTERS is an innovative company that rejuvenates older buildings by raising their existing roofs for vertical expansion. Increasing the value of commercial properties across North America for over 25 years. ROOFLIFTERS, efficient, fast, and affordable.

Space Technology, Inc.
Jeff Allen
jeff@rooflift.com
www.rooflift.com
626 RXR Plaza
Uniondale, NY 11556
(631) 491-8500

Space Technology Inc. LIFTS THE EXISTING ROOF of an industrial building, intact, to two or three times its original height. Converts obsolete, low-clearance buildings into valuable, high-cube assets. Free estimates, nationwide.

Technology

Altus Analytics
Terri Lineberry
tlineberry@argussoftware.com
www.altusanalytics.com
3050 Post Oak Blvd., Suite 900
Houston, TX 77056
(713) 621-4343

Altus Analytics is the leading provider of software solutions for analyzing and managing the value of real estate investments. Our project feasibility analysis program enables users to model cash flows, conduct sensitivity analysis and create complex financing structures to gain a complete understanding of the risks and returns of each development project.

Altus Group
Jennifer DeSantis
Jennifer.desantis@altusgroup.com
www.altusgroup.com
910 Ridgebrook Road, Suite 200
Sparks, MD 21152
(410) 568-0764

Altus Group's State & Local Tax and Advisory experts serve as trusted tax advisors, helping our clients to proactively manage their tax liabilities, recover overpayments, address exposure risks and implement strategies that deliver ongoing, meaningful benefits.

CompStak
Regina Glick
regina@compstak.com
www.compstak.com
36 Cooper Square, 4th Floor
New York, NY 10003
(646) 459-7008

CompStak delivers complete and accurate commercial lease comps. Our data is crowd-sourced from our qualified network of commercial brokers, appraisers, and researchers, validated by our data science team, and sold on a subscription basis to lenders, landlords, and investors.

Honest Buildings
info@honestbuildings.com
www.honestbuildings.com
85 Broad Street, 29th Floor
New York, NY 10004

Honest Buildings is the leading intuitive, data-driven project management and procurement platform built for commercial real estate owners and managers. Industry leaders like Brookfield, Vornado, Beacon Capital Partners, Invesco and Parkway Properties use Honest Buildings to streamline project management processes, increase revenue through faster project delivery, reduce project costs and increase efficiencies on projects portfolio-wide.

Investor Management Services
Lisa Henshaw
lhenshaw@imscre.com
www.imscre.com
11121 Carmel Commons Boulevard, Suite 250
Charlotte, NC 28226
(704) 753-7280

Investor Management Services, LLC is a member of the QuietStream Financial family of commercial real estate services and technology companies. Investor Management Services offers cutting-edge software that helps commercial real estate owners attract, engage, and manage their investors and projects. The platform features investor dashboards, document management, investor communications, electronic document execution, and live customer service with more features and enhancements on the way.

OppSites
Ian Ross
ian@oppsites.com
www.OppSites.com
363 17th Street, Suite 301
Oakland, CA 94612
(510) 788-0701

At OppSites, we match developers with city leaders to build relationships and make projects happen. Our network has thousands of people, conversations and projects. Sign up and explore the opportunities for free today.

Yardi Systems
Melissa Dempsey
Melissa.dempsey@yardi.com
www.yardi.com
430 S. Fairview Avenue
Santa Barbara, CA 93117
(805) 699-2040

Yardi® develops and supports industry-leading investment and property management software for all types and sizes of real estate companies. Established in 1984, Yardi is based in Santa Barbara, California, and serves clients worldwide. For more information, visit www.yardi.com.

Tenant Services

National Car Charging
Jim Burness
jburness@nationalcarcharging.com
www.nationalcarcharging.com
209 Kalamanth Street, Suite 3
Denver, CO 80223

National Car Charging has the widest selection and lowest prices for EV charging equipment in the country. Some of our brands include ChargePoint, AeroVironment, EV-Box, Siemens, Efacec, and more. Use our installer network or your own crew.

RJC Engineers
Monica Silenzi
msilenzi@rjc.ca
www.rjc.ca
1816 Crowchild Trail NW, Suite 500
Calgary, AB T2M 3Y7
(403) 338-5819

RJC Engineers delivers solutions in structural engineering, structural restoration, building science, parking facility design and restoration and glass/façade engineering. Our network of offices in major city centres across Canada provides superior client service at the local level, backed by the depth and resources of a leading North American firm that is committed to creative thinking and practical results. ■


3164

Developing Leaders on the Future of CRE

NAIOP's 2017 Developing Leaders Award recipients offer their insights.

By Marie Ruff

AS NAIOP'S YEARLONG 50th anniversary comes to an end, this is the perfect time to reflect on the evolution of commercial real estate over the past half century and to explore how it may continue to change in the years ahead. NAIOP asked the seven distinguished recipients of its 2017 Developing Leaders Award to share their perspectives on what's driving change in commercial real estate – and where they anticipate the industry is headed next.

The Developing Leaders Award winners received this coveted award in recognition of their outstanding commitment and contributions to the industry at NAIOP's CRE.Converge 2017 in Chicago on October 11. They identified two factors – the ability to leverage tech tools and the existence of large amounts of real-time data – as key in positioning their companies and themselves to have a strategic advantage as the future of commercial real estate unfolds.

Q: ***Where do you see the commercial real estate industry – and, specifically, your profession – going in the future?***

Lewis Agnew
President, Chas. Hawkins Co., Inc./ CORFAC International
NAIOP Nashville

A: Service professionals in any industry – real estate, law, banking, etc. – face increasingly rapid technological change that lowers barriers to entry and increases competition. The best response to this increased competition is to adapt and learn quickly in order to continue providing exceptional customer service. Big data will certainly play a big role in the future of our profession, but the amount of information we can collect can be overwhelming. My generation will have to learn how to use that information effectively, efficiently and, ultimately, in a way that benefits our clients.

Ben Bastian
Vice President, CBRE Capital Markets
NAIOP Minnesota

A: Overall, the CRE industry has been slower to react and embrace technological advances than other industries. CRE debt and sales transactions contain a significant amount of data: sale price, loan metrics, building income and expenses, and information about both buyers and sellers. Capturing and dissecting this "big data" presents a major opportunity. We can expect more data- and technology-based decision-making in the future. Deeper analytics that demonstrate the best metrics for a transaction to mitigate risk will be invaluable.

Brian DePotter
Managing Partner, Property Tax, First-Pointe Advisors, LLC
NAIOP South Florida

A: The property tax profession will continue to be driven by relationships built on integrity and commitment to clients and public officials as well as other representatives of local jurisdictions. What must evolve is how we communicate with one another. We are transitioning to filing property owners' petitions to county value adjustment boards (VABs) online, as well as making high-tech presentations and signing engagement letters electronically. Office printers and photocopiers are nearly obsolete. In five to 10 years, we will travel less because we will be using internet-based technologies to remotely deliver sophisticated, immersive presentations.

Q: ***What emerging technologies do you think will have the greatest impact on the industry?***

Bailey Copeland
Development Director, VJS Development Group,LLC
NAIOP Wisconsin

A: Three-dimensional printing continues to evolve. The possibility that a wide variety of items will be constructed solely by automation, with minimal or no workforce involvement, could become reality. This could, in turn, lead to a complete restructuring of our industry. The impact on the industry could start simply, with smaller everyday products. If those items could be 3-D printed on demand instead of being manufactured in a central location, that would reduce the demand for factory, warehouse and retail space. The ripple effect would extend to other associated real estate needs.

Kelsey Schultes
Investment Manager, Swift Real Estate Partners
NAIOP SoCal

A: Technology that allows deals to happen more quickly and efficiently will have the biggest impact. As the old sayings go, "time is money" and "time kills deals." When tenants are able to see a project, lay out the space to meet their needs on a handheld device, then execute a letter of intent and exchange funds electronically in the course of a one-hour tour, the project, brokers, principals and clients all benefit. In the future, I imagine virtual reality devices will play a larger part in this equation and further improve efficiency.

NAIOP's 2017 Developing Leader Award recipients at CRE.Converge in Chicago on October 11: from left, Lewis Agnew, Kelsey Schultes, Ben Bastian, Mike Wanezek, Brian DePotter and Bailey Copeland; Jordan Wean was unable to attend.

Mike Wanezek
Vice President, Colliers International
NAIOP Wisconsin

A: On the marketing side, I believe the use of virtual reality to create the vision for future projects as well as 3-D, 360-degree tours of existing products will continue to grow. Even 12 to 24 months ago, these tools were on the periphery. They are now becoming standard practice, providing clients or customers an accurate vision without having to take the time to physically see the real estate. On the analytic front, I believe the use of VTS and similar systems will continue to grow and become part of the standard platform for deal analysis and prospect tracking, with clients receiving real-time updates.

Jordan Wean
Director, Commercial Investment Sales, Franklin Street
NAIOP Central Florida

A: Two things come to mind: self-driving cars and smart building technology. Self-driving car technology has the ability to impact our industry in a major way on many different levels and across every asset class. We are already seeing developers designing new parking garages with the intent of converting them to other uses down the road. This technology is not coming overnight, but it is very interesting to think about such a major change to the fabric of the infrastructure around which we have built for the last century.

Smart building technology is evolving and becoming more sophisticated. It will be interesting to see how it is implemented in new developments as well as used to upgrade existing buildings. With advances in sensor technology, the interconnectivity of networked devices – the internet of things – and software that can analyze data in real time, commercial properties with partially or fully integrated building management systems will be able to function at maximum efficiency while creating personalized and optimal environments for their users. ■

By **Marie Ruff**, communications senior manager, NAIOP

Air Resources Board Targets California's Industrial Properties

California's Air Resources Board is considering an indirect source rule that would hold building owners and/or tenants responsible for reducing greenhouse gas emissions from trucks and other mobile sources that service their facilities.

By Toby Burke

GOVERNOR **Jerry Brown** touts his desire to make California a leader in the climate change debate, especially since President **Donald Trump** announced his decision to withdraw the U.S. from the Paris climate agreement. As he enters his final year in office in 2018, Brown has outlined an aggressive agenda that encourages state and local agencies to develop programs and make investments to address environmental issues. The California Air Resources Board (CARB) is one such state agency. Its primary mission is to reduce air pollution.

In March 2017, CARB adopted an addendum to resolutions 17-7 and 17-8 that directed staff to develop "concepts for an Indirect Source Rule (ISR) to control pollution from large freight facilities including ports, rail yards, warehouses and distribution centers, as well as any identified alternatives capable of achieving similar levels of emission reductions." In particular, CARB aims to hold building owners and/or their tenants accountable for reducing greenhouse gas (GHG) emissions from trucks and other mobile sources associated with servicing the facility or property, even though the owners and tenants typically have no control over these vehicles. The rule would also include emissions from machinery and other equipment operating within a building.

The implementation of an indirect source rule could have a devastating effect on the movement of goods throughout the state of California. It would make it more difficult, and perhaps impossible, to operate many industrial properties economically. One concept that has been raised would establish an emissions standard for each industrial building in California, including warehouses and distribution centers. The standard would include truck emissions that are indirectly related to the facility's operation; any truck dropping off or picking up goods at a building would contribute to that building's emissions. This could restrict the movement of goods by limiting the number of trucks that are able to service an industrial property.

In other words, the state's board would establish an emissions standard or cap for each freight-related facility. To remain in compliance with the ISR, the owner or operator of that facility would have to ensure that the facility did not exceed its emissions cap. The emissions from every truck related to that facility's operation would be included in and subject to the property's emissions cap. Violations by property owners, operators or tenants who exceed the cap could trigger fines or other restrictions.

Many commercial real estate professionals believe that CARB's overall intent is to force building operators and the trucking industry to replace internal combustion engines with electric ones. But that goal doesn't take into account the costs of such a transition, or whether the technology currently exists to achieve proposed emission reductions. To date, CARB has not conducted an economic impact analysis of the ISR concept.

Rex Hime, president and CEO of the California Business Properties Associ-

> **"Indirect source rules are the best way to upend the economic future of California. Unelected government officials deciding the fate of our distribution centers, our ports, our goods movement system, one-third of our entire state economy, only spells danger ahead."**
>
> *Rex Hime*

ation, says, "Indirect source rules are the best way to upend the economic future of California. Unelected government officials deciding the fate of our distribution centers, our ports, our goods movement system, one-third of our entire state economy, only spells danger ahead."

California's ports welcome ships from around the world, and its warehouses distribute products to the rest of the country. However, if state and local regulations become too complex, restrictive or even impossible to comply with, companies may decide to move their operations to other ports and states with less burdensome regulations. If this were to occur, California's commercial real estate industry would suffer as the state's economy slowed.

The ISR may or may not be the tipping point for this to occur. But CARB and its staff would be well served to consider the potential repercussions as they discuss how to proceed with the ISR in 2018. NAIOP California, its chapters and members are prepared to work with state regulators to develop achievable and market-based solutions that encourage job growth and build the economy while protecting the environment. ■

By **Toby Burke**, senior director of state and local affairs, NAIOP

NAIOP represents commercial real estate developers, owners and investors of office, industrial, retail and mixed-use properties. It provides strong advocacy, education and business opportunities, and connects its members through a powerful North American network. **For more information, visit naiop.org.**

Programs and Services

NAIOP Membership
For membership, information or changes to your membership record, contact membership@naiop.org.

Chapter Network
NAIOP chapters provide local and regional education, networking and legislative affairs.

naiop.org
NAIOP's central resource for industry and association news, programs, advocacy efforts and connections.

National Forums
Special-interest groups that comprise senior-level NAIOP members in a non-competitive environment for exclusive networking and experience exchange.

Center for Education
The principal learning resource for the commercial real estate development professional. Offerings include online, on-demand and live courses, plus two certificate programs.

Development Magazine
Current and past issues are available online. Readers can also access an interactive digital version and download a mobile app for Development magazine on-the-go.

NAIOP Research Foundation
Research projects and initiatives to improve the understanding of the built environment and the challenges that lie ahead for individuals and organizations engaged in real estate development, investment and operations.

Career Center
Online resource designed to help employers and job seekers find new commercial real estate job opportunities.

Business Development Industry Partners
Enhance your company's presence as an industry partner by sponsoring, exhibiting or advertising.

Government Affairs
Strong, effective support and guidance to create, protect and enhance development and property values. NAIOP's government affairs team is active on Capitol Hill, in state legislatures and in Canadian provinces.

Market Share Blog
Insights on trends, CRE-related topics and professional development tips. Subscribe to weekly posts, interviews and news. blog.naiop.org.

Mobile Apps
Take NAIOP wherever you go. Access the membership directory, find news, chapters and events, and connect on social media. ■

U.S. Postal Service Statement of Ownership, Management and Circulation

1. Title of Publication: Development
2. Publication Number: 0888-6067
3. Date of Filing: October 18, 2017
4. Frequency of Issue: Quarterly
5. Numbers of Issues Published Annually: 4
6. Annual Subscription Price: $35
7. Complete Mailing Address of Known Office of Publication: NAIOP, 2355 Dulles Corner Boulevard, Suite 750, Herndon, VA 20171
8. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher: NAIOP (same address as above).
9. Full Names and Complete Mailing Address of Publisher, Editor, and Managing Editor: Publisher – Marc Selvitelli, Senior VP, NAIOP, 2355 Dulles Corner Boulevard, Suite 750, VA 20171; Editor – Margarita Foster, NAIOP, 2355 Dulles Corner Boulevard, Suite 750, Herndon, VA 20171; Managing Editor – Julie Stern, NAIOP, 2355 Dulles Corner Boulevard, Suite 750, Herndon, VA 20171
10. Owner: NAIOP, 2355 Dulles Corner Boulevard, Suite 750, Herndon, VA 20171
11. Known Bondholders, Mortgages, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities: NONE
12. Publication title: Development
13. Issue Date for Circulation Data Below: Fall 2017 (September 15, 2017)
14. Extent and nature of circulation: A. Total no. copies: 1) Average no. copies each issue during preceding 12 months – 21,850; 2) No. copies of single issue published nearest to filing date: 21,500; B. Paid and/or requested distribution; 1) Paid or requested mail subscriptions stated on PS Form 3541: (a) Average no. copies each issue during preceding 12 months – 17,497; (b) No. copies of single issue published nearest to filing date – 17,121; 2) Copies Requested by Employers for Distribution to Employees by name or position stated on PS Form 3541: (a) Average no. copies each issue during preceding 12 months – 0; (b) No. copies of single issue published nearest to filing date – 0; 3) Sales through dealers and carriers, street vendors and counter sales: (a) Average no. copies each issue during preceding 12 months – 0; (b) No. single issue published nearest to filing date – 0; 4) Requested copies distributed by other classes mailed through the USPS: (a) Average no. copies each issue during preceding 12 months – 0; (b) No. copies of single issue published nearest to filing date – 0; C. total paid and/or requested circulation: 1) Average no. copies each issue during the preceding 12 months – 17,497; 2) No. copies of single issue published nearest to filing date – 17,121; D. Nonrequested distribution by mail: 1) Free or Nominal Rate Outside-County Copies stated on Form PS 3541: (a) Average no. copies each issue during preceding 12 months – 3,675; (b) No. copies of single issue published nearest to filing date – 3,830; 2) Free or Nominal Rate In-County copies stated on Form PS 3541: (a) Average no. copies each issue during preceding 12 months – 0; (b) No. copies of single issue published nearest to filing date – 0; 3) Free or Nominal Rate copies mailed at other classes through the USPS: (a) Average no. copies each issue during preceding 12 months – 0; (b) No. copies of single issue published nearest to filing date – 0; 4) Free or Nominal Rate distribution outside the mail: (a) Average no. copies each issue during preceding 12 months – 418; (b) No. copies of single issue published nearest to filing date – 428; E. Total nonrequested distribution: 1) Average no. copies each issue during preceding 12 months – 4,093; 2) No. copies of single issue published nearest to filing date – 4,258; F. Total distribution: 1) Average no. copies each issue during preceding 12 months – 21,590; 2) No. copies of single issue published nearest to filing date – 21,379; G. Copies not distributed; 1) Average no. copies each issue during preceding 12 months – 261; (2) No. copies of single issue published nearest to filing date – 121; H. Total: 1) Average no. copies each issue during preceding 12 months – 21,851; 2) No. copies of single issue published nearest to filing date – 21,379; I. Percent paid and/or requested circulation: 1) Average no. copies each issue during preceding 12 months – 81%; 2) No. copies of single issue published nearest to filing date – 80%
15. This Statement of Ownership will be printed in the Winter 2017/2018 issue of this Publication.

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including multiple damages and civil penalties).

Margarita Foster, Editor-in-Chief, October 18, 2017

People + Companies INDEX

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

2017 Industry Partners

NAIOP wishes to thank our Industry Partners, whose financial support helps us to provide quality programs and communications to you throughout the year. We encourage you as a NAIOP member to include these partners, wherever possible, when you are considering service partners and products for your business.

Premier Industry Partners

Cushman & Wakefield
Majestic Realty Co.
Prologis
USAA Real Estate

Platinum Industry Partners

CBRE
JLL
Newmark Knight Frank
CenterPoint centerpoint.com
Marcus & Millichap
Ten-X

Gold Industry Partners

Bank of America Merrill Lynch

Silver Industry Partners

Conor Commercial Real Estate
NAI Global
Rockefeller Group

Bronze Industry Partners

Avison Young Intelligent Real Estate Solutions
BMO Harris Bank We're here to help.
Colliers International
CRG
FCL Builders
Trammell Crow Company
Wipfli CPAs and Consultants

Chairman's Circle

CoStar Group
GLP
powers brown architecture
Clarion Partners
Ware Malcomb
Lee & Associates Commercial Real Estate Services
Millie and Severson General Contractors
Tratt Properties LLC
touchstone
wework

It's All Up to You

AS I CONCLUDE MY time as chairman, I offer my appreciation for the honor of leading this organization. I'm pleased to share that NAIOP is operating strongly and firing on all cylinders. Membership will exceed 19,000 by year-end 2017, we set records for both attendance and sponsorships at CRE.Converge in October and our Research Foundation is publishing best-in-class studies that keep our industry on the cutting edge. Celebrating NAIOP's 50th anniversary throughout the year, including honoring 22 past chairmen at a special event at the fall conference, has given us many opportunities to reflect on how far we've come.

Jonathan Tratt

As I write this in early November, the House version of a tax reform bill has kept the major issues relevant to our industry – carried interest, 1031 exchanges and interest deductibility – predominantly intact. While it is still too early to know how the Senate version and reconciliation process will influence the final tax reform effort, NAIOP's prowess on Capitol Hill and our effective advocacy efforts have certainly played an important role in this process. Congress clearly acknowledges the valuable contributions our industry makes to the economy.

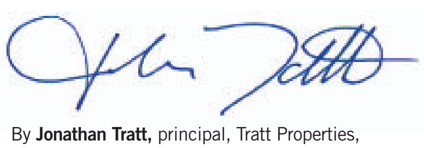
This year, I've enjoyed visits to chapters across North America, representing NAIOP at Real Estate Roundtable events and meeting so many of you at NAIOP conferences. All in all, I made 20 trips on your behalf – no small feat for this founder of an industrial development company who splits his time between Phoenix, where my business is based, and Scarsdale, New York, where my family resides. I'd be remiss in not thanking my wonderful wife, Irit, and my cherished children Maya (11), Rachel (9) and Ari (4.5) for generously supporting my travel this year.

Outgoing NAIOP Chairman Jonathan Tratt passes the gavel to incoming Chairman Jim Neyer, whose term begins on Jan. 1, 2018.

As I've fondly shared, nothing has helped me build my career more than my active involvement with NAIOP, both in my chapter and on the Corporate level. I'm grateful to have had the opportunity to work with the remarkable individuals who comprise our industry, and I'm confident that 2018 Chairman **Jim Neyer** will do an excellent job building upon our successes in 2017 and focusing attention where needed.

In closing, I'd like to share a quote from Trammell Crow, founder of the company that was named NAIOP's 2017 Developer of the Year:

"Everything that happens to me in my life is my own responsibility, solely and absolutely my own responsibility. I can ask and get help or assistance, or support. But ultimately and absolutely, it's all up to me. I can stumble or stride – both are up to me. I can succeed or fail … it's all up to me. I can prosper or lose … it's all up to me. Now life doesn't guarantee you everything, no matter how you try, but you'll only get the best that life has for you when you understand and absolutely observe that … it's all up to you." ■



By **Jonathan Tratt,** principal, Tratt Properties, LLC, and 2017 NAIOP Chairman