Commercial Real Estate Development SPRING 2018

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Industrial Real Estate
Disruptions and Structural Shifts *52*

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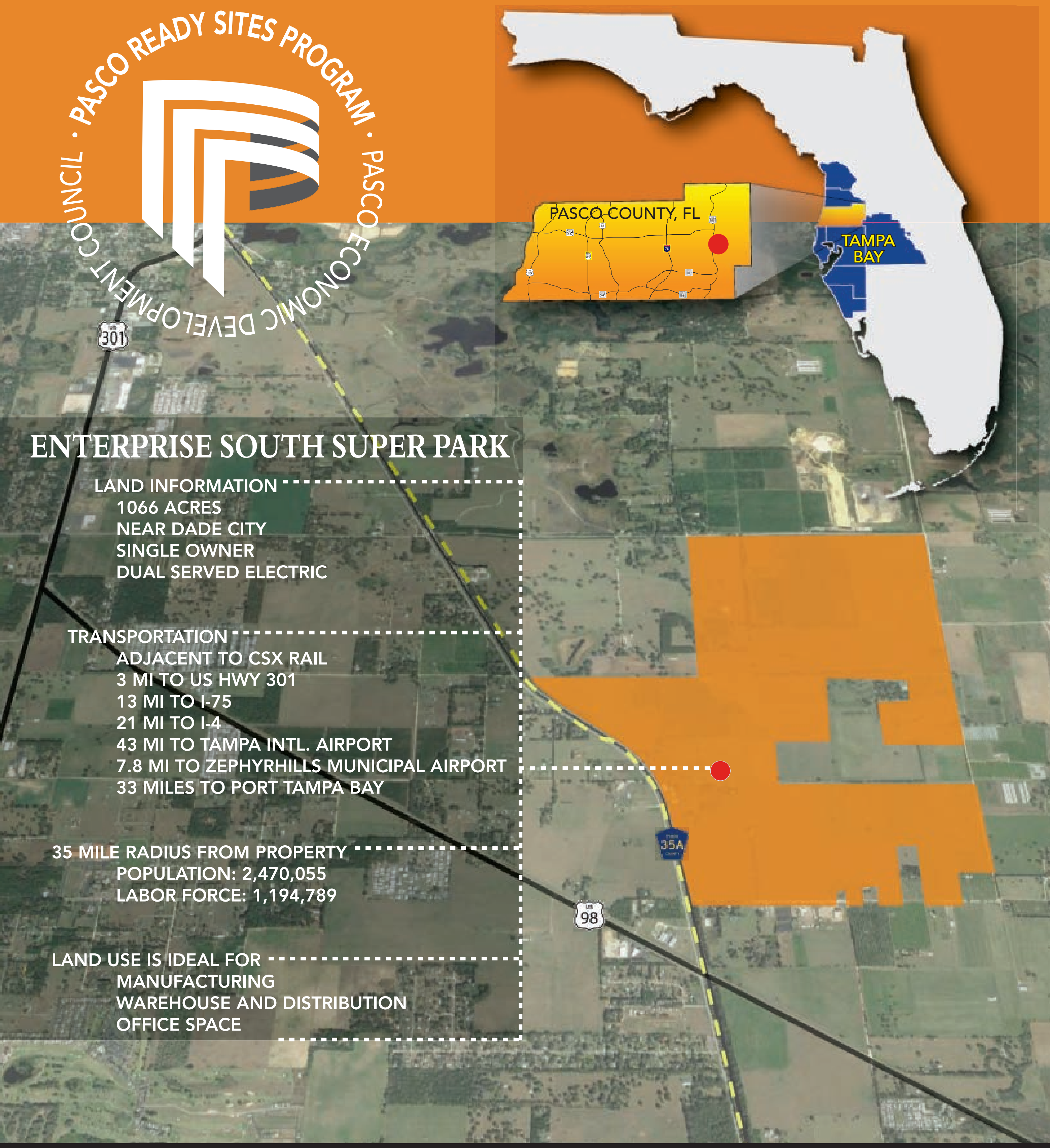

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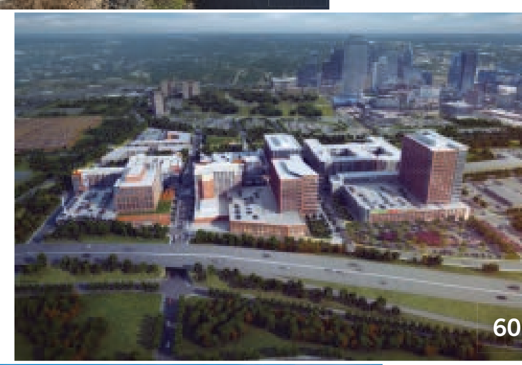
Volume XLIV No. 1



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Boston Scientific Corp. Global Customer Fulfillment Center on Squantum Point in Quincy, Massachusetts, exemplifies some of the innovations in logistics real estate discussed in this issue's cover story.
Warren Patterson Photography, Courtesy of Margulies Perruzzi Architects

Development®
(ISSN 0888-6067) is published quarterly and © 2018 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.

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A Note From the Editor

Something for Everyone

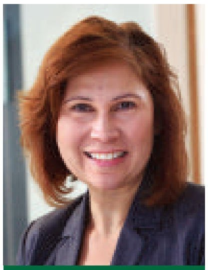
DEVELOPMENT MAGAZINE provides information for professionals working in all disciplines in the complex world of commercial real estate, whether they are students seeking to learn all they can or veterans looking to learn something new. We aim to use language that is clear and free of cryptic jargon so articles are understandable not just to real estate insiders, but also to others looking to familiarize themselves with the industry.

Each issue therefore also contains articles ideally suited for tenants in the market, which serve as quick study guides for individuals who only think about CRE once in a blue moon. All articles are available online at www.NAIOP.org/Magazine. Feel free to pass on this issue, send a link or request a reprint for your colleagues or clients.

Enjoy the issue,
Margarita Foster
Editor-in-Chief

Most Popular From Winter 2017/2018

1) **"Industrial Development Goes Vertical"** (www.naiop.org/industrialverticaldev-mag, page 54).
2) **"The Perot Family's New Corporate Headquarters"** (www.naiop.org/perothq-mag, page 60).
3) **"The First Modern Multistory Logistics Building in North America"** (www.naiop.org/multistory-mag, page 12).
4) **"Ten Industrial Trends to Watch"** (www.naiop.org/tentrends-mag, page 18).
5) **"CRE Tech Adoption Speeds Up"** (www.naiop.org/cretech-mag, page 72).



Margarita Foster

The industrial sector is experiencing a host of changes, from software that better manages truck yard activities to continued buildout of the "cold chain" and more focus on high-quality design and amenities (page 52).

Developing and operating skilled nursing facilities requires an understanding of market trends such as increased demand for private rooms and amenities like pubs and beauty shops (page 72).

Robotic furniture makes small spaces versatile, functional and comfortable, setting the stage for even smaller living spaces in the future (page 12).

What lies ahead for CRE sectors? Urbanization and growth in travel will support increasing demand for hotels and apartments; industrial properties will continue to benefit as retail continues to evolve; and office properties will continue to introduce unique amenities to remain competitive (page 21).

Skanska USA's CEO looks for leaders with solid CRE performance records when hiring senior staff, but those individuals must also be able to nurture and build integrated teams (page 26).

Women-centric coworking facilities specialize in supporting female entrepreneurs by providing daytime networking functions, mentoring programs and other support tailored to women (page 28).

Future NAIOP Events

- I.CON 2018: The Industrial Conference, June 7-8, Jersey City, New Jersey
- FlexOffice 2018, a collaboration between NAIOP and the Global Workspace Association, Sept. 12-14, Austin, Texas
- CRE.Converge 2018, Oct. 15-17, Washington, D.C.
- National Forums Symposium 2019, April 9-11, Vancouver, British Columbia, Canada

A thoughtful commercial landscaping strategy can have a positive effect on tenant moods and cognitive functions, and can result in faster lease-up and higher rents (page 31).

An introductory article on **how to set up a private equity real estate fund** discusses key elements of starting such a fund, including sponsor motivation, fund size, deal flow and seed funding (page 36).

Columbus, Ohio, is leveraging $50 million dollars from the U.S. Department of Transportation to propel its transportation system into the future by integrating multimodal data, increasing mobility options for impoverished neighborhoods, developing electric vehicle infrastructure and more (page 46).

Lenders are conducting environmental due diligence. Rather than simply declining to provide financing for projects on environmentally challenged sites, some are making the effort to fully understand the risks associated with those properties (page 42). ■

Raising the Roof

The average clear height of warehouse ceilings has increased steadily over the past 20 years.

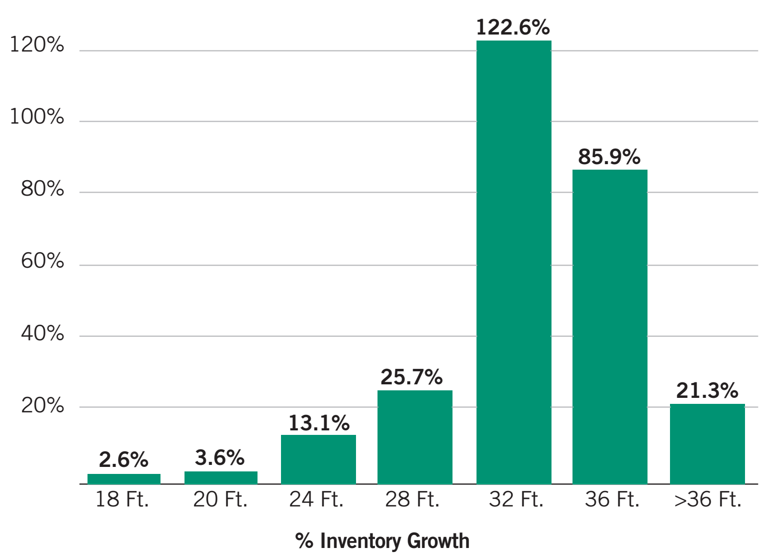
By Jason Tolliver, Carolyn Salzer, Jared Jacobs and Jolanta Campion, Cushman & Wakefield

OVER THE PAST 20 years, the average rentable building area (RBA) for newly delivered warehouses has increased by 60 percent nationally, from an average of 165,000 square feet in 1997 to an average of 268,000 square feet in 2017. The desire to optimize "cubage" has also resulted in buildings growing taller. Twenty years ago, the average ceiling height for a new warehouse was 25 feet clear. Today, in newly constructed structures larger than 300,000 square feet, 32 feet clear is typical. In megasized distribution buildings, 36 feet is common, with clear heights rising past 40 feet in some cases.

Many traditional industrial tenants do not require higher ceilings for pallet positioning, but the clear design trend is to raise the roof to 32 feet or higher to garner the interest of a larger pool of potential occupiers. Since 1997, the largest concentration of taller building construction has occurred in distribution-intense markets like California's Inland Empire, the Pennsylvania Interstate-81/I-78 Distribution Corridor, Chicago, Atlanta, New Jersey, Dallas-Fort Worth, Cincinnati, Columbus, Baltimore and Kansas City, among others.

For developers, there is a tradeoff between the need for optimal clear height inside and the desire to minimize a building's overall height-associated costs. Three of the primary cost drivers are slab, structure and fire protection. As clear height exceeds 32 feet, the flatness of the

How Low Should You Go?
(Growth Rates in RBA Clear Height, 1997-2017)



Source: Cushman & Wakefield Research

62%
Growth in average RBA of warehouses since 1997

123%
Growth of 36-foot clear height warehouses since 1997

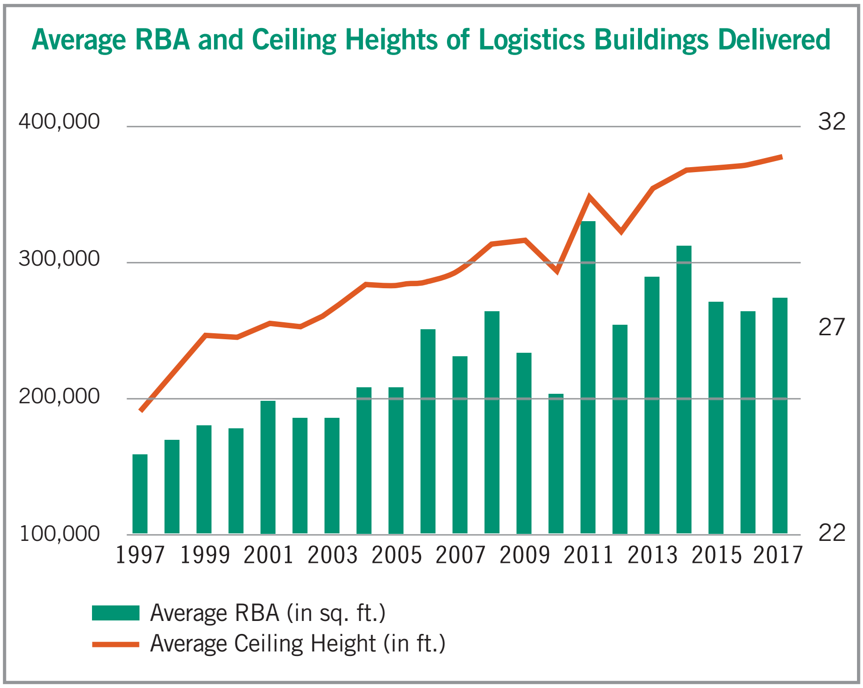
86%
Growth of 32-foot clear height warehouses since 1997

2.5%
Growth of warehouses with ceiling clear heights lower than 20 feet since 1997

slab surface itself may require tighter specifications to ensure the stability of the rack. Column spacing often must be increased to accommodate the larger forklifts needed to reach the taller pallet positions. Load-bearing exterior walls will likely get thicker. Fire protection systems may need to be upgraded. And if storage height exceeds 40 feet, in-rack sprinklers might be required, which can increase costs during tenant rollover if they must be removed for the next occupant. ■

By **Jason Tolliver** (jason.tolliver@cushwake.com), head of logistics and industrial research, Americas; **Carolyn Salzer** (carolyn.salzer@cushwake.com), logistics and industrial research analyst, Americas; **Jared Jacobs**, research manager, Philadelphia; and **Jolanta Campion**, director of research, San Diego region, Cushman & Wakefield

Note: This column is adapted from "The Evolution of Warehouse and Distribution Center Design," Cushman & Wakefield Research, November 2017.



Source: Cushman & Wakefield Research

Average Warehouse Ceiling Heights
(1997-2017)

Market	Total Logistics Stock (sq. ft.)	Average Height (ft.)	10,000-100,000 sq. ft	100,000-300,000 sq. ft	>300,000 sq. ft.
Top Three					
Los Angeles	819,300,900	25'1"	23'8"	26'8"	31'6"
Chicago	657,805,421	25'0"	21'6"	29'1"	31'8"
Dallas/Fort Worth	508,605,949	26'0"	21'4"	28'0"	32'0"
Bottom Three					
Raleigh/Durham, N.C.	31,457,816	22'9"	21'1"	27'5"	32'0"
Savannah, Ga.	36,309,110	26'9"	25'0"	28'1"	31'9"
Charleston, S.C.	42,366,151	23'0"	20'7"	29'1"	33'2"

Note: Excludes refrigerated and frozen storage warehouses.
Source: Cushman & Wakefield Research

Robotic Furniture

North American developers are animating small spaces with architectural robotics.

By Hasier Larrea, Ori

IT'S NO EXAGGERATION to say that robotics startup Ori is reimagining the potential of interior space. The company, which takes its name from "origami," the Japanese art of paper folding, combines robotics, architecture and design to enable space to intelligently and effortlessly adapt to people and their everyday activities. Ori's first family of robotic furniture systems is designed to create value for city dwellers by making small residential spaces "live" as though they are much larger, as well as by delivering value for developers through rent premiums and improved return on investment.

With a touch of the system interface, a swipe of the Ori mobile app or a voice command to Alexa or Google Assistant, the Ori Full and Queen systems quickly and easily transform a small living space from one function or mode to another. (They also can be operated manually in case of a power outage.) For example, a bedroom smoothly and quickly transforms into a comfortable living room, a spacious walk-in closet or a functional home office. Ori's systems can also connect to a variety of smart home ecosystems and devices like thermostats, speakers, lights, etc., for additional ease of use and convenience.

The first family of Ori systems is designed for studio apartments between 300 and 600 square feet. Although the systems are currently available for purchase only by real estate developers, the company is exploring leasing and even a direct-to-consumer subscription model, and may introduce these options in the future. While their natural habitat is studios, the systems can also be integrated into one- or two-bedroom apartments, or into other living spaces, such as student housing. The most popular configurations are 92 inches wide by 139 inches long by 94 inches high for the full system and 98 by 151 by 94 inches for the queen system. The systems come with a standard 5- or 10-year warranty; additional coverage is available.

Ori's space-saving robotic furniture units enable small studio units to "live" more like one-bedroom ones.
Photos courtesy of Ori

The systems have received UL approval and manufacture of the first commercial systems is expected to begin in March 2018. Ori has partnered with a national network of installers for professional installation and maintenance. The system is not permanently fixed to an apartment unit, so it can be easily installed or removed without drilling into walls or floors. Prices for the first family of systems start at $10,000.

Ori's designers set out to create a robotic system that could solve the three main challenges of small space living by providing 1) a division of space, 2) a usable living area and 3) increased storage.

With Ori's robotic furniture in place, studio units essentially function as one-bedroom apartments. The enhanced living experience it provides could encourage renters who would have once settled for a one-bedroom unit in a subpar building to instead opt for a studio in a prime building. This, in turn, allows real estate developers to optimize their unit mix in a way that greatly improves building economics. Ori's systems also provide developers with a strong marketing tool, differentiating buildings as innovative places that offer a new type of urban residential experience.

Developer Samuels & Associates has installed Ori pilot (precommercial) systems in its Continuum development in Boston, a mixed-use project with 325 residential units and more than 35,000 square feet of retail space on the border of Harvard University's southern campus and the booming North Alston neighborhood. According to one resident, "Living with Ori made life easier and more comfortable. I didn't have to choose between a big bedroom and a big closet; I got both. It also made for a great conversation piece when friends visited and saw that I had a robotic wall."

Samuels President **Joel Sklar** has seen firsthand how Ori is empowering residents to transform their living space: "Ori's systems are a perfect fit for Samuels & Associates' vision for Continuum. The effortless transition of its components allows residents to have full control of their homes and mold their spaces according to their wishes. Samuels & Associates is always looking for opportunities to work

New & Noteworthy

9 million sq. ft.

Nichols Brosch Wurst Wolfe & Associates

Strategic Property Partners has begun construction on a $3 billion, 9 million-square-foot mixed-use development that will transform 50 acres of waterfront land and 16 city blocks in downtown Tampa into a new neighborhood that integrates principles of walkability, sustainability, connectivity and wellness. Expected to be completed by 2027, Water Street Tampa will offer more than 2 million square feet of office space, 1 million square feet of new retail and cultural spaces, 3,500 residential units, 630 hotel rooms and an iconic arts/events pavilion, as well as 13 acres of public green spaces and a central cooling facility. More than $200 million in infrastructure projects are already underway. Phase I, which is slated to be completed by the end of 2020, will total 4 million square feet, including a 550-key hotel at 10 Water Street (rendering at right).

6.9 million sq. ft.

Master developer Brandywine Realty Trust, in partnership with Drexel University, has broken ground on the mixed-use Schuylkill Yards project in Philadelphia. The first phase of the 20-year, 6.9 million-square-foot, 14-acre project will enhance the public realm by creating a 1.3-acre community park, to be known as Drexel Square, directly across from Amtrak's 30th Street Station. The park will be followed by the redevelopment of the former Bulletin Building and the development of two towers along JFK Boulevard. This first phase will feature entrepreneurial space, educational facilities and research labs as well as corporate office, residential and retail space on 4.6 acres. The park is expected to be completed in the fourth quarter of 2018.

1.9 million sq. ft.

MRP Industrial, in a joint venture with Hillwood, has begun construction on Hamburg Logistics Park in Berks County, Pennsylvania. The 165-acre project along the Interstate 78 corridor in the Lehigh Valley West submarket is approved for three buildings totaling 1.9 million square feet. Phase I will include two speculative buildings: a 336,000-square-foot, single-loaded distribution center scheduled for delivery in summer 2018 and a 1.24 million-square-foot cross dock distribution center expected to delivery in winter 2019. When completed, the second building will be the largest spec building ever developed in eastern Pennsylvania. Phase II will consist of a third, 324,000-square-foot facility.

with pioneers in technology, such as Ori, and offer our residents alternative options for increased comfort and convenience." The company has already ordered additional commercial systems.

The systems are currently being showcased in apartment buildings in 10 North American cities, including Brookfield Property Partners' The Eugene in New York City; Bosa Properties' Bluesky Chinatown in Vancouver; Skanska's Watermark Seaport in Boston; Tandem Development's MODE Logan Square Apartments in Chicago; and ZOM USA's Monarc at Met3 in Miami. ZOM plans to install Ori systems into a stack of studio apartments in two of its downtown Miami apartment buildings, and has already installed a pilot system in a model unit.

Jason Haun, senior development manager at ZOM USA, agrees that Ori systems can benefit developers by letting them fit more studio units that look, feel and operate more like one-bedroom units into their floor plans.

To date, most of Ori's pilot systems have been used for demonstration purposes. As developers begin installing production systems in 2018, they will be measuring lease-up pace and rental premium levels.

The company plans to expand Ori's robotic technology into other solutions at different price points and for different markets. It is exploring ways to meet other challenges found in a variety of interior spaces, including office, hospitality and college settings. The possibilities are endless. ■

By **Hasier Larrea**, CEO and cofounder, Ori, h@orisystems.com

Repurposing Common Spaces in Office Buildings

Education, health care and retail sectors offer lessons for office building developers, designers and owners as well as employers.

■ By David Pugh, AIA, LEED AP, NCARB

AN EXCITING SHIFT is currently occurring in office buildings across North America. Owners, developers and designers are rejuvenating older buildings by rethinking the traditional concept of common spaces. Lobbies and public areas originally designed to function solely as entries and security checkpoints are becoming hospitality-infused destinations. Spaces previously active only at key moments during the day – arrival, lunch, departure – are now "places to be" all day long, with food service, retail offerings, group seating, art installations, concierge service and more.

Michigan Plaza in Chicago is one such example. In 2017, MB Real Estate rejuvenated the two-building office complex's lobby and public spaces to introduce a refreshed aesthetic in line with those available at the city's newest towers. These include the addition of lounge seating, a cafe and additional pop-up food service areas as well as a central chandelier. These new features aim to engage the approximately 20,000-plus people who pass through the area each day as well as to better serve the building's current and future tenants.

Chesterfield Towne Center transformed a seldom-used central zone into a comfortable seating and gathering area inspired by a local state park. The fire pit serves as a focal point for people as they meet and socialize. Office building owners are looking for similar ways to transform their lobbies into gathering spaces.
Evan Thomas

Today's office buildings are trying to offer something new to their tenants. Many are doing so by looking toward other industries and project types for inspiration. These other sectors, including health care, education and retail, are also dealing with similar shifts in the design of common building spaces. Several of their solutions can inform how corporate real estate addresses placemaking (the creation of high-quality spaces that contribute to people's health, happiness and well-being), fosters connectivity and creates immersive work environments.

Here's a look at some industries outside corporate real estate with lessons to share.

Creating Community on Campus

In some ways, the traditional community college experience echoes how individuals connect with their workplace. Students arrive for specific functions – classes, meetings, study sessions – and then leave campus. They typically do not live and socialize on campus in the same way students at a four-year college or university might. However, given that 60 to 70 percent of community college students balance full-time jobs and other important demands, these institutions are seeking to provide spaces that help students study on campus and take part in more casual socialization, which can enhance their academic experience.

Community colleges leading the charge to provide such spaces are introducing facilities that support student life activities, places equipped with cafeterias, health centers, lounge

New & Noteworthy

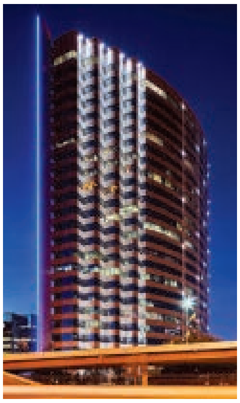
1.5 million sq. ft.

Al. Neyer, in partnership with New York Life Real Estate Investors, has begun construction of Cedar Farms, a bulk industrial development project in Lebanon, Tennessee. The two speculative buildings, totaling more than 1.5 million square feet, will feature 36-foot clear height ceilings and LED lighting in 70-foot speed bays to enhance prospective tenants' distribution capabilities. Design-builder Al. Neyer began site improvement and construction in late 2017 and expects to deliver the first building in late 2018. The first phase will consist of a 902,000-square-foot structure that will be one of the largest spec buildings ever constructed in the Nashville market, as well as a second pad for a build-to-suit structure that could be as large as 600,000 square feet.

704,000 sq. ft.

Liberty Property Trust has begun construction of two new buildings at its Port Crossing Commerce Center in a foreign trade zone in La Porte, Texas, near the Port of Houston. The first, a 600,000-square-foot cross-dock distribution facility (rendering at right) will feature 54 by 55-foot column spacing, 60-foot loading bays, 36-foot clear ceiling heights and heavy trailer parking. The second building, a 104,000-square-foot, rear-load structure with 32-foot clear height ceilings, will be accessible from Highway 146. Both structures are expected to be completed in the second quarter of 2018.

549,000 sq. ft.



Stream Realty Partners has finalized a year-long comprehensive renovation of Pinnacle Tower, a 24-story, 549,000-square-foot office tower in Dallas. Building upgrades include new exterior lighting, a renovated lobby, a fast-casual restaurant, an outdoor patio, a tenant lounge with a bar and wine lockers, a fitness center and group fitness studio, and a conference center. Stream managed the renovation, completed in December 2017, and is overseeing leasing for the building owners, New York Life and Encore Enterprises.

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.

seating, fitness areas and child care centers. Others are finding ways to infuse these types of spaces into academic buildings, like Malcolm X College in Chicago, which purposely included areas for student collaboration and idea sharing on its new urban campus, completed in January 2016.

Four-year institutions are also focused on fostering collaboration and engagement by rethinking traditional campus norms. The University of Utah's Lassonde Studios – a first-of-its-kind entrepreneurial education center – offers a 20,000-square-foot innovation space on its main floor, where all students can connect, study, dine, build prototypes or even launch companies. Open only since August 2016, Lassonde Studios already has become "the place to be" on campus. It functions as an entrepreneurial cultural center and hosts frequent events that encourage interaction among students from a wide variety of programs.

Echoing similar design efforts in corporate real estate can enrich work-life balance for tenants and help encourage the type of cross-pollination of ideas many companies are trying to breed in their interior environments. Locating within a building of this type can provide companies with a competitive advantage in recruiting and retaining top talent.

The new Minnesota Health Clinics & Surgery Center has no formal waiting rooms; patients check in with staff "concierges." Some office buildings are already testing strategies that allow receptionists to serve similar concierge functions.
Craig Dugan Photography

The University of Utah's Lassonde Studios offers space where students can build prototypes as well as connect, study, dine and even launch companies. Designing similar multifunctional spaces into office buildings can enrich tenants' work-life balance and encourage the cross-pollination of ideas.
Timothy Hursley

Breaking Health Care Norms

As corporate real estate leaders seek to redefine their buildings, they should also be open to some bold ideas from health care. In 2016, the University of Minnesota Health opened a new Clinics & Surgery Center that features no formal waiting rooms or assigned doctors' offices. Instead, the patient experience is akin to a customer's journey in an Apple store. Staff "concierges" equipped with mobile tablets greet patients, check them in, locate an open exam room, record health information and notify a doctor. This new approach allows M Health to accommodate twice as many patients with significantly less real estate than their previous facility while also enhancing the patient experience. Ten of the facility's clinics have exceeded the 90th percentile for "would you recommend" in patient satisfaction surveys.

Some office buildings and clients are already testing strategies that allow receptionists to serve similar concierge functions. These initial steps and the M Health experience should encourage designers and developers to consider how new technology and evolving expectations can improve the office environment.

The Retail Revolution

The world of retail has been upended in recent years, as e-commerce has made it simple to shop from home. In an effort to bring people back into brick-and-mortar stores, shopping center owners and retailers are reimagining the experiences created within the shopping environment, transforming stores and malls into destinations that celebrate brands and encourage social interaction.

Shopping malls throughout North America are rethinking their underutilized open spaces and departing from tradition to create destinations that attract visitors for the experience as much as for the shopping.

The redesigned Chesterfield Towne Center in the Richmond, Virginia, area has transformed a seldom-used central zone into a comfortable seating and gathering area inspired by a local state park. The central indoor fire pit at Chesterfield serves as a focal point for people as they meet and socialize.

The Yeti flagship store in Austin, Texas, is another prime example of this shift. While shoppers can buy Yeti coolers at many retail locations, the flagship store incorporates a bar into the retail experience, as well as porch concerts, film screenings and

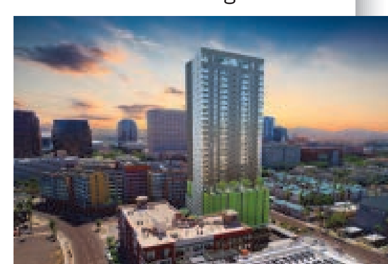
New & Noteworthy

400,000 sq. ft.

Skanska Development is completing 121 Seaport, a 17-story, 400,000-square-foot, elliptical-shaped office building with two stories of retail space in Boston's Innovation District. The base building, which was designed by CBT Architects and is targeting LEED Platinum certification, will feature a chilled beam mechanical system that will significantly reduce energy costs. The structure will also feature 10-foot-high ceilings; large, virtually column-free floorplates; and waterfront views and access. It is slated for completion in the first quarter of 2018.

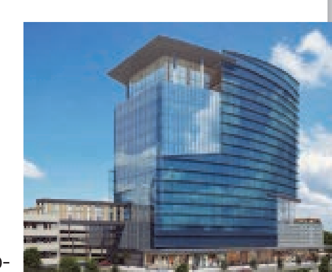
375,000 sq. ft.

CA Ventures, in a joint venture with Diamond Realty Investments Inc., has broken ground on a high-rise mixed-use building designed by Shepley Bulfinch that will be the first of three towers in The Link PHX. The 30-story, 375,000-square-foot residential and retail building will be one of the tallest buildings on the Phoenix skyline when completed in August 2019. Located in downtown Phoenix, the tower will be the first step in creating a retail and residential anchor on what is now a vacant lot in the Roosevelt Row Arts District. It will contain 257 market-rate apartments ranging in size from 450 to 1,450 square feet and 15,000 square-feet of ground-floor retail space topped by a six-story garage and an eighth-floor lobby with a fitness center, demonstration kitchen, patios and outdoor dog park. Rooftop amenities will include an outdoor pool and spa. Two additional towers, 25 and 19 stories high, are planned for the approximately 1.3-acre site.



Rendering courtesy of CA Ventures

334,000 sq. ft.



Trammell Crow Company and a joint venture partner plan to develop a 334,000-square-foot office building with 11,000 square feet of ground-floor retail space and restaurants on a 3.94-acre site in the heart of Atlanta's Central Perimeter that is directly connected to the Dunwoody Marta Station. Insight Global, a national staffing and services company, has already signed a long-term lease for approximately 60 percent of the 16-story tower, which will be known as Twelve24. The transit-oriented development project is expected to break ground in summer 2018 and be completed in early 2020. It will feature large, open floorplates with floor-to-ceiling glass, outdoor terraces, a great room, a conference center and more.

other monthly events. This type of cultural interaction strengthens the experience surrounding the brand and creates a location that people want to visit.

In Chicago, Restoration Hardware's new home furnishings retail destination is equal parts store, museum, art gallery, library, courtyard and culinary destination. Housed in the former Three Arts Club of Chicago, the store blends residential, retail and hospitality ideas to create a place where visitors can shop, dine, sightsee, meet with friends or relax. (For more on retail flagship trends, see "How Retail Flagships Lead the Fleet," Development, summer 2017.)

Office buildings are dealing with a similar challenge. As technology makes it easier for employees to work from any location, owners and employers are drawing people into their office buildings by adapting their spaces to foster interaction and reinforce collaboration and culture.

As the adage goes, if you want new results, you need to try new things. This rings true for corporate real estate leaders looking to rethink their lobbies and public spaces. The solutions for how best to attract and retain top tenants may not be in the traditional places in which one is accustomed to finding them. ■

By **David Pugh**, AIA, LEED AP, NCARB, leader of CannonDesign's corporate/commercial interiors practice in Chicago, dpugh@cannondesign.com

Note: For more on this topic, see "Activating Office Building Common Spaces for Competitive Advantage," by Richard B. Peiser, Ph.D., and Raymond G. Torto, Ph.D., NAIOP, November 2017, which was prepared for and funded by the NAIOP Research Foundation.

Three Ways High-resolution Aerial Imagery Facilitates Due Diligence

Aerial imaging technology enables commercial real estate professionals to research properties much more quickly and easily than in the past.

■ By Gregg Katz, The Shopping Center Group

LIKE MOST CLICHES, "a photograph is worth a thousand words" is true. But when that photograph is taken from an aerial vantage point, the image also could easily be worth millions of dollars. When it comes to the real estate industry, the right collection of images can make or break a deal.

According to MLS statistics, homes featuring aerial imagery in their listings sell 68 percent faster than those with standard images. New advances in high-resolution aerial imagery now allow commercial real estate brokers to incorporate those detailed images into much-improved property maps.

Those enhanced maps are effectively changing how commercial brokers sell undeveloped swaths of property and existing retail complexes. Commercial real estate transactions and projects have been significantly altered as a result of these improved aerial images

This Nearmap high-resolution PhotoMap of a shopping center in Concord, North Carolina, in February 2017, is layered with retail property occupants in ArcMap from Esri by The Shopping Center Group.

All images courtesy of Nearmap, http://go.nearmap.com

"GIS maps, especially when overlaid with high-resolution aerial imagery, allow property developers complete visual access to a property."

Gregg Katz

in three distinct ways. These range from convenience features like touring properties in the comfort of an office or easily accessing images stored in the cloud to identifying vital details like traffic patterns and changes in a location over time.

Tour Properties From Your Office

With high-resolution imagery, real estate professionals can now access a great deal of information about a particular commercial space. Terrain, proximity to neighboring properties, boundary assessments, road development, even roof condition can all now be viewed from an aerial perspective.

High-resolution aerial imagery like that provided by Nearmap, with a quality better than 3-inch ground sample distance (GSD), captures precise images much clearer than satellite imagery. Clients can tour dozens of properties without leaving their broker's office, saving hours of valuable time.

Essentially, property tours that once took multiple hours, most of which was spent traveling to and from the destination, are now completed in

New & Noteworthy

290,000 sq. ft.

Western Specialty Contractors is transforming the historic May Company building in Los Angeles into the Academy of Motion Picture Arts and Sciences' new museum. The iconic limestone and granite building, described by the Los Angeles Conservancy as the grandest example of Streamline Moderne architecture in the city, is undergoing an extensive renovation and expansion. Scheduled to open in 2019, the 290,000-square-foot, six-story museum will celebrate films and filmmaking with exhibition galleries, a 288-seat theater, educational areas, restaurants and event space. Three glass bridges will connect the existing building to a new 130-foot-tall glass and concrete sphere overlooking the Hollywood Hills.

147 units

The Opus Group has begun construction of a new four-story, 147-unit senior living center in Minnetonka, Minnesota. When completed in spring 2019, Crest Ridge Senior Housing will provide a continuum of housing and service options, including independent living, assisted living and memory care apartments. Amenities will include a salon, chapel, club room and full-service dining room, as well as outdoor walking paths, a garden, an orchard, water features and raised planter beds for resident use. Ebenezer Management Services will operate and manage the project.

100 units

Two Roads Development

Two Roads Development has broken ground on Elysee, a 57-story luxury condominium tower along Biscayne Bay in Miami's East Edgewater district that will house 100 half- and full-floor residences. Designed by Bernardo Fort-Brescia of Arquitectonica, the three-tiered telescoping structure will be the tallest residential tower in the district upon its completion in 2019. The unusual shape will provide direct 180-degree views of the bay and the city from every residence. Units will range in size from 2,300 to 4,000 square feet; all will feature private elevator foyers, 10- to 12-foot ceilings and gourmet kitchens as well as east- and west-facing terraces. A seventh-floor amenity level will include a lap pool, fitness center, spa, children's playroom and more, while an "owners' sky lounge" on the 30th floor will feature additional amenities for large-scale entertaining. ■

Nearmap high-resolution photographs can provide birds-eye views of construction sites, like this Minneapolis hotel site, shown in May 2016 and October 2017.

> **"Gone are the times when brokers and their clients spent long, travel-filled days physically touring sprawling commercial properties."**
>
> *Gregg Katz*

about 60 minutes. Brokers and clients can quickly assess a property and determine within minutes if it is a viable location worthy of an on-site visit.

GIS and CAD Integration

The CRE industry relies heavily on geographic information system (GIS) and computer-aided design (CAD) technology. Mapping professionals aim to accurately create and illustrate property maps that capture everything from an area's overall demographics, property measurements and competitive market analysis to smaller details like street names, signage, traffic patterns and more.

Those mapping professionals know that high-quality aerial imagery is a necessity. By using images captured by Nearmap and layered into their systems using GIS and CAD integration tools like ArcMap, AutoCAD and others, brokers are able to provide the most up-to-date, crystal-clear mapping imagery for their clients.

Improved Site Evaluation

Better than a bird's eye view, GIS maps, especially when overlaid with high-resolution aerial imagery, allow property developers complete visual access to a property. Coupling those maps with aerial imagery that is captured every six months also enables brokers and developers to assess a property's history. Brokers and their clients can view the landscape in leaf-off and leaf-on seasons and monitor, validate and compare changes to the property over time.

Using enhanced GIS maps, a developer looking to purchase a plot of land for a large shopping center, for example, can identify ideal entrance and exit points, measure acreage or distance to the nearest competitor, view sight lines and even determine optimal locations for signage.

Gone are the times when brokers and their clients spent long, travel-filled days physically touring sprawling commercial properties. Today, easily accessible GIS aerial maps overlaid with high-resolution imagery allow for comfortable in-office property tours while also providing tools for accurate measurements and seasonal changes, delivered within days and streamed through the cloud to their smartphones or tablets. ■

By **Gregg Katz**, director of innovation and technology, The Shopping Center Group, gregg.katz@tscg.com

What Lies Ahead for Commercial Real Estate Sectors?

A look at some of the challenges and opportunities facing CRE.

By Bill Hunt, Elmhurst Group

ALL FIVE SEGMENTS of commercial real estate – office, industrial, retail, multifamily and hotels – present significant challenges as well as opportunities. What, specifically, are these challenges, and what opportunities do they offer for developers, investors and others?

Hotels

The entire hospitality industry, from budget hotels to luxury resorts, has grown exponentially over the past decade. The primary reason for this growth has been the overall worldwide increase in both leisure and business travel. Much of the increase in leisure travel is tied to the growing global middle class, while the economy's expanding service sector requires increased personal contacts, resulting in more business travel.

In addition, the cost of air travel has dramatically decreased since the industry's deregulation in 1978. Automobile gas prices have remained a bargain, as compared to other inflation-adjusted consumer products. Demographics are also having a positive impact on travel. Millennials are much more frequent travelers than other cohorts. They may not collect things, but they do collect "experiences," and have demonstrated a willingness to spend far more money on travel than previous generations.

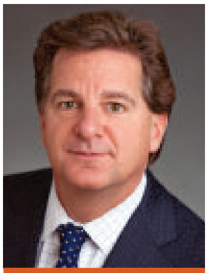
> "Airbnb has kept hotels from maximizing their room rates by temporarily expanding the supply of rooms."
> *Bill Hunt*

On the supply side, construction of new hotels has kept up with demand. The big international chains, primarily Hilton and Marriott, have added significant supply by introducing new brands. Marriott now has 30 different hotel brands; Hilton has 14.

What threats does the hotel business face? One of the most well-known is Airbnb, which is now so large that it has a stock market valuation higher than that of Marriott International. Airbnb will continue to be a disrupter for the hotel industry, but not in the same way that Uber has upset the taxi business. Airbnb offers different types of experiences, whereas Uber basically offers the same experience as riding in a cab, but does so more efficiently.

One specific area where Airbnb has made an impact is with long-term stays and during peak demand periods, such as Super Bowl and U.S. Open weekends. In those instances, Airbnb has kept hotels from maximizing their room rates by temporarily expanding the supply of rooms, decreasing the hotels' ability to raise prices.

The larger threat to hotels is actually more subtle. It comes from online travel agents (OTA), firms such as Expedia, Priceline, Travelocity and Hotels.com. These companies are quietly expanding as consumers book more of their travel plans on these websites. Airlines don't pay these sites a commission, so the OTAs have to look to hotels, tour groups and cruise ships for their profits.


Bill Hunt

In addition, the two largest OTAs, Priceline and Expedia, are now going directly after Airbnb by adding home rentals to their sites. Expedia bought Homeaway.com in 2005 and Priceline purchased Booking.com several years later.

Apartments

The multifamily housing segment has also seen tremendous growth. Demographics again have played a role: Millennials are more transient than previous generations and are delaying marriage. Thus they tend to prefer leases over homeownership.

Beyond demographics, other apartment trends include increasing demand for smaller units in more convenient urban locations, rather than larger apartments in the suburbs; in other words, "place over space." The return to downtown living is now a major trend in cities throughout the U.S., and apartments meet this new demand nicely.

A Look Ahead

Although individual units may be smaller, that reduction in dedicated space is offset by lobbies and other shared amenities such as roof decks, communal kitchens and swimming pools. In fact, many in the industry now refer to these buildings as "college dorms for older people." Some buildings even offer "co-living" spaces, shared units that come complete with housekeeping services, community events and more. These units are primarily geared to millennials who are moving out of their parents' homes.

Another area of growth in this sector has come from the opposite end of the demographic spectrum, "empty nesters," aka retiring baby boomers, many of whom are looking to downsize and relocate to a more walkable urban setting. One developer has suggested that his ideal new apartment building would provide "microapartments" for millennials on the lower floors and large penthouses for empty nesters on the top floors.

One challenge for the apartment sector involves the rising construction costs that require developers to pursue wealthy renters. Almost two-thirds of all new apartments in the U.S. are now priced at rents requiring household incomes of over $100,000 per year, a market segment that is contracting.

Retail

The retail sector has clearly seen more disruption than any other real estate sector in recent years. National retail chains are filing for bankruptcy, and individual stores are closing on Main Streets and in malls. The origins of this trend are obvious; e-commerce is generally less expensive and more user-friendly for the consumer. Contrary to most people's perceptions, however, e-commerce still accounts for less than 10 percent of all retail activity.

A less obvious contribution to the retail sector's current troubles is demographic. People between the ages of 18 and 35 have traditionally been those with peak purchasing tendencies. But today's millennials, as noted earlier, put a lower priority on buying items than did previous generations. Shopping is no longer a major social activity for them. They are more inclined to spend their money on technology – think cell phones – and experiences – think travel – than tangible goods – think clothing.

Compounding this trend is the fact that the U.S. is already "over-retailed," with five times as many shopping centers per person as Great Britain.

Is retail as we know it dead? Not exactly. Cities will always have a few upscale shopping malls, and the ubiquitous neighborhood strip centers with grocery stores will continue to thrive. Otherwise, though, in the future most brick-and-mortar stores will be selling goods at the highest and lowest price points. For example, shoppers will still go to specialty stores like Tiffany's for the personal experience, and discount stores like

Dollar General for the low prices, but fewer will continue to go to general merchandise stores like Macy's.

Retail developers are trying to fight these trends. They are transforming their retail centers into more "experiential" destinations by converting empty department stores into entertainment centers, themed restaurants and bowling alleys. They are also leasing space to churches and even retail medical clinics.

One piece of good news for the retail sector is that restaurants have grown dramatically, offsetting some of the stores' losses. In fact, for the first time ever, U.S. restaurant sales eclipsed those of grocery stores in 2016.

Finally, some retailer operators are even allowing the e-commerce "devil" onto their turf, with Amazon stores and lockers, where people can pick up or return items purchased online at a convenience store or, preferably – for the mall owner – a central location in a mall. And, of course, it will be interesting to see how Amazon's acquisition of Whole Foods will play out. The most probable explanation for this transaction is that Amazon is not, in fact, a retailer, but rather an intermediary. Thus owning and controlling a grocer gives the company a new platform to provide another important business line.

The retail sector will remain challenged. The survivors will be those that adapt by converging their physical stores with now omnipresent e-commerce platforms.

Industrial

The retail sector's losses are, however, matched by the industrial sector's gains. Industrial real estate is currently the strongest and most profitable sector in commercial real estate. Items that once would have been bought in stores are now being purchased online and shipped directly to consumers from specialized warehouses, also known as fulfillment centers. Unlike traditional bulk warehouses, these fulfillment centers are generally smaller, located closer to urban areas and contain a much wider range of products. In addition, e-commerce requires about three times more distribution space per dollar spent than brick-and-mortar stores, as it involves a far more complicated distribution process.

"One piece of good news for the retail sector is that restaurants have grown dramatically, offsetting some of the stores' losses."

Bill Hunt

Distribution centers are also becoming more automated, which means they will require smaller parking lots, fewer offices and, sometimes, a minimal amount of heating and lighting, as robots don't care about temperature or need to see.

Interestingly, industrial real estate is now more closely correlated with consumer consumption indexes than manufacturing indexes, another sign that America now consumes more than it makes.

Finally, these retail and industrial trends may intersect in the near future, with old, dead shopping malls being converted to distribution facilities for e-commerce retailers.

Office

This final segment is also going through significant changes. Many companies are following their employees back to the cities, relocating their offices from the suburbs, into new or renovated urban buildings designed with open floor plans. The goal is fluid office layouts that encourage chance encounters and collaboration among departments – think escalators and open stairways rather than elevators.

The goal of these workspaces is "collisions" among employees. The online retailer Zappos actually tracks the number of collisions per employee per square foot per day in its Las Vegas headquarters, via employees' smartphones.

Office amenities are morphing from distractions like foosball tables and nap pods to services that help employees save time, such as concierges who can make dinner reservations and travel arrangements. Some even offer pet care and on-site health care.

Companies' preferred locations within cities are also changing. Some employees now value "character over cachet." Many tech companies, in particular, are locating in "edgy" sections of town rather than the traditional downtown setting. Twitter's corporate headquarters in San Francisco, for example, is located in the city's gritty Tenderloin district, and Google's Pittsburgh offices are located in a 100-year-old former Nabisco cookie factory building in the city's East End.

The full-time telework trend seems to have fizzled out. Although some companies still allow employees to work from home one or two days each week, employees still want to be around others, and companies want people in the office for collaboration.

Coworking facilities are an ongoing trend; independent companies typically build out unique space and then sublease desks and offices, or even small suites, to individual entrepreneurs, startup companies and others. (See "Women-centric Coworking Spaces" on page 28.)

One underlying dilemma for developers in the overall office sector is that tenants are becoming more efficient with their space utilization; they continue to put more people in the same square footage. (See "Trends in Square Feet per Office Employee: An Update," Development, fall 2017.) This trend puts stress on parking lots, restrooms and other common areas.

The Challenge

In addition to these sector-specific trends, some industrywide trends also have major implications for commercial real estate. These include additional impacts from technology, including the growth of the "gig" economy, automation, 3-D printing, virtual reality, big data and even artificial intelligence. (These will be discussed in a future article.)

The challenge for the commercial real estate industry will be to determine how best to take advantage of these trends and opportunities. Constantly observing the world around you, being as knowledgeable as possible and, most importantly, always being open minded to new ideas will enable you to take full advantage of these exciting times. ■

By **Bill Hunt**, president, Elmhurst Group, and Governor and chairman, NAIOP Research Foundation, bhunt@elmhurstgroup.com

"Worth Repeating"

Sound Bites from The Office Conference 2017, a collaboration between NAIOP and the Global Workspace Association (GWA), Nov. 9-10, in Brooklyn, New York:

"It is so cheap to start companies now; it is so cheap to get your ideas to market. Why is that? It is because of exponential technology…. In 2000, it cost $5 million to start a company. In 2011, it cost $5,000. I would argue that it is even lower right now." **Julie Whelan**, *head of occupier research, CBRE*

"Seventy-one percent of people prefer working in the office. Everyone says, 'oh, offices are dead,' but actually people like to work in the office. People have a full choice to work at home, on the beach or wherever they like. They actually like to come to the office." **Andrew Garnar-Wortzel**, *principal, Gensler*

"Coworking as a concept has been around for decades; coworking as a term is fairly new, [from] the last 10 years or so. [There are] 14,000 coworking spaces currently, and that number is projected to be up to 26,000 by 2020, so the industry is exploding and there is a lot of opportunity." **Jamie Russo**, *executive director, Global Workspace Association*

"We recognize that coworking has created a model that almost all tenants tend to want in their own way or companies tend to want in their own space. That is why you saw IBM contract with WeWork in New York for 70,000 square feet: because they want to learn from WeWork how to curate their own space to create culture and design, [something] that they haven't been able to do." **Greg Fuller**, *president and COO, Granite Properties*

"Most people in the financial community have not experienced what coworking does heading into a downturn, only what it does coming out of a downturn. So that has a lot of the people in the capital markets a little gun shy about being super aggressive [in financing coworking space]." **Robert Saunders**, *president and CIO, Kaufman Jacobs*

On what coworking space can do for a suburban multifamily project: "All of a sudden, we went from 0 to 145 people coming to the building every day, which changes the complexion of what an urban/suburban [building] feels like to its residents. Now, we are finding that we are getting residents to the door who are coming to the building because [we have] that [coworking] facility." **Richard Cavenaugh**, *president and CEO, Stoneleigh Companies LLC*

"Flexible office is here to stay. JLL says that 30 percent of office space will be flexible by 2030; … Google says that for companies that have over 6,000 employees, 66 percent will be flexible space by the end of [2018]." **Nick Clark**, *CEO, Common Desk*

"Suburban office markets still have a very viable and lucrative place in the investment portfolio. … Suburban markets with a sense of place, gravitas, with a feeling of destination/location, are still doing extremely well across the country." **John Abuja**, SIOR, CCIM, *senior vice president, investments, Marcus & Millichap* ■

CEO on Leadership: Robert Ward, President and CEO, Skanska USA Commercial Development

The president of this New York City-headquartered real estate development firm offers his insights into the industry.

By Ron Derven

Robert Ward

"I'm more impressed by someone who can make their team better than by an individual's personal performance."

Robert Ward

SKANSKA USA SERVES a broad range of clients, including those involved with transportation, power, water and wastewater, health care, education, sports, data centers, government, aviation and more. Headquartered in New York with offices in 31 metro areas, the company has more than 10,000 employees. In 2016, the firm generated more than $6.8 billion in revenue. Global revenue of its parent company, Skanska AB, headquartered in Stockholm and listed on the Stockholm Stock Exchange, totaled $17.7 billion that year.

In the U.S., Skanska's commercial development group invests in and develops customer-focused, sustainable office and multifamily properties in Boston, Houston, Seattle and Washington, D.C. Since 2009, the company has invested approximately $1.5 billion in nearly a dozen projects. Skanska self-finances the majority of its real estate developments and also serves as construction manager for its projects. The group has developed headquarters offices for Brooks Sports, PwC (also known as PricewaterhouseCoopers) and Tommy Bahama. Each of its projects aims to achieve at least LEED Gold certification.

Robert Ward, president and CEO of Skanska USA Commercial Development, has been with Skanska since 2002. In 2009, he helped launch the company's commercial development business in the U.S.

Development: *What is your primary role as CEO?*

Ward: As the leader of a relatively new operation within a large, global company, I am looking ahead to 2025 and 2030. I focus on how we need to differentiate ourselves as a national developer. The world is changing at such a fast rate, and we need to change with it. I want to be the leader who gives people the support they need to do their job, the autonomy to make great decisions and the flexibility to think differently to help us get to where we need to go.

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

Ward: Two words: *no ego*. I look for people with good attitudes who I know I can trust to make good decisions. I want senior leaders who not only have a solid track record of performance, but who also have a great track record of treating their teams well. I expect senior staff to play a role in developing their people, both personally and professionally, so I'm more impressed by someone who can make their team better than by an individual's personal performance.

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

Ward: It's important to have good conversations, to give them the benefit of the doubt and to understand what led to the mistake in the first place. From there, you have to reset expectations, and make sure they understand the broader impact of the issue. It's important to help them connect their behavior to the bigger picture. Then you move forward, and hope they learn and grow from that challenge.

Development: *How does your company prepare for and weather the inevitable downturns?*

Ward: We are at least eight years into a very strong real estate cycle, and the reality is there will be a reset at a certain point in time. Skanska's commercial development operations have the benefit of being a very lean organization that we can sustain regardless of economic activity. While we never like to see an economic downturn, we also see those times as opportunities.

Unlike other real estate developers, Skanska self-finances the majority of its projects from its own balance sheet. Because of that, we're uniquely positioned to invest in land and people – or even start projects on spec if the market conditions make sense – even when the market is not strong. When markets are hot, we'll build into them, but when things are softer we're efficient, and our capital platform and structure allow us to invest when financing may not be readily available for other developers.

Development: *Looking out three to five years, what do you see on the horizon that will impact the industry? What are you doing today to prepare for those challenges?*

"I want to be the leader who gives people the support they need to do their job, the autonomy to make great decisions and the flexibility to think differently to help us get to where we need to go."

Robert Ward

Ward: We're very conscious of what tenants in the market want. We see a change in how people use office space. There is a huge shift toward more amenity spaces and integrating retail, parks and other "public" spaces into both office and residential buildings. Coworking [space] is becoming more prevalent; it meets a need for a wide range of tenants that need flexibility, and it creates a destination where people want to go.

Beyond the three- to five-year time frame, driverless cars will change how we develop. We want to try to design "convertible" buildings today to meet different needs in the future, such as converting parking to office space.

Development: *What advice would you give someone entering the commercial real estate industry today?*

Ward: My best advice is to recognize that it's not all "in the books" and that experience is important. It's a customer-focused business, and nothing can replace relationships. It's important to establish your personal brand as someone with substance, and as someone who can be trusted in the market.

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

My dad was in the Air Force, which has helped to shape my managerial style. He set clear guidelines, rules and expectations. He was also supportive of others. I have tried to emulate that over the course of my own career by trying to focus on the success of teams and not just my own career.

Development: *How do you de-stress?*

Ward: One of my favorite ways to de-stress is through golf. I like to walk the course, and I don't use my phone, so for four hours, I am completely offline. I also enjoy reading fiction. ■

By **Ron Derven**, contributing editor, Development, derven@naiop.org

Women-centric Coworking Spaces

Coworking centers designed by and for women are flourishing as entrepreneurial incubators.

By Audra Capas

FORGET BEER KEGS and foosball tables. What women really want in shared coworking spaces are supportive mentors, access to "angel" investors and an appealing yet professional office environment that helps nurture and motivate them as independent business go-getters.

A Pioneer

Felena Hanson, a tech marketer in San Diego whose 20-year career trajectory was eclipsed by layoffs at three companies, vowed to fill this overlooked market niche in 2011 by launching Hera Hub, a network of six female-focused coworking spaces in the U.S. and Sweden that also serve as business accelerators for women who value collaboration over competition, want expert advice and education to help grow their companies, and prefer networking among a community of like-minded professionals instead of going it alone. The platform is named after Hera, the Greek Goddess of women.

"Hera Hub is community first and space second," Hanson says. "From the moment someone joins to the day they outgrow us, we want them to feel connected and supported. We're here to make sure they have the right resources to launch and grow their business."

Hanson designs each coworking space with a spa-like aesthetic of soft music, natural lighting and soothing fountains along with the latest office technologies, meeting amenities and resources to accelerate entrepreneurial productivity.

Hera Hub is not exclusively for women; it also accepts male members.

The Hera Hub in Carlsbad, California, features coworking space and a lobby with a spa-like aesthetic that appeals to women, as well as access to networking events, online business accelerator classes and more.

Photos by Natalia Roberts of Full Circle Images

"Our coworking spaces are about 95 percent women. Men typically choose Hera Hub because of the chill vibe and convenience of our locations," Hanson adds.

The idea for Hera Hub grew out of Hanson's search for purpose after a near-fatal car accident in 1996 and her need for flexible workspace after her third layoff from a San Diego technology company in 2003. Undeterred, she ran a strategic marketing consultancy for the next eight years out of her home. That proved convenient and cost-effective, but also distracting and isolating at times.

"I was turned on to the concept of coworking in 2010 when hosting a networking event at San Diego's first coworking space, the Hive Haus," says Hanson. "Initially, I thought about how I might use the space for my own business but quickly realized a 30-something woman was not their target demographic." Outfitted with a ping-pong table and a beer keg, the space attracted young men at tech start-ups – an experience that sparked Hanson's "aha" moment for Hera Hub.

"It took about a year from the time I decided to launch Hera Hub to when I completed my business plan, obtained financing and solidified my first location," she recalls. "I pulled my money out of the stock market and secured a loan from my father to finance the first Hera Hub space in San Diego for $60,000," Hanson says. "But the commercial real estate process proved much more complex and challenging than I ever imagined.

"In searching for leasable space, I had two strikes against me – a new business and a new concept. With commercial real estate markets still reeling from the 2008 crash, no one wanted to take a risk. After six months of negotiations, two deals fell through at the 11th hour," she says. The third time around, Hanson secured about 5,000 square feet in a well-situated area of San Diego, double the size of the other spaces she had considered and twice the financial risk. "But I felt confident the gamble would pay off," she says.

Since Hera Hub's unveiling, Hanson has attracted private equity capital and expanded to two other locations in San Diego as well as to Washington, D.C.; Phoenix; and Stockholm. Each Hera Hub averages 3,500 to 4,000 square feet. Locations in Chicago, Atlanta and Orange County, California are also in the pipeline. "I'm on a mission to support over 20,000 women in launching and growing their businesses by 2020," Hanson says. So far, Hera Hub has reached some 4,000 members.

Hanson is also expanding by licensing Hera Hub's brand and resources nationally and internationally to other women who are as passionate as she

Plants, artwork and lighting at the Hera Hub in Sorrento Valley, California, also exemplify how these coworking centers appeal to women.
Photo by Felena Hanson

is about building and leading communities for female business owners in their respective cities, particularly where a strong support network already exists. All members can tap into intensive, online business accelerator classes through a Hera Labs nonprofit arm as well as training on the nuts-and-bolts of venture capital investing through another 501(c)(3), Hera's Angels. A separate Hera Fund and an annual Hera Venture Summit connect female investors with women entrepreneurs searching for financing.

A Licensee

Hanson chose the nation's capital to launch her first franchise on the basis of a Nerd Wallet study ranking D.C. first among the top 10 cities in America for female business owners. A news story about Hanson's entrepreneurial journey and coworking concept appealed immediately to **Julia Westfall**, who had toyed with the idea of running her own business after more than 20 years in human resources, finance, sales and marketing.

"I just wasn't ready to retire and thought, 'Wow, this could be what I want to do,'" Westfall recalls. "I had always enjoyed working with people, helping small companies, being part of a broader community. I was so inspired by what Felena was doing to support women in San Diego. So I gave her a call, flew out to California, and she came to Washington. By 2015 we had a licensing agreement, signed a lease for roughly 4,400 square feet in Friendship Heights and opened Hera Hub DC."

Today Hera Hub DC has more than 80 members, offers five membership levels ranging from $89 to $429 per month, and provides networking, workshops and voluntary peer-to-peer mentoring by select subject matter "gurus."

Sarah Gonzales, who transitioned from a federal government career to start a tutoring business called Tungsten Prep, joined Hera Hub DC in 2017 after comparing WeWork and other more male-oriented coworking spaces in Washington.

"WeWork's space is architecturally grand and more expensive than Hera Hub's but not nearly as supportive," says Gonzales. "Women entrepreneurs in mid-career like me want everything to be extremely focused on building a business. We prefer events during the workday because we want to go home to our families [in the evening]. And we want events to be purposeful, not nebulous networking over a beer that often doesn't produce results."

A Growing Trend

Dedicated spaces catering to women entrepreneurs are mushrooming, including Bloom in Las Vegas; Paper Dolls in Los Angeles; The Hivery in Mill Valley, California; and The Wing in New York and Washington, D.C.

WeWork, one of the richest startups in the world with a valuation of over $20 billion, wants in on this trend. In late December, the New York-based office space provider led a $32 million Series B round of funding in The Wing.

According to a 2017 global coworking survey by Deskmag, nearly 1.2 million people around the world will have tried coworking by the end of 2018, and approximately 14,000 coworking spaces will be in operation globally. The survey reveals that women occupy 40 percent of those coworking spaces, up from 38 percent in 2016.

One of the newest entrants in this booming market is St. Louis-based RISE Collaborative Workspace, whose unique business model also allows teen girls to work after school in the female-centric coworking space and be mentored by successful women members.

RISE Collaborative Workspace in St. Louis appeals to women entrepreneurs with a unique business model that also mentors teen girls.
Kathleen Mortland Photography

Founder and CEO **Stacy Taubman**, a former high school math teacher and counselor, recalls two events that set her on an entrepreneurial path: comforting her students after the tragic death of a classmate just before graduation and meeting a young multimillionaire who started his company at age 26.

"Helping these high school girls through their emotional journey was a tipping point for me," she says. "So was meeting a 31-year-old who had made millions in a few short years. I realized I was just as smart as he was and told myself, 'If he can do it, I can do it.'"

With several master's degrees but only one business course under her belt, Taubman pursued her passions helping teens and women entrepreneurs succeed by launching two companies: Girls Dreaming Big, in 2013, which offers academic tutoring for high school girls, and RISE Collaborative in 2017 to provide women entrepreneurs with a nurturing coworking space as well as an opportunity to give back.

Financed in part through a $20,000 crowdfunding campaign on Indiegogo, RISE Collaborative now boasts more than 160 members in a "carefully curated" coworking community of women from a variety of professions. Memberships range from $40 to $350 per month. The space includes 11 private offices as well as conference rooms, 6,000 square feet of flexible workstations, free parking and a large kitchen stocked with snacks and unlimited coffee and tea.

"No successful woman rose to the top by herself," says Taubman. "Women helping women should be modeled and encouraged. My goal is to create a continuum of support for women now and the next generation." ■

By **Audra Capas**, president, 5StarPR LLC

The Impact of Landscaping on Tenant Well-being

Can beautiful landscaping make tenants happy?

By Fred Peratt, Environmental Enhancements

In addition to providing functional places for people to live and work, commercial property developers and managers have a unique opportunity to make a difference for tenants by paying close attention to the green spaces surrounding properties. According to the results of a recent study conducted by Stanford University researchers, "The Benefits of Nature Experience: Improved Affect and Cognition," spending time in a natural setting has a positive effect on mood, cognitive function – including working memory – and anxiety. In other words, by offering attractive outdoor spaces where people can sit, visit and walk, beautifully landscaped buildings provide a better way for people to cope with the stresses inherent in modern-day living.

Dulles Corner, an office complex in Herndon, Virginia, that is owned and operated by Brandywine Realty Trust, experienced increased occupancy as a result of outdoor enhancements. (NAIOP Corporate's offices are located in the building at right.)
Photo ©Eric Taylor, www.EricTaylorPhoto.com

Landscaping for Well-being

Everyone feels better when they spend time in nature, but many people have lost touch with the natural environment. This is taking a toll on an alarmingly high number of people, as is indicated by a 2010 Harvard Health Letter, "A Prescription for Better Health: Go Alfresco." By deploying a thoughtful commercial landscaping strategy, commercial property developers and managers can make a significant difference in three key areas:

1) Community. Natural settings encourage togetherness. Moving a conversation from the office to a patio, pausing to chat on a bench before heading from a car to a desk or enjoying a brown-bag lunch together in the shade of a maple tree all foster a sense of community among people who work side by side. **Jerry Kilkenny**, director of leasing, metro DC, at Brandywine Realty Trust, cites one instance where his team transformed the green space surrounding a suburban office building into attractive collaboration areas and was delighted to find the tenants using these gathering spots even more than expected.

2) Focus. According to the "Views to Nature: Effects on Attention," an article in the March 1995 issue of the Journal of Environmental Psychology, people concentrate better when surrounded by a natural setting. The stillness of a tree outside the window, the peacefulness of fluttering butterflies or the quiet beauty of a flower garden have a clearing effect on cluttered minds.

3) Job Satisfaction. The results of a 2016 study, "Why We Need More Nature at Work: Effects of Natural Elements and Sunlight on Employee Mental Health and Work Attitudes," showed a positive correlation between worker attitudes and exposure to natural elements. Direct sunlight, indoor plants and window views of natural scenes have a measurable impact on employees' mental health and happiness at work.

Good for Business

Who wouldn't want to lease space in a building that makes them feel better? **Spencer R. Stouffer**, vice chairman at Cushman & Wakefield, finds that "feeling better" can result in lower turnover rates and higher rents. In one example, Stouffer reports that the improved "outdoor space at Dulles Corner [an office complex in Herndon, Virginia] was instrumental in enabling us to improve occupancy from 76 to 94 percent and increase rents [significantly] in a 24-month period."

Greg Ferrante, a senior vice president at JLL, agrees. "One of the easiest properties I have to lease is Clemson Corner in Frederick, Maryland, because of its attractiveness," he says, "and this is largely due to the landscaping." According to Ferrante, he was able to lease space at Clemson Corner for at least a 5 to 10 percent higher rent than comparable space nearby as a result of the property's outdoor enhancements.

"Landscaping is one of a property's first visual impressions and needs to set the right tone for a prospective tenant's property tour. It shows that ownership and property management care about the details."

Matt Pierce

There's no doubt that well-manicured outdoor spaces have the power to persuade. When prospective tenants feel that "mysterious something" at a site, the deal is more likely to be finalized. "I feel landscaping is critical to optimizing curb appeal for all commercial product types," says **Matt Pierce,** president of Buchanan Partners.

"Landscaping is one of a property's first visual impressions and needs to set the right tone for a prospective tenant's property tour. It shows that ownership and property management care about the details." Buchanan Partners and Elion Partners recently purchased a property in Chantilly, Virginia, with high vacancies and immediately invested capital dollars in improved landscaping. "The property still has a fair bit of vacancy," he says. "But the improvements have already received very positive feedback from existing tenants and prospective touring tenants." ■

By **Fred Peratt**, president, Environmental Enhancements, fredperatt@eelandscaping.com

Virtual Credentialing Is Now a Reality

Also known as mobile access, this technology allows people to access buildings via their smartphones, eliminating the need for keys or other physical credentials.

By Curtis Dennis, Nedap Identification Systems

A PROMISING INNOVATION in the use of smartphones is making life easier for developers, building owners, property managers and occupants alike. Virtual credentialing, also known as mobile access, allows developers and property managers to provide a safer and more convenient environment for their tenants while significantly cutting development and management costs. Its platforms allow people to access buildings and areas within them using their personal smartphones, rather than keys or other physical credentials such as keycards. The technology can be used by both building staff and tenants, and it doesn't require any special capital investments for keys or ID badges. Just hold up your phone near a reader and you are in.

Why is virtual credentialing a big deal? The benefits to tenants are obvious: smart phones are ubiquitous, and most people keep their phones with them at all times. People are much less likely to lose their phones than their keys, and when they are lost, "find my phone" services can generally help people get their devices back.

The technology also offers important advantages for developers and facility managers, particularly those with large properties. The cost, in both time and money, of setting up tens of thousands of keys for business tenants can be daunting. And when one tenant moves out and another moves in, the process repeats itself. With virtual credentialing, access can be arranged with a few keystrokes. Lost keys and the expense of replacing keys or other credentials are no longer an issue because, with virtual credentialing, there's no physical item to lose. Virtual credentialing can also save developers and property managers tens of thousands of dollars a year by eliminating the need to have new keys made when tenants lose theirs or when new tenants move into a building or complex. The cost of replacing an individual key can range from a few dollars to as much as $20; key cards and fobs average $15 to $50 each. The larger the building or complex, the higher the potential replacement costs.

How It Works

Most virtual credentialing platforms rely on Bluetooth to enable a phone to communicate with a reader that's located next to a door, or perhaps built into the door lock. Bluetooth Low Energy (BLE), a wireless two-way radio communication network, enables devices to communicate automatically, without requiring manual pairing. Because Bluetooth can generally communicate from several feet away, the technology offers sufficient bidirectional bandwidth to set up a secure connection.

While other technologies such as near-field communication (NFC) can also manage mobile access, BLE is the technology of choice because it has a much longer range. Plus, most users are already familiar with Bluetooth, so it's easy to use and there's a minimal learning curve. Finally, BLE is supported on most Android handsets and iPhones.

Virtual credentialing platforms utilize a cloud-based service to forward a

unique number, the identifier, to the platform apps. This number is then sent to one or more readers or locks. Remember the old days when you needed to call a locksmith to change the locks if a tenant lost a key? Now you can wirelessly send a new number to change the access data for whichever locks are impacted.

Mobile access control platforms also promote security through the use of encryption to secure the communication between the cloud-based server and the smartphone, as well as between the smartphone and the mobile access control reader associated with a particular lock. Encryption keys are used to authenticate the identity of the smartphone and its user, and virtual credentialing is just as secure as the radio-frequency identification (RFID) cards that are commonly used to manage entry into high control areas in public safety facilities, schools, laboratories and other buildings where security is vital.

A virtual networking system is also simple to install. While there's an initial, one-time cost of $350 per door, to mount specialized readers and access the necessary software, the technology should rapidly pay for itself by eliminating the need for keys. (Most plans also involve a nominal annual fee of about $1 per credential.)

Who Is Using It?

Virtual credentialing can benefit any type of business that provides keys to employees or customers. Although the technology is still relatively new, a wide variety of building types are already utilizing it, including office complexes, hotels, retail centers and residential developments.

Hotels are the most obvious market for virtual credentialing, because they are constantly creating new keys for guests. Hotels benefit from the technology by having to purchase fewer key cards. The technology is also an attractive customer service amenity; guests don't need to keep track of a key card or be careful about where in their wallets and purses they keep them.

Office and retail complexes have also begun to use virtual credentialing. Building owners can reduce their costs significantly by avoiding the need to purchase keys for tenants and each of their employees. And their tenants don't have to worry about changing locks when employees lose their keys, are fired or resign. Lock codes can be changed with a few keystrokes, and staff can instantly be supplied with the new codes. The software can even be used to provide additional security by recording data about who is coming and going in and out of a business, or even a specific area or door, at any given time.

Finally, virtual credentialing is becoming more popular at apartment and condominium complexes for many of the same reasons. The technology provides another unique benefit to residential tenants, because it's possible to create temporary codes for visitors, such as house sitters and guests. This is much more convenient than requiring tenants to have additional keys made and then having to keep track of those keys.

Stepping Into the Future, Today

It's expected that by the end of 2018 there will be 237.6 million smartphone users in the U.S., among a total population of about 327 million. It's easy to see the extraordinary promise of smartphone technologies like virtual credentialing. Developers and property managers are already reaping the benefits of this technology, which provides a secure and cost-effective way to manage how staff and tenants access their buildings.

Providing users with a virtual credential also provides administrators with direct access to users via their smartphones. This access could be used to communicate many different types of information, from marketing to emergency notices, depending on the application scenario. So while the immediate benefits are good, the potential long-term benefits are exceptional. ■

By **Curtis Dennis**, technical lead, Nedap Identification Systems in the Americas, curtis.dennis@tuxen.com

How to Set Up a Private Equity Real Estate Fund

How does one go about creating a partnership to raise equity for ongoing real estate investment?

By Jan A. deRoos, Ph.D., Cornell University, and Shaun Bond, Ph.D., University of Cincinnati

THIS ARTICLE INTRODUCES the contemporary structure of private equity real estate funds and outlines the steps necessary to create and properly manage a fund. It discusses the motivations for creating a fund and the factors that should be considered when setting one up. A future article will examine how securities laws impact the offering and management of a fund, as well as typical offering terms.

In its simplest form, a real estate private equity fund is a partnership established to raise equity for ongoing real estate investment. A general partner (GP), henceforth referred to as the sponsor, creates the fund. The sponsor asks investors, known as limited partners (LPs) to invest equity in the partnership. Those funds, along with money borrowed from banks and other lenders, will be invested in real estate development or acquisition opportunities.

In general, the LPs provide the bulk of the equity capital and are passive investors who have chosen to invest in an offering presented by the sponsor. LPs earn an early return of capital and a preferred return on capital invested. Sponsors provide some of the equity capital, secure the investment opportunities, manage the real estate and the fund, and earn fees that typically are based on its performance.

A real estate private equity fund differs from capital that comes from friends and family and joint ventures. Investments by friends and family are generally not subject to an extensive partnership agreement, and each dollar of equity investment is treated equally. Joint ventures are generally set up for a specific purpose on a single investment wherein each partner adds specific value to the investment. One example is a joint venture among a landowner, a developer and a money partner. None could complete the investment without the others, and the joint venture is specific to one investment. Real estate private equity funds, on the other hand, are created to invest in a series of deals with a standardized risk and reward structure created for the overall fund in which the sponsor and LP participate unequally.

Sponsor Motivations

The 50 largest private equity firms have collectively raised $280.8 billion and the 20 largest real estate private equity firms have each raised more than $4.5 billion over the past five years, according to the PERE 50 2017, PEI Media's annual ranking of the world's largest private equity real estate firms. But the real estate fund structure is also available to smaller investors. Creating a real estate fund allows the sponsor to accomplish the following:

Diversify and expand funding sources. A sponsor with a pipeline of potential investments can use a fund to take advantage of deal flow that would not otherwise be available. The capital-raising strategy should, however, focus on the sponsor's history, the experience of the team, the potential for returns, alignment of interests and clearly identified opportunities.

Diversify holdings. The most reputable developers with the best track records are able to find investment opportunities in their home markets that are


Jan A. deRoos


Shaun Bond

outside their traditional property type focus, opportunities outside their historical geographic focus, or some combination of both. A private equity fund can provide the scale that will allow the sponsor to take advantage of these opportunities, generating returns over a larger capital base and potentially lowering the risk of the firm.

Invest in larger, higher-quality projects. A capital-constrained sponsor can use a fund to invest in larger, more complex projects. Additional partners also enable the developer to share the risks with their investors to create a better risk-return balance on large, complex projects that the sponsor could not take on alone.

Obtain better terms from banks and other lenders. A fund with a larger capital base, diversity of investments and lower-risk projects can result in less costly debt and mezzanine capital for the fund sponsor and its investors, increasing the equity returns for both the sponsor and the LPs.

Provide an alternative to mezzanine capital. This advantage is highly dependent on the nature of the investments and the credit risk of the sponsor.

Develop projects using fund-level financing in lieu of project-by-project financing. This can allow the sponsor to move more quickly to take advantage of a rapidly developing market or a fluid environment. Having permanent or "take-out" financing in place facilitates conversations with construction lenders and landowners who may be reluctant to engage on a project without an identifiable permanent financing source.

Earn fees from the fund, including a promoted interest. The fund sponsor may find that its business has matured to the point where it is a market leader. In this case, the sponsor obtains all of the benefits outlined above plus the ability to earn a promoted interest and fees from the fund structure as a reward for its success.

While motivations may differ among sponsors, the private equity fund structure can provide significant rewards when properly executed. The key is to have a clear strategy for creating the fund and to execute against that strategy.

Three Key Considerations

While there are myriad factors to take into account when setting up a fund, three key considerations are foundational to success in establishing the fund and efficiently raising capital from the limited partners.

1) The first consideration is the amount of equity capital to be raised, including organizational fees. The minimum fund size is generally considered to be $20 million, although crowdfunding platforms have reduced this in some cases. While organizational costs are proportional to fund size, the lower floor for organizational fees is about $400,000. Although the sponsor is able to recoup these fees from the fund once the capital is raised, the sponsor must carry these costs during the formation period. These include formation costs for the legal entity or entities, filing fees, accounting fees, regulatory brokerage costs, clearing costs and the cost of producing marketing documents.

While the fund's equity capital will be combined with debt capital to create the total pool for investing, a well-executed fund needs to balance potential deal flow with fund size to ensure that the fund can produce sustainable returns for the LPs, and that it is not so small that a follow-on fund needs to be launched. The timing of flows to and from the fund also must be considered. In general, LPs start earning a preferred return on their capital as soon as the funds are invested. Thus, in addition to obtaining a commitment from each LP for the total amount invested, wise sponsors stage the pay-in to match the fund's anticipated timing of investments.

2) Sponsors must be clear-eyed about the amount of time, energy and seed funding required to launch a fund. The sponsor is responsible for all aspects of the fund: organizing the fund, which includes generating a partnership agreement, offering and subscription documents; securing investment opportunities; securing loans and other financing; managing the fund; operating the properties; preparing partners' tax returns; and responding to accounting and audit matters, to name only the highlights.

While many experienced real estate firms perform the majority of these activities in the course of their existing businesses, in a private equity fund environment the sponsor is governed by the strict nature of the partnership documents and offering memorandum, so attention to detail is paramount. In addition, the fund structure will require that the sponsor establish regular, organized meetings with the LPs and a consistent reporting structure, a task increasingly facilitated by software.

3) Sponsors must have a clear investment fund strategy. This is distinct from the market fundamentals, property type and location strategies that dominate the traditional real estate investment assessment. While experienced sponsors and the largest funds may be able to raise funds for a blind pool – a fund for which no individual investments are identified – first-time sponsors generally must identify specific investments that are included in the fund's offering memorandum.

Five Types of Funds

Sponsors should be clear about where the fund will operate on the risk/return continuum and stay true to that goal. Five different types of risk-adjusted funds exist within the private equity industry. They are generally listed in order of risk and returns. The metrics that LPs concentrate on include returns, equity multiples and sheltered income. Returns include the cash-on-cash returns and the net LP internal rate of return (IRR).

1) Core. This type of fund has the lowest risks/rewards. It typically offers 6 to 8 percent net equity IRR to LPs; no/low leverage; and well-occupied, stable, high-quality assets in primary markets and locations. Its annual income return is high relative to appreciation.

2) Core-plus. This type of fund contains high-quality assets in secondary markets/locations or slightly risky assets in primary markets/locations. It offers 8 to 12 percent net equity IRR to LPs. Moderate leverage – up to 50 percent – is employed to increase equity IRR.

3) Value-add. These funds contain assets improved via re-leasing, operational efficiencies and/or re-development; they also include new development. They employ moderate leverage, up to 70 percent. Market/location is secondary to the opportunity to add value. Appreciation is a significant part of the overall investment returns. These funds offer 11 to 15 percent net equity IRR to LPs.

4) Opportunity. These funds offer high risks/returns. They involve repositioning and redeveloping poorly operated, vacant or outdated buildings or net new buildings on vacant land. Market/location is secondary to the opportunity. Appreciation dominates the returns, with much of the return occurring at the end of the holding period. These funds typically seek to offer more than 15 percent net equity IRR to LPs.

5) Distressed debt/mezzanine. These funds purchase senior loans, mezzanine loans or nonrated commercial mortgage-backed securities (CMBS) tranches, or make mezzanine loans. They use leverage to increase equity IRR and are not averse to owning if loans default. They offer 8 to 12 percent net equity IRR to LPs.

Sponsors need to clearly articulate their fund's strategy and then make investments that are consistent with that strategy. The LPs seek returns in exchange for tying up their funds for several years with little control over the operation of the fund. Sponsors who can answer specific questions about the timing and magnitude of LP returns are more successful at raising capital than those who cannot. Most sponsors are able to create a fund only after they have demonstrated success, which often includes ownership of a healthy portfolio.

An excellent strategy for such a sponsor is to create two funds: a core-plus fund of existing stable assets that purchases from the sponsor's existing portfolio and can deliver immediate returns to investors, and a value-add fund to provide capital for new development and acquisition opportunities. The sponsor thus has two clear strategies and two different risk/return opportunities for potential investors, who can choose between the two funds or can invest various amounts of capital in each, depending on the LPs' needs.

Sponsor Compensation

Sponsors must carefully consider their compensation and align their interests with those of their LPs. Sponsor compensation may come from two sources:

1) The Promoted Interest. Also known as the "promote" or "carried interest," this generally consists of a 2 percent fee based on capital raised from the LPs and 20 percent of the profits of the fund. In many cases, to align the interests of the sponsor and the LPs, the sponsor participates only in those profits above the LP investors' preferred return.

2) Fees. Sponsors may earn additional fees for a variety of services provided to the fund. These include the following:

- **Asset management fees** for managing the fund on behalf of investors, generally 1.5 percent of the value of assets under management on an annual basis.
- **Acquisition fees** for acquiring buildings on behalf of the fund, typically 1 to 3 percent of the acquisition price.
- **Property management, leasing, construction and development fees**, when the sponsor provides these services in lieu of hiring an outside firm; these fees typically are based on market norms.
- **Finance and guarantee fees**, for securing loans and providing a guarantee on behalf of the fund, generally 0.5 to 1.0 percent of funds secured or guaranteed. Finance fees are a one-time fee, while guarantee fees are annual for the life of the guarantee.

Sponsors should not see their fund as a vehicle for generating fees at the expense of the LPs; this approach is a sure route to an unsuccessful fund. On the other hand, a sponsor that can add value in the development, acquisition and property management functions via superior management, local market knowledge and depth of experience should be willing to incorporate fees relating to these services into the fund structure.

A litmus test for fee inclusion is whether the sponsor would be willing to pay these fees if it were an LP in the fund. Sponsors should be able and willing to demonstrate that it is the promoted interest, specifically the participation in profits after the LPs have their preferred return, that drives their decision-making and aligns their interests. Further, sponsors should be transparent about the overall returns to the fund, both before and after fees and gross and net IRRs to the LP investors.

A future article will detail the securities laws that govern investment funds, offering terms and fund operations. ■

By NAIOP Distinguished Fellows **Jan A. deRoos**, Ph.D. (jad10@cornell.edu), HVS Professor of Hotel Finance and Real Estate, Cornell SC Johnson College of Business, Cornell University, and **Shaun Bond**, Ph.D. (shaun.bond@uc.edu), West Shell, Jr., Chair in Real Estate, Lindner College of Business, University of Cincinnati

Treehouses at Microsoft

By putting the employee experience at the center of its workplace design, Microsoft is reaching new heights.

By Bret Boulter, Microsoft

IN FALL 2017, Microsoft's Puget Sound headquarters opened three outdoor meeting areas in the trees outside a cluster of its buildings. Microsoft employees desiring a unique and inspiring place to hold meetings or simply work on their own can now leave the confines of their buildings, stroll through bracing fresh air and ascend a cedar ramp some 12 feet into the Douglas firs.

If they've booked Outdoor Meeting Space One, they'll find themselves in a circular 900-square-foot conference room and deck, outfitted with a meeting table, electricity and Wi-Fi, just like an office. But this "office" is paneled with reclaimed Oregon timber, clad in siding from floating logs salvaged from Seattle's Lake Union, pierced by a single circular skylight and flanked by a broad cedar deck with benches for solo working. Together, the room and the deck comfortably accommodate up to 31 people.

Outdoor Meeting Space One on Microsoft's Puget Sound headquarters campus features a 900-square-foot circular conference room and deck, accessed via a 250-foot ADA-compliant ramp.
Photos courtesy of Microsoft

Or perhaps they're heading to Outdoor Meeting Space Two, a 500-square-foot uncovered platform. Those looking to have a one-on-one meeting can ascend a staircase spiraling around the tree trunk to a lofty perch called the Crow's Nest. **Pete Nelson**, founder of Nelson Treehouse and Supply, which designed these outdoor rooms, chose this towering, 150-year-old fir as the anchor of the treehouse "campus" after spending a day on-site, "connecting with the trees." Nearby, he placed Outdoor Meeting Space Three, a 750-square-foot covered lounge and deck space seating up to 10 for informal drop-in work.

With their fresh, cedar-bright forest scents, these treehouses don't smell like conference rooms. Soft background noises – the sounds of songbirds, scrambling squirrels, pinecones thudding on wood – aren't like those heard in a typical workplace. The artful craftsmanship of the cedar joinery says "woodland cottage," not "corporate HQ." And, though two of the structures are covered, they are otherwise open to the elements and, by design, unheated. Employees willingly bundle up to work in them.

Inspiration

At a workshop last year, a workplace consultant asked Microsoft employees to list their sources of inspiration. Responses varied, but the majority included something connected to nature. Later, when the Microsoft Real Estate Development design team surveyed software engineers to ask what workplace characteristics were most important to them, their responses were clear. Overwhelmingly, they asked for nontraditional workplaces and more places to work outside in the fresh air and sunlight. Combining this employee feedback, the design team came up with the treehouse concept.

Workplace research reveals a solid connection between employees' exposure to the outdoors and the well-being that leads to productivity. Nature "stimulates the reward neurons in your brain," writes Harvard physician **Eva M. Selhub**, co-author of the 2013 book, "Your Brain on Nature." "It turns off the stress response, which means you have lower cortisol levels, lower heart rate and blood pressure, and improved immune response." Exposure to nature also dials up positivity, creativity and focus, restoring the brain from the mental fatigue of work. Forests bring particular benefits. "Trees and plants secrete aromatic chemicals that impact our cognition, mental state, and even our immunity," writes Selhub.

The treehouse conference rooms are part of a companywide initiative at Microsoft to incorporate nature into the workplace, an initiative that runs somewhat counter to the current trend

Outdoor Meeting Space Two is a 500-square-foot uncovered platform with a spiral staircase leading to the Crow's Nest.

Cedar paneling imbues this treehouse conference room with a distinctive aroma; Wi-Fi and charging stations enable employees to use their devices while working in it.

of technology companies settling in urban areas. Microsoft Puget Sound is embracing the benefits of its 500 wooded acres on the site of a former sawmill, where deer and other wildlife freely roam.

Challenges

The treehouses, which took roughly half a year to build, presented several challenges. Not surprisingly, treehouses for commercial use had never been permitted in this jurisdiction before, so the permitting process was new terrain for everyone. The city of Redmond had to work within existing code to provide appropriate building permits and certificates of occupancy. The city also had to get creative around modifications to utility easements because of their proximity to the outdoor structures.

Security issues also had to be addressed. While these were resolved by requiring employees to swipe badges at gates and doors leading to the treehouses, **Shanon Bernstine**, the Microsoft business manager who oversees access to the meeting rooms, reports that learning how to keep the facility secure after-hours was a long process.

Then there was the fact that, from time to time in the Pacific Northwest, it rains. Waterproofing had to be solid. Fortunately, the two covered structures have proven dry and cozy in the rain; employees are comfortable bringing their laptops and lunches out to the treehouses on even the rainiest days. Indeed, the treehouses became so popular so quickly that Microsoft had to extend their hours of operation to seven days a week within a month of their opening.

Benefits

This positive reception suggests that simply altering your surroundings can help you see things differently. Bernstine reports that users have described the same experience again and again: The treehouses take them to a different world.

Though there's no hard data yet on how employees are using the treehouses, or whether they're increasing productivity, it's clear the spaces are igniting *something* new in those who use them. Solo workers seem to get in touch with deeper insights, sitting cross-legged on a bench or in the grass below, eyes closed, heads tilted skyward, then grabbing their laptops and typing furiously. Meeting goers more easily converse and engage with each other when they aren't staring at a screen.

The creative process just seems to be easier in a treehouse than it is in a traditional conference room. When no one's presenting with a projector and whiteboard, all meeting participants are suddenly in an active role. Bernstine notes that treehouse meeting goers appear to be able to have more grassroots conversations about what needs to get done, and naturally come up with different ideas.

Like all Nelson treehouses, these were built to accommodate the trees' growth, with treehouse attachment bolts (TABs) and other structural fasteners that will flex and expand as necessary to last a projected 20 years. (The TABs, made of hardened steel, act as artificial tree limbs that support the treehouses without harming the trees.) Microsoft is betting that these unusual structures will likewise encourage flexibility of mindset and growth of great ideas among its employees. ■

By **Bret Boulter**, senior development manager, Microsoft

Lenders' Environmental Due Diligence

Lenders' due diligence can be just as thorough as buyers'.

By Tom Mounteer, Paul Hastings LLP

OVER THE PAST few years, many lenders have demonstrated the willingness to fully understand the risk profile of their borrowers' environmentally challenged properties.

Evolving Approaches

Two projects a few years apart illustrate this trend. A few years ago, one lender declined to provide financing for a Mountain State office building, believing that the presence of a dry cleaner across the street from the building presented a risk of indoor air quality impacts. Having identified the potential risk, this lender had no appetite to evaluate the situation any further. This resulted in an opportunity for a second lender, which had its law firm investigate the risk of indoor air quality impacts. Based on that investigation, the lender became comfortable with the level of risk involved, and provided the financing.

"All lenders placing mortgages want to know the value of their collateral, including the effect contamination has on that collateral."

Tom Mounteer

In contrast, a fairly traditional Midwest-based national lender recently took a very searching approach on a construction loan from the outset. The bank was considering providing a construction loan for a mixed-use development straddling a busy commercial street in a West Coast city. The construction site was affected by contaminants from both a gas station and a dry cleaner. The dry cleaner had operated in a building on one side of the street, while the gas station had been located on the other side of the street. Both buildings had already been demolished.

A few other facts complicated the situation. Dry cleaner solvents had migrated in the groundwater from the parcel on one side of the street to the parcel across the street. Because redevelopment plans called for a mix of uses, with residences above retail space, the lender had to be especially sensitive to the risk of indoor air quality problems caused by vapor intrusion. At the time the bank was being asked to provide construction financing, neither the dry cleaner nor gas station cleanup had been completed to the satisfaction of supervising government regulators.

One might have thought this complex situation would have deterred the Midwestern bank, in the same way that the dry cleaner risk had deterred the first bank in the Mountain State office building situation. Instead, the Midwestern bank asked its law firm to review over a dozen cleanup documents to help it understand what remained to be done to satisfy regulators and what risks the bank faced in the interim. This review found that residual levels of dry cleaner solvent

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in the groundwater were no greater than those allowed in the approved cleanup plan, so that eventual regulator satisfaction was assured. The bank provided the construction loan.

Common to All Types of Lenders

From a legal perspective, it's interesting to note that all types of lenders are engaging in this searching environmental due diligence. One might have expected secured lenders to take comfort in a liability exemption available to lenders who take security interests in property (i.e., mortgages). Secured lenders who avoid participating in a borrower's operations are exempt from hazardous substance release liability under a number of federal statutes. If the secured lender strays too far into the management of the borrower's operations, especially with respect to environmental functions, it could face liability for those operations. And if a lender foreclosed on the mortgaged property, it could be strictly liable as the property owner.

Mezzanine lenders who protect their loan by taking a right to convert to

continued on page 44

continued from page 42
an ownership, or equity, interest and asset-based lenders who take security in, for example, inventory or accounts receivable, but not real property, aren't eligible for this exemption.

Despite the liability exemption available to them, secured creditors seem to be just as interested in investigating their borrowers' potential environmental liabilities as non-real property asset-based and mezzanine lenders. All lenders placing mortgages want to know the value of their collateral, including the effect contamination has on that collateral. And all types of lenders want to know if their borrower is going to be saddled with cleanup costs that will affect its ability to repay its loan.

Voluntary Cleanup Challenges

As developers have pursued rewarding opportunities redeveloping urban and industrial sites, lenders have had to become more adept at assessing the environmental conditions those sites present. In this context, entirely voluntary cleanups present a particular challenge to lenders.

Obtaining a "no further action" determination from a government agency is generally considered to be the "gold standard" with respect to cleaning up releases of hazardous substances. The determination constitutes the judgment of the government agency charged with protecting the general public that all cleanup work has been performed satisfactorily. When a borrower shares the results of its due diligence investigation of once-contaminated property but does not include such a determination, a lender's adviser will typically ask the borrower why not, and whether the release was reported to the government.

"As developers have pursued rewarding opportunities redeveloping urban and industrial sites, lenders have had to become more adept at assessing the environmental conditions those sites present."

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A lender's inquiries when a borrower fails to provide a "no further action" letter may sometimes appear overzealous. In connection with helping one developer/borrower obtain a property acquisition loan, the borrower's counsel was presented with a Phase I environmental site assessment prepared for the lender by a well-known and generally respected environmental consulting firm.

In the assessment, the lender's consultant recommended soil sampling in an area that had once contained an above-ground fuel storage tank. A photograph in the consultant's report showed visibly stained soil beneath the site where the storage tank had stood. The borrower claimed to have already cleaned up the area. The lender's consultant wasn't convinced that the borrower's contractor had removed all of the impacted soil. This seemed like a minor condition, one that would not normally call for sampling.

Fortunately, the borrower's contractor had taken a photograph of the area after it had removed a few buckets of soil with a backhoe. That photo convinced the lender not to pursue the testing recommended by its consultant. By enabling everyone to see the soil conditions at the bottom and along the sides of the excavated area, the photo further minimized the staining's significance.

The existence of the photograph was critical and makes an important point about voluntary cleanups. Even for cleanups with no governmental involvement, written reports, preferably with photos, can be very helpful. It may be hard to get lenders to sign off on environmental conditions without a governmental "no further action" letter. In some cases, like the one above, the pictures in the report can tell a pretty clear story.

A lender will typically consult with its counsel about the reasonableness of the borrower's having performed the cleanup without government oversight and the soundness of the conclusion that all of the required work had been performed. The success of such an approach, however, may be limited to properties with very minor environmental issues. ■

By **Tom Mounteer,** partner, Paul Hastings LLP, Washington, D.C., and professor, George Washington University Law School, tommounteer@paulhastings.com

Columbus Tackles Smart City Initiatives

Columbus, Ohio, is using public-private partnerships and $50 million from the U.S. Department of Transportation and Vulcan Inc. to revolutionize its transportation infrastructure.

By Camille Galdes

ON JUNE 23, 2016, Columbus, Ohio, beat out 77 other U.S. cities to become the winner of the U.S. Department of Transportation's Smart City Challenge. The $50 million prize was awarded to Columbus to revolutionize its transportation infrastructure and transform it into the first "smart city" in the country.

Representatives from the city of Columbus, the Columbus Partnership, and other for-profit and nonprofit partners are now working side by side in a coworking space, the Columbus Idea Foundry, which is dedicated to supporting creative workers and entrepreneurs. Although each member of the team comes from a well-established organization, when they come together as Smart Columbus they consider themselves a startup.

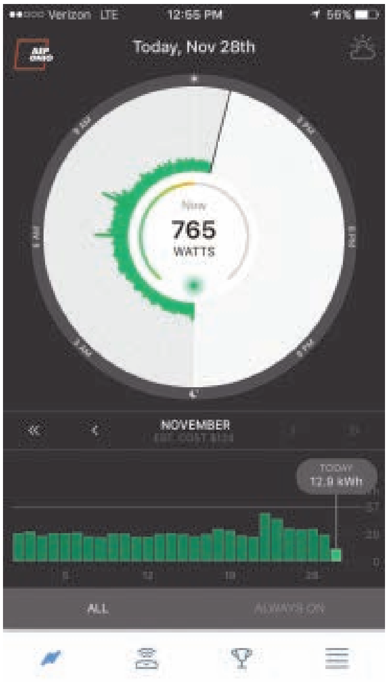
Smart Columbus is hosting "Ride-N-Drive Roadshow" events at which participants learn about electric vehicles and are able to test drive or ride in an EV.
Smart Columbus

Where to Start?

Smart Columbus is spearheading a host of smart city initiatives that aim to improve multimodal trip planning, create a smart operating system to integrate data from multiple transit sources, connect residents to transit hubs using autonomous vehicles and make trucking more efficient. All of its projects are still in the planning phase. According to **Mike Stevens**, the city's chief innovation officer, members of the Smart Columbus team want to affirm the assumptions they made in their Smart City application before implementing any projects. "We only want to create solutions for problems that actually exist," he adds. Therefore the city is first engaging the users who are targeted by each project. In fall 2017, city officials generated a series of "user stories" from their conversations with residents that will guide the implementation of several projects in 2018.

One reason Columbus' application stood out to the U.S. Department of Transportation (USDOT) was its focus on improving the quality of life in economically distressed neighborhoods. After winning the challenge, Columbus and the USDOT refined the project list, winnowing it down from 15 projects to nine by combining some and dropping others.

One project that was added, however, demonstrates the city's commitment to social equity: a prenatal transit program to enhance health care support in Linden, one of its poorest neighborhoods. The program aims to help pregnant mothers get to necessary doctor's appointments. "We face one of the highest infant mortality rates



American Electric Power is replacing analog meters with smart meters that enable consumers to access real-time energy information through a mobile app.
Smart Columbus

in the country, and the worst in the state," says **Mark Patton**, vice president of the Columbus Partnership. By creating a multimodal transit app and consolidated payment system, Smart Columbus hopes to improve access to public transit and help residents overcome difficulties getting to and from transit hubs, known as "first-mile/last-mile challenges."

Focus on Electric Vehicles

While $40 million of the grant money came from USDOT, Vulcan Inc., a **Paul G. Allen** company dedicated to "improving our planet through catalytic philanthropy," also contributed $10 million to the Smart City Challenge. Its portion of the funding is dedicated to decarbonization, electric vehicle (EV) charging infrastructure and increasing the adoption of electric vehicles. By 2020, Smart Columbus plans to reduce single-occupancy commutes to major workplaces by 10 percent and increase EV sales from 0.37 percent of cars sold to at least 1.8 percent – a more than fourfold

"Although each member of the team comes from a well-established organization, when they come together as Smart Columbus they consider themselves a startup."

Camille Galdes

increase that would put 3,200 additional EVs on the road.

To encourage residents to drive electric, Smart Columbus is taking a "Ride-N-Drive Roadshow" to the seven counties of central Ohio over the next three years. Its goal is to host 150 roadshow events, the first 11 of which were held in fall 2017. Roadshow events are cohosted by local employers and showcase 12 of the latest plug-in electric and hybrid vehicle models. Participants learn how to charge an electric vehicle and about alternatives to driving to work. They are even able to test drive or ride along in an EV. At the first 11 events, 810 participants test drove an EV and an additional 113 rode along as passengers.

Leveraging the Private Sector

Columbus is proud of what it calls "the Columbus way," a unique commitment its citizens have to prioritizing collective goals and working together to solve problems. **Bret Kaufman**, principal of Kaufman Development, which develops mixed-use neighborhoods, says that the city and developers are "not at loggerheads" in Columbus the way they often are in other places. He has received a substantial amount of support from the mayor's office as well as from business leaders over the years.

"I've had CEOs of banks and some of the largest companies in this city – and the world – invite me to their *homes* to talk about an issue I'm grappling with," Kaufman says. This penchant to help one another stems from a desire to do what is best for the city. "People bend over backwards to help because they want others to succeed and help the city grow and prosper."

The Columbus Partnership is proof of the Columbus way; this nonprofit organization has institutionalized how the city's citizens work together. The partnership is a membership organization of CEOs from the city's 60 largest companies, which employ approximately 14 percent of the city's workforce. For the last 15 years, city officials have regularly communicated and cooperated with the private sector through the partnership. It is no surprise, then, that the partnership is an integral part of Smart Columbus.

While the Vulcan grant is incentivizing the purchase of electric vehicles for the city's fleet, Smart Columbus also wants to encourage individuals and private fleets to use EVs. The Columbus Partnership has asked its corporate members to lead in this area by personally buying these clean vehicles. Its goal is for 50 Columbus Partnership executives to drive EVs, and it expects about 24 to be on-board by the second quarter of 2018. More than 44 companies in the partnership have also signed up to be "acceleration partners" and will install EV charging stations at their locations, create corporate fleets of EVs and educate their workforces about smart mobility.

Complementary Efforts

The private sector is also supporting Smart Columbus in other ways. **Brandi Braun**, the city's deputy innovation officer, explains that "There are additional projects throughout the state which are independent, known as 'aligned investments,' being pursued by private organizations that see an opportunity in and are inspired by the Smart Columbus initiative, which accelerate our progress." Smart Columbus calculates that in addition to the Smart City Challenge grant money, the public and private sectors have committed another $502 million to projects across the city that will complement Smart Columbus initiatives and help to scale and sustain them into the future. But Mayor **Andrew Ginther** is not stopping there. His goal is to increase the value of these additional investments to $1 billion.

One of Smart Columbus' acceleration partners, American Electric Power (AEP), plans to commit $175 million to the Smart Columbus Acceleration Fund for projects that are separate but complementary to Smart Columbus efforts. AEP plans to modernize the Columbus electric power grid by implementing technologies such as smart meters, EV charging stations and a demonstration microgrid. **Ryan Houk**, smart city project manager for AEP Ohio, says AEP plans to install more than a half million smart meters in the Columbus area by mid-2019 and an additional 394,000 in the rest of its territory, approximately half of Ohio, by 2021.

These smart meters will enable consumers to access real-time energy information through a mobile application, "It's Your Power." In addition, AEP Ohio is in the process of creating a rebate program that will reduce the up-front costs of installing EV charging stations at workplaces, multifamily buildings and public sites to help spur the construction of EV charging infrastructure and stimulate the market for EVs.

Results

While Kaufman says it is too early to have a clear sense of how the Smart Columbus initiative will impact commercial real estate developers in the area, it is clear that Smart Columbus and the city will take a supportive posture. "There is already a rebate program in place to help offset the cost of electric charging stations for new multiunit residential projects. Smart Columbus has created a pot of money to allocate to new construction projects that want to put new charging stations in their projects" – a move that will surely encourage the development community to embrace electrification initiatives. ■

By **Camille Galdes**, an urban policy writer and researcher, camille.galdes@gmail.com

Bringing It Home: Four Innovative Concepts for E-commerce Deliveries to Consumers

All of these innovations could affect how goods are delivered directly to consumers in the future.

By Robert T. Dunphy

THE PROLIFERATION OF online purchasing has created a vast expansion in the need for delivery of goods directly to customers. One important element in the e-commerce shopping experience has been the streamlining of the fulfillment process, which creates pressure on traditional package delivery mechanisms such as DHS, FedEx and the U.S. Postal Service. Consumers want faster deliveries, but of course do not want to pay for them. Several innovations currently underway will use new technology to solve this problem.

1) Drones. The coolest technological innovation for geeks still waiting for the flying cars long promised by old TV shows, drones offer the flexibility to overcome traffic congestion, poorly connected rural road networks, water bodies and other physical barriers. However, they have limited carrying capacity, currently ranging from 2 to 5 pounds, as well as a limited range of 10 to 30 miles. And they need to return to base after every trip to resupply.

Thyssenkrupp's TeleRetail delivery robot, which is approximately 33 inches wide and can carry up to 77 pounds, can travel on sidewalks, thereby avoiding road congestion. Thyssenkrupp Elevator launched a pilot project with software developer TeleRetail in which the robots transported spare parts and other material to job sites.

Starship Technologies' six-wheeled delivery robot is 27 inches long by 22 inches wide and can carry up to 20 pounds within a two-mile radius. This one delivered holiday gifts to residents of Redwood City, California, where the European company has an office.
Starship Technologies

Larger drones designed to carry heavier parcels require a landing area of at least 21 square feet, a problem in dense neighborhoods. Forthcoming federal regulations may impose additional restrictions. These limitations suggest that the most effective deployment of drones for consumer delivery, at least initially, will be in rural areas, which are also the most expensive to serve by ground. Even with these qualifications, a 2016 McKinsey & Co. report, "Parcel Delivery: The Future of Last Mile," estimated that drones could eventually handle 20 percent of Amazon's deliveries.

2) Droids. Delivery robots similar to the droids of Star Wars fame are able to travel on sidewalks or in bike lanes, among pedestrians, bikes and cars. Delivery robots can navigate on their own most of the time, making sequential stops to deliver packages to multiple consumers, although a human operator may act as a backup. They have higher carrying capacities than drones and, since they travel on the ground rather than by air, are less expensive and less complex to operate.

According to a 2016 Stanford University white paper, "Technological Disruption and Innovation in Last-mile Delivery," droids also will face fewer regulations than drones, since automated vehicles and Segways will have paved the way with state legislatures. Droids will be used most commonly to deliver goods to lower-density suburbs, university campuses, assisted living facilities and other private venues. A team of six-wheeled food delivery robots created in Estonia by Starship Technologies is already delivering takeout food from restaurants to customers in Washington, D.C.

3) Driverless Vehicles. The extensive development underway for self-driving cars and trucks could create spinoff benefits for consumer deliveries. In fact, one of the early successes in freight was in October 2016, when Otto's first paid delivery via self-driving truck was a beer shipment. (See "Six Innovative Concepts for Moving Freight," Development, winter 2017.)

Pizza would be a natural successor. Sure enough, according to a September 2017 Fortune article, "Will Consumers Actually Like Having Pizza Delivered by a Self-Driving Car?" Domino's and Ford have teamed up on a pilot project in Ann Arbor, Michigan, to test how people interact with driverless car delivery systems, in a market heavily populated by students. Customers get a text with a four-digit code to access the vehicle when their pizza arrives. Most of the questions about the effectiveness of this application relate to the last 50 feet: Is the car in the driveway or at the curb? Will customers be reluctant to come out into the snow? In fact, these are the same questions that must also be answered for deliveries by drones and droids.

The automated ground vehicle (AGV) is a special variation on the driverless car delivery system. More like a small van, an AGV could be equipped with lockers that could be accessed with a secure code. These vehicles could deliver packages to multiple addresses, and could even be programmed to pick up packages from customers.

4) Crowdsourcing. Although all of the innovations described above involve the delivery vehicles themselves, technology can also be used to speed deliveries to consumers via traditional vehicles. In 2015, Uber introduced a delivery service in New York, Chicago and San Francisco. UberRush promised that "if we can get you a car in 5 minutes, we can get you anything in 15 minutes." The on-demand delivery service connects bicycle and pedestrian couriers with businesses and individuals. Although Uber closed the service to restaurants in May 2017 – encouraging customers to switch to UberEats, for which it had created a new app – crowdsourced deliveries could have a much wider application for small businesses and individuals.

Walmart, which considered a crowdsourcing system in 2013 that would have enabled in-store customers to deliver packages ordered online by other customers, has begun testing a program that uses its associates to deliver e-commerce orders on their way home from work.

According to a June 2017 blog post by **Marc Lore**, president and CEO, Walmart U.S. eCommerce, "Associates choose how many packages they can deliver, the size and weight limits of those packages and which days they're able to make deliveries after work – it's completely up to them, and they can update those preferences at any time. We also allocate packages based on minimizing the collective distance they need to travel off of their commute to make a delivery."

Fast or Free? One conundrum created by the e-commerce model is how to pay for the additional costs of delivering goods directly to consumers. This is of particular concern to smaller retailers, who lack the bargaining power that larger firms have with delivery services. Larger retailers are focusing on service speeds, as same-day delivery becomes possible in many metro areas. Shoppers want their goods to arrive quickly, but are averse to paying more to expedite delivery. This is one of the greatest challenges that retailers must address as they exploring emerging technological innovations in delivery to consumers. ■

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

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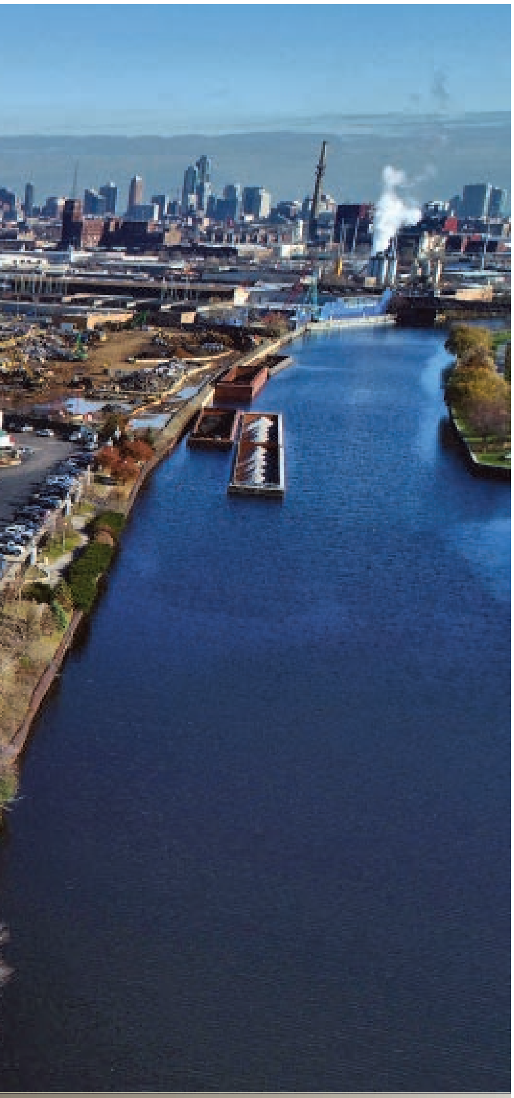
Industrial Real Estate 2018

Meridian Design Build is constructing this new 75,000-square-foot last-mile facility for Banner Wholesale Grocers on a 4.25-acre site in Chicago. When completed in June 2018, the building will feature a 36-foot clear height ceiling, LED lighting, a fully air-conditioned wholesale floor, high cube freezer/cooler space, eight loading docks and a covered van platform with 16 loading positions.

Photo courtesy of Meridian Design Build

Disruptions and Structural Shifts



Supply chain advances and new technologies are affecting how, where and what types of industrial facilities are being built.

By Aaron Ahlburn, JLL

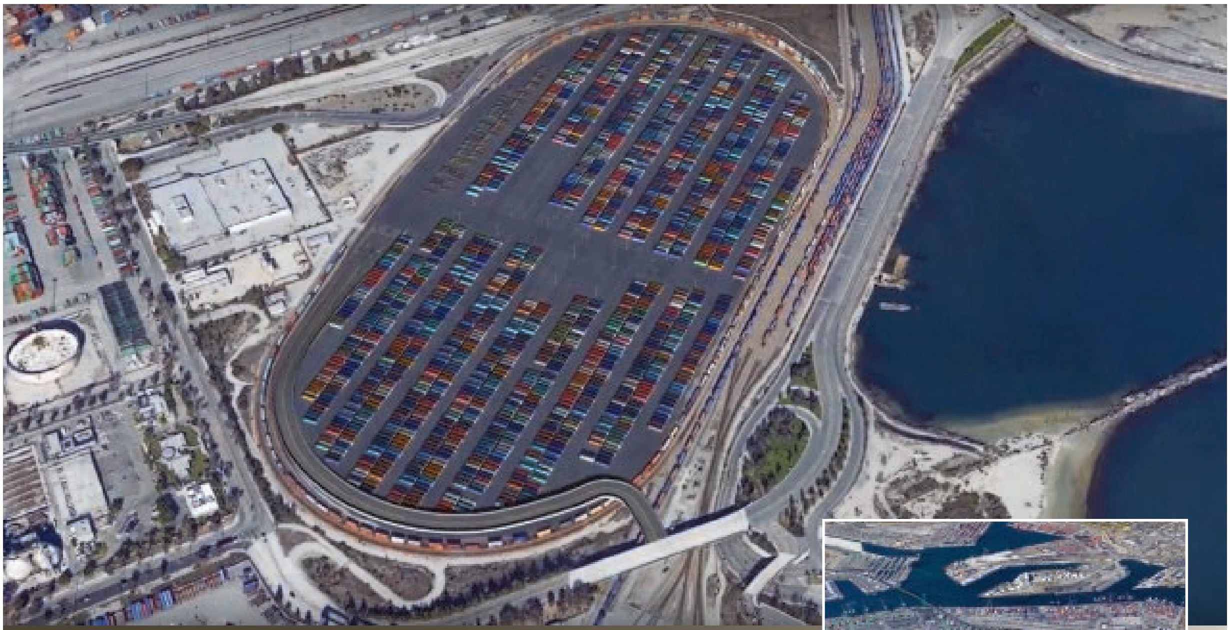
MUCH OF THE media coverage of industrial real estate today is overwhelmed by e-commerce oriented topics. Retailers continue to build out their delivery, fulfillment and return capabilities, in ways that are having significant impacts on the industrial supply chain and, consequently, on the location and design of buildings. E-commerce is undoubtedly driving significant change within the industrial property sector, but real estate developers and investors should also consider a variety of other disruptions and structural shifts.

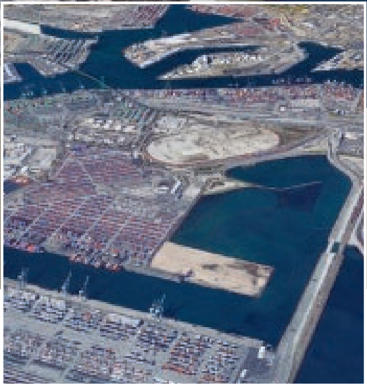
These include key changes being made along the supply chain and how those changes are affecting where and how new industrial facilities are being developed today, as well as where and how they will be developed in the future.

Supply Chain Advances

Key changes unfolding in the supply chain include the following.

Multimodal Options. Wholesalers and retailers alike recognize that they need to create more nimble supply chains to accommodate evolving first- and last-mile activity. "First-mile" multimodal transportation options are becoming increasingly important. End-to-end supply chains are becoming ever more complex, and industrial real estate site selection will continue to be tied closely to cost efficiencies in transportation.





The Harbor Performance Enhancement Center (HPEC) at the Port of Los Angeles is expected to help reduce congestion and increase the port's cargo handling capacity by 10 percent.

Supply chains must become more nimble. Bringing multimodal transport options, including trains, electric vehicles and trucks, to the first mile helps streamline the process of distribution from the source to the end user, while also speeding up delivery.

A Fusion of Technologies. The Fourth Industrial Revolution and the digitization of the supply chain are both well underway. According to Klaus Schwab, founder and executive chairman of the World Economic Forum, "The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. Now a Fourth Industrial Revolution is building on the Third, the digital revolution that has been occurring since the middle of the last century. It is characterized by a fusion of technologies

McCraney Property Company plans to break ground on Airport South Business Park in the second quarter of 2018 and deliver the first buildings by the end of the year. Set on a 54-acre infill site less than a mile from the Charlotte Douglas International Airport in Charlotte, South Carolina, with easy access to three interstate highways, the park will feature more than 610,000 square feet of space suitable for users with freight forwarding and fulfillment needs in five spec buildings.

> “**Improvements in yard management systems** … will create more integrated information flows to facilitate supply chain management.”
>
> *Aaron Ahlburn*

that is blurring the lines between the physical, digital and biological spheres.”

Tomorrow’s warehouses will be increasingly driven by technology. They will be much more connected to logistics operations, powered by information systems and even more embedded in processes related to the broader supply chain.

Automation. According to a recent “MHI Annual Industry Report – Next-Generation Supply Chains: Digital, On-Demand and Always-On,” supply chain professionals view sensors and automatic identification, as well as inventory and network optimization tools, as the innovations with the greatest potential to create competitive advantages.

Emergence of the “Cold Chain.” While the online grocery segment is only in the beginning stages of its development, it is leading to need for new grocery-oriented logistics and state-of-the-art cold storage facilities that help companies get “closer to the customer.”

Yard Management. Improvements in yard management systems (software designed to oversee the movement of trucks and trailers at industrial facilities), dock scheduling software and warehouse management systems will create more integrated information flows to facilitate supply chain management, building more continuity, safety and accuracy into the process.

Location Considerations

Changes affecting the industrial sector are having the following impacts on where industrial facilities are being located.

Mitigating Risks. As more companies look to employ predictive analytics and artificial intelligence to power their logistics operations, these processes could also affect their site selection decisions. Understanding how to mitigate supply chain risks is becoming ever more critical. Focusing on more accurate demand planning, management around natural disasters and optimal location and functionality of facilities is becoming paramount.

First-mile Efficiencies. While many of the innovations that could transform industrial real estate are technology related, some are more traditional. For example, multimodal logistics efficiencies can be realized from the “first mile” of transloading containers from a seaport to the “last mile” of delivery to the customer. Simply relocating or expanding near different transportation hubs can help reduce delivery time and costs while improving the level of service. Additionally, importers have to become more efficient in the first mile to offset growing congestion on highways near seaports and worsening truck driver shortages.

Throughout the current economic expansion, modernization and growth of the cold chain have continued to garner investor and developer interest. From seaport operations to airport hubs to inland intermodal destinations, innovative new real estate development around transportation hubs is occurring, both from an import and an export perspective. Here are two examples:

Port Logistics Refrigerated Services (PLRS) now operates a 130,000-square-foot intermodal cold storage and freezer facility at Berth 219 at Port Tampa Bay, which serves central Florida as well as the Southeast and Midwest U.S. with direct transfer via truck or CSX rail. The state-of-the-art building facilitates the import and export of food and other cold storage items throughout the region. It can handle break bulk palletized products as well as 40-foot temperature-controlled containers. The facility consists of four cold storage areas and two freezer storage areas as well as a truck staging area, a fumigation building and an office building with a U.S. Department of Agriculture (USDA) laboratory.

The Harbor Performance Enhancement Center (HPEC), a public-private partnership between the Port of Los Angeles (POLA) and a private consortium, plans to operate a 110-acre “peel-off yard” or staging facility intended to reduce congestion at the Port of Los Angeles. It is designed to accommodate approximately 3,150 containers from adjacent container

Completed in September 2017, Boston Scientific's new customer fulfillment facility on Squantum Point in Quincy, Massachusetts, includes 64,000 square feet of office space and a 630,000-square-foot fulfillment center. Margulies Perruzzi Architects' design transformed an antiquated warehouse building into an energy-efficient, natural light-filled structure with extensive amenities, including a full-service cafe, and 2.5 miles of high-efficiency "smart technology" conveyors plus an enterprise warehouse management system. More than half the company's global product manufacturing now moves through the 24-hour facility.
Warren Patterson Photography, Courtesy of Margulies Perruzzi Architects

terminals at any one time and to significantly increase efficiencies and throughput at the port.

The site, inside the jurisdiction of the Port of Los Angeles, has been idle since 2006. Meanwhile, container volumes flowing through the Port of Los Angeles, as well as the Port of Long Beach on the other side of the harbor, have recently regained and now significantly exceed their pre-Great Recession peak levels. Growth in container volumes, the advent of ships carrying two to three times as many containers as did ships prior to the recession, and new trucking regulations have combined to create serious congestion in Southern California. This has made the retrieval process for containers lengthier and, at times, unpredictable.

HPEC will lease the 110-acre facility and provide a valet-and-park service for importers. It will retrieve containers from the terminals and park them on chassis in the HPEC yard, so that importers can retrieve them at their convenience on a 24/7 basis. The resulting increase in the predictability of the dray from POLA to the importers' facilities and the likely shorter time it will take to do this will reduce truck drivers' idle time at distribution and transload centers.

Manufacturing. Finally, manufacturing is poised for more disruption and transformation in design than any other industrial sector. Employ-

“Goods-to-person picking and collaborative robotics are **redefining movement within the distribution center.**”

Aaron Ahlburn

ing more adaptive manufacturing methods like 3-D printing could create leaner supply chains and lead to the proliferation of smaller manufacturing facilities closer to major population centers.

Innovative new light production or light manufacturing incubators like the nonprofit The Hatchery Chicago or the L.A. Prep kitchen, both of which provide production space for food and beverage providers, are just two examples of how industrial spaces are accommodating a wider variety of uses. These types of facilities often incorporate coworking kitchen space, dry and cold warehousing, and loading docks, as well as meeting and/or office spaces.

Impacts on Buildings And Sites

Industrial users are becoming ever more sophisticated, insisting on buildings that are highly functional. According to **Jimmy Love,** managing partner of Distribution Realty Group, building attributes that were previously considered premium improvements found mostly in build-to-suit structures are becoming more common for new speculative construction. These include 36- to 40-foot clear height ceilings, dedicated on-site trailer storage, 60-foot speed bays, LED lighting and oversized employee parking lots.

New Amenities. Demand for new amenities in industrial parks is growing. In recent years, as e-commerce and associated sectors like delivery and third-party logistics have expanded aggressively, the number of workers picking and packing orders in megasized fulfillment centers has increased. So have the number of workers at traditional warehouse and distribution operations. Attracting and retaining skilled labor has become even more challenging. To keep employees motivated and increase productivity, companies are bringing in more amenities such as expanded eating, lounge and fitness facilities to warehouses and industrial neighborhoods.

Human-centric Design. Some of the newest industrial facilities in Asia contain even more amenities, with people-oriented features such as cafeterias, day care centers, locker rooms, gyms and yes, even rock climbing walls. Developers like ESR-REIT (formerly Cambridge Industrial Trust REIT), which develops and operates industrial facilities throughout Asia, have included these above-standard amenities in some of their new logistics developments, as well as relaxation lounges, retail shops and more sustainable design.

This trend also extends into innovations in personnel safety, especially around loading dock areas and equipment. Using more cameras and red or green lighting systems on dock walls and floors at dock levelers to signal safe loading and unloading execution helps prevent accidents.

Robotics. Goods-to-person picking and collaborative robotics are redefining movement within the distribution center. The goods-to-person concept involves incoming goods being automatically retrieved from storage and brought to a human “picker” rather than the traditional person-to-goods picking model, in which a picker travels around a fulfillment center gathering goods to fill orders.

Collaborative robots are programmed to work safely alongside humans; many can be easily programmed to perform a variety of tasks as needed. Automated guided vehicles (AGVs) are portable robots that follow wires or tape in or on the warehouse floor or use vision, magnets or lasers to navigate through a warehouse. They offer many cost-saving benefits such as improved safety and accuracy as well as reduced damages.

In addition, drone technology is becoming a reality in some warehouses. A new system developed by researchers from MIT uses drones to track inventory in warehouses by scanning existing radio-frequency identification (RFID) tags.

Wearables. Worker productivity and accuracy can be improved through the use of wearable technology with features like augmented reality, which superimposes a computer-generated image on a worker’s view of the real world, or voice picking. Headsets, wristbands and other wearables can route workers throughout a warehouse more effectively.

More large developers like Prologis are installing solar photovoltaic panels atop warehouses.
Photo courtesy of Prologis

Sustainability. Many companies have incorporated sustainability and energy efficiency initiatives into their supply chains. While initially this could primarily impact transportation via the use of more energy efficient vehicles, the real estate implications are also significant. Incorporating LED or natural lighting, cool roofing materials and even sustainable packaging can affect building efficiencies. Smart building innovations are allowing large, sophisticated developers to create efficiencies and operational savings for their customers, according to **Jeannie Renne-Malone,** vice president of sustainability at Prologis. Harvesting data from these facilities will enable the design and development of even more sustainable industrial facilities in the future.

Incorporating solar power into warehousing space offers various upsides. The overall corporate and social impact is not being lost on many major companies. Larger developers like Prologis have the scale to meet growing customer requirements with a rooftop solar program. Developers are also incorporating water-saving technology, irrigation and landscaping into new warehouse design to meet customer demands.

Accommodating Autonomous and Electric Trucks. With electric and semiautonomous trucks becoming a reality in the near future, site and yard designs will need to adapt. Building owners may need to install dedicated electric charging stations for trucks on-site, embed sensor technology into loading areas and yard spaces, and/or create new safety protocols for trucks within overall warehouse operations.

What Will the Future Bring?

The disruptions and structural shifts described above are already having a significant impact on where and how industrial facilities are being developed, and will continue to do so for the foreseeable future. It's impossible to predict what types of changes the next set of significant advances will bring, but real estate professionals who keep an eye on the future will be well positioned to recognize and make the most of them. ■

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Capitol View

Master Planning a Dynamic Urban District

A new walkable urban district is now rising on a 32-acre former brownfield site in Nashville's North Gulch neighborhood, adjacent to the city's booming downtown.

A cohesive yet flexible master plan sets the stage for this Nashville mixed-use development, which is now underway on a brownfield site.

By Kyle Reis, Cooper Carry

FROM A 32-ACRE brownfield in a virtual wasteland once known as "Hell's Half Acre" there now rises a $750 million walkable urban district stitching together its surroundings into a new modern neighborhood destination. Capitol View represents a dense, mixed-use development rising from an underutilized section of land adjacent to Nashville's booming downtown area, known as the North Gulch. The site sat mostly vacant, save for a smattering of one-story light industrial and other vacant buildings, prior to the inception of this project.

"In the late 1800s, this area was known as 'Hell's Half Acre,' home to new European immigrants and saloons. From there, it was home to various businesses and residences, including an ice house, a service station, a car dealership and Greyhound bus station. We have uncovered cobblestone roadbeds and outdated trolley tracks during our site work. We also discovered abandoned sewer lines dating to pre-Civil War Nashville," says **Austin Webb**, project manager, Hoar Construction, which is building Blocks D and E.

Northwestern Mutual Real Estate crafted the original vision for redeveloping this mostly vacant site, in the shadow of the Tennessee State Capitol, into a thriving, vibrant and dynamic mixed-use community. The firm gradually built up its holdings in the area, acquiring 32 acres from two dozen different entities over a six-year period before bringing in the Nashville office of Boyle Investment Co. to develop the site.

With Boyle as the master developer, several different corporate owners, multiple design firms and more than 60 subcontractors are working on the project. When completed, Capitol View will consist of 1.1 million square feet of office space, 130,000 square feet of retail and restaurant space, 650 multifamily residences, more than 200 hotel rooms and a new urban park that will connect to Nashville's Greenways trail system.

To successfully deliver Boyle's mixed-use vision, the master plan needed to be flexible yet cohesive. **Jeff Haynes,** a principal in Boyle's Nashville office, enlisted Cooper Carry to help Boyle realize its goal of revitalizing this part of the city. At the outset of the project, Boyle sold 10 of the 32 acres to HCA Healthcare, Nashville's second-largest employer, which recognized the value of locating three of its subsidiary companies in a walkable urban environment. Boyle also attracted another local company, LifeWay Christian Resources, to anchor the north end of the project with its new headquarters office building on an approximately 2.7-acre block.

The Planning Process

Boyle Investment Co. tasked Cooper Carry's Center for Urban Design with navigating the various needs of multiple property owners, developers and designers while creating a unified master plan. At the onset of the project, Cooper Carry took Capitol View's developers, corporate owners and designers to the Washington, D.C., region to investigate lessons learned at similar types of projects. The group toured National Harbor, Bethesda Row, Rockville Town Center, Mosaic, CityVista, City Center DC, Constitution Square, The Yards and other developments.

They discussed how these projects incorporated elements such as ground-floor retail space, street design, architectural continuity and public space programming.

That initial trip allowed the group to share a common experience, and helped everyone visualize potential opportunities and pitfalls to consider during the master planning process. It also provided an opportunity for Cooper Carry to sharpen its understanding of its partners' objectives and goals.

As the master plan evolved, the urban design team crafted design guidelines through a consensus-building process regarding a wide range of project goals, including activating street edges, streetscape design continuity, building massing, pedestrian and vehicular access, and districtwide wayfinding. These efforts set the stage for a master plan that provides flexibility for each corporate user inside a cohesive urban district with an activated public realm.

The master plan embraces the gritty, rugged nature of the site, connecting it to adjacent repurposed brick warehouses and embracing its proximity to elevated freight rail lines. It aims to create an energized Main Street activated by shops and restaurants. This rebuilt portion of 11th Avenue north of Charlotte Avenue is only one block from the extension of Nashville's Gulch Greenway trail, which links various parks and historic neighborhoods.

The master plan also incorporates a new 2.5-acre urban park that Boyle will develop over a sewer easement between two elevated CSX rail lines at the northeastern edge of the site.

The master plan for Capitol View encompasses seven blocks and an urban park.

The park will be a central part of the project's bike and pedestrian network. A series of once-forgotten tunnels running underneath the CSX lines will connect the park to the rest of Capitol View. Boyle is working with the city of Nashville to complete the park in 2018.

One of these tunnel connections aligns with Nelson Merry Street, which is the designated "festival street" that runs through the heart of Capitol View. Nelson Merry can be closed to vehicular traffic for festivals, concerts and other pedestrian-oriented events that will extend into the park.

Development Begins

The final master plan encompasses six blocks (A-F) and the aforementioned urban park, as well as a seventh block that will be developed by others.

Block A. The first block to be delivered includes the 430,000-square-foot, 17-story HCA Tower, which opened in October 2016 and serves as the corporate headquarters for Sarah Cannon Research Institute, Parallon Business Solutions and HealthTrust, all subsidiary companies of HCA Healthcare. The building also includes 84,000 square feet of shared dining and confer-

The 17-story, 430,000-square-foot HCA Tower is the first building constructed at Capitol View. Completed in October 2016, it houses the headquarters for three subsidiary companies of HCA Healthcare as well as 26,000 square feet of ground-floor retail space.

Photo by Brian Hubbard, courtesy of Boyle Investment Group

ence space and more than 26,000 square feet of ground-floor retail space. This building has helped establish an aesthetic benchmark for Capitol View.

"As we began our search for office space for HCA subsidiaries Sarah Cannon and Parallon, we were drawn to the Capitol View site because of the location," says **Nick Paul**, vice president of real estate for HCA Healthcare. "After conversations with Boyle and Northwestern Mutual, we knew we had found the right site and the right development partners because we share a common vision for Capitol View."

Boyle's early conversations with HCA executives centered on design models that would maximize activity on the street through an abundance of ground-floor options, from convenient lunch destinations and upscale dinner venues to creative office space, vibrant hotel lobbies and restaurants, plus patio spots featuring cocktails and live music.

The urban design team emphasized the importance of creating a flexible market-based retail strategy focusing active uses on 11th Avenue and Nelson Merry Street. The ownership team of Nashville's popular M.L. Rose Craft Beer and Burgers cited the energy and unique magnetic draw of Capitol View in their decision to open a new location at the HCA Tower in fall 2017. The 2,000-plus HCA employees in Block A have helped kick-start an 18- to 24-hour environment at Capitol View.

Block C. After purchasing this block, Christian publisher LifeWay Christian Resources retained Boyle to develop a nine-story, 250,000-square-foot office building to house more than 1,000 workers. The building, which delivered in November 2017, features additional ground-floor retail space including a bookstore.

"The location advantage has been very beneficial for our business," says **Amy Thompson**, director of corporate relations at LifeWay. "Capitol View is a place people want to come to, and has allowed us to attract and retain top talent from across metro Nashville."

"We are fortunate to have two iconic Nashville corporations choose Capitol View for their long-term business headquarters," adds **Henry Lange**, regional director for Northwestern Mutual Real Estate in Atlanta. "It's a unique opportunity to create something that will be a special place for Nashville well into the future."

Block D. This $115 million mixed-use complex, set directly across from the HCA Tower, will be completed in fall 2018. It will feature 378 luxury apartments, many with views of the state capitol, as well as amenities that include a recording studio, a wine room and a golf simulator. The apartments will be set atop 60,000 square feet of ground-floor retail space along 11th Avenue, 40,000 square feet of second-floor loft-style offices and a 1,000-space parking garage.

The retail and office spaces will line a three-level parking deck embedded within the block, with four levels of wood-framed apartments set above the podium level of the deck. The vertically integrated blueprint for this block will also eventually accommodate a 26,000-square-foot grocery store, an important amenity for both Capitol View residents and commuters coming from downtown Nashville.

The Future

The master plan also calls for a 10-story office tower, to be developed by Boyle on Block E, that will become the new corporate headquarters for Nashville-based health care information technology company HealthStream. Block E is scheduled to deliver in spring 2019, with 24,000 square feet of ground-floor retail space and a 1,200-space garage, along with a 169-room Hampton Inn & Suites housed in a separate building that will wrap around the garage.

Construction has not yet begun on Block B, owned by HCA Healthcare, which lies between the HCA Tower on Block A and the LifeWay headquarters on Block C. The plan for this block includes a parking garage and future office expansion opportunities for HCA. Block F, which sits to the north of Capitol View's urban park, will contain approximately 200 additional residential units.

A seventh block, located north of Block E and east of the LifeWay building, is being developed by Terwilliger Pappas. Now under construction, Solis North Gulch will contain 271 residential units and is expected to be completed in spring 2018.

Lessons Learned

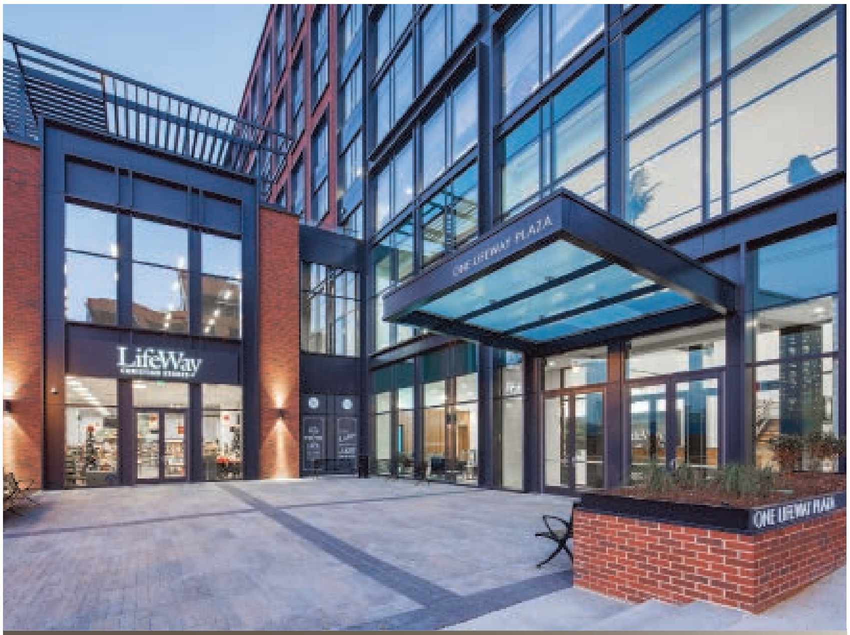
Capitol View offers valuable lessons on creating mixed-use destinations that suit the requirements of each use within vertically stacked structures. HCA, for example, required conference space in its tower on Block A. Designers set the conference facilities above ground-floor retail space along 11th Avenue to add vertical massing along the street while reserving the street level for more active uses.

Block D also accommodates ground-floor retail space on 11th Avenue, with single-loaded creative office space set between the retail space and the residential levels above. Carefully accommodating shared vertical circulation while meeting the egress requirements of multiple users with the least amount of impact on the leasable retail area was a key challenge in both Blocks A and D. The master plan identified key locations, such as the intersection of 11th Avenue and Nelson Merry Street,

Capitol View Project Summary

Project Location	Nashville, Tennessee
Type of Site	Urban
Development Types	Ground Up/New Development, Infill/Brownfield Redevelopment, Mixed Use
Transportation Modes	Car, Transit (Bus, Future BRT/Light Rail), Bike, Pedestrian (Greenway)
Mix of Uses	
Office	1.1 million sq. ft.
Retail/Restaurant	130,000 sq. ft.
Urban Park	2.5 acres
Residential	650 units; 600,000 sq. ft.
Grocery Store	29,000 sq. ft.
Hotel	200+ rooms
Parking	
Structured	4,800
Surface	Approximately 340 spaces
Site and Building Dimensions	
Total Acreage	32 acres
Total FAR*	2.51
Total SF*	2.5 million sq. ft.
Building Heights	7-16 stories
Tenants**	
Block A Office	HCA Subsidiaries 330,000 sq. ft., 14 floors
Block A Retail	Starbucks 1,800 sq. ft. M. L. Rose Craft Beer and Burgers 5,800 sq. ft. Your Pie 2,800 sq. ft.
Block E Office	Healthstream 67,000 sq. ft., 10 floors
Block C Office	Lifeway Christian Resources 272,000 sq. ft., 9 floors
Development Team	
Master Developer	Boyle Investment Co. and Northwestern Mutual with Northwood Ravin (Block D residential) and Chartwell Hospitality (Block E hotel), plus corporate users HCA and Lifeway Christian Resources Project and
Project and Interiors Architect	Cooper Carry
General Contractor	Hoar Construction
Financial Partners	
Co-owners	Northwestern Mutual, Northwood Ravin
Tax Incentives	Both HCA and Lifeway receive incentives from the city of Nashville
Timeline	
Land Acquistion	Begun 2007
Land Acquisition	Completed 2013
Block A Completed	October 2016
Block C Completed	December 2017
Block D Completed (Projected)	December 2018
Block E Completed (Projected)	Early 2019
Project Completed (Projected)	2019
Development Costs	
Phase I Hard Costs	$441 million
Phase II Hard Costs	$309 million

**Excludes Blocks B and F*
***As of January 2018; additional tenants TBD*



Completed in November 2017, LifeWay Christian Resources' nine-story, 250,000-square-foot office building also contains a bookstore and additional ground-floor retail space.
Photo by Chad Baumer, courtesy of Boyle Investment Group

for more active uses and located complementary uses, like office and residential, to take advantage of shared vertical circulation and shared parking arrangements.

Locating shared service areas between uses minimized their footprints and enabled planners to capitalize on the advantages of integrated uses. This approach frees up more leasable area and provides more flexibility in the creation of a meaningful, activated public realm that can be enjoyed on a day-to-day basis and during special events.

Connectivity is one of Capitol View's strongest selling points. The project forms a new gateway into downtown Nashville via Charlotte Avenue, and its strategic location offers immediate access to surrounding communities, including The Gulch, Vanderbilt University, Germantown, New Salem and East Nashville. Residents and visitors can walk or bike from Capitol View to the Nashville Sounds' new baseball stadium and other nearby downtown hotspots.

"We needed easy access for our employees, access to retail, access to restaurants and different ways for [employees] to get to work, including biking options for our millennials," says **Eddie Pearson**, chief operating officer of HealthStream, regarding the company's decision to relocate its corporate headquarters to Capitol View.

Boyle Development Co. is fulfilling a promise to city officials by extending the existing Greenways for Nashville trail along the eastern edge of the development. The Greenways trail extension will connect Capitol View to nearby Bicentennial Mall, along with more than 26 miles of biking, walking and running trails throughout greater Nashville. Capitol View also has multiple vehicular access points, including two interstate exits for commuters driving in from the suburbs.

The Response

Since the opening of Capitol View's first phase in 2016, the community has embraced the project. City leaders continue to emphasize the vital role the development plays in the evolution of Nashville, one of the Sun Belt's fastest-growing cities. Both the former and current mayor have noted that Capitol View delivers long overdue connectivity to the area and have welcomed the economic boom brought by Northwestern Mutual, whose vision and initial investment nearly a decade earlier made the dramatic transformation possible.

The project is also setting a new industry standard for the redevelopment of brownfield sites into thriving mixed-use communities, as cities across North America continue to seek ways to breathe new life into underutilized districts and accommodate the influx of people back to the urban core.

"What attracted us initially [to Nashville] was that it had good strong economic fundamentals," says Northwestern Mutual's Lange. "It's not a boom-and-bust kind of market. In partnership with Boyle, we found we could achieve good, steady returns in comfortable, bite-sized pieces. … Probably just as important is the fact that there is a very strong functional government that is very pro-business. We invest in a lot of markets, and we don't see that everywhere. When you're here, you take that element for granted."

Capital View was named NAIOP Nashville's 2017 Development of the Year. ■

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Crossroads Commerce Park

From Blighted Brownfield to Thriving Infill Industrial Park

Located on a brownfield site just five miles north of downtown Denver, Crossroads Commerce Park provides a central location for distribution facilities. The park's first three large speculative buildings were completed by the end of 2016.

All photos courtesy of Trammell Crow Company

Long-term planning and collaboration among various partners across multiple jurisdictions have been key to creating a new industrial park in Denver's Globeville neighborhood.

By Bill Mosher and Ann Sperling, Trammell Crow Company | Denver

MORE THAN A century ago, the Asarco Globe Plant was operating as a metal smelting facility, employing nearly 3,000 Coloradans in Denver's culturally rich Globeville neighborhood. Over the years, an array of industrial processes and uncontrolled disposal on-site contaminated the groundwater and soil with heavy metals. This contamination resulted in the property being identified as a brownfield site, and decades of investigation and remediation began.

When Asarco finally closed the plant entirely in 2006, the community was left with a blighted, abandoned and fenced 77.5-acre site. Land developer EnviroFinance Group LLC (EFG), working closely with the Colorado Department of Public Health and Environment (CDPHE), the U.S. Environmental Protection Agency (EPA), and Adams and Denver counties, managed the site's environmental cleanup, achieving regulatory closure in June 2015. (Ongoing

When completed in late 2019, Crossroads Commerce Park will contain approximately 1 million square feet of space in 10 buildings, seven of which (buildings 1-7) have been completed and occupied.

monitoring will continue for several more quarterly testing periods.)

In October 2014, as the environmental cleanup was underway, EFG entered into a purchase and sale agreement with Trammell Crow Company (TCC) for the site. TCC and joint venture partner Principal Real Estate Investors (PREI) began development of what is now known as Crossroads Commerce Park in 2015, breaking ground on nearly 1 million square feet of new industrial facilities. When completed by the end of 2019, Crossroads will feature 10 industrial buildings, seven of which are already completed and occupied by local, national and global tenants. The property is once again a regional economic engine helping to rejuvenate Denver's Globeville neighborhood.

Strong Regional Collaboration

The fact that the site had a history of environmental contamination made redeveloping it no easy task, even after EFG had obtained regulatory closure, completed the horizontal infrastructure and readied the site for vertical development. Achieving the site's full promise required partnership with a proven commercial developer.

TCC's goal was to create a cohesive, holistic plan with an integrated design; negotiate effectively with local jurisdictions on entitlements; initiate design and use covenants that would add value and protect the aesthetic and functional integrity of the park, as well as the company's investment; and craft a market vision and branding for prospective tenants and users through the commercial brokerage community. It also aimed to underwrite a capitalization plan, to attract the necessary equity and debt. Doing so required close coordination among all members of the development team, as well as with government agencies.

Strong collaboration with multiple entities, including CDPHE, the EPA, the Denver Urban Renewal Authority and Adams County Economic Development, as well as an intergovernmental agreement between Adams and Denver counties, has enabled Crossroads to kick off a renaissance in Denver's Central submarket.

A Unique Opportunity

In 2014, it was becoming clear that demand for industrial space in this submarket would soon increase. Industrial tenants were being displaced from other parts of the region by a variety of activities. These included new infrastructure surrounding the National Western Complex, a more than 600,000-square-foot event venue that the state is renovating and expanding; the expansion of light rail through the region; and the gentrification of the River North (RiNo) neighborhood as it was being transformed from its historic industrial roots to an emerging mixed-use area.

Crossroads' key location just five minutes north of downtown Denver presented a unique opportunity to develop in an infill area that hadn't seen any significant construction in more than 10 years. With immediate access to both Interstate 70 and I-25, the two major highways traversing the Rocky Mountain region, the site provides a central location for distribution. Crossroads features low sales tax rates for companies located in unincorporated Adams County, along with a Denver mailing address. Economic incentives available to businesses locating there include enterprise zone tax incentives and other tax rebates.

Centrally located in Denver's Central Industrial submarket, near the crossroads of Interstate 25 and I-70, Crossroads Commerce Park – shown here before vertical construction began – is located in both Adams and Denver counties.

Challenges and Solutions

While Crossroads is located at the crossroads of two major freeways, the site itself slopes more than 40 feet from 55th Avenue on the north to 51st Avenue on the south and is bifurcated by overhead power lines as well as the county line. (One side of the park is in Adams County while the other is in Denver County.) It was also subject to numerous limitations created by site remediation, including use restrictions. Housing and schools are prohibited; development on the site is generally limited to industrial uses.

The development team chose to incorporate a two-pronged strategy. The larger northeastern portion of the site was designed for three institutional-grade, speculative distribution buildings. On the balance of the site, because of the inability to build under power lines or across county lines, the site plan called for seven build-to-suit for-sale buildings to complete the development.

Design Standards. To ensure a consistent standard of development throughout the entire site, as well as to improve functionality for the surrounding community, TCC filed a planned unit development (PUD) plan with Adams County. The document included a description of the public and private infrastructure serving the park, restricted permitted uses within it and established design guidelines for its structures. The PUD zoning governing the site required the creation of a third-party design review committee (DRC) to apply uniform design guidelines in both counties. The DRC is comprised of five members, including landowner stakeholders, an architect, a commercial broker and a Globeville neighborhood representative.

The PUD, DRC and design guidelines ensure a high-quality and uniform standard of design for all buildings at Crossroads Commerce Park, regardless of jurisdiction. They specify features that include 18- to 32-foot clear height ceilings; energy-efficient modern design, including 60-mil thermoplastic polyolefin (TPO) cool roofs, which help reduce the amount of solar energy retained by a building; clerestory windows that provide natural light; ESFR sprinkler systems; and modern truck courts with significant car and trailer parking.

Financing Strategies. EFG was instrumental in developing an intricate financial plan utilizing a combination of grants, debt and equity to acquire, remediate and develop the site infrastructure. These included private financing, Asarco bankruptcy funds, an Adams County HUD loan, tax increment financing, Denver Community Development Block Grant (CDBG) funds, and funding from the newly created Crossroads Commerce Park Metropolitan District. This district was created to represent the park's collective ownership and oversee the maintenance of its shared infrastructure.

TCC attracted institutional capital to finance the vertical development by engaging Principal Real Estate Investors as an equity partner. PREI saw Crossroads as a unique infill opportunity for industrial property, a favored asset class among institutional investors. PREI therefore decided to invest both equity and preferred equity in lieu of debt for the leasable buildings. Colorado Business Bank worked with TCC to establish a programmatic loan for the build-to-suit for-sale portion of the site, recognizing that this location could fill an unmet niche. The bank viewed this as an opportunity to expand its commercial lending by committing to finance these seven build-to-suit structures.

Smart Land Uses. The initial remedy for the former Asarco site was based on a "cap and fence" plan, pursuant to the 1993 consent decree, which would have resulted in a vacant, fenced site that could not be redeveloped. The alternative remedial approach implemented by EFG, which involved abatement and demolition of 26 structures totaling almost 1 million square feet, groundwater and soil remediation, and installation of on-site and off-site utilities and roadways, allowed for full redevelopment of the site. Remediation funding served double duty, both cleaning up the site and preparing it for redevelopment simultaneously.

Crossroads Today

Crossroads Commerce Park offers a variety of building configurations, including front park/rear load, cross-dock, and front park/front load. Its 10 buildings can accommodate large distribution users as well as small bay users. The final site plan resulted in three for-lease buildings totaling 673,000 square feet on the northern end of the site and seven for-sale buildings totaling 350,000 square feet on the balance of the site.

All horizontal infrastructure was completed and the three large speculative buildings constructed by the end of 2016. Build-to-suit for-sale opportunities began in August 2015, starting with a 61,900-square-foot facility built for Empire Staple Co. on the northwest corner of the site that was completed in February 2016.

Since then, TCC has acquired additional land parcels on a phased, "just-in-time" basis. Two additional build-to-suit projects commenced in 2016, a 52,600-square-foot building completed in January 2017 and sold to Sierra Pacific Industries (SPI), and a 69,000-square-foot building completed in June 2017 for Inline Distributing Co. Most recently, Stillman Wholesale Meat Co. announced its relocation to a new 60,000-square-foot building to be completed in the second quarter of 2018. Remaining build-to-suit opportunities include three buildings ranging from 17,000 to 58,000 square feet, all located on the southern portion of the site.

Results

The Globeville neighborhood has benefited from the major infrastructure improvements made within and along the perimeter of the park, including the expansion of public streets as well as the addition of new private roads, regional drainage detention, sidewalks and landscaping, and a new traffic signal at Washington Street and 55th Avenue. The new sidewalks and roads enable employees and visitors to access nearby amenities and services, including fast food outlets and bars, along Washington Street as well as local outdoor recreation opportunities.

Since TCC announced its plans for Crossroads, the Central industrial submarket has surged with additional new development. More than 1.3 million square feet of additional space is proposed or underway within 5 miles of the site, in four projects: Hub 25, Central 62, Pro-

Crossroads Commerce Park Project Summary

Location	The southwest corner of 55th Avenue and Washington Street, Denver, Colorado
Type of Site	Urban
Development Type	Ground Up/New Development, Infill Brownfield Redevelopment
Transportation Modes	Car, Truck, Transit (Bus)
Building Types	Warehouse, Distribution and Fulfillment Centers
Tenants	
Lennox Technologies	49,100 sq. ft. (Building 1)
GloProfessional	32,800 sq. ft. (Building 1)
E-commerce Tenant	85,900 sq. ft. (Building 2)
American Tire Distributors	127,500 sq. ft. (Building 3)
Empire Staple Co.	61,900 sq. ft. (Building 4)
Sierra Pacific Windows	52,800 sq. ft. (Building 5)
Inline Distributing Co.	69,600 sq. ft. (Building 6)
Stillman Wholesale Meat Co.	66,500 sq. ft. (Building 7)
Rental Rates	$5.50 to $8.00/sq. ft. (Base Rent), Triple Net
Site Dimensions	
Total Acreage	77.5 acres
Total Sq. Ft. Approved	1 million sq. ft.
Total Built to Date	833,000 sq. ft.
Total at Buildout (Projected)	1 million sq. ft.
Development Team	
Developer	Joint Venture of Trammell Crow Company and Principal Real Estate Investors
Landscape Architect	Meuran Design Group
Architect	Ware Malcomb
General Contractor	Murray & Stafford
Leasing Broker	Newmark Knight Frank
Financial Partners	
Municipal Funds and Tax Incentives	Adams County Housing & Urban Development (HUD) Loan; Tax Increment Financing [with Adams County, the City & County of Denver, and the Denver Urban Renewal Authority (DURA)]; City and County of Denver Community Development Block Grants (CDBG); Crossroads Commerce Park Metropolitan Districts
Construction Loan	Colorado Business Bank
Equity	Principal Real Estate Investors
Short-term Debt	Principal Real Estate Investors
Long-term Debt	Principal Real Estate Investors
Timeline	
Land Acquisition	Commenced late 2014; ongoing
Planning Started	2012
Active Environmental Remediation Completed	June 2015
Construction Started (Infrastructure)	November 2012
Construction Started (Buildings)	August 2015
Existing Construction Completed	June 2016
Final Construction Complete (Projected)	December 2019
Total Project Costs	$105 Million (includes remediation, cost of land, infrastructure improvements and full core-and-shell build-out)

Logis Park Center and CenterCore Distribution Center.

As of the third quarter of 2017, more than 300 jobs have been accommodated at Crossroads, approximately one-quarter of which are new to the region. This number could rise to a total of as many as 800 jobs, depending upon the park's ultimate users. Crossroads' existing employers are all strong public and private investment-grade companies.

Crossroads Commerce Park has been transformed from a brownfield site into a vibrant economic generator of new employment. As Crossroads nears completion, it has become clear to Trammell Crow Company and its partners that their collaboration and continuing focus on the long-term goal of creating a vibrant, energizing employment center in the Globeville neighborhood have been key to the project's success. That collaboration and focus have enabled them to overcome multiple challenges over many years, including the difficulties involved in working across multiple jurisdictions, bankruptcy and funding concerns, and environmental issues caused by decades of contamination and neglect.

Crossroads has received numerous awards. In 2016, NAIOP Colorado named it the chapter's Industrial Development of the Year. Overall, the development of Crossroads Commerce Park has brought the former Asarco smelter site full circle. Once again, it is an economic engine for the region that is helping to revitalize both the Globeville neighborhood and Denver's urban core. ■

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Best Practices in Developing Skilled Nursing Facilities

Grade fluctuations presented serious challenges to the development of an 85,000-square-foot addition to Forest Hills Care Center in Anderson Township, Ohio.

Photos courtesy of Michael Adkins, PHCM Construction Inc.

An Ohio-based developer of these specialized properties describes how it is capitalizing on growing opportunities as well as evolving market trends.

By Greg Lazaroff, PHCM Construction Inc.

AN AGING POPULATION and medical advances that are extending the average person's life expectancy are increasing the need for skilled nursing facilities. Developers are responding by gearing up to build more of these projects to meet the expected need. One such company, Premier Health Care Management, a Cincinnati-based nursing home developer and operator, plans to double in size in the next three years by expanding its total number of beds from 700 to 1,200 through building renovation, expansion and ground-up construction.

Premier's in-house architectural team, PHCM Construction Inc., is currently working on five nursing home development projects with a combined construction value near $100 million. All are geared toward capitalizing on market trends that include residents' desire for private rooms and more amenities. These trends, along with variables such as site conditions, occupancy codes and availability of financing, are among the primary challenges faced by most senior living development projects.

The examples below demonstrate how many of these challenges can be transformed into opportunities that will contribute to a project's flexibility, cash flow and long-term success.

More Private Rooms

Completed in January 2018, Social Row Transitional Care Center is a 100-bed, 98,000-square-foot skilled nursing and post-acute (short-term rehab) care facility located in Washington Township, Ohio, between Cincinnati and Dayton. One of Premier's primary challenges with this project centered on producing a building that offers as many private rooms as possible while also considering the impact of the building size on nursing home operations.

"Residents today are seeking the best possible health care available, and that includes the comfort of a private room. We are doing our best to provide this option, but it's also important to design a building that enables our staff to oversee all resident activity in a seamless way. As the buildings grow in size to accommodate resident needs, health care operations become one of our biggest challenges, one that we must always balance carefully," says **Harold Sosna**, president of Premier Health Care Management.

To meet this challenge, the company's design team makes many calculated decisions regarding the location of nurses stations, linen closets, storage rooms and administrative offices. All resident rooms are within visual sight lines of at least one nurses station. Linen closets are strategically located near resident rooms, so that nurses and other staff don't have to walk far to replenish rooms with clean linens. Administrative offices are positioned in a separate part of the building, away from resident rooms.

Varying Levels of Care

A second challenge that all skilled nursing facilities face involves how to design a building that can accommodate residents who require varying levels of care. Social Row is currently set up to receive both post-acute and long-term care patients. "Sometimes we may have a majority of short-term residents, while at other times the opposite may be true," says Sosna. To plan for this reality, best-in-class designs feature patient rooms, dining facilities, serveries (counters, service hatches or rooms from which food is served), lounges and nourishment centers (combination storage and food service units) that can accommodate both types of residents at any given time.

In addition to designing efficient, flexible buildings, Premier also aims to create stimulating environments for residents by incorporating plenty of amenity spaces. Sosna says, "We want our residents to have a meaningful experience while at Social Row and I believe our amenity spaces will enrich the rehabilitation process."

Leveraging some concepts found throughout the company's seven other facilities, Social Row features a pub, a gift shop, a beauty shop, a soda shop and a 16-seat movie theater available to residents and visiting family members. It also has a 1,200-square-foot activities hall where residents can participate in a variety of social activities and events, as well as additional lounges, courtyards and sitting areas for residents.

Ohio state code requires skilled nursing facilities to have a minimum of 25 square feet of activity space and 25 square feet of dining space per resident. Sosna believes it's important to go above and beyond those minimum requirements when possible, especially if doing so can contribute to greater patient satisfaction. To that end, Social Row's activity and dining spaces add up to almost 12,900 square feet, or about 129 square feet per resident, more than double the minimum required.

Challenging site conditions required a three-story addition to the Forest Hills Care Center. This entrance will provide access to the assisted living and skilled nursing units. A separate entrance on a lower level will provide access to a new physical therapy gym, enabling Forest Hills to provide outpatient PT services without disturbing residents.

Site and Code Issues

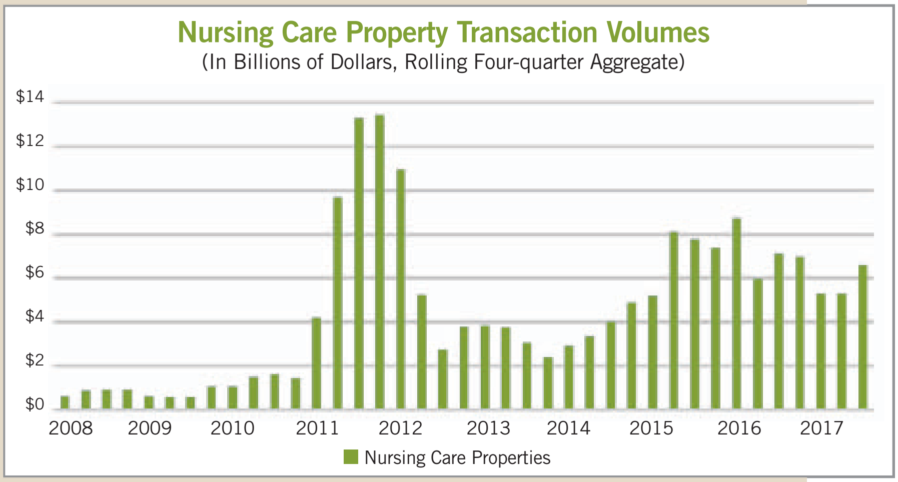
An 85,000-square-foot addition to Premier's existing Forest Hills Care Center in Anderson Township, east of Cincinnati, offers another example of a challenge that has presented additional opportunities. The new building will add 30 private skilled nursing care rooms, 24 apartment-style assisted living units and a new physical therapy gym. When the $15 million construction project is completed in summer 2018, the facility will have grown to 151,000 square feet.

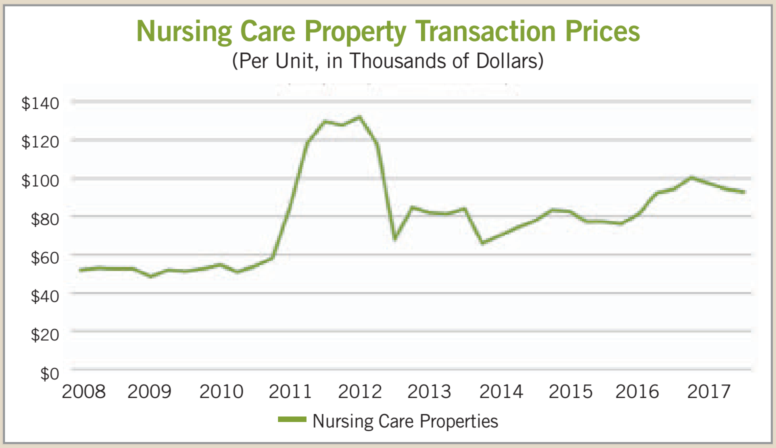
The existing facility serves 87 residents, who require a combination of short-term and long-term skilled nursing care, in a combination of private and semiprivate rooms. From a development standpoint, one of the biggest challenges Premier has faced with this project centers around site grading conditions. Significant grade fluctuations in the land directly adjacent to the existing structure required the developer to design the addition as a three-story building rather than a typical single-floor facility.

Because the new building will house skilled nursing, assisted living and physical therapy facilities, the developer needed to consider code requirements for both I-2 (Skilled Nursing, Physical Therapy) and I-1 (Assisted Living) occupancy. The building design must, for example, provide proper fire separations.

For a single-story building, this would be accomplished by simply designing a two-hour fire wall wherever the skilled nursing/physical therapy units connect to the assisted living units. The challenging site conditions, however, required a three-story addition in which the third floor would serve as the connection point to one of the existing building's skilled nursing units. From an operational standpoint, this meant designers had to place the new skilled nursing care unit on the third floor and situate the assisted living (AL) unit directly below, on the second floor. The physical therapy (PT) facility will therefore be located on the bottom floor.

Investing in Skilled Nursing Properties





Source: NIC MAP Data Service

While recent headlines have highlighted a number of businesses that are modifying their investment strategies related to skilled nursing properties, other investors are doubling down or entering the space in less conventional ways. Investor interest remains relatively strong, with $3.5 billion in transactions, comprising 439 properties, changing hands in the third quarter of 2017.

Since 2008, only three other quarterly periods experienced stronger dollar volume. On a four-quarter rolling basis, there were $6.6 billion of deals done, inclusive of 777 transactions. Meanwhile, pricing remains relatively strong. It averaged $93,000 per bed in the third quarter, close to its recent high in late 2016 of $100,000 per bed, based on a four-quarter moving average.

Investors must consider an array of options for financing, selling and purchasing skilled nursing properties. On the positive side, of course, are demographics, as large numbers of baby boomers and their parents continue to age. Long-term skilled nursing care and short-term rehabilitation services both stand to benefit from this significant trend.

The slower implementation of new value-based care and bundle-based payment models by the Centers for Medicare & Medicaid Services (CMS) in 2018 should also provide near-term support to operators of skilled nursing properties. Bundled payment models, however, with their greater emphasis on health outcomes and less focus on fee-for-service options, will present a longer-term test for the sector.

Other challenges facing the sector include labor shortages and rising wage rates, shifting Medicare and Medicaid reimbursement models, more acutely ill patients, aging buildings, narrowing of post-acute provider networks and rising competition from home health and other sectors. The skilled nursing sector also faces continued occupancy reductions resulting from shorter lengths of stay, as well as some daily rate pressures through the greater penetration of Medicare Advantage (MA) plans, which can affect operators' profitability. NIC's Skilled Nursing Data Report for the second quarter of 2017 shows that the share of Medicare managed plans continues to rise while revenue per patient day (RPPD) continues to fall, ending the second quarter at $437 per day, down from more than $490 per day in 2012.

For some capital providers, investing more intensely in operations or big data systems, such as electronic health record (EHR) systems, that create economies of scale and nurture new business opportunities and partnerships is a strong way forward. For others, investing in ancillary and home care services seems more compelling. Meanwhile, strong operators are acknowledging today's challenges and working to maintain and create the most cost-effective care-intensive option possible for both today's aging seniors in need of long-term care as well as their children, who often need short-term care and rehab services while recovering from joint replacements and other afflictions common to baby boomers. ■

By **Beth Burnham Mace**, chief economist, National Investment Center for Seniors Housing & Care (NIC), bmace@nic.org

Social Row Transitional Care Center, shown here under construction in August 2017, features protected courtyards as well as rooftop solar panels, which were financed in part through PACE financing.

With these operational requirements and design constraints in mind, designers separated the skilled nursing and assisted living floors with a two-hour assembly between the floors in order to abide by the multiple occupancy codes. (The same scenario exists between the AL and PT floors.) However, to maintain that two-hour separation universally, the structural components needed the two-hour fire rating as well. After careful collaboration and research, Premier chose a C-joist structural assembly using Gyp-Crete floor underlayment and gypsum wallboard. "This was the first time we faced a scenario like this involving a multistory building with I-2 above and below an I-1 occupancy," says **Alex Hewitt**, project manager for Premier.

While this scenario has presented challenges, it also sparked a major opportunity. Placing the 3,000-square-foot physical therapy gym on its own floor at grade level allowed the design team to include a dedicated exterior door for the gym, which leads out to a new parking lot. That separate exterior door has enabled Forest Hills to pursue an additional revenue stream by providing outpatient PT services in addition to those provided to live-in residents, who will be able to access the PT area from within the building.

Construction Financing

Financing remains a critical component for any developer. Premier typically finances its construction projects through traditional bank loans with a locked-in interest rate. While that continues to be the prevailing approach, Sosna and his team have recently embarked on projects that also incorporate Property Assessed Clean Energy (PACE) financing.

PACE is private capital in 99.9 percent of cases – the exception being port authorities in states like Ohio – attached directly to a privately owned building, meaning that the PACE loan conveys with the building if it is sold. The capital is then repaid by the owner through an assessment on property taxes over a 15- or 30-year period. PACE financing is repaid through property taxes, using the same type of special improvement district financing that applies to tax increment financing districts (TIFs).

PACE funds typically finance energy-efficiency measures leveraged as part of the construction project, such as LED lighting, more efficient HVAC systems, solar panels and so forth. The PACE loan enables developers to install more expensive energy-efficient equipment upfront and then pay back the loan from net gains resulting from lower energy costs.

Premier completed its first PACE deal – the second in Ohio – for Social Row, and plans to continue to use PACE to complement traditional financing wherever possible. Sosna sees PACE financing as a great opportunity for all parties involved, noting, "PACE helps me get the capital I need upfront while the municipalities can earn additional property tax revenue – and, in the process, we build an energy-efficient building that is less expensive for us to operate."

The Future

Looking ahead, it is clear that the need for these types of facilities will continue to grow as the population of North America ages. Developers who choose to enter this asset class must understand the many challenges involved in building and operating safe, comfortable, efficient and flexible skilled nursing facilities, many of which may also provide short-term rehab and PT services. Developer-operators who aim to deliver the best possible health care to their residents will need to pay careful attention to every detail. ■

Greg Lazaroff (glazaroff@premierhcm.com) is director of business development at PHCM Construction Inc.

2018 Guide to Economic Development AUTHORITIES

The economic development authorities throughout North America listed here can help you attract businesses to your area and to your developments.

This annual guide provides sources and key contacts to enable you to benefit from the myriad of incentives available for commercial real estate development. From site selection assistance to energy saving rebates, state and local enterprise zones to bond financing, public-private initiatives to financing help and assistance in navigating approvals, you'll find it all right here.

FLORIDA

Pasco Economic Development Council

Tom Ryan
tryan@pascoedc.com
www.pascoedc.com
16506 Pointe Village Dr., Suite 101
Lutz, FL 33558-5255
(813) 926-0827 ext. 228

Pasco Economic Development Council is the lead organization in Pasco County servicing businesses relocating and expanding in north Tampa Bay focusing on site and building selection, labor market analysis, regulatory assistance, workforce recruitment and training.

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

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NEW MEXICO

Albuquerque Economic Development, Inc.
Albuquerque Economic Development, Inc.

Gary Tonjes
gary@abq.org
www.abq.org
851 University Boulevard SE,
Suite 203
Albuquerque, NM 87106
(505) 246-6202

AED's mission is to strengthen the Albuquerque metro area economy by recruiting new 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.

PENNSYLVANIA

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.

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TEXAS

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Dan Bowman
dbowman@allenedc.com
www.allenedc.com
700 Central Expwy South, Suite 210
Allen, TX 75013
(972) 727-0250

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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

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The Colony Economic Development Corporation

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

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VIRGINIA

Loudoun County, Virginia Economic Development

Buddy Rizer, Executive Director
DED@Loudoun.gov
www.LoudounPossible.com
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WISCONSIN

Wisconsin Economic Development Corporation

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dobusiness@inwisconsin.com
www.wedc.org
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 wedc.org, call 855-INWIBIZ or email dobusiness@inwisconsin.com. ■

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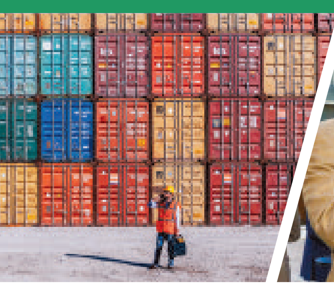

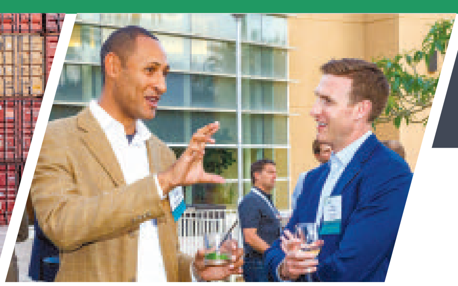

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SIOR

Meet the Visionaries

A new program is engaging younger CRE industry professionals with the work of the NAIOP Research Foundation and its Governors.

By Bennett Gray

PROFESSIONALS AGE 40 and under make up an increasing percentage of the commercial real estate profession as well as NAIOP's membership. Those age 35 and under currently comprise 24 percent of NAIOP's total membership and 46 percent of new members annually. In 2017, the NAIOP Research Foundation, aiming to recognize exemplary industry professionals in the early years of their careers and involve them in the work of the Foundation, created the Visionaries program.

The inaugural class of 10 NAIOP Visionaries was introduced at CRE.Converge 2017 in Chicago last October. Research Foundation Governors and NAIOP senior staff selected these individuals from a large pool of applicants for their career accomplishments, history of involvement with NAIOP and demonstrated interest in the Research Foundation's mission.

"In a time of great change for our industry, the Foundation increasingly relies on the guidance of its stakeholders to help direct our research efforts," says Research Foundation Chairman **Bill Hunt**, president of Elmhurst Group in Pittsburgh. "As experienced professionals under 40 years old, the Visionaries bring with them unique perspectives that will increase the diversity of our brain trust and improve the quality of our research."

The Foundation established the program with five goals:

1) Providing an opportunity for exemplary industry professionals in the early part of their careers to gain industry and career development insights from Governors.

2) Recruiting rising industry leaders whose expertise and experience will help inform the Foundation's research.

3) Ensuring that the perspectives of NAIOP members under age 40 are represented in Foundation activities and discussions.

4) Educating Visionaries on the benefits of becoming Governors through thought leadership and mentoring.

5) Cultivating future Governors to support the Foundation's work.

During their three-year term, Visionaries will attend exclusive meetings with Governors; participate in shaping the Foundation's research; and be mentored by individual Governors. A maximum of 20 Visionaries will serve at any time.

"The work that is done by the Governors and the Research Foundation is integral to leading NAIOP, the communities in which we develop and the commercial real estate industry into the future. Giving back to the organization that has given so much to me and to our industry is a high priority of mine. I am honored to be a member of the Visionaries program," says **Megan Creecy-Herman**.

Visionaries will directly impact the Foundation's work by serving on its Research and Distinguished Fellows Credentialing committees, as well as by helping to identify qualified candidates for future cohorts. They will also share their experiences and expertise by attending Industry Task Force (ITTF) meetings held at NAIOP's two annual events. The ITTF is made up of Research Foundation Governors, NAIOP Distinguished Fellows and invited guests. The Visionaries will join other task force members in exploring and discussing timely industry-related topics that help to inform the Foundation's annual program of work.

In early 2018, the Foundation introduced a mentor program exclusively for the Visionaries. In each year of their three-year term, participants will have the opportunity to meet with a different Governor mentor and benefit from their experience and guidance over a year-long period. To date, 10 Governors have generously volunteered to give back by becoming mentors to Visionaries.

"I was drawn to the Visionaries program by the opportunity to have a closer association with the Research Foundation and its Governors," says **Kate Nolan Bryden**. "I have been fortunate to benefit from mentorship at different times throughout my career and greatly value the opportunity to learn from others who have a greater depth of experience in the industry. I look forward to the exposure to new ideas and opportunity to help drive research and analysis that will benefit the profession."

The Visionaries

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

Jordan Angel, CMB
Senior Director
HFF
San Francisco, California

Kate Nolan Bryden
Vice President-Development
MRP Industrial
Baltimore, Maryland

Peter Cocoziello, Jr.
Director of Asset Management
Advance Realty
Bridgewater, New Jersey

Megan Creecy-Herman
Vice President, Leasing and Development
Liberty Property Trust
Scottsdale, Arizona

Matt Milich
Vice President
Pearlmark
Chicago, Illinois

Drew Richardson
Director of Leasing
Primera Companies
Dallas, Texas

Lex Rickenbaker
Executive Director, Investments
USAA Real Estate Company
Atlanta, Georgia

Colleen Wevodau
Senior Manager
Baker Tilly
Vienna, Virginia

Chris Zarek
Partner
Form Development
Salt Lake City, Utah

The Foundation will be employing a software program already used by NAIOP's chapters to match mentors and mentees. Governors who volunteer to serve as mentors provide their biographies, along with dates when they are available to meet with prospective mentees, which are posted in a "mentor gallery." Visionaries can then select their mentors and set up sessions with them online.

"The continued growth of the Governors program has made for more robust and insightful discussions at Foundation meetings, as more geographic regions and company types are represented," says **Marc Selvitelli**, CAE, executive director of the NAIOP Research Foundation. "Engaging these rising industry professionals will bring important new perspectives to the Foundation's work."

The application period for the next class of Visionaries will open in July 2018; only five new members will be accepted in this and future years. All NAIOP members who are 40 years of age or younger and have seven or more years of commercial real estate experience are welcome to apply. More for information, visit naiop.org/visionaries. ■

By **Bennett Gray,** vice president, NAIOP Research Foundation, gray@naiop.org

Congress Greenlights Brownfields Legislation

NAIOP continues to advocate for the reauthorization and expansion of the federal Brownfields Program in 2018.

By Alex Ford

WHILE THE REPUBLICAN tax bill got most of the attention in 2017, lawmakers from both sides of the aisle were quietly working to reauthorize and modernize a successful federal program that enjoys widespread bipartisan support. These efforts largely remained out of mainstream press reports but, once completed, could have tremendous upside for NAIOP members and local governments alike.

At stake is the federal government's once-vibrant Brownfields Program, into which Congress has breathed new life. Brownfields are properties that may be contaminated by a pollutant or other hazardous substance. A relic of the nation's industrial past, they are typically abandoned and dilapidated industrial properties, but can also be the sites of former gas stations or dry cleaners, businesses that can produce high levels of subsurface contaminants.

With close to half a million brownfields currently dotting the American landscape, chances are most Americans have come across one at some point. What's more, that staggering figure only represents places where a detailed environmental assessment has been conducted. The total number of U.S. brownfields is thought to be in the millions.

"The Brownfields Program has been responsible for the cleanup and subsequent reuse of more than 117,000 properties across the country."

Alex Ford

Perhaps the biggest hindrance to development of brownfields is the threat of liability under the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Commonly known as Superfund, this law made the purchaser of real property strictly liable for any contaminants on the site, even if the contamination happened before the owner took possession. Because of this uncertainty and considerable financial risk, owners of potential brownfields sites generally withheld them from the market or abandoned them altogether.

Many of these sites were once hubs of economic development – think Pittsburgh steel mills, Iowa agricultural distribution centers or New Jersey ports. Brownfields often sit on prime real estate, with access to existing infrastructure such as railways and rivers. More than just an eyesore, brownfields deprive local governments of much-needed tax revenue, even dragging down the values of surrounding properties. According to the National Brownfields Association, as much as $2 trillion of real estate may be undervalued because of the presence of contamination.

On the other hand, cleaning up and reinvesting in these properties improves and protects the environment, increases local tax bases, facilitates economic growth and utilizes existing infrastructure for development. Administered by the U.S. Environmental Protection Agency (EPA), the Brownfields Program was created in 1995 with the goal of doing just that. Through various grants, the program enables states to tackle these sites head on, stimulating cleanup and economic redevelopment.

After more than two decades, the results speak for themselves. By any measure, the Brownfields Program has been a resounding success. Since its inception, according to the EPA, the program has created 130,000 new jobs and leveraged $16 in private and state development funds for every $1 of federal taxpayer-funded grants. From a biomedical research facility in Shreveport, Louisiana, to a job training facility in Oakland, California, to Minute Maid Park, home of the 2017 World Series champion Houston Astros, the Brownfields Program has been responsible for the cleanup and subsequent reuse of more than 117,000 properties across the country.

So why is this now an issue? Authorization for the Brownfields Program expired back in 2006. Recognizing its value, Congress has wisely chosen to appropriate money to fund the program each year since then, but it has done so at varying and often decreased levels, subjecting the fate of brownfields sites to the political whims of the legislature in any given year.

Fortunately, last year the House passed legislation – H.R. 3017, the Brownfields Enhancement, Economic Redevelopment, and Reauthorization Act of 2017 – that would formally reauthorize the program, setting its annual funding at $200 million. It also would provide increased liability protection to local governments for acquired brownfields, and would in-

"Lawmakers often have difficulty enacting sweeping legislation in an election year.... But thanks to the efforts of various stakeholders, brownfields legislation might end up being the exception to this rule."

Alex Ford

crease the $200,000 limit on grants to $500,000, further enhancing the program.

In an overwhelming show of support, 409 representatives from both sides of the aisle voted in favor of the bill. Similar legislation has been introduced in the Senate, sponsored by the bipartisan duo of Sens. **Jim Inhofe**, R-Okla., and **Ed Markey**, D-Mass. Lawmakers often have difficulty enacting sweeping legislation in an election year, and that may be the case in 2018. But thanks to the efforts of various stakeholders, brownfields legislation might end up being the exception to this rule.

In communities across the country, the Brownfields Program has had considerable success. But at its current pace, it will be more than 300 years before every underutilized property is remediated and made suitable for development. We simply cannot afford to wait that long, which is why NAIOP will continue to advocate for reauthorization and expansion of the Brownfields Program. ■

By **Alex Ford**, director of federal affairs, NAIOP, ford@naiop.org

NAIOP Resources

NAIOP PROGRAMS AND SERVICES

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.**

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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.*

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Getting to Know the Chairman

I BELIEVE THAT THE lifeblood of NAIOP is active, involved members who share their ideas and experiences. This collective knowledge, shared across our expansive chapter network, helps all of us to grow professionally, and I'm excited to lead the organization in 2018. To help you get to know me, Development magazine asked me to share my thoughts on our industry and association.

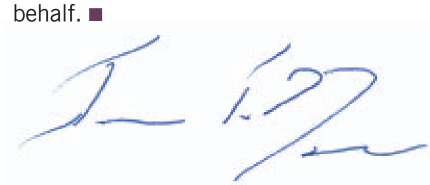
Jim Neyer

Where are we in the real estate market cycle?
It seems like we keep replaying the sixth inning. Fundamentals remain strong, with good employment growth, available debt and equity in the right balance, but without the overbuilding that marked past downturns. The industry is in step with supply and demand, and that will soften the sting of the inevitable downturn, which is not expected to be as deep as the last.

What's special about your home market of Cincinnati?
Like many cities, Cincinnati is experiencing an urban renaissance that has great energy for millennials, families and baby boomers. Our low cost of living and educated workforce make it a very stable market, and with nine Fortune 500 headquarters, as well as air freight hubs for DHL and Amazon Prime Air, we have a strong and diverse economy.

What are your goals as NAIOP Chairman?
I see my role as a conduit of information between the chapters and NAIOP Corporate, particularly as we embark on a new strategic plan that addresses the topics of industry talent development, advocacy and vetted knowledge. I've challenged the staff to help articulate the value of membership in NAIOP by demonstrating the tangible results of our legislative efforts and the practical knowledge offered by our research and educational offerings. I'm a strong supporter of continuing NAIOP's efforts to increase diversity in the industry and the association.

Why should members be engaged in legislative issues?
No one can effectively articulate the effects of zoning, land use, the environment, transportation, taxation and other issues our industry faces to our elected leaders better than a commercial real estate practitioner. I believe that members need to understand how their voices can make a difference, from the local level up to state/provincial and federal areas. Most members say that they join NAIOP for networking and business opportunities, yet the most distinguishing benefit – and, in my opinion, the one with the biggest payback – is NAIOP's advocacy on our behalf. ■



By **Jim Neyer,** executive vice president, real estate development, Al. Neyer, and 2018 NAIOP Chairman

All About Jim

Education
Bachelor of Science in civil engineering from Marquette University.

Family
Celebrating 30 years of marriage this spring; father to a daughter (28) and two sons (26 and 24).

Last book read?
"The Short and Tragic Life of Robert Peace: A Brilliant Young Man Who Left Newark for the Ivy League" by Jeff Hobbs.

Industry mentor
A series of folks have shaped me along the way in ways that they may never realize, but I would definitely have to start with my dad, who gave me the love of construction and solving problems. I miss him every day.

Best words of wisdom you ever received?
Personally: "Listen to your mother." Professionally: "You can't spend revenue." ■

See Jim Neyer talk about NAIOP and his vision as chairman.
www.naiop.org/meetjimneyer