Commercial Real Estate Development SUMMER 2018

Development

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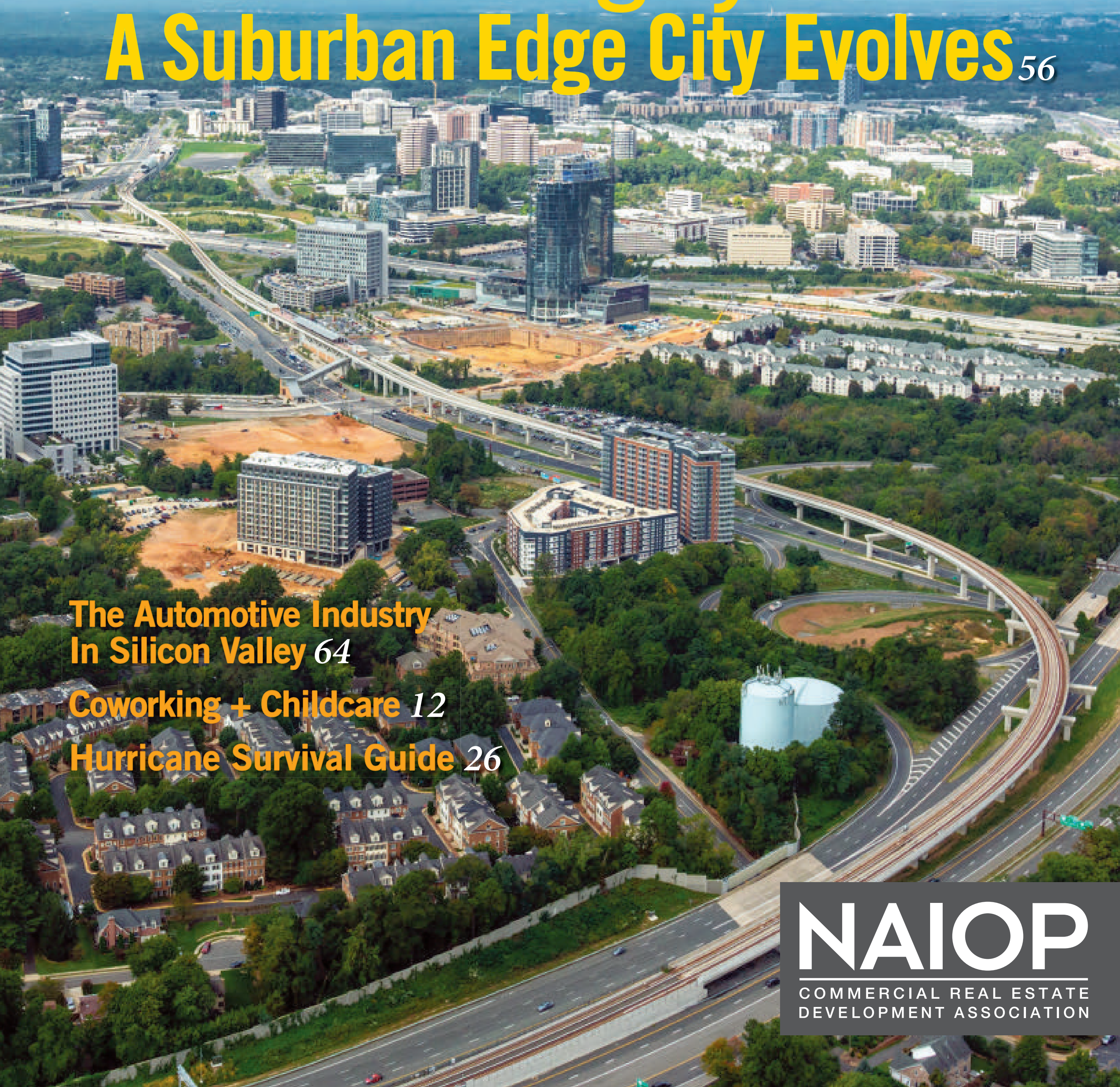
Retrofitting Tysons

A Suburban Edge City Evolves *56*



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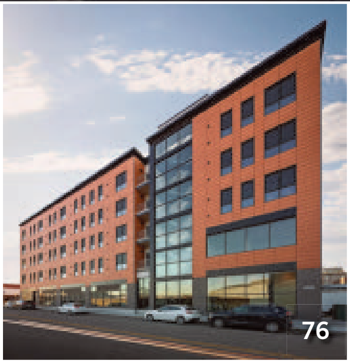

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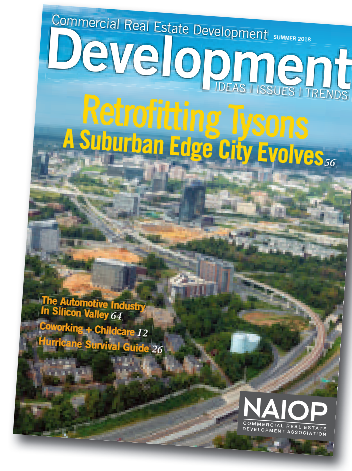

Tysons, Virginia, is evolving from an auto-dependent "edge city" dominated by office buildings and shopping malls to a denser, more walkable transit-served place.
Image provided by the Tysons Partnership

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(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

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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

Farewell to Our Managing Editor

DEVELOPMENT MAGAZINE is published four times a year without fail. For the last five years, **Julie D. Stern** has been a major force behind the sourcing, editing and refinement of every issue. I put off writing this column because it involves a farewell to Julie, my colleague, friend and mentor, who will retire this summer, making this the last issue of Development magazine that she will manage from beginning to end.

Those who have worked with her know that she invariably makes their work better, clarifying concepts and smoothing language. Her efforts typically result in an article that the author alone would not have been able to produce. Despite the modifications she makes, she respects each author's concepts, words and images and battles fiercely to protect them.

I often joke that Julie and I have made magazine writing and editing a team sport, involving numerous iterations, true collaboration, transparency, humility and grit.

I encourage you to send Julie an e-mail (stern@naiop.org) and let her know how much you've appreciated her work.

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


Margarita Foster

As usual, what follows are key takeaways from some of the articles in this issue.

All the best,
Margarita Foster
Editor-in-Chief

Tysons, Virginia, the largest and best-known "edge city" in the U.S., is being transformed into a more walkable urban center that will offer a suburban lifestyle within walking distance of restaurants, transit, jobs and urban vitality (page 56).

Every major automotive company now has divisions located in the Bay Area, conducting advanced automotive work in electrification, artificial intelligence, autonomy and mobility services, and introducing a new sector to the region that is generating increased demand for industrial space (page 64).

Rigorous energy efficiency standards mean that Passive House-certified buildings perform four to five times better than their code-compliant counterparts and two to three times better than comparable projects built to LEED Platinum standards (page 76).

The gig economy has created an opportunity for coworking centers to meet the needs of many parents by marrying part-time workspace with part-time child care (page 12).

Liberty Property Trust's Houston team braced for Hurricane Harvey by marshalling resources, creating a structured communications process, and setting up a "war board" to centralize information and resources and troubleshoot as conditions changed (page 26).

Candidates with multicycle experiences may be just the right people to take the reins from leaders who are retiring or to serve as a bridge for younger executives who are not yet ready for senior leadership roles (page 28).

The movie theaters that have become popular anchors for today's retail and mixed-used developments have replaced stale popcorn and sticky floors with stadium or reclining seating, high-tech audiovisual systems, and expanded food and beverage menus (page 30).

As developers recognize that retail space impacts the brand of their office buildings, they are thinking less about the creditworthiness of small retail tenants and more about retail as an amenity in which to invest (page 33). ■

Most Popular From Spring 2018

1) **"Industrial Real Estate 2018: Disruptions and Structural Shifts"** (www.naiop org/18 disruptions, page 52).
2) **"How to Set Up a Private Equity Real Estate Fund"** (www.naiop.org/18equityfund, page 60).
3) **"Raising the Roof"** (www.naiop.org/18raisingroof, page 12).
4) **"Capitol View: Master Planning a Dynamic Urban District"** (www.naiop.org/18capitolview, page 18).
5) **"Robotic Furniture"** (www.naiop.org/18roboticfurn, page 72).

Construction Costs Outlook

Steel yourself for higher materials costs.

By Ken Simonson, Associated General Contractors of America

THE OTHER SHOE has dropped: Contractors are beginning to pass along more of their costs to building owners.

In 2017, construction labor costs increased at a 2.7 percent annual rate, not seasonally adjusted, as measured by the Bureau of Labor Statistics' monthly series on average hourly earnings. By the first quarter of 2018, the rate had accelerated to 3.1 percent.

Meanwhile, the cost of materials and services purchased by contractors, which was *decreasing* at a rate of nearly 2 percent annually just two years ago, climbed 5.6 percent from March 2017 to March 2018, according to BLS's producer price index (PPI) for inputs to nonresidential construction. That index measures the cost of a fixed "basket" of goods used for all types of nonresidential construction, including the cost of items consumed by contractors, such as diesel fuel, along with the cost of services used in construction, such as equipment leasing and trucking.

The goods portion of the index jumped by 5.8 percent in the 12 months ending in March 2018 – the largest rise since 2011 – while the services portion increased 5.3 percent. Both numbers were up sharply over the past two years.

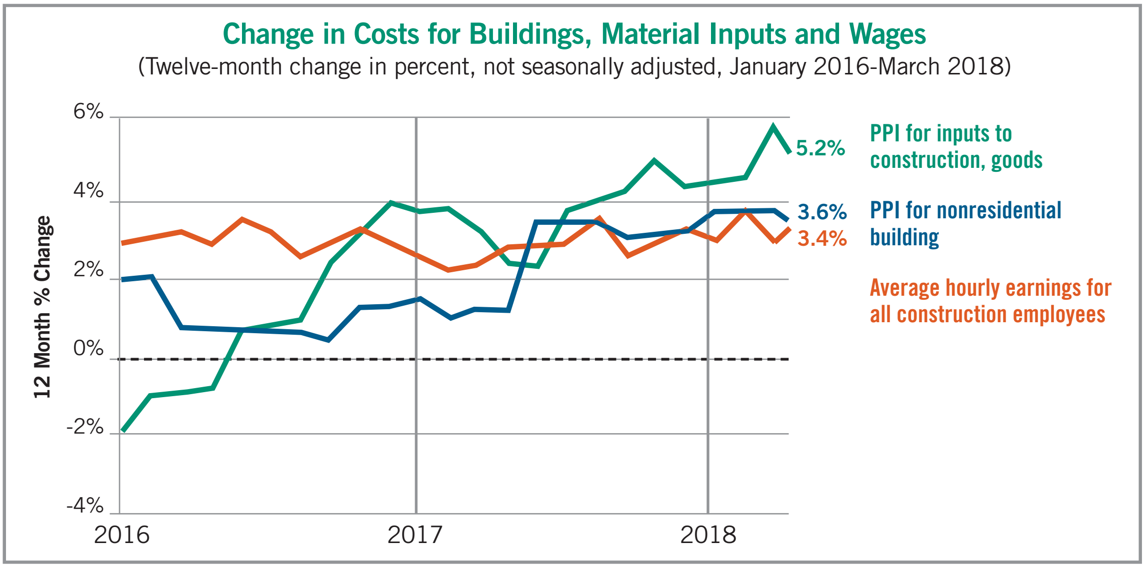
How have contractors responded to these escalating prices? Probably the best indicator of contractors' pricing is the PPI for new nonresidential building construction. BLS compiles this index by asking a fixed group of contractors how much they would charge to put up the same set of buildings month after month. The contractors do not have to estimate the cost of materials and services each time, only what they would add to those costs to cover their labor and markup.

During 2016 and the first half of 2017, this index generally increased at an annual rate of less than 1.5 percent. But in July 2017, contractors began pricing their (hypothetical) bids more than 3 percent higher than they had a year earlier. By March 2018, the annual rate of increase averaged 3.6 percent for five types of nonresidential buildings. Increases ranged from 3.2 percent for new office buildings to 4.3 percent for new industrial buildings. (BLS defines "industrial" projects as primarily manufacturing facilities.) School, warehouse and health care building construction pricing lay in between.

The Implications

In other words, contractors have raised their prices, but generally not enough to cover the pickup in the cost of materials. What are the implications for developers and other owners?

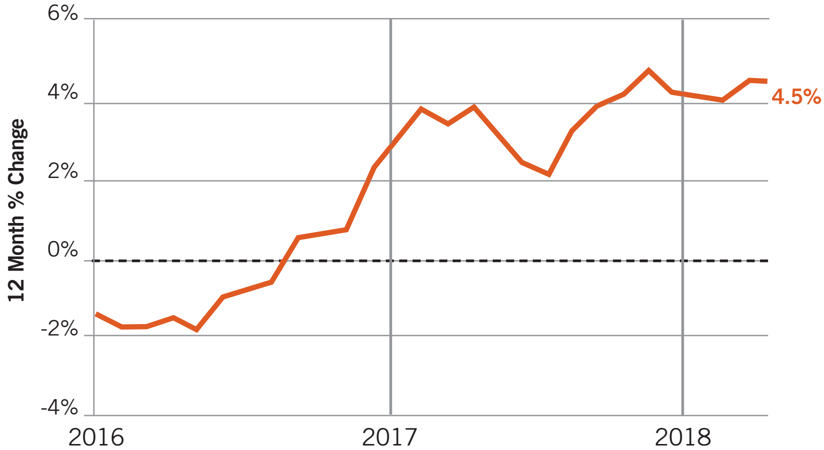
One possibility is that contractors can recoup the higher costs through productivity gains. A study by BLS economists published in early 2018



Source: Bureau of Labor Statistics

PPI Commodity Data for Net Inputs to Commercial Structures

(Twelve-month change in percent, not seasonally adjusted, January 2016-March 2018)



Excludes capital investment, labor and imports

Source: Bureau of Labor Statistics

found that from 2007 through 2016, output per employee hour in industrial building construction increased at a robust 5.3 percent average annual rate. If replicated across all nonresidential building construction, that would imply that contractors can at least absorb higher direct labor costs, though not necessarily higher materials and subcontractor costs.

However, productivity gains are probably harder to achieve in other segments than in industrial building construction. Industrial projects tend to be larger and more capital intensive than, say, retail or office developments.

Without sufficient productivity gains, contractors face two choices: accept lower profit margins or pass along cost increases. The evidence on profit margins is skimpy, but it is widely believed they have remained much lower than they were before the long 2006-2011 slump in construction spending.

Further Increases?

What is the likelihood of further cost increases? Very high, based on notices contractors have received in recent months. Suppliers of rebar – the reinforcing steel bars used in concrete construction – have raised prices repeatedly since December, generally with no advance notice. By early April, these increases totaled as much as 20 percent, with many contractors anticipating more increases weekly. Other steel products, such as wire mesh, steel masonry accessories, and studs, also have posted double-digit price increases.

Ready-mix concrete suppliers announced they would increase prices by as much as 10 percent in April. Many other products have had price increases of 5 percent or more. And the retail price of diesel fuel, which contractors use to power off-road equipment, dump trucks and concrete mixers, climbed nearly 20 percent from March 2017 to March 2018.

Additional increases are almost certain if the Trump administration follows through on tariffs it has threatened to impose on imported steel (at a rate of 25 percent), aluminum (10 percent) and a long list of products from China (various rates). While it is too early to say how much these proposed tariffs will ultimately push up prices, contractors are likely to put an allowance for these costs in their bids, or ask developers to cover possible increases.

A further – and perhaps larger – worry for owners is delivery times. The frequent, sudden price shocks that have already occurred, along with the expectation of large additional increases, have led contractors and steel service centers to flood mills with orders. In addition, widespread shortages of truck drivers have injected uncertainty into delivery dates from fabricators and service centers to construction sites.

Worker shortages are not limited to truck drivers. Contractors have reported widespread difficulty finding qualified workers for a variety of hourly and salaried positions. BLS reported that there were 196,000 job openings in construction at the end of February 2018, the highest February total since 2007. Meanwhile, the number of unemployed job seekers with recent construction experience fell to the lowest February total in the 19-year history of that data series. The implication is that the hunt for qualified workers will get harder and labor costs will continue to accelerate, whether in the form of higher straight pay, overtime, benefits, or recruiting and training expenses.

In short, owners and developers should expect no letup in contractors' bid prices through summer and early fall 2018. They may also face shortages of certain materials that will create either project delays or the need to redesign or "value engineer" projects. ■

By **Ken Simonson**, chief economist, Associated General Contractors of America, simonsonk@agc.org

Coworking Spaces With Child Care Services

A new type of coworking center is emerging to meet the needs of parents with part-time or flexible work schedules and child care needs.

By Camille Galdes

THE GROWTH OF the coworking model is well-documented. As the trend continues to take hold, more spaces are catering to specific demographics, such as women, or industry sectors, such as tech startups and scientists. The latest subpopulation to be targeted by coworking spaces is parents, particularly working moms and dads, through on-site child care.

Jobs and child care mirror each other; a child must be cared for while a parent is at work, making work and child care schedules dependent on one another. But in the age of the sharing economy and virtual work, jobs have changed in ways that are challenging the current structure of child care. Workers are increasingly undertaking "gigs" rather than full-time positions, while child care largely remains on the full-time, regular schedule of the past. In fact, many parents intentionally pursue part-time, flexible work to spend more time with their children or to keep one foot in the workplace. With child care costs continuing to rise and wages continuing to stagnate, parents have even more incentive to reduce their consumption of child care.

Coworking spaces with on-site child care are emerging as an innovative way to make the child care routine more efficient, convenient and cost-effective. Moonlighting moms and dads can stop taking calls at naptime and cobbling together babysitting; now they can go to one location where their children will be cared for while they work on a more flexible, customizable schedule.

Different Approaches

Child care is a highly regulated industry that varies tremendously from state to state. The type of child care offered by a coworking space depends on its location and what regulatory path the operator has opted to take. Many spaces offer child care that is exempt from state licensing standards as long as children attend no more than a certain number of hours per day; three or four hours is most common. This exemption was designed to enable parents to engage in short-term activities, such as in a mall or gym.

Nido: Durham, North Carolina. One of the first coworking spaces with on-site child care to emerge in the United States was Nido, which means "nest" in Italian. Demonstrating the link between work habits and child care needs, founder **Tiffany Frye** came up with the idea in 2013 when her employer allowed her to work remotely from home after she had a baby. What started at her house as a co-op of women, who alternated working on laptops with watching the kids, has evolved into a coworking space with an on-site Montessori child care program in a 2,000-square-foot house zoned for commercial purposes.

Nido currently operates as an exempt child care program for children ages 4 months to 5 years with a limit of four hours per day and offers half-day (four hour) packages. Parents can sign up for two, three or five half-days of combined coworking and child care per week, to be used on whatever days they choose, at a cost of approximately $200 per month for one half-day a week.

Work and Play: South Orange, New Jersey. Deborah Engel, founder of Work and Play, conceived of her coworking space when she struggled with going back to work after her second child arrived. She quit her job and researched her idea. She found that a lot of New York City executives

Work and Play in South Orange, New Jersey, offers 1,525 square feet of coworking space plus a 1,000-square-foot licensed child care facility.
Live Love Lens Photography

Kristine Foley Photography

> **"There were lots of people trying to stay [involved in] their children's daily lives while continuing to work."**
>
> *Deborah Engel*

in the New Jersey suburbs were working remotely and that parents were looking for flexible child care just like she was. "There were lots of people trying to stay [involved in] their children's daily lives while continuing to work."

With the help of an investor, Engel bought a dilapidated building in South Orange's downtown and fully renovated it. Town officials, who saw the space as an economic development tool that would drive foot traffic downtown, helped Engel navigate a morass of zoning and code issues as she overhauled the unique space. Engel designed a 1,525-square-foot coworking environment as well as a 1,000-square-foot child care space capable of meeting state child care regulations.

Work and Play opened in February 2015. New Jersey permits only two hours per day of child care for exempt programs, so Engel quickly pursued licensure. Since December 2016, Work and Play has offered a fully licensed early childhood program with customizable schedules for infants up to 6 year olds. Members can "choose how many days a week [their] child comes, as well as how many hours, [ranging] from two hours to six hours per day." Coworking rates range from $75 for 15 hours to be used over a three-month period to $275 per month for an "all access" plan, while childcare costs an additional $15 to $16.50 per hour.

New & Noteworthy

712,000 sq. ft.

WPT Capital Advisors, in a joint venture with Keystone Corporation, is nearing completion on Pacific Distribution Center, the first speculative distribution building within the 350-acre Keystone Pacific Business Park in Patterson, California. The new 712,000-square-foot cross-dock project is located immediately off Interstate 5 in the Central Valley, within a one-day drive of all major West Coast markets. The building, which is expected to be completed in June 2018, features 36-foot clear height ceilings and ESFR sprinkler systems as well as 112 dock doors, four drive-in doors and parking for 369 cars and 250 trailers.

660,000 sq. ft.

Trammell Crow Company and Clarion Partners have broken ground on the second phase at the 127-acre Fallbrook Pines Business Park in Houston's northwest industrial submarket. Scheduled for completion in November 2018, Phase II will include two speculative cross-dock industrial buildings of 368,000 and 292,000 square feet, both of which will be divisible for multiple tenants. The structures will feature 32-foot clear height ceilings, 52-foot-wide column spacing, ESFR sprinkler systems, ample car and trailer parking, wide truck courts and outside storage. Eighteen acres in the park remain available for a build-to-suit project.

420,000 sq. ft.

Rose & Berg Realty LLC is developing The Gateway at Wynwood, a speculative office building at the intersection of three of Miami's most popular neighborhoods, Wynwood, Midtown and the Design District. Designed by Kobi Karp Architecture, the 12-story building will feature floor-to-ceiling glass and 200,000 rentable square feet of office space plus five floors of parking and about 25,000 square feet of ground-floor retail space. Office floor plates will range from 24,700 to 28,900 square feet. Amenities will include a private rooftop terrace, 24/7 on-site security and Wi-Fi service in common areas and on patios. The building is scheduled to deliver in late 2019.

A Look Ahead

While approximately 18 percent of Engel's members use both coworking and child care, the majority (59 percent) use only coworking and the remaining 23 percent use only child care. Work and Play has experienced so much demand for its coworking space that it has already rented additional private offices down the street.

Play, Work or Dash: Tysons, Virginia. Nicole Dash had owned a home-based day care business in northern Virginia for nearly a decade when she decided families in her program needed more support. "I realized that I needed to help parents too, so the whole family could achieve better work-life balance." She rented a 1,500-square-foot townhouse office space in December 2015 and designed a coworking space geared toward working parents.

Play, Work or Dash in Tysons, Virginia, offers both coworking space and a supervised playroom where parents can leave their children for up to three hours per day.

Photos by Jessica Scharpf

Dash set up the same high-quality child care she had developed in her previous business on the lower level and designed a shared office space upstairs. The coworking space is homey and relaxed; it feels as if you are in your living room while a playdate is going on in another wing of the house. In January 2018, Play, Work or Dash expanded to the 1,700-square-foot space next door to offer more private offices, a larger

“I realized that I needed to help parents too, so the whole family could achieve better work-life balance.”

Nicole Dash

play space and other amenities such as a private call room, making its total footprint 3,200 square feet.

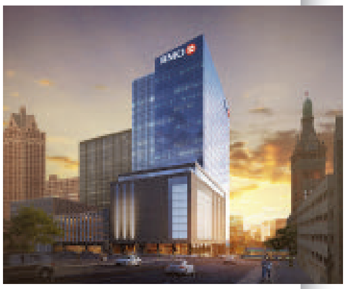
The vast majority of members are parents whose children use the playroom, which operates as an exempt child care space with a three-hour limit, per Virginia regulations. Although Dash encourages her customers to sign up a half-hour ahead, as long as there is space in the play area, parents can drop in whenever they need. Play, Work or Dash accepts children from 9 months to 8 years and allows parents of children ages 2 and older to drop off their children while they run an errand or go to an appointment as long as they are no more than 30 minutes away from the space.

Marcia Sheehan, director of Play, Work or Dash, says the company’s users value the reliability of the child care. “Our members know we’re always here – many of them actually first discover us when their babysitters cancel or they have a family emergency.” For a mid-range package, which allows users to access coworking and child care for 24 hours a month, 90-minute passes cost about $20 each ($320 per month). Rates vary depending on whether passes are purchased in advance, as part of a package, or a la carte.

The Hatchery: Columbia, Missouri. Amanda Quick was inspired by a multiuse space in the St. Louis area that hosted classes, a restaurant and on-site child care. Since her home city of Columbia lacked a coworking

New & Noteworthy

381,000 sq. ft.



Irgens has begun vertical construction of the 25-story BMO Tower in downtown Milwaukee, which is on track to be completed by the end of 2019. The Kahler Slater-designed building will feature more than 360,000 rentable square feet of office space above a 10-story, 647-space parking garage and 20,000 square feet of ground-floor retail space. BMO Harris Bank and law firm Michael Best have signed on as the building’s largest tenants. Office floors will feature 26,000-square-foot floor plates, 9.5-foot finished ceilings and floor-to-ceiling glass.

275,000 sq. ft.

Beacon Capital Partners and Elevation Development Group have completed vertical construction at The Hub, a 275,000-square-foot, eight-story mixed-use development in Denver’s River North Art District. The Gensler-designed property, which will be ready for occupancy in the fourth quarter of 2018, will include 250,000 square feet of office space plus 25,000 square feet of retail space. The office space will feature open floor plates, 14-foot ceilings and oversized windows with mountain views. The project will also include a parking garage with secure bicycle storage and electric vehicle charging stations, a garden terrace and a fitness center. HomeAdvisor, a digital home services marketplace and one of Colorado’s largest technology employers, has signed a 70,000-square-foot lease.

122,000 sq. ft.

Meridian Design Build has begun site work on a 122,000-square-foot build-to-suit project in Indianapolis. The project, which is located on a 14.8-acre site, will serve as a distribution facility for Ferguson Enterprises’ plumbing division. The structure will include 10,000 square feet of office space, a 5,000-square-foot sales area and 106,000 square feet of warehouse/distribution space with 19 loading dock positions. The building, which is expected to be completed in October 2018, has been designed to accommodate 50,000 square feet of future expansion.

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.

Coworking parents can leave their children at The Hatchery in Columbia, Missouri's child care space for up to four hours a day.
Photos by Drew Piester Photography

space, she decided to establish one with child care as an amenity. The Hatchery opened in July 2017 with an exempt child care program that children between the ages of 6 weeks and 6 years can attend for up to four hours a day, per Missouri regulations. The space offers a spa-like environment that uses open, white spaces to remove the distractions common at a coffee shop or home so members can focus and work efficiently. Quick enjoys networking and career coaching; members can look to Quick's team and other members for guidance. While only 17 percent of her members use the child care space, Quick allows parents to purchase hours of child care as an add-on to any of the monthly coworking packages. Coworking rates range from $20 per day to

“One bank told us that the coworking would be too disrupted by the kids. We ultimately used a bank that better understood our vision.”

Tiffany Frye

$179 per month for unlimited use. The most popular child care package costs $400 for 80 hours.

The Challenges of a New Business Model

Entrepreneurs looking to open a coworking space with child care often experience roadblocks because third parties do not understand their business model. Frye, who now mentors others planning to open new spaces, says, “For instance, insurance folks don’t understand what we’re talking about. One of my mentees said an insurer would cover child care but wouldn’t take on adults being in the space too. [Insuring coworking with child care] requires the way liabilities are defined [to] be totally rewritten.” Quick also encountered doubt when she looked for a loan: “One bank told us that the coworking would be too disrupted by the kids. We ultimately used a bank that better understood our vision.”

Furthermore, child care licensing standards were not designed for the coworking model. Licensure often relies on structural and code-level building design that is not easily met by a space suitable for coworking. For example, licensure requires an outdoor play space, ample parking and several bathrooms and sinks in particular locations. “The space needs are different, functionally as well as aesthetically. You need to achieve the modern aesthetic of a coworking space – you can’t just

New & Noteworthy

66,000 sq. ft.

Kinsley Construction Inc. has begun site work on a 66,000-square-foot addition to Phoenix Contact USA’s existing logistics center near Middletown, Pennsylvania. The building will include a 35,000-square-foot mezzanine that will provide additional office and laboratory space for the company, which develops and manufactures industrial electrical and electronic products. The structure is scheduled for completion in March 2019.

65,000 sq. ft.

Steaven Jones Development Company Inc. and Creative Office Properties are developing INclave, a live, work, play campus in Marina Del Rey, California’s Marina Arts District. The three-building mixed-use project, which is scheduled for completion in the first quarter of 2019, will consist of 65,000 square feet of office space geared to tech companies, 49 luxury rental apartments on the third through fifth floors and a 2,160-square-foot cafe, plus a two-level underground garage featuring an AutoParkIt automated parking system that will accommodate 277 cars as well as bikes, surfboards, kayaks and personal storage units, with 10 electric vehicle charging stations. The office space will feature 22-foot ceilings, polished concrete floors, skylights and operable windows, and kitchens adjacent to private patio areas.

109 acres

Courtesy of Panache Development & Construction

Eightfold Development and Panache Development & Construction have broken ground on Eightfold, a 109-acre mixed-use development six miles east of Austin, Texas’ urban core. The project aims to transform an abandoned former Motorola campus into a live, work, play community. Over the next decade, it will grow to include office towers for tech companies, food halls, coworking facilities, exercise and wellness outlets, a boutique hotel, a medical office space co-op and more. The first phase, with more than 450,000 square feet of office space, is expected to be ready for occupancy by the end of 2018. Newmark Knight Frank, which is representing Eightfold in leasing transactions, tenant negotiations and marketing, has signed the project’s first lease with Work Well Win, a collaborative workspace provider. ■

design it as a day care [facility]," Frye says. Although Nido is not licensed, Frye reiterates that its program meets as many of North Carolina's licensing guidelines as possible and, in many cases, exceeds them. "Some of the licensing requirements are unnecessary in a setting where parents regularly check in on their kids and are involved in their care," Frye explains. In Virginia, there are additional requirements associated with being fully licensed. Dash says she would need to hire a professional, full-time educational director, an onerous cost for a small business.

Adding Value by Connecting Like-Minded People

Coworking with child care largely caters to women who are both their children's primary caregiver and entrepreneurs, a role known as "mompreneurs" in the blogosphere. It thus connects people facing the same challenges. When these working moms meet, they instantly relate and want to help each other succeed. "We have accountants, web designers, editors, et cetera, who all offer their services to our small business owners," explains Dash.

Networking groups like Femworking and Charmed Cardinals, which focus on supporting the unique needs of female entrepreneurs, also meet at Play, Work or Dash. Similarly, the Mom Owned Business Group, a networking and accountability group for mom business owners, meets monthly at Work and Play. Quick says that members of The Hatchery who are "certified in self-care techniques like Reiki, massage and empowerment coaching offer their services to other members."

Moreover, just having other "coworkers" to commiserate with about work as well as parenthood provides members with emotional support.

It is just the beginning for these innovative spaces. **Steve King**, president of Emergent Research, which closely tracks the growth of coworking spaces, estimates that among the more than 4,000 facilities in the U.S., only around 25 to 30 currently offer on-site child care. However, he says they are "popping up at a rapid clip right now." Some examples of new or upcoming spaces are The Inc. in Seattle, MOMentum Coworking outside of Philadelphia, Workafrolic in Washington, D.C., and Third Space Coworking + Childcare in Omaha, Nebraska. ■

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

What Lies Ahead for Commercial Real Estate, Part 2

A look at some of the trends presenting challenges and creating opportunities for CRE.

By Bill Hunt, Elmhurst Group

AN EARLIER ARTICLE, "What Lies Ahead for Commercial Real Estate Sectors?" (Development, spring 2018) explored some of the challenges facing those sectors today. This follow-up piece examines some general trends that will impact commercial real estate overall.

General Trends

The first of these is an emerging demographic life stage: people older than 65, but not yet elderly. This group has been described as "the young old," "geri-actives" and "OWLs" (older, working less). Real estate opportunities for this group could include Club Med-style resorts, with a balance of wellness programs and other activities, as well as specialized apartments in urban areas with amenities ranging from bike racks to on-call doctors.

Another general trend is the so-called gig economy, the growth of independent contractors. Many work from home and provide services for individuals and/or act as subcontractors for companies. These services include part-time legal work, accounting, customer service and IT support. The gig economy presents a threat to real estate, since companies using contractors rather than employees may require less space. Yet it also presents an opportunity for more coworking environments, which many gig workers prefer to traditional offices.

"The gig economy … presents an opportunity for more coworking environments."

Bill Hunt

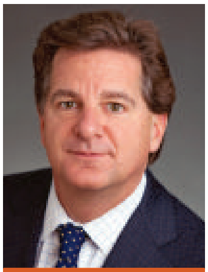
Tech Trends

New and changing technology, including e-commerce, automation, 3-D printing, virtual reality, big data and even artificial intelligence, will also have big impacts on real estate.

E-commerce. While the shift in how and where people buy things has negatively impacted the retail sector, it is benefitting other niche real estate segments, including data centers, other types of industrial properties and cell towers.

Automation. Autonomous cars will eventually have a huge impact on real estate. Parking structures could become obsolete, and homes may no longer need garages. Streets could be narrowed as the need for street parking disappears; parking lanes could be replaced by bike or bus lanes, wider sidewalks, open space or even new development.

People will probably use autonomous cars as a service, rather than owning their own cars, which makes sense, because most cars are used less than 5 percent of the day. But most, if not



Bill Hunt

all, of these changes will probably take place in the far rather than the near future. (For more on this, see "Transitioning Toward the Autonomous Vehicle" on page 52.)

Another automation trend, which has already been underway for some time, involves the use of robots in warehouses. The next generation of collaborative robots, or "cobots," will feature cameras, touch sensors and somewhat humanlike features, enabling them to safely work alongside and collaborate with humans.

3-D Printing. As 3-D printing becomes more prevalent, certain products will no longer require warehousing, as they will be manufactured on-site. During the past 10 years, the price of low-end 3-D printers has come down from around $18,000 to under $500. Incredibly, they are also now 100 times faster.

Virtual Reality. Beyond the video game industry, virtual reality hasn't really taken off yet. But it very well could in the near future, as the quality improves, and as it includes more augmented reality, which combines actual images with virtual creations.

Some architects and brokers are already using virtual reality presentations. (See "CRE Tech Adoption Speeds Up," Development, winter 2017/2018.)

Augmented reality may also impact leisure travel – imagine a $10 tour of the Grand Canyon – and business travel, as virtual conferences and meetings become more prevalent. And special glasses will enable construction workers to see construction drawings superimposed on actual spaces.

Big Data. Smartphones and the internet have made information more abundant and valuable. Google knows what people search for, Facebook knows what they share and Amazon knows what they buy. Data mining presents an interesting opportunity for the real estate industry. Mall owners can track shoppers' habits, apartment building owners can track residents within their buildings and office landlords can track workers throughout public spaces.

Artificial Intelligence. This technology is also improving exponentially. After tracking occupants' whereabouts, building owners can then create algorithms to predict future usage.

One example is NVidia, a company specializing in visualization software, which has installed cameras to recognize the food people are eating in its cafeteria and then charge them accordingly, with no lines or cashiers. The company also tracks employees' arrivals and departures to determine optimal heating and cooling needs.

Retail landlords are attempting to use AI with special apps that lure shoppers with mall-wide discounts. A landlord is then able to track a shopper's spending habits and steer them to specific retailers. Even law firms may need less space, as smart computers could provide rudimental legal advice.

Displacing People?

All of these technological advances raise an important question: will technology actually be an asset that improves people's performance in the workplace, or will it just remove people from the workforce? There is a name for this potential trend:

> **"The nation should consider reallocating some of its funding for higher education by directing more dollars … toward technical schools and community colleges."**
>
> *Bill Hunt*

"robogeddon." Although only one occupation, the elevator operator, appears to have been completely obliterated by technology, many businesses will clearly continue to be affected by automation and other technological advances. One fairly recent example: several years ago, UPS created a GPS algorithm that provided distribution routes for its trucks, which minimized waiting times for left turns. This was a huge success for UPS; the company now needs fewer trucks, but it also needs 1,100 fewer drivers.

What can society do to help all those displaced people going forward? This is a very big question.

The Future Workforce

The academic world has already spoken up on this subject, introducing the concept of "universal basic income." (**Mark Zuckerberg** talked about this in his 2017 Harvard commencement address.) The theory is that a portion of the excess profits from technology should be used to fund the salaries of displaced workers.

Other strategies revolve around education. First, the U.S. needs to increase its emphasis on science and math at the very early stages of the learning process. Schools need to go beyond simply attempting to make science "fun." Educators must create new curriculum paths that encourage *all* students to study science, not just those who will become scientists, enabling everyone to become employable in a tech-centered workplace.

Second, the nation should consider reallocating some of its funding for higher education by directing more dollars, both private and public, toward technical schools and community colleges. These schools can best retrain people who have lost their jobs because of advances in technology. Traditional colleges and universities are important; they are one of America's biggest assets, but they are not for everyone, and they are very expensive.

For better or for worse, the nation has overextended itself during the past few decades with college spending. Historically, only 25 percent of 18- to 24-year-olds have gone to college, but during the past 20 years, that number has grown to nearly 35 percent. The result has been a growth in liberal arts college matriculation and a subsequent increase in the number of graduates competing for scarcer and scarcer non-tech jobs.

This growth has led to expensive overbuilding of campuses and excess capacity. Consolidating some of these colleges would free up unused properties to become technical training centers for the people who will be needed to work in tomorrow's technology-dominated world. These technical training centers could offer ongoing benefits and provide "lifelong" learning opportunities for people of all ages because, as the world changes so quickly, individuals may now need to begin new careers many times over the course of their lives.

New Opportunities

Finally, circling back to commercial real estate, all of these trends can be seen as threats, but they also create new opportunities. The "secret" that will enable CRE professionals to take advantage of these trends is to be as knowledgeable as you can, by always observing the world around you. Most importantly, you must always be open to new ideas, so you can take full advantage of these very exciting times in which we now live. ■

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


UNPARALLELED ACCESS.
UNRIVALED OUTCOMES.

CEO on Leadership: Larry Heard, CEO, Transwestern

The president of this Houston, Texas-based commercial real estate services, investment management and development firm offers his perspective on the industry.

By Ron Derven

Larry Heard

FOUNDED IN 1978, Transwestern has grown to 35 cities nationwide with more than 2,300 employees. It is comprised of three firms specializing in nationwide services, investment management and development. Transwestern Commercial Services leases and manages approximately 400 million square feet of space around the U.S. while providing comprehensive services to owners and occupiers of commercial real estate; Transwestern Investment Group has more than $4.3 billion in assets under management; and Transwestern Development Co. has completed more than $1.32 billion of real estate developments since 2013.

The Transwestern family of companies – which also includes Ridge, the industrial arm of Transwestern Development Co., and Delta Associates, Transwestern's research affiliate – represents some of the largest investors, owners and occupiers of commercial real estate in the world.

"Be prepared to work hard and persevere through adversity. Show up every day and be resilient. Surround yourself with smart people you trust and admire. Stay humble but develop confidence. Have integrity with everything you do. Become an excellent communicator and an even better listener. … Enjoy what you do."

Larry Heard

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

Larry Heard: My primary role is bringing to life our company's purpose statement: empowering good people to do extraordinary things together. As CEO of the Transwestern family of companies for the past 15 years, I feel a personal obligation to everyone in the firm. I enjoy working with the leadership teams of each company to establish and pursue our shared vision and create business strategies to serve our clients at the highest level possible. Working to unleash the talent of 2,300 team members is a rewarding and fulfilling experience.

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

Heard: We look for natural leadership skills: an excellent communicator, a trustworthy person and a person with a proven track record of success and integrity. [We want] a confident person that thinks creatively and "out of the box." We also appreciate team players, [people who can] build consensus and inspire those with whom they work.

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

Heard: Directly and with compassion. Mistakes are often the byproduct of trying something new and the pursuit of innovation or a higher standard. We try to convert a mistake into a learning experience, but we deal with it in a direct and unambiguous manner.

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

Heard: First, we have worked hard to diversify our firm and our activities. We have developed a number of revenue streams. When transaction volumes slow, while we feel the effects, they are moderated somewhat by our other lines of business. Secondly, we are committed to annual strategic planning. Through this annual practice, we try to stay close to the business cycles that will come, and we always have a fairly well-developed contingency plan for a downturn.

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

Heard: Be prepared to work hard and persevere through adversity. Show up every day and be resilient. Surround yourself with smart people you trust and admire. Stay humble but develop confidence. Have integrity with everything you do. Become an excellent communicator and an even better listener. Work well in a team construct and give teammates credit for their contributions. Be a continual learner, as the pace of change is accelerating in all businesses. Take responsibility for your actions, especially mistakes. Enjoy what you do.

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

Heard: I have had a number of mentors throughout my life and career. I have worked with **Robert Duncan**, Transwestern's founder and chairman, for close to 35 years. I learned a lot from him in the mid- to late 1980s as real estate firms, ours included, endured a brutal economic downturn. His resolve was instructive, but so was his commitment to do the right thing and be transparent throughout the process. We celebrate our 40th anniversary as a firm this year, and some of our greatest achievements have emerged from our most difficult challenges. Grandparents, aunts and uncles have also been great mentors over the years. I always felt comfortable asking questions, and they were always generous with their thoughts and opinions. ■

By **Ron Derven**, contributing editor

A Hurricane Survival Guide

Almost a year later, Liberty Property Trust looks back at the impact of Hurricane Harvey.

By Hans Brindley, Liberty Property Trust

LIBERTY PROPERTY TRUST had a solid plan for Hurricane Harvey, but when it made landfall in Texas in August 2017, no one could have anticipated the full power of the record-shattering 50-hour storm. Once it hit, the company's Houston office had to manage resources in ways that tested its plan and mettle.

Before the storm, the team positioned materials locally and near its Dallas office. They covered windows and door glass, and organized a system for checking on people – both employees and tenants – and buildings. They locked down vendor commitments for the supplies and services they expected to need after the storm. Tenant and vendor contact rosters became the core of their playbook.

After all that preparation, Liberty had to acknowledge the inevitable: some employees, tenants and vendors would be trapped in their neighborhoods, and it could be days if not weeks before they could get to the office. Some might even lose their homes. So the team purchased external phone batteries, charged up everything possible and stocked up on water and food. Then they collectively held their breath.

Hans Brindley

Many of Liberty Property Trust's industrial buildings in Houston, including the one on the right, were difficult or impossible to access for days after Hurricane Harvey struck in August 2017.
Photo by Hans Brindley

As the storm struck, Liberty's first objective was to make sure its team was safe. Many employees suffered major damage to their homes, and one experienced the worst of it; her house was almost a complete loss. Fortunately, she was able to evacuate before being inundated by water.

With many roads impassable or unsafe and telecommunications networks severely impacted, it was imperative to work through a formal communications protocol. Mandatory twice-a-day team calls were held on a pre-set conference line. Those first calls helped to facilitate information sharing and focused heavily on how to best help employees and tenants in peril.

Almost immediately, the team reached out to tenants and vendors, tracking all of the information they provided in a commonly accessed "Contact and Property Triage" document. This Excel document became the core of the team's efforts. It was an accessible way to collaboratively update information on each of the company's 60 buildings in real time, including the work needed, status of insurance claims, and whether the tenants were, or could be, up and running.

Seven Lessons From Hurricane Harvey

Every real estate owner faces natural disasters; it's in the job description. The following seven lessons might help you prepare for the next one you face.

1) Brainstorm. Some of Liberty Property Trust's best ideas came from sharing across roles, including leasing, property management, tenant services and office staff.

2) Marshall resources in advance. Be prepared to share documentation, regardless of whether you can reach the office.

3) Create a check-in process. Scheduled calls provide structure, create a safety check for employees and identify who can get to work quickly.

4) Power up. Charge everything that needs to be charged and make sure all vehicles have fuel.

5) Study up. Know your insurance policies and how to reach your agents quickly.

6) Create "war boards." Physical and online war boards can provide all team members with real-time access to repair, leasing and materials information.

7) Improvise. Be ready to improvise at all times, and keep communicating. It's your best defense against the chaos of a natural disaster. ■

This was a crucial step. While all team members were working from remote locations, everyone could use the document as a basis for their own plans and as a mechanism to communicate with Liberty's national headquarters in Philadelphia and its sister office in Dallas, both of which stood poised to handle arrangements for additional help.

As roads cleared and utilities began to come back online, the Liberty team was able to access their office, which fortunately had not sustained any damage. The triage document then became the basis for the "war board," a conference room wall filled with maps, property lists, condition reports and materials status reports. As the days went by, it became clear that Liberty had been very fortunate, as most of its properties were minimally impacted.

About 20 percent of the company's buildings sustained damage of some sort, mostly by water penetration from sustained high winds that blew the rain sideways. Roadways and parking lots were flooded out, but Liberty avoided much of the flooding people saw on television because its industrial buildings are cross-dock facilities with dock doors that are four feet off the ground.

Yet mobility for the first couple of weeks after the storm was greatly impacted. The city was split in two as Buffalo Bayou breached, making what had been a 10-minute trip a frustrating two-hour excursion. Moving people and materials remained challenging – and at times, especially in the early days, dangerous – long after the storm was over. Team members focused on fixing what needed to be fixed, managing insurance company claims, helping employees and aiding with the real estate needs of others.

The war board was not only efficient; it also gave the team a sense of control throughout the recovery and expanded their ability to help the community, by identifying opportunities to use the company's available resources to help those who didn't fare as well.

The Red Cross, the Federal Emergency Management Agency (FEMA) and charitable organizations reached out to Liberty for assistance before, during and after the storm. Their needs ranged from short- to long-term use of space, often for sorting and storing building materials, fixtures, appliances and donations needed for rebuilding. The team was also able to identify some spaces they could offer free of charge to charitable groups. For example, a coalition of former military members began their service during the storm by rescuing people from roofs and flooded areas. Liberty provided them with a base for their operations, which enabled them to expand their support into the delivery of food, water, supplies and, eventually, bedding.

As Hurricane Harvey blew out of Texas, it made a beeline for Florida, another state where Liberty has significant holdings. The Houston team was able to provide the company's South Florida and Tampa teams with ideas and suggestions that made their hurricane experiences safer and easier.

Today, people continue to ask if things are back to "normal." In truth, there was no getting by Hurricane Harvey, but Liberty Property Trust managed to get through it. The company continues to streamline its crisis plans – there will always be a "next event" – and help those who, to this day, are still trying to recover. ■

By **Hans Brindley**, Houston market leader, Liberty Property Trust, hbrindley@libertyproperty.com

Capstone Candidates in the C-suite

Older, experienced professionals can add tremendous value to a CRE company.

By Mary McCarthy, Terra Search Partners

EXECUTIVE RECRUITERS, especially those who specialize in commercial real estate, often have successful, experienced leaders from the 55-plus age group come to them seeking a role that offers a concluding chapter or crowning achievement to their career. This is the "capstone candidate." The capstone candidate has 25 or 35 years of experience in the CRE business, often including two or three down-cycles, and is ready for one more challenge. But there's an imbalance in this arena.

A capstone candidate's former colleagues may be chanting, "Encore!" or, "Oh, won't you stay just a little bit longer," as in the popular song. But it's rare that recruiters hear from an employer, "I want to hire a senior person with five or 10 years of runway and 30 years' experience."

Real estate companies that recruit senior talent tend to think from the bottom up, equating less experience with a lower-cost compensation package. The assumption – possibly not even explicit – may be that the less experienced hire will stay with the company for as many as 20 years or more. A more realistic assumption, however, is that any new hire, whether in the C-suite or elsewhere, likely will be with the company for about five years. The right fit for the C-suite, thus, could very well be someone with deeper experience and the desire to work for another five to 10 years or more.

Candidates with multicycle experience may be just the right people to take the reins from leaders who contemplate scaling back as they plan for retirement, or those who need a bridge between themselves and the younger executives still rising through the ranks but not yet ready for a senior leadership role.

The following examples illustrate when a capstone candidate can be a great solution.

Growth Company. A young operating company on its second or third investment fund seeks to build the "institutional" team that its limited partners require. With more and larger investments, this firm now needs someone who can focus solely on one discipline, such as asset management, whereas before, everyone

Mary McCarthy

Six Tips for Capstone Candidates

In working with companies and talking to successful candidates, Terra Search Partners has learned some lessons that may be helpful to capstone candidate job seekers aged 55 plus.

1) Talk to People You Know. Chances are that the people who are going to hire a capstone candidate already know you or are within one degree of separation. It's not enough to "keep your head down and do the work" as your career advances. Maintaining industry visibility and networking are both important. The older the candidate, the more valuable his or her personal network becomes in securing that last challenging job.

2) Adjust Your Expectations. There are fewer seats at the top. Be willing to consider a position with less prestige.

3) Get Creative. Some capstone candidates are able to create their own jobs by thinking strategically about "pain points" in the business and where they may be able to offer solutions.

4) Solution Orient Your Pitch. When presented with a position that seems appealing, "here's my solution" (to a problem the industry or company is facing) is a strong response. This approach can help a capstone candidate stand out from the crowd.

5) Join a Board. Consulting and advising at a macro level can be a valuable two-way street, enabling capstone candidates to meet new professionals in their field while also "giving back" to their professional community.

6) Go Rogue. Pursuing a portfolio of activities – for example, a combination of consulting and volunteering – can widen a capstone candidate's options. ■

doing a bit of everything worked just fine. The capstone candidate brings knowledge about processes and institutional investor expectations, as well as expertise, and can enable the firm to build capability in the desired discipline quickly and efficiently.

Big Company, Untapped Resources. A major real estate services or global investment firm is sitting on a treasure trove of data. Until now, the data have been more or less "afterburner" material, a result of established services or investment, but not the focus of the firm's efforts. With the benefit of 30 years' experience, a capstone candidate may recognize the value of the investment insight in the data and could use it to identify a new business strategy or to create a new service for clients. That person could become a brokerage firm's or construction company's first "chief data officer."

Gravitas. An investment firm transitioning from a capital base of high net worth investors to one that includes institutions seeks a candidate with strong credibility in the institutional world. Having satisfied their youthful ambitions, capstone candidates can be happy and fulfilled sharing their knowledge and adding their names to a company's letterhead without threatening existing leadership. As one such recruit said recently, "I'm not trying to take over the firm." Clearly, he was less focused on his personal "crown" and more focused on how he could help his new team grow and succeed.

Plug-and-Play. While some see this as a pejorative term, a narrowly focused expert who can join a firm and immediately begin adding value can be an elegant solution for a company that needs someone to fill a specific role. These types of capstone candidates require virtually no ramp-up time. The capstone recruit knows his or her role and the marketplace's expectations. This person also has standing in his or her sphere. As one successful capstone candidate said, "I knew the players and gave my new firm instant credibility."

Team Player/No Big Ego. Having already proven themselves and secure in their abilities, capstone candidates can often fit into a new firm's culture more easily than younger workers.

Compensation Challenges. Some companies seek a prospective employee with lots of experience, but are not willing or able to pay the "big bucks" or offer the long-term compensation package that a rising 45- to 55-year-old – especially one who is currently employed – might require. These employers can often fill that position with a candidate in the 55-plus age group. This capstone candidate may be more driven by the challenge than the money, either because they have already earned and saved enough to be well positioned for retirement, or because they simply can't command the big bucks. The capstone candidate also is aware that this new employer's compensation scheme is established and non-negotiable; they may be willing to trust that once their value is proven, additional rewards will follow.

The message to employers is simple: think broadly. Capstone candidates may provide benefits that you might not have imagined, and their past experiences could add tremendous value for your company. Don't overlook them. If they choose to "stay [in the workforce] just a little bit longer," the benefits could be mutual. ■

By **Mary McCarthy**, managing director, Terra Search Partners, mary@terrasearchpartners.com

Amenity-rich Movie Theaters as Anchor Tenants

As cinemas become popular anchors for retail and mixed-use developments, they are generating more foot traffic and creating synergies with other tenants.

By Amanda Tran and Adrienne Schmitz

WITH THE DEMISE of department stores as anchors, owners of shopping centers and mixed-use developments are looking to entertainment-related tenants to fill the gap. Movie theaters have become an important component in the entertainment mix.

Nick A. Egelanian, president of Siteworks Retail Real Estate Services in Annapolis, Maryland, advises shopping center owners on how to survive the post-department store era. He says, "Theaters help a shopping center to compete for customers' discretionary dollars and time."

Entertainment components make a center more of a destination and provide "another reason to go to the center and a reason to stay longer," says **Margaux Keusch**, director of lifestyle and urban leasing at Woodbury Lakes in suburban Minneapolis. Owned by Ramco-Gershenson Properties Trust, the 300,000-square-foot Woodbury Lakes shopping center combines big box and lifestyle tenants in a town center configuration. In repositioning the center, management decided that it needed to add entertainment and restaurant components to generate more traffic.

Alamo Drafthouse Cinema, a state-of-the-art theater chain, was chosen as a good fit to anchor the center. According to Keusch, when it opens in mid-2018, the theater "will feature a full-service restaurant and bar, and will host a variety of movie-themed special events that will draw traffic" to the center.

Katie Bucklew, vice president of development at Edens, a national retail real estate owner, developer and operator, explains the company's perspective. "When we look at a development project or any center that we own, we are asking, what are the drivers? What is getting people into the shopping center? What Edens really looks for in any of its centers is how we can be a hub of the community. How do we create a place that looks and feels great, that has the right merchandizing and really serves the community?"

When it opens in mid-2018, the Alamo Drafthouse Cinema at Woodbury Lakes in suburban Minneapolis will feature a full-service restaurant and bar in addition to first-run movies and cinema-themed special events.

Movie Theater Trends

Customer experience is the key, and theaters are rising to the challenge. No longer will stale popcorn and sticky floors suffice; today's theaters provide the kinds of environments and amenities that discerning consumers demand: reserved seats, stadium or reclining seating, high-tech audiovisual systems, and expanded food and beverage menus, including alcohol.

Egelanian says today's cinemas comprise a wide range of concepts, including "elaborate luxury venues with a broad range of food and beverage offerings. Essentially they are restaurants that show films."

The Angelika Film Center, a boutique movie theater, serves as an anchor in the Mosaic District, Edens' 32-acre mixed-use development in the Washington, D.C., suburbs, which opened in 2012. (See "The Mosaic District," Development, fall 2013.) Bucklew explains that Edens had the opportunity to place a traditional multiplex cinema at Mosaic but preferred Angelika's art-house concept.

"We really wanted to differentiate this project, understanding the surrounding community, which was very highly educated. Time was constrained in their lives and they wanted a unique experience. We wanted to bring in a theater that spoke differently to those consumers." Angelika fit the bill perfectly; four of its eight theaters are dedicated to independent films and it features gourmet food, coffee, wine and craft beer. Angelika's presence as an anchor at Mosaic has "affected the type of merchandising for the rest of the center and who it attracted," according to Bucklew.

At Vancouver Mall in Vancouver, Washington, Cinetopia took over an 82,200-square-foot space that had been a department store in 2011. According to **JB Schutte**, the mall's general manager, "Today's shopping centers are all about lifestyle. Entertainment and dining are a big part of that. These kinds of tenants bring people back to the mall more frequently."

Schutte adds, "The theater at Vancouver Mall is a huge draw. Cinetopia is very upscale, with food and alcohol, and screens as large as 80 feet across. With 23 screens, some are "parlors," like very fancy living rooms. These can be rented for parties, and also show first-run movies."

Synergies Among Tenants

Egelanian notes, "Theaters are a reliable source of traffic in all but the most high-end malls. Further, theaters and restaurants are important to each other. Even though theaters often have their own internal food and beverage offerings, they spawn a great deal of interest in other dining venues in a shopping center."

David Millard, a principal at Avison Young who was responsible for office leasing at Mosaic, credits Angelika and the vibrant retail scene at Mosaic with helping to attract tenants. "The activity the theater generates is typically at night and on the weekends, which you wouldn't normally think would affect office leasing," he explains. "But the retail that wants to be around the movie theater absolutely helps the office leasing." In addition, since office and movie theaters operate at different hours, they are able to share the same parking spaces.

Leasing to Theaters

Compared to most retail leases, movie theater leases tend to be longer, require more expensive buildouts and generate less revenue per square foot. Egelanian says theater leases are typically for 10 to 15 years. Schutte says Cinetopia signed a 15-year lease with two 10-year extensions. The buildout cost was split about 50/50 between the landlord and tenant. Hours of operation are not specified in the lease, because the theater is open longer hours than the mall. Shows begin as early as 9 a.m. and end around midnight on weeknights and as late as 2 a.m. on weekends. These extended hours have not caused any problems for the mall management, according to Schutte.

The Angelika Film Center, a boutique movie theater, helped draw both retail and office tenants to the Mosaic District in the Washington, D.C. suburbs, and serves as an anchor for the 32-acre mixed-use development.

Keusch notes that some of the potential negatives of theater tenants are not expected to be a problem at Woodbury Lakes. The movie theater is located at the far end of the center, with plenty of parking, so theater attendees – who typically stay for several hours – will not be parking in front of retailers. Keusch also cautions landlords to pay attention to "exclusive" lease clauses that might give a theater the right, for example, to be the only tenant allowed to sell candy or popcorn, which could eliminate an entire class of potential tenants.

That's a Wrap

Despite lower revenue per square foot and potential additional effort and expense, movie theaters are a major draw that contributes significantly to the retail environment and experiences that landlords of shopping centers and mixed-use developments want to provide. As Bucklew observes, "What we have found is people want experiences. … That is why food and theaters have become really important to shopping centers. They provide that experiential element." ■

By freelance real estate writers **Amanda Tran** and **Adrienne Schmitz**

Attracting Local Retailers to Office Buildings

Bringing in an independent coffee or sandwich shop rather than a national chain can mean extra work for a developer, but it can also make for livelier lobbies and streetscapes.

By A-P Hurd, Skip Stone

IN THE PAST, office buildings didn't need retail space. They might have a sundries shop and maybe a sandwich shop on the ground floor. That situation changed dramatically with the wave of urban office buildings developed in the last 15 years. All of a sudden, many cities were requiring buildings in the urban core to include ground-floor retail space. Quick on their heels, developers began reaching out to attract food and beverage as well as other retail tenants as part of the amenity package for new Class A office buildings.

Thinking back 10 years, most office developers' first instinct was to bring in credit tenant retailers such as Taco del Mar, Starbucks and Jimmy John's. Ideally, they looked for national chains; at a minimum, they accepted regional chains. Given the fit-out costs for food and beverage retail space – including electrical, bathrooms, hoods and venting – developers were wary of spending that money on a fly-by-night operator that might take the developer's "loan" for tenant improvements and then not survive the lease term.

Yet developers often complain about these national retail tenants: how demanding they can be, how they need everything built to their brand standards, how they are so inflexible. That got some developers wondering if there was a better way.

Choosier Tenants

Sometime during the last decade, office tenants also got pickier about the kind of retail offerings their office buildings provided. Imagine: they wanted the food to taste good! They wanted it to be locally sourced. They began to recognize that the retail space was impacting the brand of their building.

That caused some developers to think less about the credit they were getting on that 1,500-square-foot space; instead, they began to think of retail more like any other amenity in which they would invest, such as gyms, better elevators or showers and locker rooms. With this change in perspective on their TI investment, some decided to turn their attention to attracting the kind of local and character-filled retail spaces that tenants were requesting.

These developers found that the best local retailers had some similarities with "old" office retail, but also several differences. They had great brand vision, much more flexibility than national retailers about how to build out their space and limited access to capital. Also, many of the most attractive retail options – for a developer, its tenants and the building – only had one existing location that typically was run by the owner. In order to get this type of tenant into a new building, developers learned that they often had to work hand-in-hand with the retail business owner to develop a business plan for their new location that would enable them to ramp up in a downtown market and hire a manager for their existing location so that they could focus their energy on making the new location pay off.

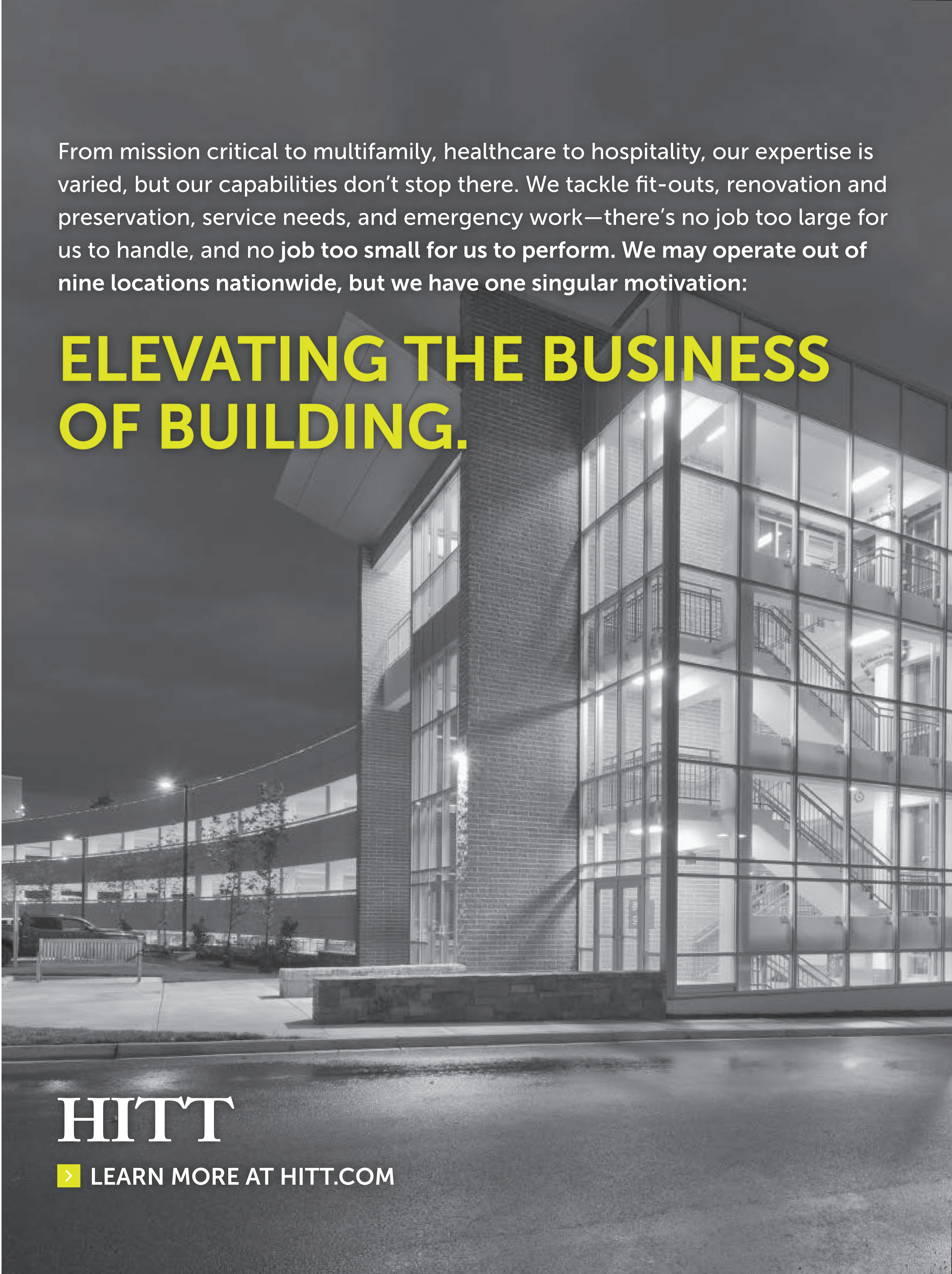
In order to hedge their downside while providing the biggest possible TI budget, more developers found themselves building out these spaces to very warm shells, with electrical, heating, plumbing, basic lighting and finished concrete floors. This, in turn, led to more detailed collaboration between landlord and tenant on the final design for the space. Collaboration became a way to manage risk: Even if the tenant didn't make it, the space could be re-let to another local tenant without significant downtime or reinvestment. At the same time, it made the tenants happy, because the developer was providing the full cost of Type-1 hoods, and a reasonable TI allowance on top of that.

Benefits

Attracting and working with local retailers involves much more work than leasing to national credit tenants. But it also results in much more of a partnership between office landlords and their retail tenants. Developers are finding that their investment in understanding and supporting local retail tenants is ultimately producing better results for the whole building.

That kind of experience is what makes being a developer so much fun. It's what makes developers feel connected to the communities in which they work. The concept of "placemaking" can feel like something abstract that only architects and planners do, until that Tuesday morning when you're meeting with your coffee retailer to develop a sales strategy for the next three months. A year later, when you walk by and notice that the lobby is lively, the retailer is thriving and the building has become open and porous to the street, you feel a tremendous amount of joy in having made something special. Not just a monument, carved out of thin air, but a piece of fabric woven into the places around it and the people who occupy it. ■

By **A-P Hurd**, president, Skip Stone, and former president and chief development officer, Touchstone, aphurd@skipstonesea.com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Setting Up a Private Equity Real Estate Fund, Part 2

What securities laws govern private equity real estate funds, and what factors must fund sponsors take into account when operating one?

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

AN EARLIER ARTICLE, "How to Set Up a Private Equity Real Estate Fund," introduced the contemporary structure of private equity funds, explored the motivations for sponsoring a fund and provided an overview of the considerations that fund sponsors must take into account. Part II reviews the securities laws that govern private equity funds, explores the most common offering terms and discusses fund operations. It is not intended to be an exhaustive review of private placements or securities laws.

Securities Laws, Regulation D And the Offering Memorandum

Note that any firm contemplating the creation of an investment fund should retain legal counsel and an experienced financial team to assist with the process of raising capital and administering the fund. Sponsors commonly also work with placement agents, intermediaries who advise and assist in setting up funds and raising money from investors, particularly if the sponsor is looking to raise equity beyond a narrow network of investors.

The creation of an investment fund using a private equity offering can be accomplished without registering with the Securities and Exchange Commission (SEC), as long as the offering conforms to the requirements of Regulation D of the Securities Act of 1933. The act has been updated over time; this article refers to the current rules. These were most notably revised by the JOBS Act of 2012, which eased various securities regulations to encourage funding of small businesses. They were further refined by amendments in 2016 that revised the rules for the exemptions for registration.

Regulation D establishes two exemptions from the registration requirements of the Securities Act, Rules 504 and 506. Regulation D also establishes two fundamental types of investors: "accredited investors" and "non-accredited investors." Accredited investors are those investors with a personal net worth in excess of $1 million, excluding the value of their home (individually or jointly with their spouse), or investors with annual income in excess of $200,000 in the past two years and a reasonable expectation of the same in the current year ($300,000 jointly with their spouse). If one of these criteria are not met, investors are considered non-accredited. In addition, directors, executive officers and general partners of the sponsor and business entities are considered accredited investors regardless of their income or net worth.

Rule 504 allows sponsors to raise up to $5 million annually without SEC registration. Funds can come from any number of investors, accredited or non-accredited, and the sponsor is not subject to any specific disclosure requirements. The investment offering is "restricted" in that interests granted to investors may not be sold without registration. Although Rule 504 provides an exemption from SEC registration, sponsors must comply with state "blue sky laws," which are designed to protect investors against fraudulent sales practices and activities.

Under Rule 504, sponsors are not generally allowed to solicit or advertise the offering of interests to the public, but the rule may allow those activities if specific requirements are met. Most notably, sponsors who follow state securities law exemptions, called the

Jan A. deRoos

Shaun Bond

Small Corporate Offering Registration (SCOR), may advertise the offering provided that the sponsor sells interests only to accredited investors. While Rule 504 allows for the sale of interests without specific disclosure requirements, sponsors should be mindful of antifraud provisions that require any information provided to be free of false or misleading statements.

Rule 506 allows sponsors to raise unlimited funds as long as they follow a very specific set of standards, which fall under two broad categories, Rule 506(b) and Rule 506(c).

Under Rule 506(b):

- The sponsor can offer the fund to an unlimited number of accredited and up to 35 non-accredited investors. All non-accredited investors must be sophisticated or be advised by an investment adviser who is. The SEC defines a sophisticated investor as someone with sufficient knowledge and experience in financial and business matters to make them capable of evaluating the merits and risks of the prospective investment.

- There are no specific rules for disclosure to accredited investors, but the sponsor must make significant disclosures to non-accredited investors that are generally the same as for registered offerings, including financial statements. Any information provided to accredited investors must be made available to non-accredited investors.
- The sponsor must make itself available to answer questions from prospective purchasers.
- The sponsor may not solicit investors or advertise the offering.

Under Rule 506(c), a company *may* solicit investors and advertise the offering, provided that:

- All investors in the fund are accredited.
- The sponsor takes reasonable steps to verify that investors are indeed accredited, beyond receiving a statement by the investor – for example, reviewing tax returns, bank or brokerage statements and similar documents.
- Investors do not sell their interests for at least one year.

Regardless of the rule used to offer interests, sponsors must be aware of four items that affect all private placements: 1) Sponsors are required to file with the SEC within 15 days of the first sale of an interest. 2) Sponsors must not violate the antifraud provisions of federal securities laws. 3) Sponsors cannot "game the system" by creating multiple offerings that are essentially the same. 4) State blue sky laws must be followed.

Offering Materials and The Private Placement Memorandum

While offering materials are sometimes mandated, as detailed above, sponsors need to see the offering materials or private placement memorandum (PPM) as an effective and positive communication medium as well as a way to protect the sponsor from unforeseen liability. Sponsors of interests offered via Rule 504 or Rule 506(b) are often dissuaded from issuing a PPM because it is expensive to produce and not required as long as one is offering only to accredited investors. The costs range from $25,000 to $250,000, so the decision to prepare a PPM is not to be taken lightly.

If only a small number of accredited investors will be involved, the offering materials can consist of a term sheet and a willingness to allow the investors (usually as a group) to perform due diligence on the offering. When the number of potential investors or the offering is large, a formal PPM can help the sponsor effectively communicate a consistent offering to investors, help investors understand the rewards and risks of investing and protect the sponsor from alleged antifraud charges.

Operating the Fund

Factors unique to operating a fund with outside investors include the following:

Contributions to real estate funds are most easily handled in a closed-end fund raised for a specific investment or an investment set with a fixed number of investors. Using such a fund eliminates the need to value (appraise) the fund for additional investors. Most funds set a schedule for capital funding, termed "calls" that specify the dates, amounts, and terms of each round of funding. There is generally an initial contribution, with the remaining funds called as needed to fund the investment or development schedule.

Distribution of cash flows and allocation of profits are performed according to the information provided in the offering memorandum, which generally consists of a preferred return to the investors, plus the investors' share of net profits after the preferred return. In general, investors prefer to receive their funds in the following order:

- Investors and the sponsor receive a return of their capital contributions (which are generally not taxable).
- Investors receive a preferred return, calculated on the basis of the total amount of capital held and the length of time those funds were held.
- The sponsor may then receive an allocation of the profits referred to as a "catchup," generally in proportion to the profit split.
- Lastly, all remaining profits are divided between the investors and sponsor according to the agreed-upon promoted interest structure.

This structure helps align the interests of the sponsor with those of the investors.

Clawbacks are found in some funds with multiple investments to provide a device for the investors to receive funds from the sponsor if a later marginal investment results in an overallocation of profits to the sponsor, especially if the investors do not receive their entire return of capital and preferred return.

For example, imagine that a fund finds early success with its first project, placing the sponsor in the promoted interest, earning the majority of the profits from the venture. However, a later project becomes distressed and needs to be sold at a loss. In this situation, a clawback provision would allow the investors to get access to profits from the first project to make them whole for the return of capital, preferred return or both.

Disputes over fees and potential conflicts of interest can arise when the sponsor is seen as profiting at the expense of the investors. While sponsors generally take a fee for managing the investments in a fund, additional fees should be handled with enough transparency to show that they are not in excess of normal market rates.

Decision-making is generally handled by the sponsor on such issues as budgets, purchase and sale of investments, indebtedness and leverage, use of specific service providers, and tenant selection and management. Some institutional investors may wish to participate in operational decisions and may insist on certain provisions.

Setting up a real estate fund is a big step for many real estate professionals. This two-part series was meant to demystify fund formation and operation. ■

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

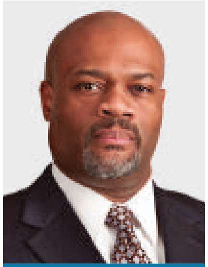
The Legal Risks of Crowdfunding

Understanding the risks involved in crowdfunding will help real estate professionals make the most of the opportunities presented by this "engine of change."

■ By John Amabile and Brian Cromwell, Parker Poe

THE COMMERCIAL REAL estate business has experienced seismic shifts since the Great Recession. Among other things, the creation of new investment models, along with the growth of financial technology (fintech) and real estate technology, have the potential to change the entire industry. Crowdfunding, however, may be the foremost engine of change within real estate, granting even the most local company a national audience of prospective investors.


John Amabile


Brian Cromwell

Indeed, crowdfunding in real estate is expected to grow from more than $3 billion worldwide in 2016 to over $300 billion in 2025, according to Forbes magazine. Used properly, crowdfunding can be a true asset. However, if it is used incorrectly, it could result in large fines or even incarceration.

What Is Crowdfunding?

Crowdfunding is simply defined as funding a project by raising small amounts of capital from a large number of sources, typically via the internet. Crowdfunding enables a company to sell an interest in a project by advertising an offering to people with whom the company does not have a pre-existing relationship. The true benefit of crowdfunding is that it creates a direct correlation between the number and types of disclosures required under the securities' laws and the amount the offering seeks to raise.

"Regulation crowdfunding," the best known of three types of federally recognized crowdfunding mechanisms – in addition to Regulation A+ and Rule 506(c) offerings – greatly simplifies what a real estate company must disclose as long as the company is willing to limit the total amount it seeks to raise via this method of funding to slightly more than $1 million in any 12-month period and limit the amount each individual or entity invests to certain specified limits.

Real estate companies must conduct crowdfunding offerings through registered intermediaries, such as broker-dealers or funding portals. While companies also must make initial and updated filings with the Securities and Exchange Commission (SEC) and must include specified financial statements in the offering disclosure documents, those disclo-

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sures are limited compared to the disclosures required of traditional (and less restricted) public offerings. Thus, regulation crowdfunding is considered very attractive as it limits the time and costs associated with required disclosures.

The primary advantage of crowdfunding, including regulation crowdfunding, is its ability to advertise an offering to a large number of potential investors who are otherwise complete strangers to the company. This, along with permitting an unlimited number of unaccredited investors, is what most distinguishes regulation crowdfunding from typical syndications. Real estate syndications remain subject to SEC disclosure and filing rules and regulations, which, unless you go the full public offering disclosure route, limits advertising and the number of unaccredited investors allowed.

In other words, with certain limitations, you can legally use the internet to sell your securities! To a real estate company seeking to raise funds, this opens a world of possibilities previously not available under federal securities laws. It is also where the legal risks begin to accumulate.

"The primary advantage of crowdfunding … is its ability to advertise an offering to a large number of potential investors who are otherwise complete strangers to the company."

John Amabile and Brian Cromwell

What It Is Not

First and foremost, it is important to recognize that crowdfunding is not an exclusion from federal or state securities laws. Instead, it creates an "umbrella" that offers specific protections. What cannot be ignored is that when a company raises money by crowdfunding, it is offering securities for sale. While the required disclosures may be limited, they must nonetheless be compliant with federal laws. In addition, there is the possibility that multiple states' blue-sky laws – state laws that regulate the sale of securities on a local level in order to protect the public from fraud – could apply to crowdfunding offerings when investors from more than one state participate, a potentially unanticipated consequence of a crowdfunding offering.

As an alternative, many states permit similar offerings on a purely intrastate basis, often with much larger caps on the amount that may be raised. Georgia, for example, permits the sale of up to $5 million in securities if the offering company, which may be located outside Georgia, complies with the state's regulation crowdfunding rules, which include restricting investors to Georgia residents. However, this also creates certain types of legal exposure. Specifically, the offeror is voluntarily subjecting itself to the laws and the jurisdiction of that state. State law claims under fair business practice act statutes, state blue-sky laws or myriad other local liabilities can vary greatly. What plays in Georgia may be frowned upon in Nevada.

Unique Risks and Opportunities

The unique nature of crowdfunding also raises unique risks. Internet advertising may become subject to analysis under federal and state securities laws. Existing material on your informational website that could be viewed as mere "puffing" in other areas may become the basis for a fraud claim under state and federal securities laws. Every public statement therefore requires the strictest of scrutiny.

Moreover, all of the above apply equally to both civil and U.S. Department of Justice or SEC liability. Anyone involved in the sale of a security subjects himself or herself to potential criminal exposure. Regardless of how careful you may be, being the person quoted in an internet posting used to sell securities puts the advertiser in the position of owning those words and subjects them to a wide array of criminal and administrative claims.

Crowdfunding offers tremendous opportunities for real estate companies. In many ways, it brings the offering of securities into the 21st century. However, like most things associated with emerging technologies, it also brings unique risks. One must be aware of those risks before leaping into the crowdfunding arena. ■

By **John Amabile** (johnamabile@parkerpoe.com), counsel, Parker Poe, Atlanta, and **Brian Cromwell** (briancromwell@parkerpoe.com), partner, Parker Poe, Charlotte

Mixing It Up in Midtown Houston

Houston's new Midtown Park offers a wide array of amenities, plus an underground parking garage, coupled with sustainability.

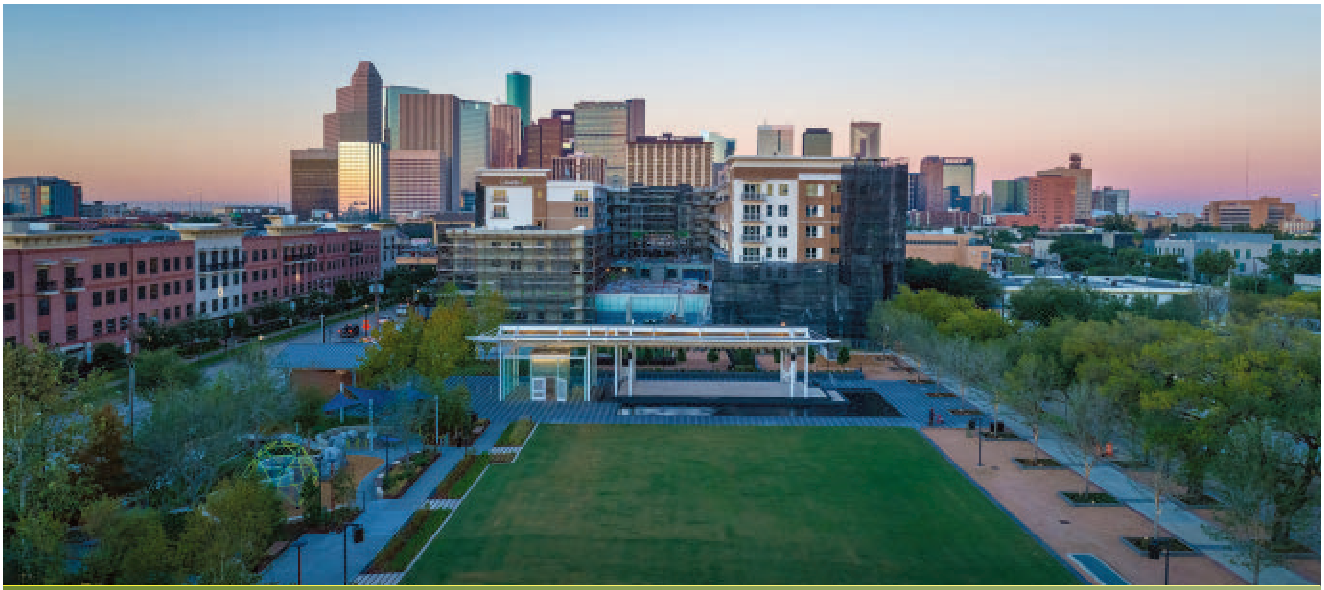
By Kirsten Cornell, Walter P Moore

HISTORICALLY KNOWN AS Houston's second residential neighborhood, Midtown flourished through the mid-1940s, boasting Victorian homes owned by well-known families. After declining in the 1980s and 1990s, Midtown has rebounded to become one of Houston's most bustling neighborhoods. It is now also home to Midtown Park, a landmark project scheduled for completion in fall 2018 that features a 2.5-acre park above a parking garage plus an entertainment pavilion, water features, an additional half-acre pocket park, restaurants and luxury apartments.

"In addition to increasing community gathering opportunities and enhancing quality of life for current Midtown residents, the park will become an economic development catalyst to attract new development to Midtown, says **Marlon Marshall**, director of engineering and construction at Midtown Redevelopment Authority (MRA), a nonprofit organization created to manage basic infrastructure improvements as well as encourage new residential and commercial development in the neighborhood. "Parks help maximize the long-term value of real estate since businesses and residents are willing to pay a premium to be near parks."

Challenges and Solutions

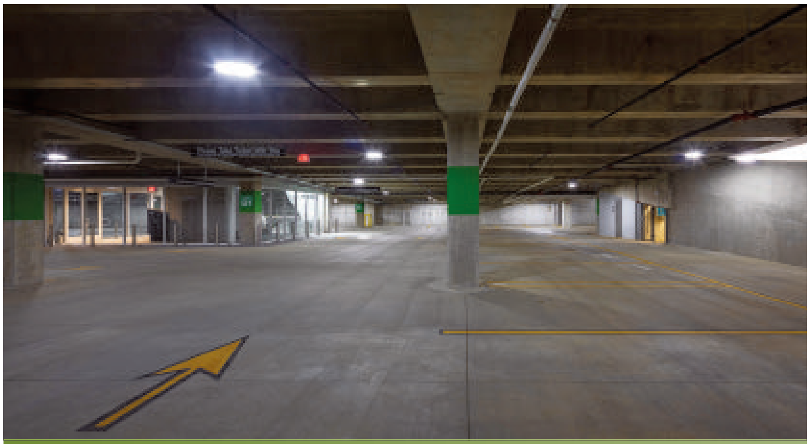
Since the late 1990s, MRA had been working with developers and property owners to assemble what became a 6-acre tract of land commonly referred to as "the SuperBlock." Over the years, the MRA board, staff and design team consultants, with community and stakeholder input, worked to create a vision for a mixed-use project featuring an underground garage. "We wanted to create a premier urban park space in the heart of Midtown to become the focal point for the community and attract new development along the Main Street corridor," says Marshall. The group brought in parking consulting firm Walter P Moore as lead consultant for the project. "The goal was to bring nature to Midtown and revitalize the East Side, which had experienced a decline in retail occupancy," says **Brian Lozano**, director of parking services at Walter P Moore.



Houston's 2.5-acre Midtown Park, which opened in October 2017 and will be completed in fall 2018, is a sustainable, living public space set above a below-grade parking garage. The park features an entertainment pavilion, water feature, playground and social games area as well as a dog park.

Photography by Shau Lin Hon - Slyworks Photography

Camden McGowen Station will occupy 3 of the 6 total acres of development. Once completed in September 2018, the 8-story complex will boast over 300 luxury spaces divided among studios, apartments and townhomes. The multifamily community will include amenities such as a private parking garage, chef-inspired kitchens, spa-reminiscent bathrooms, and – capitalizing on its serene location – a community pool overlooking a portion of Midtown Park. “Camden specifically responded to the scheme



In addition to 400 parking spaces, the underground garage houses essential drainage and pump systems that help sustain the park. They also prevented the garage from flooding during Hurricane Harvey.

Camden Pavilion will be the setting for concerts, exercise classes and other events.

of the park with the design of their building forming an 'H' and allowing for both park and downtown views," adds Lozano.

One challenge that proved surmountable was how to host a living, sustainable park above a below-grade parking garage. Walter P Moore structural and diagnostics engineers worked closely with parking engineers to design an operationally efficient garage while allowing the park's trees to also grow and thrive. "Partnering with landscape architect Design Workshop, we planted large trees throughout the park that needed over 5 feet of clearance from the soil to the top of the structure to allow [the roots] to grow," says Lozano. "We sloped the lid of the garage, allowing for proper clearance for the grass blanketing the lawn space, and a greater distance to sustain the trees."

The 400-space parking facility – which opened February 2017, just in time for Super Bowl weekend – sits virtually unnoticed below the SuperBlock. An intricate system of underslab draining capabilities, robust waterproofing, pumps and a rainwater vault not only serves to self-water the landscape but also prevented the garage from flooding during Hurricane Harvey, which destroyed many surrounding homes and underground structures in August and September 2017.

As a nod to Houston's "Bayou City" nickname, the bayou landscape and waterway serve as part of the park's stormwater infrastructure, mimicking the recirculating system of natural bayous and wetlands. "Rainwater is collected through a piping system in the garage before it is pumped into a 70,000-gallon irrigation vault underground," says Lozano. The team planned for the impressive rainfall that often hits the Houston area and integrated a backup plan. "The parking garage underslab drainage system pumps water into the irrigation vault, which is used for watering the various landscape features in the park," Lozano adds. "When the vault fills up and cannot receive any additional water, a series of valves in the system allows the water to bypass the vault and drain into the bayou water feature, which also serves as the detention for the Midtown Park site."

In addition to ensuring that the parking garage met all safety standards, the parking team at Walter P Moore installed additional lighting to help drivers adjust when transitioning from below ground to above ground. "There are no hidden corners. People feel extremely safe when entering and exiting the garage. That was important to us," says Lozano. The team also incorporated a "glass cube," which houses a staircase, wrapped around the elevator to allow natural light to flow into the garage. Concrete was colored to mimic the pavers used throughout the park to not only create connectivity between the spaces but also clearly identify high-traffic pedestrian areas.

Fun Meets Functional

Bound by the SuperBlock of Main, McGowen, Travis and Anita streets, Midtown Park, which opened in October 2017, offers residents a blend of urban living and functional green space. Many educational and sustainable features are interwoven into the fabric of the park's design. "When we considered the audience that would be utilizing the space, we pictured young professionals living in the area, working in downtown," says Lozano. "The first day the gates came down, we saw urbanites in the park with their four-legged friends."

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All of the spaces in the park and garage were employed to create a multiuse area that appeals to all brands of outdoor enthusiasts. The slope of the garage entrance, for instance, also operates as a portion of the off-leash dog park and serves as a highly popular dog run.

Camden Pavilion's water feature boasts a rainfall simulation program that can be turned on and off to allow a still layer of water to remain (approximately 1/4-inch deep) that appears as clear as glass but morphs into a replication of a rainstorm in mere seconds. "Jets shoot up through the water, making it look like raindrops," explains Lozano. "The intensity gradually increases, and the lights within the feature and around the pavilion come on. It's really quite mesmerizing to watch."

The pavilion will host concerts and other types of performances, as well as exercise classes and various other public events. "There is also a designated space with plug-ins for food trucks, and the area behind the stage is wide enough for vehicles to pull up behind it to unload equipment," says Lozano. Tent anchors are set into the ground along the Promenade, encouraging farmers markets, craft fairs and other similar events.

A playground encourages exploration as well as activity, with climbing spheres, sound tubes, adult-size swings and interactive pipe sections. The social games area – where patrons can play bocce, washer pitching (a game similar to horseshoes) and other games – is surrounded by lush gardens.

"Since the start of construction at Midtown Park, there have been six new private development projects announced within three blocks of the park," says Marshall. "These ongoing, planned or recently announced redevelopment projects include mixed-use residential/retail, multifamily and office projects, which we expect to generate an estimated $338 million in new taxable value in Midtown." From art walls to swingsets, Midtown Park answers the need for a flourishing green space in an urban area. ■

By **Kirsten Cornell**, corporate communications, Walter P Moore, kcornell@walterpmoore.com

Automated Parking Comes to the US

While automated parking facilities are commonplace in Germany, Japan and China, they are gaining momentum in North America.

By Scott Gable, CityLift Parking

BY THE LATE 1980s, as automobile ownership skyrocketed in Germany and Japan, the automated parking industry in these countries took off. Today, Japan alone has about 1.6 million parking spaces in automated parking facilities, where some sort of mechanical system transports cars to and from parking spaces. "Automated parking," "robotic parking" and "mechanical parking" are all synonymous terms. Automated parking systems use computer-controlled, motorized vertical and horizontal lifts to transport automobiles to a remote parking space without the assistance of humans. Similar growth in the industry occurred in China starting in the late 1990s, fueled by a new generation of private car owners.

The U.S. parking industry, however, pursued a very different path. An abundance of space in U.S. cities and suburbs meant that most parking demand could be met by building surface lots and large conventional concrete parking garages. As cities and suburbs have densified, however, these facilities no longer meet the needs of U.S. car owners. And, although autonomous vehicles may eventually decrease demand for parking, the brutal reality is that the nation now needs more parking.


Scott Gable

The only practical way to meet this demand is to borrow a page from Germany, Japan and China. The time has come for automated parking in the U.S., and the benefits are compelling. An automated parking system can do the following:

- Reduce the amount of space needed for parking by 40 to 80 percent.

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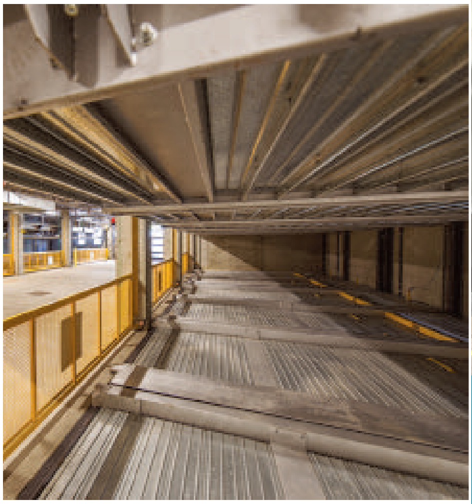

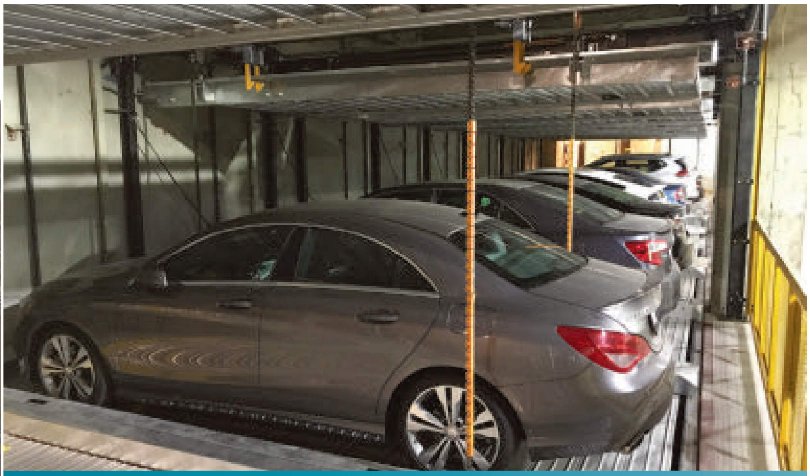

A three-level semi-automated parking system at the Idora Apartments in Oakland, California, enables the facility to accommodate 42 cars on a site area that could accommodate only 15 standard surface parking spaces.
All photos courtesy of CityLift Parking

Creating a Unique Identity in a Sea of Creative Office

Three key design considerations to create an authentic sense of place for commercial real estate

By Jinger Tapia, Principal, Design, Ware Malcomb

Today tenants and occupants are not only looking for amenity spaces, they are wanting a truly authentic experience. When designing for commercial real estate, the task at hand is to create authenticity around campuses and workplace environments. Whether indoor or outdoor, the goal is to create spaces and amenities that are utilized and truly function for work. Drawing inspiration from the surrounding neighborhood and designing to a specific tenant profile will give a property a unique identity in the creative office marketplace.

Expanding the connection between indoor and outdoor environments

Location

A project's site is an extension of the workplace and everyone's first impression. Understanding site context, such as adjacent food options, public transportation options, and environmental influencers aids the designers in curating a complementary and unique campus experience. Designing to the site context creates a strong connection between the project and surrounding community. This reinforces and strengthens a project's sense of place, ultimately creating authenticity.

Creating a sense of place

Tenant Profile

Who is the target audience for the project? Developing a tenant profile allows the design to be geared towards a specific type of tenant and user. This increases the possibility that planned amenities will be utilized, functional and become a true extension of the workplace.

Armed with a tenant profile and property research, designers can more effectively work with the development team to uniquely brand a project, setting it apart from its competition.

End User Goals

The average office square footage per employee has shrunk 9% in the past seven years according to commercial real estate tracker CoStar Group.

In most markets, the average end user requires office space ranging between 3,000-5,000 SF.

One common question among all companies is: How do you compete with the "Googles" of the industry for talent? Attracting and retaining top tier talent is a priority for many clients.

Layering in hospitality-inspired amenities based on site context, tenant profiles and branding strategies will provide a unique, rich workplace to complement a firm's overall employee attraction and retention strategy. The resulting hospitality-like vibe brings employees out of the typical work environment and allows them to socialize and interact with their peers.

With endless amenity options today, understanding the location, tenant profile and end user goals is key to designing a unique property. Ware Malcomb excels at leveraging these three design considerations to create an authentic user experience.

With over 45 years of commercial real estate expertise, and in-house architecture, interior design, branding, planning and civil engineering, we guide clients through the design process from beginning to end. We bring tried and true industry experience to create unique designs to maximize long term real estate investment value. Join us at waremalcomb.com for the latest in design, news and our awesome culture!

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Principal, Design
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The seven-story Hive Parking Structure, the first and only fully automated parking system in the San Francisco Bay Area, accommodates 39 cars on a 1,600-square-foot site, room for only seven standard parking spaces.

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- Offer options that are less expensive to build and operate than a conventional garage.
- Be built faster than a conventional garage.
- Be built in modules.
- Be moved, in some cases, if demand changes.
- Dramatically reduce greenhouse gas emissions.

If the automated parking industry evolves in the U.S. as it did in Germany, Japan and China, U.S. developers will soon be choosing from the following two options:

Semi-automated Systems

This is where much of the industry in the U.S. is today. These systems move a car to its parking space mechanically, but the driver or an attendant needs to put the car into the system and/or operate it. One example of a semi-automated parking system is the puzzle design, in which the parking structure lifts and slides so that every car can be retrieved independently and the operator doesn't have to drive one car off the system to get to another.

These systems are affordable and highly configurable, and they meet most current parking challenges for properties where architects and developers are looking for ways to meet their parking requirements in the same, or sometimes smaller, footprint. The systems can be placed within a building or on top of a surface lot.

The Idora Apartments in Oakland, California, uses a three-level puzzle semi-automated parking system. CityLift was able to maximize and create 42 parking spaces where room for only 15 standard surface parking spots was available. In the end, the result was 180 percent space maximization.

Fully Automated Systems

In a fully automated system, after the driver positions the car in a parking bay or transfer area, the driver and passengers leave the vehicle. The system then transports the car to a parking space, which can be two levels below ground or 20 stories above ground. This is what most people envision when they think of automated parking. A number of these systems are currently being built across the country, from San Francisco to New York. They work best in tight locations where semi-automated systems take up too much space. These systems cost quite a bit more per space than semi-automated systems, but in some locations other costs may be avoided. In those situations, a fully automated system could be the most economical choice.

The recently built Hive Parking Structure is the first and only fully automated parking system in the San Francisco Bay area. CityLift took 1,600 square feet of space, room for seven standard parking spaces, built a structure 55 feet (seven stories) high, and turned those seven spaces into 39.

A new era of parking has begun. Within the past few years, commercial real estate developers and property owners have started to accept and even embrace automated parking systems, which can accommodate more cars in less space while also reducing operating costs and emissions. Expect to see more of them soon in cities throughout North America. ■

By **Scott Gable**, CEO, CityLift Parking, contact@cityliftparking.com


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Transitioning Toward the Autonomous Vehicle

Partially automated cars are already here, and will soon begin to have major impacts on commercial real estate, particularly parking infrastructure.

By Audra Capas

WELCOME TO THE world of autonomous vehicles (AVs). The world's leading auto manufacturers are already testing a wide range of artificial intelligence (AI) features, with the goal of eventually replacing human drivers altogether. Carmakers are also competing with upstarts like Silicon Valley's Zoox and Google's Waymo subsidiary, which aim to get completely hands-free, robotic cars capable of parking independently as well as maneuvering through jammed highways and crowded city streets into consumers' hands within the next decade.

Today, some 320 companies worldwide – from automakers and their suppliers to ride-sharing car services, software developers, and sensor and mapping firms – are racing to develop commercially viable, completely driverless cars. (For more on this, see "The Evolving Automotive Industry" on page 64.)

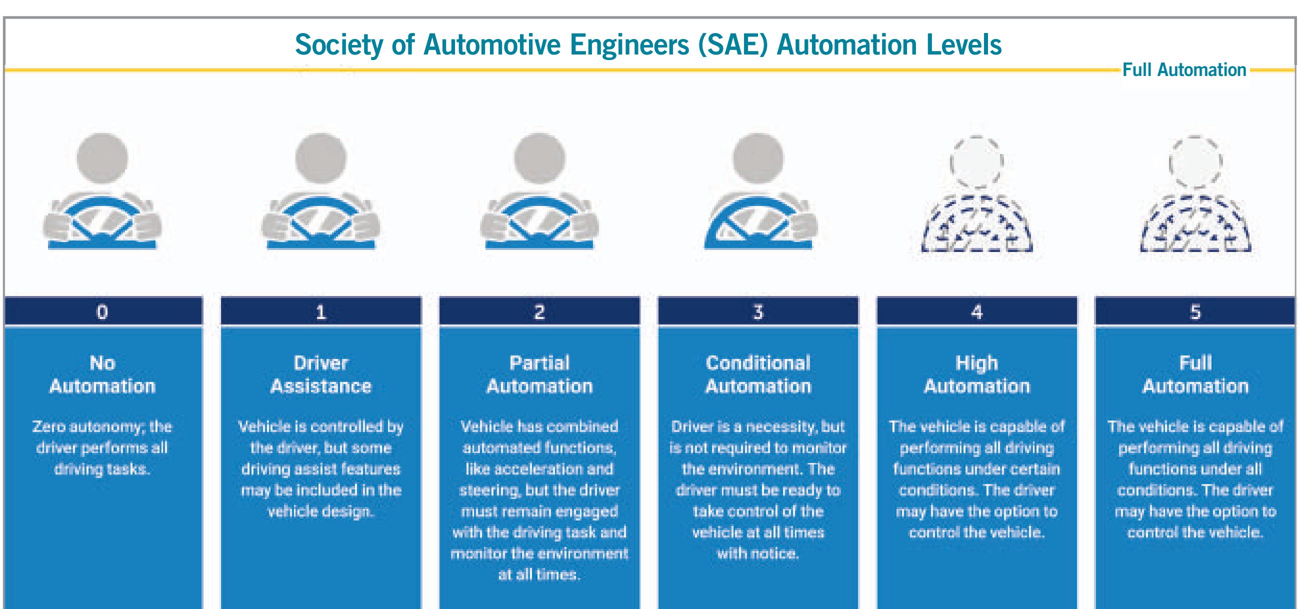
The terms "self-driving, "autonomous" and "driverless" are often used interchangeably to describe a vehicle that can drive itself with zero human intervention. But a truly driverless car won't be on the market for some time.

SAE International – a global association of 128,000 automotive and aerospace engineers, scientists and technical experts – defines vehicle automation in six steps, from Level 0 (no automation) to Level 5 (full automation). The levels differentiate the extent to which a car takes over tasks and responsibilities from its human driver, and how the car and driver interact.

SAE's 700 standards development committees and 17,000 technical volunteers worldwide devise standards and recommended best practices for every aspect of the automotive industry, from vehicle design and manufacturing to operation and maintenance. SAE's standards have been widely adopted by the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the global car industry. SAE also addresses related issues, such as fuel efficiency, engine power and energy mandates.

Five Levels of Automated Driving Systems

At Level 0, a car relies on a human for everything. Many cars on the road today, including those equipped with cruise control, are at this level.



Source: NHTSA

A driver in a Level 1 vehicle still needs to maintain full control of the car, although some functions, such as parking and acceleration, are supported by an adaptive driver assistance system. Anti-lock brakes, back-up and blind-spot sensors, radar-based cruise control and warnings that help drivers avoid unsafe lane changes are now common Level 1 car features. Newer cars on the road today incorporate at least one of these systems.

Level 2 describes a vehicle in which "one or more driver assistance systems" control steering and speed but a human remains responsible for continually monitoring the "driving environment" – from traffic jams to making turns, changing lanes and exiting freeways – and must always be ready to take full control of the car at any time. This is the highest level of autonomous passenger car available for sale today.

Tesla's autopilot system meets Level 2 requirements, as does General Motors' Cadillac Super Cruise driver assist system. Yet both cars have limitations. Tesla's "Model S Owner's Manual" outlines a number of circumstances where its system might fail: if parking sensors are dirty, for example, or when the car approaches a stationary object. Cadillac's CT6 Super Cruise works only on divided highways and can't sense when to change lanes. It also doesn't function in snowstorms or at speeds above 85 mph.

At Level 3, monitoring the driving environment becomes more of the car's responsibility rather than the driver's. While human attention in Level 3 cars is still critical, and drivers must be ready to intervene if anything goes wrong, they can shift "safety-critical functions" to the car's automated system, allow it to monitor the environment and simultaneously control acceleration, braking and steering. If, for example, a Level 3 car "sees" a slower-moving vehicle in front of it, the car can "decide" to change lanes and overtake the slower car.

"Eventually, I foresee a zero parking ratio that will free up entire floors of garages for other uses."

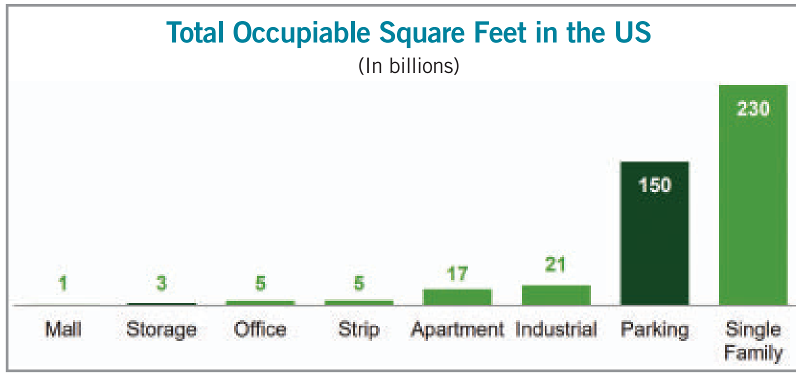
Dale Dekker

Audi claims its A8 concept car, being readied for sale by late 2018, has achieved Level 3, hands-free autonomy, but only under certain driving conditions. The car's AI software will be able to take over in a traffic jam at speeds below 37 mph. A person, however, must be prepared to respond to the car's request to switch to driver control if Level 3 autonomous conditions no longer exist: when a traffic jam clears, for instance, and speeds climb back over 37 mph.

At Level 4, a human driver will be able to put a car into autonomous mode only after the car's monitors determine that conditions are safe. In autonomous mode, the driver will be able to nap while traveling long distances on highways. The car will control steering, braking and acceleration. It will decide when to change lanes, turn and use signals. But it won't be able to decipher more dynamic driving situations, such as traffic jams or merging onto a highway, and will need to transfer control to the driver within a few seconds in certain other instances, such as road construction. BMW, Ford and Volvo predict they'll have Level 4 cars ready for sale to consumers by 2021.

Level 5 is the point at which a car reaches full automation, driving without any human interaction. At this level, everyone in the car will become a passenger; no one in it will need a driver's license or have to be fit enough to drive. With true Level 5 automation, a car will be able to do everything a human driver can, presumably much more safely. Many industry observers think a full-blown Level 5 car is at least 10 years away.

Growing concerns over AV risks to humans may slow that timeline even further as fatal accidents mount, beginning with the 2016 death of a Florida Tesla owner whose autopilot system failed to detect a truck crossing in front of it. In March 2018, a pedestrian was struck and killed by an Uber self-driving test car in Arizona. That same month, a Tesla Model X with its autopilot engaged crashed into a concrete highway divider south of San Francisco, killing the driver.



Source: Green Street Advisors

The Future

Experts predict that when these futuristic cars finally do arrive, they won't just revolutionize how people get around. They'll also upend entire industries, including commercial real estate. Parking infrastructure will be particularly impacted.

"Cars today spend 96 percent of their time parked in a garage or surface lot," says architect **Dale Dekker**, principal and founder of Albuquerque-based Dekker/Perich/Sabatini. "Once AVs go mainstream, privately owned cars will give way to more efficient shared vehicles and subscription-based fleets that will move in and out of 'nesting' areas to transport people 24/7 instead of staying stationary.

"Because passengers will no longer be opening car doors in parking spaces, garages will only need 4 inches of space on either side, reducing parking by as much as 60 square feet per space. Eventually, I foresee a zero parking ratio that will free up entire floors of garages for other uses."

Dekker says planning for fewer private cars in the future, repurposing parking for AV drop-off points and adapting the resulting unused space for more productive commercial use presents a huge and as yet largely untapped opportunity for property owners and developers. ■

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

Retrofitting Tysons

A massive amount of construction is transforming Tysons, Virginia, from an "edge city" dominated by office and retail uses to a denser, more walkable urban place. Shown here is Phase I of The Boro (in March 2018), an office, apartment and retail complex being developed by The Meridian Group. One of the area's four Metrorail stations can be seen at the upper right.
Duane Lempke, Sisson Studios, on behalf of The Meridian Group

From Edge City to Walkable Urban Place

The largest and best-known "edge city" in the U.S. is being transformed into a more walkable urban center.

By Christopher B. Leinberger, George Washington University School of Business and Arcadia Land Co.

THE DEFINING REAL estate book of the late 20th century was "Edge City: Life on the New Frontier." Written by Washington Post reporter **Joel Garreau** and published in 1991, the book chronicled the explosion of "drivable sub-urban" development and described "the most radical change in a century in how we build our world." Edge cities are typically freeway-hugging agglomerations of regional malls, business parks, hotels and the occasional rental apartment complex. They are dependent on cars and trucks as their primary or only transportation option. And they are where the vast majority of economic growth and substantial real estate development occurred in the late 20th century U.S.

Garreau's model edge city was Tysons Corner in northern Virginia, an area set near the intersection of two major limited access highways, the Capital Beltway (Interstate 495) and the Dulles Access Road (Route 267). Later renamed simply Tysons, it was characterized by mid- and high-rise office buildings and two regional malls, surrounded by acres of surface parking lots.

Tysons has been the largest edge city in the U.S. since the 1980s. In that decade it added on average 1.3 million square feet of new office space per year, as well as retail space, luxury hotels and apartments. Coming out of the Great Recession in 2010, Tysons had a total of 27 million square feet of office space as well as 20 million square feet of retail, hotel and residential space spread over 2,400 acres. (See "Tysons Overview" on page 61.) That year, Tysons was the 13th largest "downtown" in the country, in terms of office space. With as much office space as the downtowns of Denver and Pittsburgh, Tysons housed nearly 100,000 jobs and a population of 17,000. It was larger than Perimeter Center in metro Atlanta, Chicago's Schaumburg, Houston's

Tysons in 1989, when the book "Edge City" was published. The Dulles Access Highway (Route 267) is in the upper right corner and the Capital Beltway (I-495) is in the foreground. The Tysons Corner Center shopping mall is on the left; the then-new Tysons Galleria is at the center.
Image provided by the Tysons Partnership

Galleria/Post Oak, Los Angeles' Costa Mesa and Seattle's Bellevue.

Yet Tysons also had some of the nation's worst traffic jams, was hostile to pedestrians and had limited cultural offerings. And it was approaching full buildout under existing zoning. By the early 21st century, it also had competition from a place that offered something it fundamentally did not have: walkable urban vitality.

The Rosslyn-Ballston (R-B) Corridor in nearby Arlington, Virginia, immediately across the Potomac River from Washington, D.C., had been a competitor to Tysons. During the go-go days of the 1980s, Tysons was absorbing over twice as much office space annually as the R-B Corridor. However, the R-B Corridor was then at the start of a transformation into *the* national model of the urbanizing suburb. Starting in the 1970s, Arlington County had based its urban plan for the R-B Corridor around five then new Metrorail stations and encouraged high-density, mixed-use zoning in urban clusters within walking distance of each station.

In sharp contrast to Tysons' drivable sub-urbanism, the R-B Corridor offered walkable urbanism. This development model is five to 30 times denser than traditional suburban development. It offers multiple transportation options, including transit, bikes and walking, in addition to cars and trucks. And it features a mix of product types – typically office, retail and residential – as well as parks and other public spaces, plus 24/7 place management, all within about a 3,000-foot (half-mile) radius.

During the 1990s and the 2000-2006 real estate cycles, Tysons and the R-B Corridor grew at exactly the same rate of office absorption annually and had comparable office rents, about $25 per square foot. There was a standoff between drivable suburban Tysons and walkable urban R-B Corridor during those cycles.

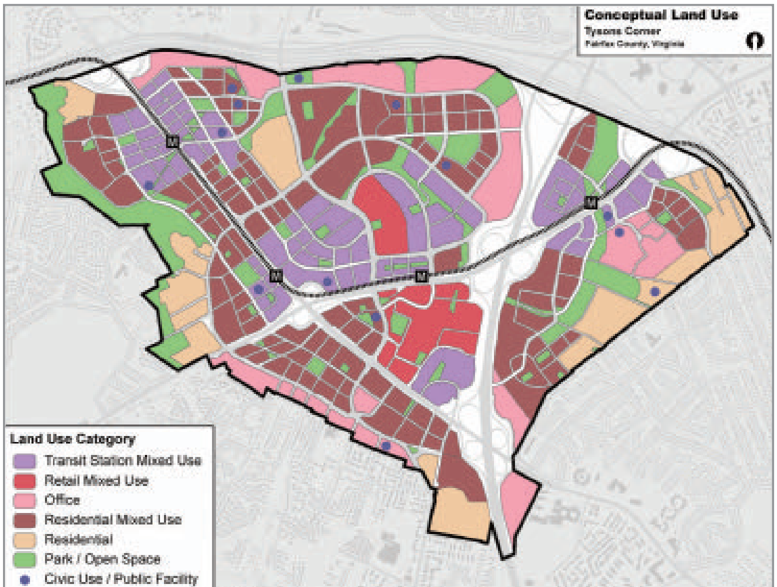
Tysons Loses Market Share

During the current real estate cycle (from 2010 to the present), however, Tysons grew at only half the rate of the R-B Corridor in terms of new office space delivered. Its net office absorption was even worse; Tysons was losing 100,000 square feet annually. The R-B Corridor achieved an average office rent of $41 per square foot, compared to $31 in Tysons, a 32 percent premium.

The valuation premium was even higher, since drivable sub-urban cap rates are in the range of 5 to 7 percent versus 4 to 5 percent for walkable urban office product, adding an additional 30 to 40 percent valuation per square foot premium. The relative loss of market share and value was naturally troubling for Tysons' property owners and developers.

In addition, Tysons was not well positioned for the major new development product of the post-Great Recession market: rental housing. Most 21st century renters did not want to live in a sterile, drivable sub-urban location like Tysons; they wanted a hip, walkable urban place like the R-B Corridor. The R-B Corridor added 1,200 apartment units per year from 2010 to 2014, versus about 370 units per year in Tysons.

These lagging office and residential rental absorption trends for Tysons came as most developers and investors in metropolitan Washington real estate were beginning to realize that the late 20th century approach to development was losing favor. Walkable urban places were rapidly



Fairfax County's Tysons conceptual land use map focuses on accommodating mixed-use development near the area's four Metrorail stations.
Fairfax County Department of Planning and Zoning

becoming more popular and more financially successful in response to pent-up demand.

Back to the Future

The market was shifting "back to the future." Developers were once again building walkable urban places, something they had not done in a century. And the focus of that development was confined to much smaller areas. Since walking distance has been fixed for thousands of years at about a half mile, this limits the size of a walkable urban place to between 100 and 400 acres. The R-B Corridor has five walkable urban places totaling 1,100 acres, or an average of 220 acres each.

"Core Values: Why American Companies Are Moving Downtown," a 2016 report published by Smart Growth America in partnership with Cushman & Wakefield and The George Washington University, demonstrated office tenants' growing demand for walkable urban places. Researchers surveyed over 500 corporations that had moved to these places and learned that the No. 1 reason they had done so was to attract talented young millennial workers. To be a 21st century knowledge-based, creative class company requires being located in a walkable urban place.

The growing demand for walkable urbanism, among other factors, lead the Fairfax County Board of Supervisors to establish the Tysons Land Use Task Force in 2005. Another major catalyst for the establishment of the task force was the planned construction of Metrorail's new Silver Line, which was to add four new stations in Tysons. Comprised of citizens, planners, landowners and businesses in and around Tysons, the task force's mission was to:

1) Promote more mixed-use development.

2) Better facilitate transit-oriented development (TOD).

3) Enhance pedestrian connections throughout Tysons.

4) Increase the residential component of the density mix.

5) Improve Tysons' functionality.

6) Provide for amenities and aesthetics, such as public spaces, public art and parks.

The head of the task force was **Clark Tyler**, a neighborhood leader who had lived near Tysons for 50 years. A longtime observer of Tysons, he saw it as "the blob that ate Northern Virginia." Yet he felt there was a model Tysons could follow nearby: the R-B Corridor.

Tyler and the task force studied how the R-B Corridor had evolved, following smart growth principles of high-density, walkable urban development clustered around its five Metrorail stations. Two things stood out:

1) In the late 1980s, 11 percent of Arlington County's land mass consisted of land zoned for walkable urban development, and that land generated 20 percent of its tax revenues. By 2010, more than 50 percent of the county's tax revenues came from this up-zoned and redeveloped land.

2) The main arterials serving the corridor's five walkable urban places, which experienced a tripling of square footage since the 1980s, actually saw their traffic counts *decline* in absolute terms. All of the growth was accommodated by increased transit, biking and walking.

Tyler and the task force also discovered from the R-B Corridor that high-density mixed-use development within walking distance of single-family housing improved the quality of life in the surrounding neighborhoods. Allowing Tysons to evolve into a much denser, more walkable urban place, as the county's comprehensive plan envisioned, could offer residents of surrounding neighborhoods the best of both worlds: a suburban lifestyle within walking distance of restaurants, transit, jobs and urban vitality.

The existing street grid for Tysons (top) limits connectivity for automobiles and pedestrians throughout the area. A more urban grid (bottom) will enhance connectivity for all modes of transportation.
Fairfax County Department of Planning and Zoning

Plan Approved

After an extensive community engagement process, including 300 meetings, economic and fiscal impact analyses, land use planning, and review and approval by both the task force and the Fairfax County Planning Commission, the Fairfax County Board of Supervisors approved the Tysons rezoning and urban plan amendment to the county's comprehensive plan on June 22, 2010. The plan update calls for 75 percent of all new development in Tysons to be located within a half-mile walk of a Metrorail station.

By 2050, Tysons is projected to have twice as many jobs (200,000) and five times as many residents (100,000) as it did in 2010, resulting in a jobs/housing balance of two jobs for every resident, as opposed to a 6:1 ratio in 2010. Tysons will also be more environmentally sustainable, with restored streams; a green network of public parks, open spaces and trails; and green buildings.

A redesigned transportation system will include circulator routes, community shuttles, feeder bus service and vastly improved pedestrian and bicycle routes and connections. The new comprehensive plan also called for the establishment of the Tysons Partnership, a nonprofit organization of property owners originally empowered to engage in transportation management, which has broadened its responsibilities tremendously, as discussed below.

All of this required substantial up-zoning. The new comprehensive plan allows for a tripling of the square footage existing in 2010, with up to 150 million square feet estimated to be on the ground around 2050. It assumed that much of this new development would be spurred by the four Metrorail stations, which opened in 2014. The plan and the Metrorail opening did indeed spark an explosion of rental housing deliveries. In the two years after the Silver Line opened, 840 new rental apartments came on the market annually, more than double the 371 units that came on line in the previous four years.

Funding

The $2.9 billion Metrorail extension was paid for by increased tolls on the Dulles Access Road as well as state and federal funds. However, an additional estimated $2.8 billion in other transportation infrastructure was needed to support the increased density and transform Tysons into a walkable urban place. Where would this funding come from?

Highlights of the Plan

The 2010 plan calls for Tysons to grow from 19,000 residents and 93,000 jobs to 100,000 residents and 200,000 jobs by 2050. Other features include the following:

- A new "Transit Station Mixed-Use" land use category.
- No fixed ceiling on development intensity within a quarter mile of Metro stations, with intensity determined through the rezoning process.
- Twenty percent new-housing affordability for households with incomes between 50 and 120% of the area median income.
- Nonresidential development contribution of $3 per square foot to an affordable housing trust fund.
- Leadership in Energy and Environmental Design (LEED)-certified residential buildings and commercial buildings that reach the LEED silver standard.
- A green network of parks, open space, and trails, with urban standards for parks and recreational facilities.
- An urban grid of streets, designed for use by pedestrians and bicyclists as well as automobiles.
- Circulator routes linking residential neighborhoods to the station areas, and other transit service linking Tysons to communities outside its borders.
- Rigorous transportation demand-management measures.
- A phase-in of parking maximums to replace suburban-oriented parking minimums. ■

Tysons Overview

Product Type	2010		2017		2040*	
	Thousands of Sq. Ft.	Percent of Total	Thousands of Sq. Ft.	Percent of Total	Thousands of Sq. Ft.	Percent of Total
Office	27,928	59.2	27,876	54.8	45,201	41.9
Retail	5,826	12.3	5,899	11.6	7,482	6.9
Hotel	2,578	5.5	2,740	5.4	6,267	5.8
Residential	10,844	23.0	14,352	28.3	49,499	45.9
Total	**47,177**	**100**	**50,867**	**100**	**107,810**	**100**

**Projected; includes projects approved and under construction as of December 2017.*

Source: Fairfax County, CoStar

Tysons property owners now contribute to both a Tysons-wide Road Fund and a Tysons Grid of Streets Fund to increase walkability and put in new streets to break up the super-blocks that have long dominated the area. As the county's 2017 Tysons Progress Report says, "All new or reconstructed road improvements will include pedestrian facilities and many will include bicycle facilities." The county's board of supervisors recently increased the 2018 contribution rate for these two funds to a combined total of $13.21 per floor-area ratio (FAR) square foot for commercial property.

A third transportation fund, The Tysons Road Fund, which has been in existence since before the 2010 comprehensive plan was approved, requires an assessment of $4.46 per FAR square foot. A developer's minimum assessment, payable upon obtaining a building permit, is now $17.35 per FAR square foot.

This contribution, however, reflects the base transportation fees, and generally does not represent the full upfront cost of transportation improvements associated with a specific new or redeveloped project. Additional fees fund unique on-site road improvements, nearby road and intersection improvements, traffic demand management studies and programs, traffic signals, etc. Total transportation fees therefore typically range from $25 to $29 per FAR square foot. These fees alone mean that Tysons has some of the highest-priced suburban land values in the country.

To put these fees in context, annual asking rents for Class A office space in Tysons now average about $40 per square foot; the one-time transportation fees for the three funds and unique assessments therefore represent 62.5 to 72.5 percent of annual rents. Compare this to New York's Park Avenue Manhattan submarket, where Class A asking rents are about $90 per square foot, according to Cushman & Wakefield, among the highest in the country. Transportation fees there are about $62 per FAR foot, according to the New York Times, 69 percent of annual rents. In other words, Tysons transportation charges are about the same, relative to rents, as those in one of the most expensive office submarkets in the country.

These substantial transportation fees reflect both the high cost of infrastructure improvements for walkable urban development as well as the market's ability to pay for the improvements, given pent-up demand and higher rents.

The Tysons Partnership

The comprehensive plan foresaw much increased cooperation among landowners regarding transportation management, human-scale infrastructure improvements and even consolidation and/or coordinated development plans. To date, that cooperation has primarily been through the Tysons Partnership.

The Tysons Partnership was officially designated by Fairfax County as the transportation management association (TMA) for Tysons. It has been responsible for carpooling and circulator management as well as the introduction of the metro area's Capital Bikeshare network to Tysons.

The partnership, which describes itself as "a dynamic collaborative of Tysons stakeholders working together to accelerate the transformation of Tysons into a great American city," has been taking the lead in ensuring "that the overarching goals and objectives of the Comprehensive Plan for Tysons are achieved." Its work has involved wayfinding, entrance signage and street banners; organizing pop-up

The Boro

The new walkable urban place that is furthest along in Tysons is The Boro, a multiphase mixed-use project being developed by The Meridian Group. Although the company was initially skeptical about investing in Tysons, following the adoption of the comprehensive plan and the commencement of Metrorail construction, Meridian felt Tysons was "ready to transition … away from the suburban office park model and create high energy pockets where people want to be," according to **Gary Block**, partner and chief investment officer with Meridian.

The Meridian Group wanted a Tysons location that would allow it to begin with a first phase large enough "to dramatically change the perception and feel of that area, which would drive land value of subsequent phases," says Block. In August 2013, the company acquired the three-building headquarters of SAIC, a major government contractor, adjacent to the Greensboro Metrorail station. The property included 630,000 square feet of Class B office buildings, a parking deck and a call option for additional land with 3 million square feet of FAR. SAIC leased back 130,000 square feet in one of the three buildings.

The first improvement Meridian made was to add a new "front door" to the SAIC property to face the new Metrorail station, in addition to the original car-oriented entrance. Meridian then acquired a 765,000-square-foot portfolio of four buildings adjacent to The Boro on the east and a 210,000-square-foot building directly across Greensboro Drive to the south. This will allow subsequent phases of development to take advantage of the critical mass that will be created in the first phase.

The Boro will feature vibrant streetscapes and greenspaces; its first phase will contain 1.7 million square feet of apartments, condos, office and retail space, including a 15-screen cinema.
Courtesy of The Meridian Group

The rezoning of Meridian's holdings allows a total buildout of nearly 4 million square feet. The Boro's first phase will contain 1.7 million square feet of apartments, condos, office and retail space, including a 15-screen ShowPlace Icon movie theater and the largest Whole Foods Market in the U.S.

Two parks and new streets will break up the super blocks. The Boro aims to create the walkable urbanity promised by the comprehensive plan when its first phase delivers in 2019.

Office rents at The Boro have already increased from the mid-$20s annually in 2013 to the mid-$40s in 2018, following renovation of the existing buildings from Class B back up to Class A. Office rents at the new phase I office tower are in the mid-$50 per square foot per year. Condos will be priced at $800 per square foot, on average, and some early reservations have achieved $1,000 per square foot. The rental apartment market is still new in this location, but Meridian is projecting annual rents of $36 to $42 per square foot. There is plenty of room for apartment rents to rise, since Tysons apartments currently rent at a discount to those in the R-B Corridor and downtown Washington.

The key, according to Block, will be to "co-brand our properties and integrate one into the other, creating co-dependence and allowing one to benefit from investment in the other." This "more is better" value creation phenomenon is common to most walkable urban places. As you build more retail space, housing, offices and entertainment, the area improves over time. More people on the sidewalks attract even more people. This is also referred to as the "upward spiral of value creation." Meridian has planned substantial additional development to reap the benefits of the critical mass it expects to achieve in phase I.

parks, murals, festivals and other events like bike races and farmers markets; and installing public art. The partnership also represents property owners in their interactions with the county, the local jurisdiction implementing the comprehensive plan.

The partnership is not, however, taking an in-depth role in placemaking and place management. These functions will be filled by private developers and property owners.

The major responsibilities for implementation of the comprehensive plan are now in the hands of the private sector, which is taking advantage of the Metrorail and other infrastructure improvements and the substantial increase in zoning density to transform Tysons into a denser, more urban place. Many developers and property owners are in the process of creating walkable urban places through new development, placemaking and place management. (See "The Boro" for more on the new development now underway.)

The Coming "Breakup"

At 2,400 acres, Tysons is far too large to be just one walkable urban place. Recognizing this, the comprehensive plan divided Tysons into eight different zones, anticipating that each would evolve independently. However, it now appears that the bulk of new walkable urban development will cluster around Tysons' four Metro stations, as specified by the new zoning.

Over the next generation, five walkable urban places of about 300 acres each are expected to emerge: one each around the McLean, Greensboro and Spring Hill stations, and two at the Tysons Corner station – one on either side, anchored by the area's two regional malls, both of which are already surrounded by substantial office and residential development. Each of these five places will have its own character, economic role, tenant submarkets, etc.

This means that only about 1,500 of Tyson's 2,400 acres will become walkable urban places. The rest of the area will stay pretty much as it is today for the foreseeable future.

Future Challenges And Lessons Learned

The entire country and much of the world is watching the transformation of drivable sub-urban Tysons into a collection of walkable urban places. This process already offers the following five lessons:

1) Massive investment in transportation and parks must be made upfront, by both the public sector and private property owners. Given unlikely future federal infrastructure spending, this funding will probably have to come from state and local sources, and must include private co-investment.

2) Walkable urban places, with their complex mix of residential, office and retail products, are much more difficult to develop than stand-alone drivable sub-urban projects. The initial phase of any walkable urban project must achieve enough critical mass to create a "there there."

3) Not all of the drivable sub-urban space in an edge city will be converted to walkable urban development. Some of the existing office, retail and residential products will remain, and will still be able to attract tenants unable to afford the higher-priced walkable urban product.

4) Conventional underwriting probably does not apply to these projects, especially in their early phases. Upfront investment in infrastructure and parks, along with some unproven product offerings, especially at the required rent or sales price levels, will require a leap of faith at times. Property owners will eventually profit from the increase in land value in subsequent phases.

5) Place making is essential for success. Whether through a business improvement district, government-funded urban districts or private place management, extraordinary cleaning and safety services, festival management and promotion, park development and management, economic development and more are required, and do not come cheap.

Since the first projects following the opening of Metrorail have only recently been completed and the first phase of The Boro, Tysons' first major walkable urban place, has not yet delivered, the jury is still out on Tysons' transition to walkable urbanism.

What *is* known is that, if the largest edge city in the country can pull this off, other edge cities will take notice and follow Tysons' lead. In fact, Fairfax County is already applying some of the new policies and practices developed for Tysons to the Reston Transit Corridor, where the Silver Line is being extended to Dulles Airport. ■

Christopher B. Leinberger is a professor at George Washington University School of Business and a partner with Arcadia Land Co.

The Evolving Automotive Industry

Detroit Meets Silicon Valley

Pacific Commons South, under construction and scheduled for completion by the end of 2018, will include 10 buildings with a total of 1.7 million square feet of advanced manufacturing space in Fremont, California, less than two miles from the Tesla plant.

Electrification, artificial intelligence, autonomy and mobility services are having big impacts on the Bay Area commercial real estate market.

By Michael E. Karp, Cushman & Wakefield

THE BAY AREA and Silicon Valley have long been the epicenter of the technology industry, so it is no surprise that the rapid evolutionary changes that are beginning to appear in cars, trucks and buses originated there. Even more interesting is the rapid migration of companies into the area to capitalize on the emergence of these new technologies.

Every major automotive company now has divisions located in the Bay Area, including General Motors' Cruise automation division and the Ford Research and Innovation Center Palo Alto. Mercedes-Benz, Audi, BMW and Volkswagen have significant research and development facilities in the Bay Area, all of which are dealing with advanced automotive work that may encompass everything from electrification and increased connectivity to shared and autonomous vehicles.

Delphi Technologies, one of the world's largest original equipment manufacturing (OEM) suppliers, has a lab in Mountain View, while Germany's Continental (generally thought of as a tire maker) now has a burgeoning 65,000-square-foot R&D facility in San Jose devoted to self-driving and electric powertrain technologies. These are just some of the nearly 100 automotive-oriented groups that have either set up shop in the Bay Area or spun off from other larger local groups in the last few years.

Tesla Motors, headquartered in Palo Alto, is the single largest automotive-related user of Bay Area real estate, and is by far the largest automotive-related employer there. As the first successful large-scale manufacturer of electric automobiles, Tesla has had a profound impact on the market, both as a consumer of space and a driver of new technology.

Drivers of Growth

What key trends are driving growth in the automotive industry, and how are they impacting Bay Area real estate markets? Autonomy, connectivity, electrification and sharing (which includes mobility services), often referred to as ACES, comprise the four broad categories occupying space in the advanced automotive community. These industries, both separately and in connected ways, underscore the westward shift of R&D in automotive technologies from Detroit to the Bay Area, and indeed from automotive manufacturing centers around the world. All of these groups occupy space in the Bay Area real estate markets.

Autonomy is being driven by some of the largest Bay Area tech companies. These include Waymo's parent, Google; Mobileye, recently acquired by Intel Corporation; and Uber, through its Advanced Technology Group, the self-driving truck unit formerly known as Otto. Most recently, Lyft announced a major R&D center in Palo Alto that reportedly includes partners such as Waymo, nuTonomy, Jaguar/Land Rover and GM, taking a more "open platform" approach. Recently they upped the ante by announcing a partnership to manufacture systems with Canadian auto parts powerhouse Magna. Approximately 60 companies in the Bay Area are now

> "**Autonomy is as much about vehicles being able to communicate with one another** as it is about self-driving features in the car itself."
> *Michael E. Karp*

focused exclusively on autonomous vehicle development.

A prime example is Velodyne, the leader in Lidar (light detection and ranging), the laser sensing technology that enables autonomous vehicles to "see" the roadway and obstacles around them. These sensors, commonly attached to car roofs, look like spinning "fried chicken buckets," and are one of the key components in developing vehicle autonomy. The majority of current autonomous vehicle development programs use the Velodyne system. The company recently purchased a 200,000-square-foot manufacturing building in San Jose. Although the new building has enabled Velodyne to significantly increase its capacity, customers still face at least a six-month backlog for deliveries of this critical component.

The very idea of autonomy has fundamentally changed how the automotive business views itself. The dialogue within automotive circles has evolved rapidly from autonomy being characterized as an "unlikely fringe element" to its becoming an accepted mandate. Competition is being fueled in part by government regulators, insurance companies and health care experts, all of whom have given the autonomous vehicle, which could save tens of thousands of lives annually, a thumbs-up. Industry leaders and Washington lawmakers are now seeking to roll out level 4 and 5 autonomy (fully autonomous, with or without traditional controls) as fast as possible. (See "Transitioning Toward the Autonomous Vehicle" on page 52 for a description and illustration of these levels.)

The debate about when and how these technologies will become commonplace continues. GM has recently jumped ahead of Ford, announcing that it plans to introduce a fully automated ride-sharing service similar to Uber by 2019. Ford has promised consumers a fully autonomous vehicle by 2021. It wasn't long ago that the automotive industry was still grappling with the idea that many of tomorrow's cars may not have steering wheels at all, and that many future car buyers would simply opt out of direct ownership altogether. Now, they appear to be accelerating that very change.

To illustrate the speed with which all of this is occurring, Waymo received approval from city officials to deploy completely driverless Chrysler Pacificas on the streets of Chandler, Arizona, in February 2018, with vehicles picking up and dropping off passengers in a pilot program. That same month, the California Department of Motor Vehicles announced that it will permit testing of fully autonomous vehicles, without safety drivers, on select highways and streets.

Only a few weeks later, Uber halted tests of its autonomous vehicles throughout the U.S. and Canada after a Volvo XC90 operating in autonomous mode struck and killed a pedestrian in Tempe, Arizona, in March 2018. While the investigation into that incident is ongoing, other groups, including Waymo, continue their road tests in Arizona and elsewhere.

Connectivity is one of the least understood aspects of the new age of mobility. Yet it will be critical if autonomy is to take hold in both urban and rural settings. Think about the importance of cell towers. The advent of level 4 and 5 autonomy cannot take place without the widespread integration of new 5G communication technology (fifth-generation wireless systems).

Autonomy is as much about vehicles being able to communicate with one another as it is about self-driving features in the vehicle itself. Connectivity technologies have historically been headquartered in Silicon Valley. These industries, including companies such as Apple, Broadcom and Samsung, already command a huge presence in the market. These legacy companies occupy many millions of square feet in the Bay Area.

Electrification and the development of electric vehicles is occurring globally, but Tesla has led the way in delivering fully electric automobiles on a large scale. Lucid Motors in Menlo Park recently leased an additional 126,700 square feet in Newark, directly across the highway from Tesla's new 230,000-square-foot Fremont office complex. As Lucid prepares to bring its high-end electric cars to market, other more familiar names have set up operations in the Bay Area to develop electric vehicles and drivetrains.

Bay Area Companies Involved With Autonomous Vehicle Research and Development

Palo Alto	Mountain View	San Francisco
Artisense	Almotive	Civil Maps
Aurora Innovation	BMW Technology Group	Cruise Automation
Autonomia	CrowdAI	Decyphir
Autonomic	DeepScale	Gaze
Bosch Research & Technology	Delphi Labs	Lyft
Cyngn	Drive.ai	Mirada Technologies
DeepMap	Google X	Otto
Ford Research & Innovation Center	Honda Research Institute	Ouster
Nauto	Nuro	Scooterson
RightHook	Phantom Auto	Uber
Robby Technologies	Toyota Infotechnology Center	Vivify Trucks
Tesla	Waymo	
Xpeng		
San Jose	**Santa Clara**	**Sunnyvale**
AutoX	Auro	JingChi
Continental Automotive	Cardinal Optimization	Mercedes Benz R&D
Denso International	Ours Technology	Nissan Research Center
Drivermode	Robomart	Quanergy
Next future transportation	Savari	
Nio		
Voyage		
Menlo Park	**Oakland**	**Redwood City**
Helm.ai	Exonav	Drivemode
Hyundai Ventures	Pyka	Metamoto
Zook	Vehicle Data Science Corp.	Starship Technologies
Other Markets	Dellfer (Novato)	Tesla (Fremont)
AEye (Pleasanton)	Luminar (Portola Valley)	Tyto Lidar (San Leandro)
Cepton Technologies (Saratoga)	Neuvition (Dublin)	Volkswagen Group (Belmont)
Civil Maps (Albany)	PlusAI (Los Altos)	

Source: PitchBook and Cushman & Wakefield Research

These include Porsche, Volvo and Hyundai, to name just a few.

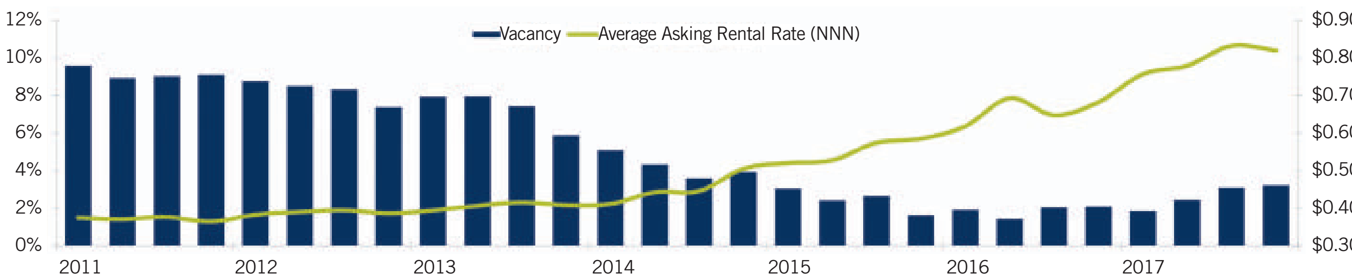
Sharing technology and mobility services are the focus of giants Uber and Lyft , but myriad other aspects of this new trend are being addressed with R&D funded by the major automakers, and much of that work is being done in the Bay Area. Researchers are attempting to get a handle on how people will use and access vehicles in the future, and automakers are trying to figure out how to target future sales of automobiles. On the other end of the sharing spectrum, the likes of Ford Bike and Lime Bike are attempting to solve "last-mile" transportation gaps with fleets of high-tech bicycles that can be rented and accessed via smartphone apps.

From NUMMI to Tesla

The 2010 closure of the New United Motors Manufacturing Inc. plant (a joint venture between GM and Toyota) in Fremont, which was California's last automotive assembly plant, left a 5.3 million-square-foot hole in the East Bay industrial market. By 2009, the region had already lost 3,000 jobs at the plant and approximately 4,000 related supplier jobs. Real estate experts and economists predicted that this was the end of automotive production in the Golden State. They spoke too soon.

Tesla Motors' purchase of the plant the same year it closed triggered a remarkable turnaround that today includes 6,000 assembly jobs, 10,000 additional administrative and R&D jobs, and thousands of supply chain jobs in the broader Tesla ecosystem. The current 5.3 million-square-foot plant is expected to grow to 10 million square feet on nearby land owned by Tesla, whose expansion plans have received approvals from the city of Fremont.

San Francisco East Bay Warehouse Market

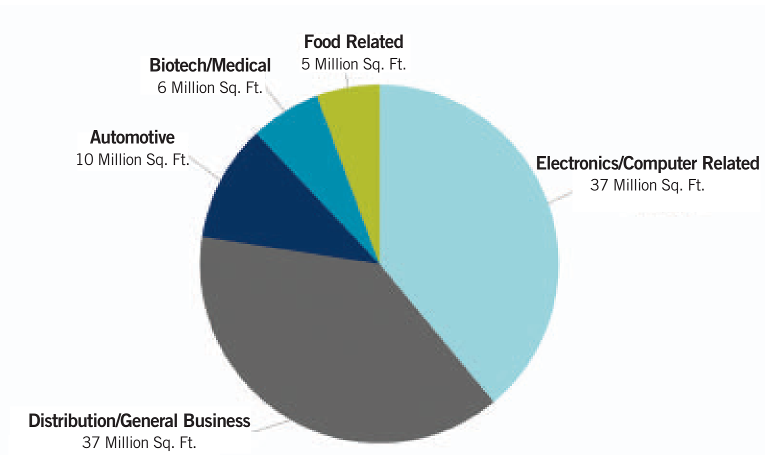


Source: Cushman & Wakefield Research

In surrounding submarkets, Tesla and its major suppliers occupy some 3.3 million square feet of additional space. Tesla is far and away the single largest user of industrial real estate in the Bay Area. With production of the low-cost Model 3 ramping up, deliveries are projected to increase fivefold to over 500,000 units annually by the end of 2018. By most accounts, the effect of Tesla's already significant presence has just begun. While significant development has occurred over the last several years, vacancy rates remain extremely low.

Top Five Industry Occupiers in the San Francisco Bay Area

(Includes tenants/users >100,000 square feet)



Source: Cushman & Wakefield Research

Market Focus

How is growth in these related industries impacting the Bay Area market? The largest impact is being felt in the East Bay industrial markets, where the "Tesla effect" is most pronounced. Taken as a whole, the overall impact of the automotive space is impressive and growing. San Francisco, primarily an office market, has over 1.5 million square feet of office space currently occupied by automotive-related companies, including Uber, Lyft, Cruise and Otto. Within the Peninsula market, which includes Palo Alto and Menlo Park, R&D space related to advanced automotive groups has a significant presence of roughly 700,000 square feet. Major blocks of space have been consumed by automotive uses in nearly every city in the Bay Area, putting stress on an already tight market.

Advanced Manufacturing

"Advanced manufacturing" is a catch-phrase used to describe large-footprint industrial buildings intended to house high-tech, worker-intensive industries. With early entrants in Tesla's supply chain such as Futuris, SAS Automotive and Draexlmaier, all of whom supply interior components and employ large numbers of workers, city planning departments throughout the East Bay are using the critical shortage of developable industrial land to demand that traditional warehouses make way for the higher-image, heavily powered facilities with more parking that advanced manufacturing industries prefer. Theoretically, these facilities will enable the companies occupying them to create more and higher-paying jobs.

In many submarkets, jurisdictions are now requiring conditional use

> "**Automotive technology developed in the Bay Area** will likely be integrated into existing automotive manufacturing strongholds."
>
> *Michael E. Karp*

permits (CUPs, also known as special use permits) for standard warehouse uses and are imposing these restrictions not just on new developments, but also on older, existing facilities and existing tenants. It can take several months for a company to apply and receive approval for a CUP, which significantly increases transaction times. These factors can negatively impact properties and entire submarkets that require CUPs, since many tenants will opt to locate in nearby markets that do not require CUPs. On the other hand, manufacturing uses that can demonstrate potentially higher employment will not be required to get CUPs. Cities that are hoping to increase their long-term employment base by requiring CUPs for standard uses are taking a gamble with their core warehouse base.

One developer that has embraced these trends is Overton Moore Properties, which has parlayed its early success in accommodating advanced manufacturing companies into the start of construction on the largest new industrial park project now underway in the Bay Area. Pacific Commons South, also known as PCS, will include 10 buildings with a total of 1.7 million square feet, primarily advanced manufacturing space. Construction began in April 2018 and PCS is expected to be completed by the end of the year. The Tesla plant is less than two miles away.

Immediately adjacent to PCS, Conor Commercial Real Estate is building an 817,000-square-foot warehouse development known as Pacific Commons Industrial Center. Soil preparation was underway in spring 2018; the project is expected to be completed in spring 2019. This will be the single largest spec industrial building ever constructed in the East Bay. It will accommodate either warehouse or manufacturing uses.

What's Next?

Key elements of the advanced automotive industry are still shaking out. The industry has rapidly embraced changes and major automotive manufacturers have moved key departments to Silicon Valley. Ford's new CEO, **Jim Hackett**, is one example of this trend; he was tapped to lead the company after running its smart mobility division in Palo Alto. Hackett was recently quoted as saying, "Being frozen in the past is really a death sentence. We're looking at things that we never would have imagined 10 years ago." The emphasis at Ford seems clear.

While the center of gravity for automotive research has indeed shifted west, the future of the automotive industry unfolding in the Bay Area is similar to the evolution of the personal computer industry. With a culture of innovation, the availability of venture capital money and two top-tier universities – the University of California, Berkeley, and Stanford University – providing intellectual capital, the Bay Area is fertile ground for promoting change. However, the cost of operating in the Bay Area markets remains extraordinarily high and is trending even higher. These costs will likely make large-scale manufacturing in these markets a challenge.

This paradigm was also true when large-scale computer manufacturing began and was then outsourced to more inexpensive markets. Thus, automotive technology developed in the Bay Area will likely be integrated into existing automotive manufacturing strongholds as soon as it is approved. Recent trends do not point to the end of Detroit's dominance. Rather, they suggest that technology born in the Bay Area will enhance and fortify one of America's great industries, making it stronger and more competitive. Bay Area real estate markets will continue to accommodate new technological advances and Tesla's burgeoning footprint, but local cities must remain creative and flexible if the area is to keep up with the demand for space.

Remarkable transformations are taking place in the automotive industries, and those changes will impact personal transportation, trucking and other ground transportation, and much more. The impacts of change in the automotive industry have already had a major impact on the real estate market in the Bay Area, and savvy developers are factoring this increased demand into their office, R&D and industrial projects. ■

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395 Pedricktown Road

Dermody Properties completed this concrete tilt-wall building in January 2018, only a month after Kenco Logistic Services signed a lease for 401,000 square feet of the 481,000-square-foot structure, which is located in the LogistiCenter at Logan master-planned business park in Logan Township, New Jersey.
Photos courtesy of Dermody Properties

By John Seelmeyer

When Kenco Logistic Services began circulating a request for proposals (RFP) in early 2017 for a major distribution center in the Philadelphia-Wilmington region, it needed far more than four walls, a bunch of dock doors and some office space.

Because Kenco's client, a Fortune 100 company, planned to contract with the Chattanooga-based provider of third-party logistics services to distribute motor oils and lubricants from the facility, Kenco was looking for a building that met the tenant's specialized environmental and safety requirements.

The requirements included specialized systems, both inside and outside the building, to prevent spills from getting into the sanitary sewer system. Fire code requirements for storage of liquid petroleum products, meanwhile, required sprinkler heads that deliver a strong blast of water from 75-pounds per square inch (psi) heads installed near product storage areas.

Dermody Properties of Reno, Nevada, had just begun work on a building at 395 Pedricktown Road in Logan Township, New Jersey, just southeast of Philadelphia, when Kenco circulated its RFP, and the timing proved fortunate. Dermody had completed site work and had poured the building's foundation and floor – progress that enabled Kenco to move quickly – but time still was available to incorporate the specialized tenant improvements required by Kenco and its client.

Even so, the midstream change of plans – taking a spec project and constructing it instead as specialized build-to-suit – proved relatively easy to accomplish within a reasonable time frame.

"We added fencing and a guardhouse, split the utilities and

Tailored Improvements For a Specialized Tenant

A speculative building in southwest New Jersey incorporates specialized systems to control spills and fire protection requirements for storage of liquid petroleum products.

adapted the design to meet Kenco's requirements," says **James Mascaro**, senior vice president of development for Dermody Properties. "None of these were especially challenging." They added approximately $2.0 million to the cost of the building.

Dermody Properties completed the building in January 2018, only a month after Kenco had signed a lease for 401,000 square feet in the 481,000-square-foot distribution center at Dermody's LogistiCenter at Logan, a 1,100-acre master-planned business park.

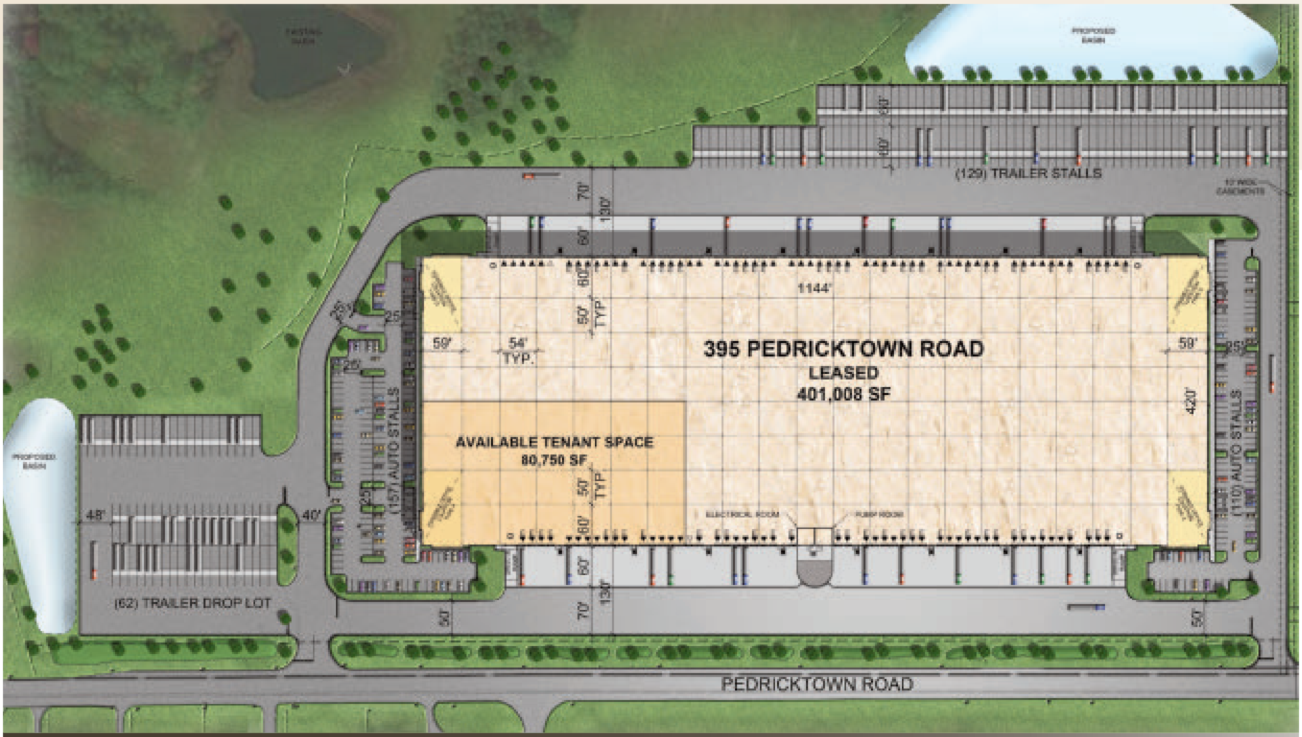
Specialized TIs

David Caines, chief operating officer of Kenco, stresses that the tenant needed a facility with specialized systems to contain spills as well as ESFR fire protection operating at 75 psi. These systems added approximately $400,000 to the cost of the building.

Mascaro says the storage of petroleum products in the building triggered state and local environmental controls that are more robust than those for other similar-sized facilities.

For instance, a raised floor protects drains so that an accidental spill cannot enter the sanitary sewer system. Outside, systems similar to those that capture grease from the wastewater in restaurants – but much larger and far more sophisticated – prevent petroleum spills from reaching storm drains.

To meet fire-protection requirements, sprinkler systems were engineered to direct their flow from 75-psi heads located near the stored petroleum products. That required installation of a suspended acoustical ceiling grid 6 feet below the roof deck of the building itself. Fire-suppression systems then were attached to that false ceiling.



Approximately 81,000 square feet of the building remains available for a second tenant.

Kenco and its client also required additional security around the building. That need presented a challenge, because Kenco is leasing only about 80 percent of the building. Kenco's security operations couldn't interfere with the trucking operations and employee access for the tenant that ultimately will lease the remaining 80,750 square feet.

Galvanized cyclone fence supported by video surveillance provides the first line of security around the building, while access is controlled through two active gates manned by security guards and two padlocked, unmanned gates. The building's design, with its long face along nearby Pedricktown Road and curb cuts at either end of the property, provided flexibility in the location of the active gates, Mascaro says, so that the tenant in the remaining portion of the building will have full access without interference from the Kenco-related security measures.

The location was the single most important consideration in Kenco's decision to lease the building, says Caines. It's close to a manufacturing facility operated by Kenco's client, and a dedicated shuttle will run product from the manufacturing plant to the distribution facility. Caines says Kenco also likes the site's proximity to major transportation arteries that link the location to customers in major population centers along the East Coast.

"This facility flows very well, both for inbound as well as outbound traffic," says Caines. Traffic can move from either Interstate 295 or the New Jersey Turnpike along one of two roads leading to the site. The site itself provides ample space for tractor-trailer stacking as truckers await clearance through Kenco's guardhouse.

Along with storage and distribution of motor oils and lubricants, Kenco's 50 employees at the site will provide some value-added services such as final assembly of kits – point-of-sale displays, sample packs and the like – for the client. The New Jersey location is one of 90 distribution locations operated nationwide by Kenco, a provider of integrated logistics solutions that range from distribution and fulfillment to transportation management and information technology.

The space leased by Kenco provides 94 dock doors (57 of them equipped with dock levelers, seals and bumpers) as well as three drive-in, grade-level doors. The project provides 129 stalls of trailer parking for the Kenco operation. Slightly more than

> “**This facility flows very well,** both for inbound as well as outbound traffic.”
>
> *David Caines*

The building's primary tenant, a distributor of motor oils and industrial lubricants, had specialized environmental and safety requirements, including interior and exterior systems to prevent spills from getting into the sanitary sewer system as well as ESFR fire protection with sprinkler heads installed near product storage areas.

20,000 square feet of the leased space will be devoted to offices.

The building incorporates LED lighting, as well as extensive use of daylighting techniques, to reduce energy consumption.

The Bigger Picture

The building is part of the 1,100-acre LogistiCenter at Logan, a master-planned business park that, when completed in late 2018, will include more than 5.5 million square feet of warehouse, distribution and manufacturing space. The park is strategically located within a one-day drive of 40 percent of the U.S. population, halfway between New York City and Washington, D.C., with excellent access to the Northeast transportation corridor.

Proximity to large populations is particularly important to the e-commerce companies whose fulfillment operations are driving much of the current boom in industrial development, says **Gene Preston**, Dermody Properties' East Region partner. That proximity is becoming increasingly important as e-commerce companies become ever-more aggressive with their delivery windows, moving from promises of two-day delivery to same-day delivery.

Also strengthening the location's appeal is the availability of a sizable labor force within a 20-minute commute from nearby Philadelphia and Camden. As labor supplies tighten nationally, the number of job seekers in the region remains relatively high. The jobless rate in Philadelphia, for instance, runs more than a percentage point higher than the national rate, and Preston notes the region provides a workforce that brings diversified skills, education and racial and ethnic makeup.

Dermody Properties bought the land in 2005 and worked closely with the New Jersey Department of Environmental Protection to execute a waterfront master plan for the property, which includes extensive wetlands that surround the upland building sites. The developer then took advantage of the construction slowdown during the Great Recession to complete storm basins and other infrastructure required by the waterfront plan.

“We got it done at a time when contractors were looking for work,” says Mascaro.

Dermody worked closely with Logan Township officials on the project, but the development was completed without incentives from local governments. Logan Township officials, Mascaro explains, were so confident that the project made sufficient economic sense on its own that they didn't see the need to provide financial assistance to Dermody.

As it nears buildout, LogistiCenter at Logan now includes 14 buildings totaling 4.3 million square feet. Only two sites – one for a 193,400-square-foot building and the other for a 369,000-square-foot building – remain available for sale or lease. Preston says Dermody expects to complete both buildings in 2018.

The Project

Construction began in April 2017 on the concrete tilt-wall building that would be leased by Kenco. The schedule enabled the structure to be buttoned up before the arrival of winter weather and cleared the way for the building's completion in January 2018. Equally important for Kenco, the building was one of very few available in the southern New Jersey market. Like many markets across the nation, it has tightened substantially in the past 18 months.

The general contractor on the project was Blue Rock Construction, which has worked on 13 projects for Dermody Properties, seven at the LogistiCenter at Logan.

395 Pedricktown Road Project Summary

Location	LogistiCenter at Logan, Logan Township, New Jersey
Type of Site	Suburban
Development Type	Ground Up/New Development
Transportation Modes	Car, Truck, Ship/Ports, Airport
Mix of Uses	
Warehouse	475,000 sq. ft.
Office	7,000 sq. ft.
Surface Parking	
Cars	274 spaces
Trailers	129 spaces
Tenants	
Kenco	401,000 sq. ft.
Available	81,000 sq. ft.
Rental Rates	$5.25/sq. ft. (for the available unit)
Lease Terms	5 years
Site Dimensions and Density	
Site Area	179 acres
Building Size	482,000 sq. ft.
Development Team	
Developer	Dermody Properties
Architect	Ware Malcomb
General Contractor	Blue Rock Construction
Leasing Broker	Colliers International (**Marc Isdaner**, **Mark Chubb** and **Michael Zerbe**)
Financial Partners	
Equity	Washington Capital Management
Short-term Debt	Bank of Arizona
Timeline	
Land Acquisition	June 1, 2005
Planning Started	May 1, 2016
Initial Plans Submitted	June 27, 2016
Approvals Obtained	August 11, 2016
Construction Started (Infrastructure)	April 21, 2017
Construction Started (Building)	June 1, 2017
Lease Signed	September 1, 2017
Construction Complete	January 22, 2018
Development Cost Information	
Hard Costs	$23.7 million
Soft Costs	$3.8 million
Total Project Costs	$27.4 million

"We have a great relationship with them," says Preston. "Our conversations with them rely on a lot of shorthand because we've worked together for 13 years." ■

John Seelmeyer is a business writer and editor based in Reno, Nevada.


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

The Distillery North

The energy-efficient 60,000-square-foot Distillery North apartment building combines an airtight building envelope with intelligent ventilation and careful attention to solar gain.
All photos by Trent Bell

Passive House Apartments in South Boston

The largest Passive House project in Massachusetts offers lessons for developers seeking to reduce energy use and operating costs.

By Michelle Apigian, AIA, Icon Architecture

WITH ITS FOCUS on exceptional energy reduction, the Passive House building standard is the world's most energy-efficient design approach. Applicable to all building types and uses, it dramatically reduces utility bills, operating costs and carbon footprints. The natural byproduct is buildings that are far more durable, comfortable and healthy to be in and that offer the highest level of resiliency to both natural and man-made disasters and disruptions. Just as important, this increase in quality and performance does not require a comparable increase in cost. What it does require is an integrated design, engineering and construction process committed to a holistic approach toward the building envelope and systems.

The standard is based on several measurable criteria that establish a low energy budget by setting a maximum limit on 1) space heating and cooling demand, 2) airtightness and 3) primary energy. Heating and cooling loads are effectively the "miles per gallon" of a building; they typically comprise roughly one-half of a building's total energy use. Airtightness is critical to energy conservation but is also fundamental to building durability and moisture control. Primary energy represents a structure's true carbon footprint by taking into account not only all energy used on-site, but also the source of that energy and what is lost in transmission.

The Distillery North's terra cotta and green siding link it to The Distillery (at left), a 110,000-square-foot 19th-century brick building that was redeveloped in 2017 as studios and apartments for artists.

Together, these three criteria ensure that buildings endure and perform optimally. A Passive House-certified building typically performs four to five times better than its code-compliant counterparts and two to three times better than comparable projects built to LEED Platinum standards.

The project described in this article, for example, has an energy use intensity (EUI) of 22.5 kilo-British thermal units (kBtu) per square foot per year, compared with Highland Terrace, a LEED for Homes Platinum-certified affordable housing project with an EUI of 60.5 kBtu per square foot per year. Similarly, even though Highland Terrace was focused on compartmentalization (the minimization of air transfer between units), blower door testing there measured 2.36 ACH50 (the most commonly used measurement of building envelope tightness) relative to a maximum 0.6 ACH for a Passive House project.

One Passive House Project

The Distillery North is the largest Passive House project in Massachusetts. The 60,000-square-foot building connects with The Distillery, a 110,000-square-foot 19th-century former rum distillery that was redeveloped in 2017 as studios and studio apartments for approximately 140 artists and other businesses. These two buildings, along with a third building planned for a future phase, eventually will enclose a large green space that will include a garden and venues for theater and installation art.

The project adjoins Boston's Seaport district, which has become home to many biotechnology and other technology-based businesses and is just 5 miles from a swimmable beach on the South Boston Waterfront. The Distillery North includes 28 rental apartments as well as parking, a small restaurant and a roof deck with a city view. The next phase will add 37 more rental apartments, a three-story greenhouse, a rooftop garden and greenhouse space, and four ground-floor shops.

After searching for a compelling energy-efficiency strategy, developer Second Street Associates decided to target the Passive House standard because of its measurable

The South Boston project is near the Seaport District, which has become home to many technology-based businesses.

focus on energy use. The developer was dissatisfied with LEED and other certification systems, which offer good holistic sustainability guides but are generally underwhelming when it comes to energy efficiency.

Using traditional building methods and readily available products, The Distillery North combines an airtight building envelope with intelligent ventilation and careful attention to solar gain. Four stories of panelized wood construction, with wood stud walls and prefabricated open web trusses, sit above two concrete-and-steel levels of garage and commercial space.

The building envelope's walls, roof and floor are designed with enhanced insulation, both within the building spaces and continuously at the building's exterior to minimize thermal bridging. Where the lower-level parking and commercial space meet the residences above, 6 inches of continuous extruded polystyrene (EPS) foam insulation provides an R-value of 30. The 2- by 8-inch stud walls filled with cellulose insulation are augmented with 3 inches of stone wool insulation on the exterior for a total R-value of 37.

The terracotta and fiber cement cladding are attached using thermally broken Z-clips. At the roof, a minimum of 2 inches of continuous EPS sits on top, and the open-web roof truss cavity is filled with insulation for an overall R-value of over 70. Thermally broken, triple-glazed windows and doors ensure the Passive House envelope, while a south-

"The Distillery North combines an **airtight building envelope with intelligent ventilation and careful attention to solar gain.**"

Michelle Apigian

> “Should renewable energy be an option, **a Passive House building could easily become net-zero or even net-positive.**”
>
> *Michelle Apigian*

The Distillery North Project Summary

Project Location	South Boston, Massachusetts
Type of Site	Urban
Development Type	Ground Up/New Development
Transportation Modes	Car (Zipcars On-site), Transit (Bus, Water Taxi), Pedestrian
Mix of Uses	
Restaurant (My Diner)	530 sq. ft.
Residential	28 units
Lobbies and Mail Area	910 sq. ft.
Structured Parking (Two Levels, Partially Below Grade)	52
Site Dimensions	
Total Acreage	1.74 acres
Total Sq. Ft.	60,000 sq. ft.
Number of Apartments	
Studio	3
One-Bedroom	8
Two-Bedroom	17
Total	28
Apartment Rents (Monthly)	
Studio	$2,250
One-Bedroom	$2,850-$3,250
Two-Bedroom	$3,300-$5,000
Development Team	
Developer	Second Street Associates
Project Architect	Icon Architecture
General Contractor	Commodore Builders
Leasing Agents	Second Street Associates
Timeline	
Construction Started	March 2015
Construction Completed	January 2017
Total Project Costs	$14 million, excluding land costs

facing balcony with operable shades delivers solar heat gain when it is wanted and prevents it when it is not. (A thermally broken system has a barrier between the inside and outside clips or window frames that prevents thermal energy loss.)

A continuous airtight barrier carefully wraps the entire envelope. Each unit is provided with an individual energy-recovery ventilator (ERV) to supply continuously filtered air, to exhaust stale air, and to retain 95 percent of the heat (and coolness) being vented. It should be possible to raise the filtration of the ERV units from their installed minimum efficiency rating value (MERV) 13 to filtration levels of MERV 15 to 18. Levels of 15 and above eliminate microparticle pollution, an urban health hazard. Heating and cooling are accomplished through individual heat pumps in each unit, while hot water is provided through a centralized system from a high-efficiency gas boiler.

Passive House Certification

To obtain certification from Passive House Institute US (PHIUS), architects or developers must submit energy-relevant planning documents and technical data about construction products early in the planning process. They must then follow up by updating any changes that took place during the construction process and submit to a final inspection by Home Energy Rating System (HERS) raters. The inspection includes an evaluation of air leakage through blower door testing. An energy modeling software tool, WUFI Passive, is used to determine space heating and cooling as well as primary energy. For more information, see the website at PHIUS.org.

The biggest challenge to obtaining Passive House certification involves meeting the standard for airtightness. Icon Architecture strongly recommends testing early and often. If you wait too long, it’s much harder to identify where infiltration is occurring – and it’s costlier to address the problem later.

Many of The Distillery North's 28 apartments feature balconies; residents also have access to a deck and lawn. A third building will add 37 more apartments and four ground-floor shops as well as a greenhouse and a rooftop garden.

Although the owner had no interest in obtaining LEED certification for this project, Boston Zoning Code Article 37, Green Buildings, requires it to be certifiable. It was therefore built to the required LEED Silver standard, but ultimately met the Platinum standard, achieving 98 points.

Benefits

While the enhanced thermal envelope and detailing can be costly, this expense is offset by much reduced costs for heating and cooling equipment and associated ductwork. Taking into account a substantial lifetime reduction in operating costs, one can see that any initial cost premium should require a payback of only a few years. Should renewable energy be an option, a Passive House building could easily become net-zero or net-positive.

Residents are already enjoying The Distillery North's comfortable units and low energy costs. The annual cost to heat and cool a two-bedroom, 1,487-square-foot apartment in 2017 was only $419.28 (at an electricity cost of $0. 21 per kilowatt/hour). A lifetime of savings in energy use and associated operating costs, as well as a substantially higher level of comfort and indoor air quality, make the Passive House standard ideally suited for multifamily housing and virtually all other building types. ■

Michelle Apigian, AIA, LEED AP, AICP, CPHC, is an associate and sustainability leader at Icon Architecture.

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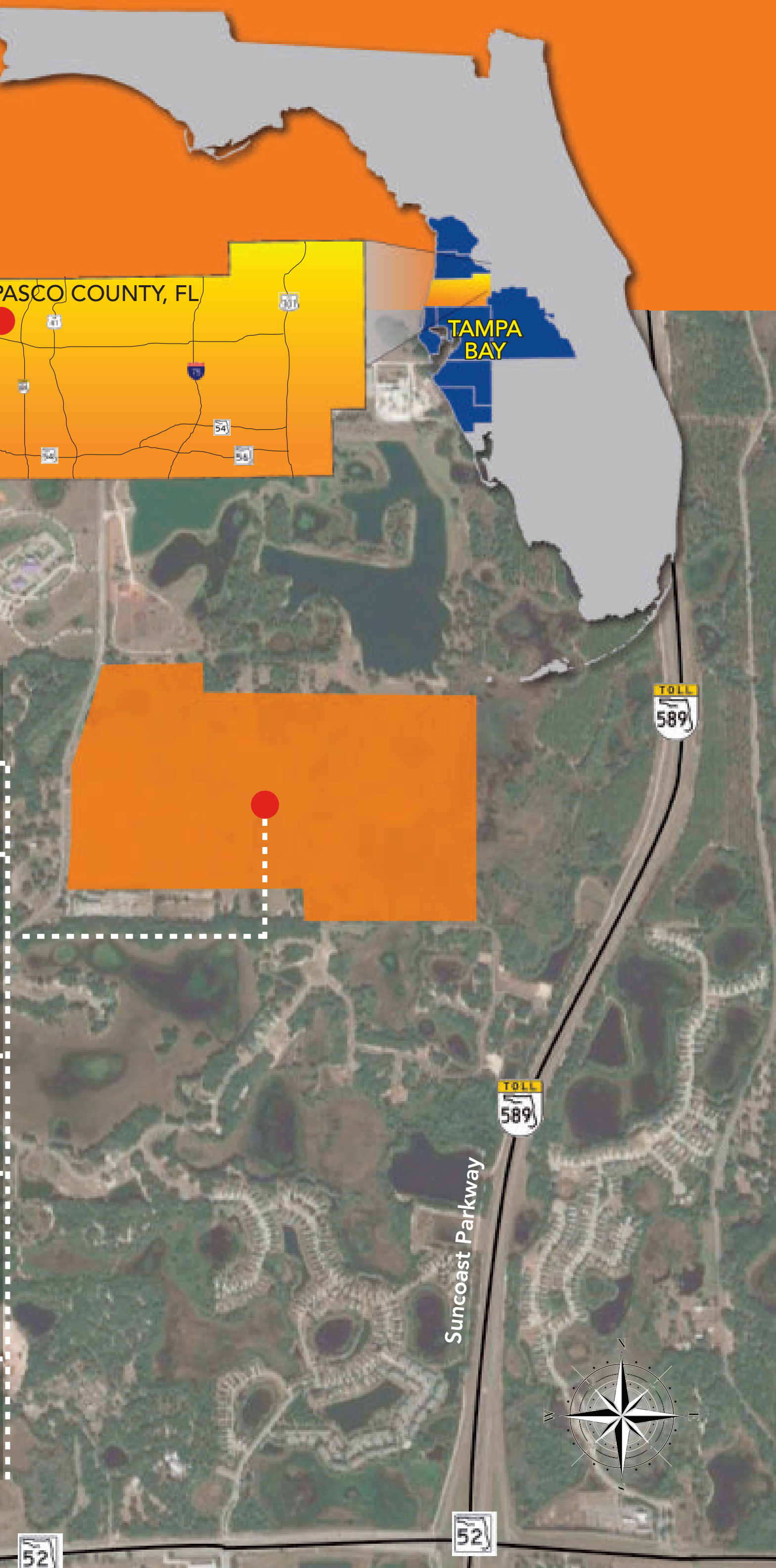

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Building a More Diverse Future CRE Workforce

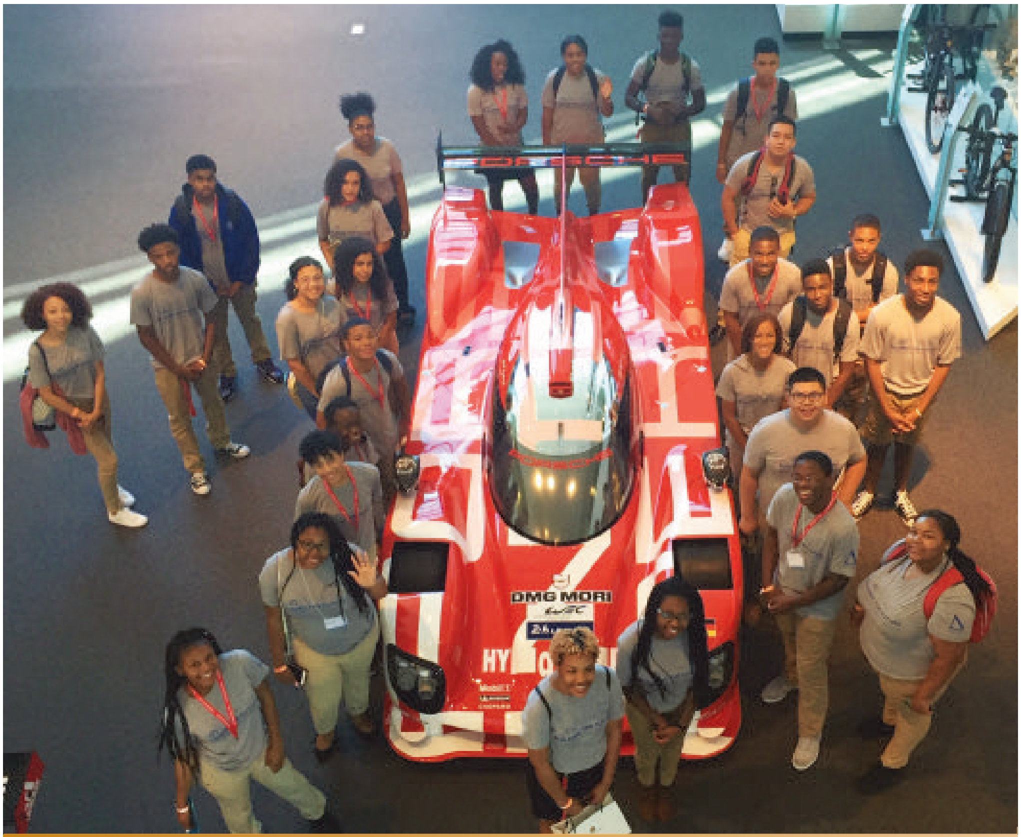
New NAIOP-sponsored educational programs enable gifted and talented minority teens to explore careers in commercial real estate.

By Courtney Bulger

IT'S 2 A.M. IN a dorm hallway at Georgia State University (GSU), where teams of energetic young teenagers have gathered to put the finishing touches on their "CEO presentations" to the team at Porsche the next morning. These students were part of the inaugural "CRE Experience" at a two-week summer camp also known as "Building the Future – Exploring Careers in Commercial Real Estate." NAIOP, in partnership with the Real Estate Executive Council (REEC) and Nexus Summer Programs, a firm that specializes in summer programs for gifted and talented minority youth, sponsored the program in July 2017.

The program curriculum was developed by GSU with support from Nexus, NAIOP Georgia and REEC. Students were divided into teams, and each team was assigned to prepare a development plan for a different portion of an unknown site, which was to include office space, a museum, a public entertainment complex and a top-shelf dining facility.

After studying the site and preparing their plans and presentations, the students boarded buses that took them to the presentation location, where it was revealed that the case study was based on Porsche's Atlanta Headquarters and Driving Experience Track. The students then delivered their competitive presentations to NAIOP, REEC and Porsche employee volunteers, who



Participants in the inaugural CRE Experience, a two-week summer program held at Georgia State University in July 2017, toured Porsche's Atlanta Headquarters and Driving Experience Track.

selected a winning team. Members of the winning team received Porsche hats provided by NAIOP Georgia. The presentations were followed by an exhilarating tour of the Porsche facility and museum.

Twenty-seven teens from six states participated in the program, which included an SAT prep course, advanced software skills development, self-discovery exercises and presentations by a variety of guest speakers. Students also toured SunTrust Park, the new Atlanta Braves ballpark, and Three Ring Studios, a full-service film and music production studio facility.

Volunteers from commercial real estate companies, including both seasoned veterans and young professionals, arranged the tours, led group discussions and helped students prepare their presentations. The CRE Experience proved to be a great way for the leaders of today to help pave the way for the future workforce. The program was so successful that Georgia State plans to host a second summer experience July 8-19, 2018.

Mike Wells, director of leasing, Highwoods Properties, and a member of the NAIOP Georgia Board of Directors who participated at the camp, shares that "Seeing chapter volunteers get engaged with these young teens demonstrated that this is a role that NAIOP must play in creating the workforce of the future."

Debbie Koenig, executive director, NAIOP Georgia, adds that "We are honored to have been part of this charter program, which is one of several paths to reach out and encourage students to consider the CRE industry."

Twenty teens participated in a weekend CRE Experience program at the University of Washington in November 2017.

In November 2017, NAIOP Washington State sponsored a similar but more condensed program. Twenty teens participated in a weekend experience held in collaboration with the University of Washington. The program's hands-on experience provided a brief introduction to careers in the built environment, with a focus on negotiations between brokers and sellers, architecture and mixed-use development. NAIOP volunteers supported the teams as they worked on an exercise based on Amazon's search for a second headquarters location. Charged with making a recommendation as to where HQ2 should be located in just two short days, students conducted a mini regional analysis, considering regional economics, workforce needs and community impact.

Tyson Feaster, a principal with Lake Union Partners in Seattle and a member of the NAIOP Washington State Board of Directors, was a catalyst in bringing this two-day program to fruition. He urges NAIOP to help grow these types of programs and expand participation to include other organizations. "We need to create programs that generate a workforce that is representative of our community, enhances diversity of thought within the CRE industry and helps employers compete for talent entering the workforce."

The preliminary results of the two programs indicate that nearly 30 percent of those who've attended now plan to minor in real estate when they seek a business degree in college. In addition, over 60 percent of those eligible to return for a second year of CRE learning have signed up for Nexus CRE programs in 2018.

"Our industry is filled with entrepreneurs, risk-takers and trailblazers, and the future of commercial real estate is in our high school classrooms today," says NAIOP President and CEO **Tom Bisacquino**. "NAIOP is proud to support these programs across the country. Creating the next pipeline of CRE professionals is extremely important to NAIOP, and our partnership with NEXUS and REEC is just one of many initiatives with which we are currently involved." ■

By **Courtney Bulger**, vice president for membership and chapter relations, NAIOP, bulger@naiop.org

For more information on these programs, or to learn how to sponsor one in your community, contact the author at the email address above.

California Groups Seek Property Tax Hikes

A ballot initiative could remove Proposition 13's protections for commercial property.

By Kevin Ivey, NAIOP So Cal Chapter, KPRS Construction

FORTY YEARS AFTER California voters approved Proposition 13, the issue of the state's property tax limits could be headed back to the ballot in 2020. A coalition that includes the California State PTA and the League of Women Voters has received the green light from the state's attorney general to promote a proposition that would remove Proposition 13's protections for commercial property. While it appeared that the proposition was headed for the California ballot in November 2018, its backers have read the political tea leaves and postponed it to the general election in November 2020, when the presidential contest will produce a larger, potentially more sympathetic voter turnout.

The backers say the initiative, called the California Schools and Local Communities Funding Act, would leave in place Proposition 13's protections for residential property and agricultural land while removing protections for commercial property. Many businesses would be affected by higher occupancy costs, since landlords typically pass on any increase in operating expenses, including property taxes, to their tenants by increasing rents.

The measure would result in all commercial property and land zoned for commercial use being reassessed up to market value in the year 2020, and raised again to current value every three years after that. This would create a huge tax hit for commercial property owners as well as increased uncertainty.

The initiative is the latest in a series of attempts to establish a "split-roll" property tax that would unbundle commercial real estate from the protections of Proposition 13 and reassess it more frequently. Under Proposition 13, property is reassessed only upon its sale, when more than 50 percent of its ownership transfers, or when construction of a new project or renovation is completed. Barring a sale, a property's assessed value can increase no more than 2 percent annually. The proposed measure would change all of that for commercial property.

Advocates for the split-roll initiative say the projected $11 billion to be generated annually in new property tax revenue from commercial property is needed to provide new funding for schools and infrastructure. But commercial real estate owners say this is simply another attempt to raise taxes at the expense of California's business community.

"It's a foot in the door to changing a fundamental feature of Prop. 13," says **Jon Coupal**, president of the Howard Jarvis Taxpayers Association, founded by and named for Proposition 13's author in 1978. "The way the law is now, businesses can predict with

"This initiative discriminates against California businesses and gives them yet another reason to move out of the state."

Jon Coupal

certainty what their property taxes will be in the future. This initiative discriminates against California businesses." It could give them yet another reason to move out of the state.

The initiative's proponents say they're only seeking to eliminate a loophole that allows real estate corporations to avoid paying higher property taxes if 50 percent or less of a property's ownership transfers in a sale. The reality is that this court-created wrinkle has a legislative fix. Both sides came close to resolution in the California Legislature in 2014, only to see the split-roll advocates pull out of the compromise at the last minute.

The ballot measure was filed on Dec. 15, 2017, with the State of California Department of Justice's Office of the Attorney General. By law, 585,407 valid petition signatures (8 percent of total votes cast in the last election for governor) are needed to qualify it for the November ballot. This means proponents will have to gather nearly 1 million signatures to account for duplicates and invalid names. Postponing the initiative until 2020 allows proponents more time to gather these signatures.

Opponents point out that passage of a split-roll initiative would have an enormous negative impact on the state's economy. They cite the most recent study by Pepperdine University's Davenport Institute forecasting that a split-roll property tax would:

- Increase property taxes on businesses by an estimated $6 billion annually.
- Cost the state $71.8 billion in lost output and increased unemployment from a loss of more than 396,000 jobs in the first 5 years alone.
- Hit small businesses the hardest, as landlords pass the increased property taxes through to lessees.

NAIOP chapters nationally must be on the lookout for similar efforts. Often, as California goes, so go other parts of the country. Efforts such as this ballot proposal suggest that comparable efforts to increase commercial real estate taxes could be coming to other states and cities that also limit increases in their parcel-specific property taxes. Those include Arizona, Florida, Michigan, South Carolina and Texas, as well as Cook County, Illinois, and New York City. As politicians in these states and municipalities look for new revenue, it's easy to see them following this California movement and rolling out their own versions of a split-roll property tax. ■

By **Kevin Ivey**, chairman, NAIOP Corporate State and Local Subcommittee, and business development officer, KPRS Construction Services Inc., Los Angeles

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

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

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

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

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

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

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

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

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

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

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

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

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.*

2018 Industry Partners

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

Premier Industry Partners

Platinum Industry Partners

Gold Industry Partners

Silver Industry Partners

Bronze Industry Partners

Chairman's Circle

Last-mile Fulfillment

IN MARCH, NAIOP HOSTED a first-of-its-kind conference focused on the industrial "last mile." Same-day delivery expectations for nearly every online purchase, including groceries, are driving real estate space demand and the increased use of robotics and other technologies that get goods into the hands of consumers more quickly and efficiently.

Jim Neyer

Like the 300 other commercial real estate professionals who attended CRE.Insights: The Last Mile 2018, I'm trying to keep up with the pace of change that has resulted from e-commerce growing at a 16 percent annual rate, with no end in sight.

The conference content focused on disruptive technologies and other factors that are challenging the status quo of distribution space. The event's location in Seattle gave us a firsthand look at Prologis' Georgetown Crossing, the first modern multistory distribution facility to be built in the U.S., which is located in a dense, urban location.

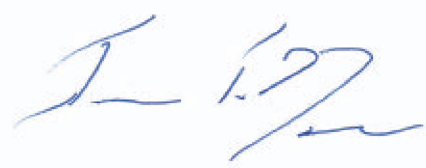
We also toured an AmazonFresh pickup facility, where customers can pick up groceries ordered online, and an Amazon Prime Now fulfillment center, which processes online orders of groceries and other goods that are delivered to consumers within a one- or two-hour window. The number of products in each venue and the efficiencies for fulfillment are game changers for retail sales. Amazon chose locations for these facilities that optimize last-mile delivery, with quick access to the majority of the surrounding urban population. Grocery e-commerce continues to boom, with all major grocers exploring new and more efficient methods for both shopping and delivery. This is truly a new era of grocery shopping.

Free delivery remains the most important factor to most consumers, but fast delivery is quickly becoming almost as important. Thus, last-mile fulfillment centers close to the consumer become essential. With quicker turnover of inventory, these facilities must become more efficient at bringing in bulk inventory, breaking it down, picking individual items and delivering them. Clear height for storage becomes less important as access to employees, freelance delivery drivers and the local transportation network dominates location decisions.

Amazon certainly grabs the headlines, but Walmart, Target and Best Buy are all in aggressive pursuit of its commanding market share. It certainly will be interesting to see which retailers survive as we mourn the loss of others, including the recently announced closure of Toys R Us. Clearly those that survive will be the ones that quickly adapt to the changing needs of the consumer for, as one conference speaker said, "It's not the strongest that survive, it's those that adapt."

With its enormous growth and impact on our lives, it's hard to believe that e-commerce is still in its infancy. NAIOP will continue to help our members learn and capitalize on the opportunities that abound. A longtime leader in industrial real estate, NAIOP will host its annual I.CON: The Industrial Conference, June 8-9, in New Jersey. I invite you to join me there as we continue to examine e-commerce's ongoing impact as well as many other drivers shaping the industrial markets.

NAIOP members, you're able to access presentations and recordings from CRE.Insights: The Last Mile 2018 at naiop.org/lastmileresources18. ■



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

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