Commercial Real Estate Development SUMMER 2021

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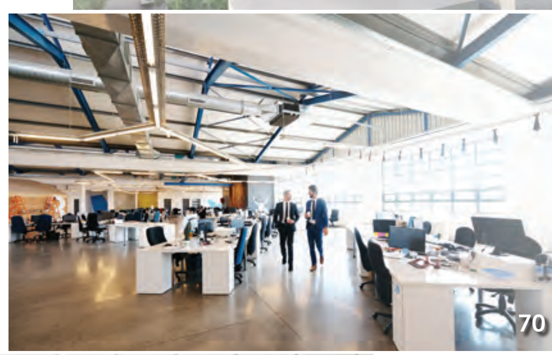

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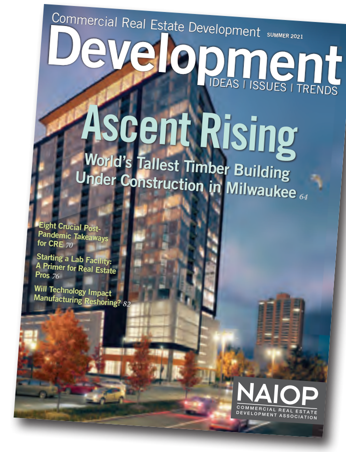

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New Land Enterprises' Ascent building in Milwaukee will be the world's tallest mass-timber building when it is completed in Summer 2022.

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

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

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A Note From the Editor

An Economic Upswing

As we begin to leave the worst of the pandemic behind us, optimism and enthusiasm are rising along with the temperatures. The economy is rebounding, personal savings levels are at an all-time high and unemployment levels continue to fall.

Jennifer LeFurgy

Increased vaccination rates will inject more spending and activity such as travel and in-person dining and shopping. Industrial and residential markets lead the way while the future of office demand is in flux. Some companies are switching to all-remote work, while others will implement hybrid situations or business as usual with everyone back in the office by fall.

Speaking of being back together this fall, I hope you can join us for what promises to be a terrific in-person meeting: CRE. Converge in Miami Beach, Florida, September 26-29.

Enjoy your summer,
Jennifer LeFurgy, Ph.D
Editor-in-Chief

Most Popular From Spring 2021

1. **"How to Create a Superior Rail-Served Industrial Property"** (naiop.org/21rail), page 46
2. **"Life Sciences Boom Sparks Design Innovations for Commercial Buildings"** (naiop.org/21lifesciences), page 30
3. **"How a Fully Remote Team Can Manage Large Construction Projects"** (naiop.org/21remote), page 20
4. **"Measuring the Impact of Smart Building Technology Investments"** (naiop.org/21buildingtech), page 12
5. **"The Vaccines are Here. What Happens Next?"** (naiop.org/21vaccines), page 54 ■

With the COVID-19 pandemic starting to fade, here are eight crucial takeaways for the commercial real estate industry as it begins to adjust to a new normal. (Page 70)

The fast-growing laboratory sciences sector can be complex to navigate for developers. Here's a primer on what goes into building labs. (Page 76)

The 2021 NAREIM Diversity & Inclusion Survey shows some progress in diversity efforts in real estate investment management, but a lot of work remains to be done. (Page 100)

Future NAIOP Events

- **I.CON West 2021: The Industrial Conference**, August 31-September 1, Long Beach, California
- **CRE.Converge**, September 26-29, Miami Beach, Florida
- **I.CON East 2021: The Industrial Conference**, November 11-12, Jersey City, New Jersey

For the most current information on upcoming NAIOP events, both virtual and in-person, visit naiop.org/Events-and-Sponsorship ■

The commercial real estate industry faces unique challenges when it comes to designing workplace vaccination programs. (Page 12)

Costs for construction materials keep climbing amid shortages and supply-chain issues, creating a Lemony Snicket-like "series of unfortunate events." (Page 10)

The rapid rise of e-commerce grocery fulfillment during the pandemic forced the commercial real estate industry to adapt quickly to meet soaring demand. (Page 16)

The NAIOP Research Foundation recently commissioned an index that allows real estate professionals to compare development-approvals processes in different jurisdictions. (Page 98)

Monumental staircases in buildings can inspire greater interaction, reduce energy costs, and improve employee health and fitness. (Page 58)

When it comes to spec vs. build-to-suit projects, young, growing businesses might lean toward spec buildings; older, established firms could favor build-to-suits. (Page 38)

A development near Chicago shows the potential for hybrid facilities where offices, warehouse space and manufacturing operations exist under one roof. (Page 20)

A new framework for mitigating disease in the office focuses on air quality, changing behaviors and building occupant trust. (Page 52)

Development magazine sits down to chat with Jean Kane, CEO of Colliers International-Minneapolis/St. Paul and 2014 NAIOP national chair. (Page 32)

President Biden's 10-year, $2.65 trillion infrastructure plan goes far beyond "roads and bridges" and would impact many industries, including commercial real estate. (Page 92)

Modern facilities require strong internet connections to help tenants conduct business and to power the growing trend of investments in smart building technologies. (Page 34)

A project in Pittsburgh demonstrates the potential of activating common areas in older retail destinations. (Page 28)

Joint-venture investment structures are becoming more common in commercial real estate because they can diversify risk. (Page 42) ■

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"A Series of Unfortunate Events"

Costs for construction materials keep climbing amid shortages and supply-chain issues.

By Ken Simonson

Contractors may be feeling like they are live versions of Lemony Snicket. Just when it seemed nothing worse could happen and new opportunities were just around the corner, new challenges kept arising. The miseries are likely to affect commercial property developers and owners as well.

The No. 1 concern is materials costs. After a rapid runup from April to September last year, the cost of inputs to nonresidential construction leveled off for two months, in part because lumber prices retreated from record highs.

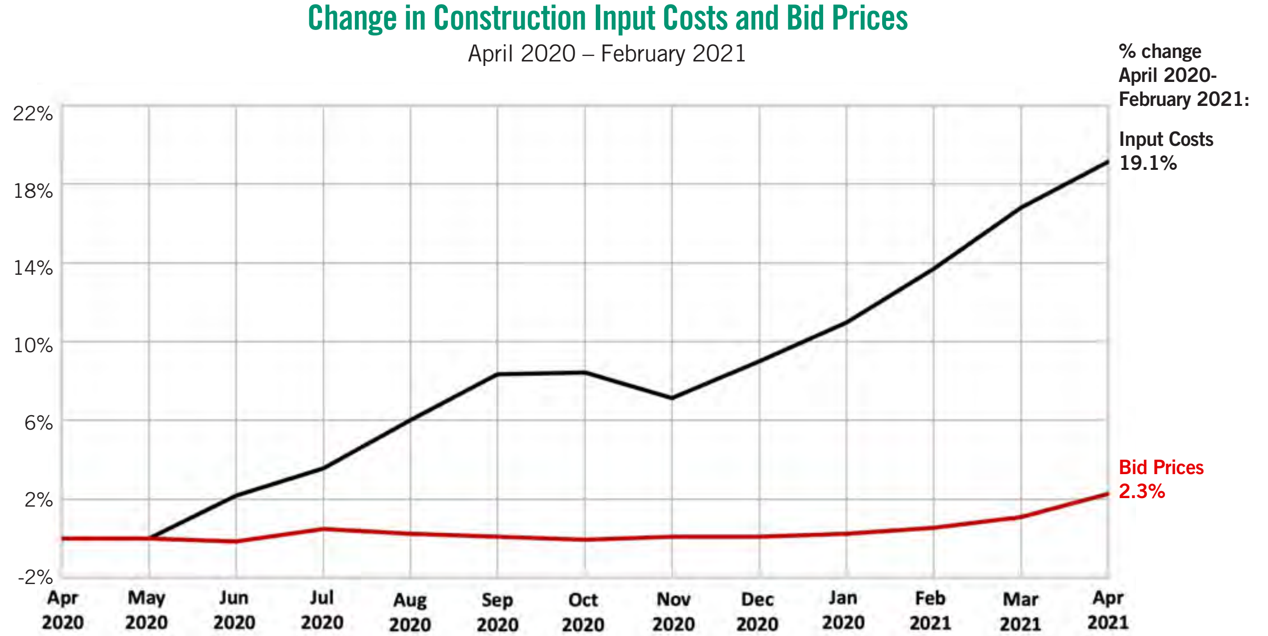
From November to May, however, lumber prices took off again, and were joined by a host of other materials. Both the Random Lengths Lumber Price Index and quotes for hot-rolled steel topped $1,500, more than three times the year-ago levels. The retail price of diesel fuel climbed for 20 straight weeks, rising 82 cents per gallon or 35% in less than five months. Copper futures set highs before mid-May. Meanwhile, contractors' bid prices climbed just 2.3% from April 2020 to April 2021, as weak demand for new projects forced contractors to hold down their prices even though their costs were soaring by 19% over the same interval.

The dichotomy between flat bid prices and escalating costs is shown in the chart below. The black line traces the monthly change in the producer price index (PPI) for all goods and services purchased for nonresidential construction, other than capital goods and items imported directly by contractors. (The index does cover distributors' sales of imports, which comprise most imported materials.) The red line shows the change in a PPI that measures the prices contractors say they would charge to build a fixed set of nonresidential buildings — warehouses, schools, offices, industrial (manufacturing) and health care buildings.

As prices ratcheted up, so did lead times for many materials. As early as March, suppliers of steel joists were quoting delivery times stretching into late fall or even the first half of 2022.

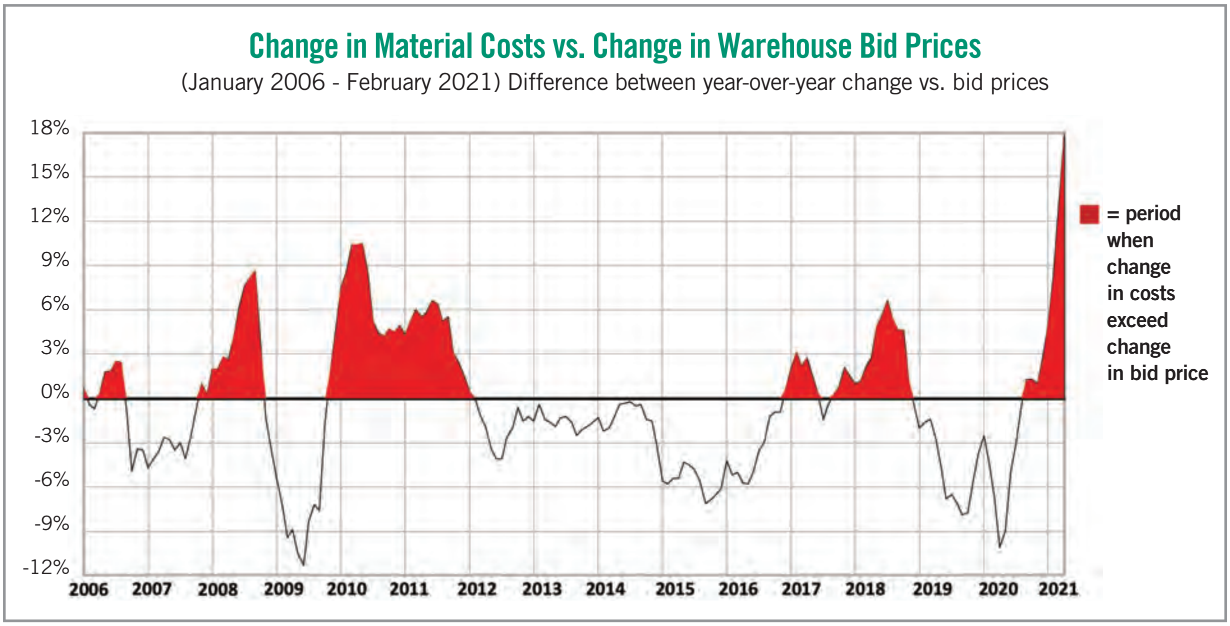
Change in Construction Input Costs and Bid Prices

April 2020 – February 2021



Source: Bureau of Labor Statistics, producer price indexes (PPIs) for new nonresidential building construction (bid prices) and inputs to nonresidential construction (input costs), not seasonally adjusted.

Eventually these backlogs and price surges will abate. However, past episodes of materials price spikes show it can take as long as two years before contractors are able to pass through their added costs.



Source: Bureau of Labor Statistics, producer price indexes for goods inputs to nonresidential construction (material costs) and new warehouse construction (bid prices).

The crippling cold that struck Texas in February damaged facilities producing the building blocks for a host of plastic construction products. These include PVC plumbing pipes and fittings; vinyl siding and vapor barriers; and resins for acrylic paints, geotextiles, and the layers of oriented strand board. Meanwhile, the freeze also created a surge of demand for PVC pipe to replace burst water pipes. This unfortunate event has meant many projects nationwide may be delayed for lack of seemingly minor inputs.

Production problems at cement plants in Texas and California caused yet another headache for some contractors in a number of midwestern and western states: rationing. Some ready-mix concrete companies were notified they would get only 50% of the amount of cement they had received in the winter quarter — just as demand was increasing with the arrival of the spring building and paving season.

Ship and rail delays at ports on both the east and west coasts, especially Los Angeles and Long Beach, have left contractors unable to finish projects that need appliances, plumbing fixtures, flooring and a variety of other imported products. Just as some of those bottlenecks seemed about to ease, the six-day blockage of the Suez Canal in March added new uncertainty about whether European manufacturers that rely on components from Asia would be able to meet delivery commitments. The backlog of containerships and lack of containers reaching Asian shippers compounded the problems.

Eventually these backlogs and price surges will abate. However, past episodes of materials price spikes show it can take as long as two years before contractors are able to pass through their added costs. The chart above shows the difference in the year-over-year change in the PPI for the cost of goods used in nonresidential construction, less the PPI for contractors' bid prices for building new warehouses. The periods in red are times that contractors were "in the red" — with higher increases in costs than in bid prices.

That may sound comforting to project developers and owners, but it is likely to mean many contractors, especially smaller subcontractors, are driven out of business or withdraw from certain market segments, potentially leaving projects unfinished or far behind schedule. An unfortunate event for all concerned. ■

Ken Simonson is the chief economist with the Associated General Contractors of America. He can be reached at ken.simonson@agc.org.

Integrating Vaccinations into Wellness Programs

The real estate industry faces unique challenges in designing vaccination programs based on workplace types and the nature of jobs.

By Wendy King

As COVID-19 vaccines continue to roll out, and with the possibility of booster shots for variants as fall approaches, many commercial and residential property management companies, as well as sales and leasing brokerages, are considering how to deal with vaccinations within their workplaces.

If designing a company-wide vaccine program, consider prioritizing vaccine distribution based on job function. For example, some essential employees must work in person to keep commercial buildings functioning. Meanwhile, a significant portion of the workforce will likely continue to work from home until this fall or beyond.

Getty Images

Workplace vaccination programs are currently not prohibited under federal anti-discrimination laws.

Tying Vaccinations to Wellness Programs

There are some practical steps to consider when designing a vaccination program that works best for the company's operational needs, culture and the overall safety of its employees.

Know the essentials. Review state plans to determine where employees' jobs may fall in any tiered rollout of vaccinations that may remain, including any timeframes for the rollout. Some employees will be eligible to receive the vaccine at an earlier time than others. Employees such as facility managers and those performing in-person appraisals, valuations or showings may also be prioritized under state definitions of essential workers. Some states and locales also have rules requiring employees to delay vaccinations if they are working remotely.

Spread the word. It's one thing to be eligible for a COVID-19 vaccination; it's another thing to find a place to get one. Make it easier for employees to get vaccinated by putting together educational information on when employees are eligible for vaccinations and how they can apply. Decreasing employee confusion and stress should be a primary part of the policy.

Consider the Scope

The first crucial decision is whether to create a mandatory or voluntary vaccination policy.

Currently, the U.S. Equal Employment Opportunity Commission (EEOC) does not prohibit employers from implementing mandatory vaccinations under federal anti-discrimination laws. The EEOC guidelines do note certain obligations under a mandatory vaccination program, such as exceptions and accommodations based on disability, pregnancy and employees' sincerely held religious beliefs.

Keep in mind, the EEOC only deals with federal laws and does not address state or local laws. That means employers must stay up to speed on current pending state legislation on COVID-19 vaccines. Presently, there are state bills pending that take both sides on permitting or prohibiting mandatory vaccinations, so this issue could become more complicated over time.

Encouraging Employees on Vaccinations

Several notable national employers have grabbed headlines for offering their workers cash, paid time off and gift cards for getting vaccinated. Incentivizing for vaccines is not a new

If designing a company-wide vaccine program, consider prioritizing vaccine distribution based on job function. For example, some essential employees must work in person to keep commercial buildings functioning.

concept in the world of corporate wellness. Flu vaccinations have been part of wellness strategies for years.

Keep in mind, though, that incentives for wellness programs are not without their complexities. There's a risk of regulatory backlash if incentives are substantial enough to be perceived as coercive, given the voluntary nature of wellness initiatives.

The EEOC maintains that employees could feel coerced to participate if the incentive offered is too high, disclosing protected medical information in order to earn it. Lower-risk strategies, like paid time off offered to all employees, or a modest prize like a water bottle or T-shirt, are the safest approach.

Other issues that employers must address are medical and religious accommodation requests, potential absences post-vaccination if employees have side effects, paid leave that might be available and employee objections to mandatory vaccination policies. Additional issues include safety measures

New & Noteworthy

2.5 million sq. ft.

First Industrial Realty Trust and **Butters Construction & Development** are developing **First Park Miami**, a 2.5-million-square-foot **Class A industrial park** in **Medley, Florida**, that will encompass as many as 13 buildings. Phase I, which is expected to be delivered in the third quarter of 2021, will include three buildings totaling 600,000 square feet. They will feature 32-foot to 36-foot clear heights, 120-foot to 180-foot truck courts, extensive dock-high loading and an ESFR sprinkler system.

954,311 sq. ft.

Brennan Investment Group is developing the **Colorado Logistics Park**, a two-phase **industrial development** with up to 954,311 square feet in five Class A buildings in **Commerce City, Colorado**. The first phase opened in December 2020 with three buildings totaling 558,000 square feet. Phase 2, which will open later this year, will add two more buildings totaling 396,000 square feet to the park. In total, the five buildings will include two bulk-distribution and three rear-load warehouses.

953,230 sq. ft.

Transwestern Development Company will build the **Cartersville Logistics Park**, a 953,230-square-foot **industrial park** in **Cartersville, Georgia**, northwest of Atlanta. The four-building logistics project will feature 36-foot clear heights, 185-foot truck court depths, excess trailer storage and ample vehicle parking along with a rear-loading warehouse configuration. These four buildings will be developed in three phases, with the first scheduled for completion in the fourth quarter of 2021.

and practices to keep the workplace intact, confidentiality of vaccination information obtained, and evolving federal, state and local guidance. Teaming with human resources, legal, safety and occupational health business partners is key to working through these and other emerging issues.

What Incentives are Permissible?

Much like a flu vaccination program, the guidelines for adding the COVID-19 vaccination to a wellness program means compliance with applicable federal, state or local laws. Developing a COVID-19 vaccination strategy has been hampered by a lack of guidance on incentive limits from the EEOC. Long-awaited proposed rules regarding wellness program incentive limits were released in January 2021, but then put on hold pending review by the new administration in Washington.

Until clear guidance on incentive limits is published by the EEOC, proceed with care and talk to a legal advisor. Risk levels associated with incentivizing the COVID-19 vaccine will depend on several factors including the amount of the incentive being offered, who administers the vaccine, and protocols for accommodating employees who cannot be vaccinated for medical or religious reasons.

HR would assume the least risk by simply educating around vaccine

Company leaders can set the tone and calm fears by visibly getting their own vaccines, as well as helping employees navigate available resources.

safety and availability. Other lower-risk strategies might include granting a set amount of paid time off to get the vaccination and making that benefit available to all employees. Keep in mind, the higher the financial value, the greater chance a program could be viewed as unnecessarily coercive, making an employee feel that participating was not voluntary. And this would be a violation of the wellness program rules.

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Address Employee Concerns

Since COVID-19, companies are implementing or improving wellness programs and offering enhanced training and better communication. Company leaders can set the tone and calm fears by visibly getting their own vaccines, as well as helping employees navigate available resources. Explain the science behind the vaccines and what can be expected with both the Pfizer and Moderna two-dose vaccines or from the Johnson & Johnson single-dose vaccine. The U.S. Centers for Disease Control (CDC), Johns Hopkins and Mayo Clinic have excellent websites for clinical information.

Consider the mental well-being of workers as vaccination plans proceed. As a society, we are dealing with a mental health crisis as a function of the coronavirus pandemic and its fallout. While education around it may allay fears, HR should also see this as an opportunity to remind employees of the mental health resources available under their health plans and Employee Assistance Programs (EAPs).

Wellness programs that incorporate vaccine initiatives can be an important step forward for organizations that use a combination of strategies, such as a strong education campaign, promoting available health resources, improving access to vaccinations and motivating employees to get immunized through a fully vetted incentive program.

In just a matter of months, the coronavirus pandemic dramatically changed the landscape of the commercial real estate and housing markets, especially in big cities. With the rollout of successful vaccines, the economy will change again — this time, in a positive way. ■

Wendy King is the director of health and performance for Hub International.

New & Noteworthy

581,344 sq. ft.

Swift Real Estate Partners recently opened **Flyte**, a three-building, **creative office campus** adjacent to Los Angeles International Airport in **El Segundo, California**. The renovation included repositioning the campus by modernizing the interior and exterior of the two office buildings, and creating a highly amenitized outdoor space. The buildings feature upgraded lobbies, elevators, and state-of-the-art event spaces available to both tenants and the community.

500,000+ sq. ft.

UnCommons, **Matter Real Estate Group's mixed-use development in southwest Las Vegas**, will be the first in Nevada to be built with criteria set by the International WELL Building Institute. Construction is now underway on the $400 million, 40-acre project, and the first phase is expected to be delivered in early 2022. The urban campus will be comprised of 500,000+ square feet of modern office space, 830+ residential units, a venue that blends music and movies, a beer garden, restaurants and cafes, health and fitness studios, and a multipurpose conference center.

370,000 sq. ft.

DH Property Holdings and **Suffolk Construction** are building a **multistory distribution center** at 640 Columbia in **Brooklyn, New York**. Ware Malcomb provided design services for the project. The three-story facility totals over 370,000 square feet and includes a warehouse, office space, two levels of truck docks, a mezzanine with parking and dedicated elevator service to the third floor. The second story, which is accessible to full-size tractor trailers via a ramp, consists of 28-foot clear heights and a 130-foot truck court. The third floor includes 18-foot clear heights and direct freight elevator access.

Industrial Solutions for E-Commerce Grocery Fulfillment

The pandemic forced the industry to adapt quickly to meet soaring demand.

By Scot Murdoch, AIA

While grocery e-commerce was growing prior to the pandemic, the sector saw staggering market penetration over the course of 2020 and beyond. Concerned about safely accessing food, consumers across all demographics turned to online grocery shopping as a convenient, safe option.

A survey by LEK indicated that food e-commerce made up 3%-4% of total grocery retail sales before the pandemic and that overall penetration would reach 15%-20% by 2025. But in its February 2021 Online Grocery Report, Business Insider projected online grocery adoption will reach 55% in the U.S. by the end of 2024. Consumers have clearly grown accustomed to the convenience and safety of grocery e-commerce.

Getty Images

Online grocery adoption will reach 55% in the U.S. by the end of 2024, according to Business Insider's February 2021 Online Grocery Report.

While some national grocers filled online orders via strategically placed warehouses close to urban centers, local stores also managed to keep up with same-day delivery demands. This has forced grocers to rethink opportunities to reduce labor costs and the strain on local stores by using gig-economy delivery platforms such as Instacart. Additionally, new models of automation built around goods-to-person systems that support food distribution allow stores to devote more space to stock while effectively transforming them into omnichannel facilities that can manage in-store and e-commerce distribution from the same building.

Couple these changes with increasing consumer demand for local and fresh foods, and the potential to create a truly equitable and sustainable model has never been greater. This transformative model will feature several components — multimodal delivery hubs within an existing network of stores, strategic use of automation through microfulfillment, and expanded vertical farming operations.

Multimodal Network

When early adopters of the food delivery model such as Peapod first started, the mode of delivery was traditional box trucks. The emergence of Amazon's Sprinter vans for last-mile deliveries has now expanded the speed, reach and nimbleness of delivery across many e-commerce platforms. And, with unemployment reaching 15% at the height of the pandemic, companies such as Amazon and Instacart provided job opportunities to delivery drivers.

A study by visiting MIT Sloan Professor **Jordan Nickerson** indicates that gig economy platforms, while not perfect, served as a safety net during the pandemic. For example, one data point shows that unemployment claims are nearly 5% lower for people with cars, because it is easier for them to find work as delivery drivers.

That said, congestion in dense urban areas has increased opportunities for bike delivery models that companies like DHL and Amazon are exploring. Energy-efficient cargo bikes are also emerging as a viable secondary means of delivery. Concerns about the space that urban bike delivery companies take up on sidewalks would further support on-site vehicle storage and loading capability to avoid street congestion.

Multimodal facilities must have space for pick-up and queuing. Therefore, facilities with on-site parking, queuing and loading structures with clear access and ease of movement will

While some national grocers filled online orders via strategically placed warehouses close to urban centers, local stores also managed to keep up with same-day delivery demands. This has forced grocers to rethink opportunities to reduce labor costs and the strain on local stores by using gig-economy delivery platforms such as Instacart.

thrive. Access to both local streets and multiple highways will further enhance location as cars, vans and bikes meet the growing demand for e-commerce deliveries. The ultimate multimodal solution will provide a full range of access and supply — from an open retail street presence to the utilization of drone delivery as regulations and other hurdles for that transport mode are overcome.

Microfulfillment

Microfulfillment centers (MFCs) provide the opportunity to create socially sustainable supply chains built around customer loyalty and local presence. According to March 2021 research from Bain & Company, stores using staff to fill orders in-store for delivery lose 10%-15% profit per order. But data provided by AutoStore shows that smaller, highly automated warehouses can cut profit losses in half. And an

New & Noteworthy

320,988 sq. ft.

Meridian Design Build recently completed construction on a 320,988-square-foot **package sortation and distribution center** for developer **Scannell Properties** on a 37.4-acre site in **Portage, Michigan**. The new building includes 87 loading docks, eight drive-in doors, 196 interior van loading positions and 10,441 square feet of office space. Significant site improvements were completed to accommodate a 602-car parking lot, 256 van-staging spaces and a 185-stall trailer storage yard.

270,000 sq. ft.

Hines and **2ML Real Estate Interests** recently revealed the first renderings for the initial **laboratory at Levit Green**, a 53-acre life science district in Houston. The five-story, 270,000-square-foot Phase I building is designed to serve today's advanced laboratory needs. The building will include 100% redundant emergency power, enhanced structural vibration attenuation and augmented mechanical systems. The 33-foot structural bay depths and floorplates in excess of 55,000 square feet will also enable research and office teams to create hyper-efficient configurations that enable teamwork and collaboration.

Levit Green rendering courtesy of Hines

106,622 sq. ft.

General contractor **Adolfson & Peterson Construction**, along with **Cushman & Wakefield** and **Page**, are developing the new **corporate headquarters** for the **PGA of America** in **Frisco, Texas**. The 106,622-square-foot headquarters will sit on 6.2 acres of the new 660-acre PGA Frisco campus, which will also include two new championship golf courses, a 500-room Omni Resort and a golf entertainment district. Predominantly glass and limestone, the four-story building has three floors of office space, a top-floor conference room and outdoor terrace lounge space. It is projected to open in the first quarter of 2022.

KSS Architects

The future of e-commerce grocery fulfillment could include multistory, multimodal facilities that will provide a full range of access and supply.

analysis by financial firm Jefferies determined that "microfulfillment could reduce order-related costs by as much as 75%," thus increasing revenue.

These centers use the same automated storage and retrieval system (ASRS) technology as a full-size distribution center, at a much smaller scale — typically within 3,000-10,000 square feet. When located near consumers, whether attached to the grocer or within the store itself, this streamlined solution shortens the time from online order placement to pick-up or delivery.

As a building typology, MFCs are part of an agile omnichannel system that depends on both humans and robotics, creating a sustainable supply chain and offering increased opportunities for grocers and gig workers. Seamless, frictionless goods delivery systems like those by Autostore by Redline offer increased storage density — sometimes four times as much product than traditional racking — and are flexible and expandable. Crucially for urban sites, MFCs can reduce square footage needed for product to 25% of the floor area needed for traditional systems.

Goods stored in bins within the storage grid are retrieved by robotic picking and dropped off to an order assembler, then go straight to the delivery drivers. "Dark stores" built for fulfillment without direct access by consumers, like those by Whole Foods and others, are also emerging. Factor the spatial premiums on urban sites and the enhanced storage volume per square foot that MFCs offer, and the benefit is further enhanced.

Vertical Farming

COVID-19 has had a significant impact on urban centers that were already suffering from a lack of access to food and jobs. Companies like AeroFarms have been working to address this inequity through vertical farming, providing access to fresh, locally grown produce.

Vertical farms, such as AeroFarms' in Newark, New Jersey, can harvest up to two million pounds of fresh greens per year in just 70,000 square feet of space. These systems use less water, less energy and require less skilled labor to produce a reliable yield of consistent quality. Vertical farming is a global industry, estimated at $2.23 billion in 2018. It's poised to grow to $12.77 billion by 2026. Urban areas with tight footprints and limited sun-

Multimodal facilities must have space for pick-up and queuing. Therefore, facilities with on-site parking, queuing and loading structures with clear accessand ease of movement will thrive.

light can benefit from these farms, which offer fresh, local, sustainable food to communities year-round. In conjunction with multimodal MFCs, this concept could produce an urban model of supply that brings food to the literal door of a large customer base. (Development profiled a vertical farm in the Chicago area in the Winter 2020-2021 issue.)

Integrated Solutions

COVID-19 accelerated the growth of grocery e-commerce, prompting developers to respond with more efficient, cost-effective ways to meet demand. The solution is facilities that are integrated, multi-dimensional and sustainable. Ideally, these buildings merge strategically located, multimodal delivery food hubs with the pre-existing network of stores, utilize gig-economy delivery platforms, employ the strategic use of automation via microfulfillment, and expand vertical farming operations. These facilities will enable grocers to increase their supply chain connectivity and distribution networks.

Furthermore, development that weaves together multiple uses will maximize the value of urban sites, create synergies for end users and local communities, and ultimately, be viable into the future. ■

Scot Murdoch, AIA, is a partner with KSS Architects.

New & Noteworthy

90,000 sq. ft.

LeBeau Realty is developing **450 B Tower** in **San Diego**. The 90,000-square-foot **creative office building** includes a six-story, multi-tenant creative office building and a below-grade parking structure. The office will feature design by global design and architecture firm Gensler and is aimed to achieve LEED silver certification. The building is located close to notable restaurants, shopping and entertainment.

50,000 sq. ft.

The Verve Partnership recently completed the 50,000-square-foot **Maryland Innovation Center** (MIC) for the Howard County Economic Development Association. It is part of county- and state-wide initiatives to develop technology, cyber and innovation communities in the Baltimore-Washington corridor. The MIC includes varying spaces for meetings such as open and closed huddle rooms, conference/board rooms and a state-of-the-art event space.

5,000 sq. ft.

Interior architecture and planning firm **H. Hendy Associates** recently finished a new **patient-centric facility** for lifestyle medicine company **Metagenics Clinic** in **Aliso Viejo, California**. The 5,000-square-foot Personalized Lifestyle Medicine Center features 11 exam rooms, three large rooms for chiropractic care, two lifestyle education spaces for nutrition, life coaching and telehealth, and a waiting area complete with a digital check-in system, pharmaceutical counter and dispensary. ■

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.

Rethinking the Corporate Headquarters

A project near Chicago shows the potential for hybrid facilities where offices, warehouse space and manufacturing operations exist under one roof.

By Karl Heitman, AIA, LEED AP BD+C

As global industries expand in the post-pandemic economy, dramatic changes are taking place in industrial building design. Additional issues related to visibility, transparency and social equity are also shaping newer hybrid industrial facilities.

This heightened need for customization is leading to a new generation of hybrid build-to-suit developments that expand the use of technology, automation and specialized equipment. These complex, high-tech industrial operations integrate the traditional office functions, which range from sales, marketing and accounting to the executive suite. The resulting hybrid facilities create dynamic corporate flagship operations that blurs the lines between disparate departments, enhancing opportunities for collaboration and increasing company brand recognition.

These hybrid facilities provide several benefits that will be important in the post-pandemic era, such as cost efficiencies. They typically are developed within an industrial footprint, where land and construction costs are lower. They also create significant opportunities for unifying employees across the company platform, creating showrooms to promote unique production processes with customers, and building brand recognition that can increase sales and revenue and support corporate culture.

The Background

The Chicago suburban market has attracted many global manufacturing businesses looking to plant a flag along the I-90 "Golden Corridor." One recent example is Bystronic Inc., an international high-tech manufacturer of machines and systems for processing sheet metal and other materials. The Swiss corporation's new 163,350-square-foot North American "Experience Center" and headquarters facility was designed and conceptualized by Heitman Architects and constructed by McShane Construction Company. The facility was occupied in January 2020, and construction costs were just over $19 million.

Bystronic's "Experience Center" is a high-profile facility centered around a 30,200-square-foot, two-story showroom that overlooks a restored habitat and cantilevers outward 15 feet above a visitor approach. The building includes 30,400 square feet of North American headquarters space, 67,750 square feet of production space and 35,000 square feet of modern warehouse space.

Brand recognition is strategically and subtly infused throughout the facility by incorporating the company's gray, black and red colors and industrial metal detailing across exterior and interior building finishes and furnishings. A warm gray paint mirrors the firm's machine colors, and zinc-coated black metal panels from the production line form sections of the exterior and slice through to the interior. The red color from a machine finish is carried through to the exterior of the building. Metal facades and accents were also used on the interior instead of the more traditional wood to reflect the company's industrial focus.

Site Selection Challenges and Opportunities

During site selection, which required months of planning and multiple site evaluations, the team identified requirements for a location near O'Hare International Airport and with high visibility along the I-90 corridor. An environmentally protected area provides a dramatic backdrop for a sales and marketing showroom.

This type of location reflects the ongoing industry momentum toward moving manufacturing to locations near the end consumer. This creates more sustainable economic development in which goods are created close to

Bystronic's "Experience Center" is a high-profile facility centered around a 30,200-square-foot, two-story showroom that overlooks a restored habitat and cantilevers outward 15 feet above a visitor approach. The building includes 30,400 square feet of North American headquarters space, 67,750 square feet of production space and 35,000 square feet of modern warehouse space.

© Patsy McEnroe Photography Inc.

The Bystronic "Experience Center" in Hoffman Estates, Illinois, combines offices, warehouse space and manufacturing operations. It is the North American headquarters for the Swiss machinery manufacturer.

the consumption point. This reduces transportation and distribution costs.

Finding a site that met those requirements was a tall order given the number of existing corporate facilities in place. Ultimately, an 11.5-acre site provided the necessary visibility and prestige of being clustered in the coveted Golden Corridor near other high-tech corporations.

However, the site had some topography issues to overcome. The original building design focused on having a large nature setting and bird sanctuary as a key visual from the expansive glass wall of the showroom. That room would house Bystronic's signature high-tech laser equipment showroom, which is used for training and sales efforts.

During site excavation, it was determined that the soil that would support the glass showroom consisted of non-bearing, damaged peat soil. The team repositioned the building to avoid the bad soils, which impacted circulation and truck court access. This allowed the showroom to remain facing the naturalized setting.

Special deep foundations and support for underground utilities were required. A dedicated switchback access road with a U-turn at the end was incorporated to allow trucks to make the necessary decline to reach the truck dock area.

The excavating work shifted to a plan for stripping the site and extensive soil replacement and compaction. This work had to be completed in the fall to adhere to the construction schedule, which added weather-related challenges. The remedy involved McShane Construction using two 30-ton equipment cranes and four 20-ton equipment movers to repair the site and prepare it for construction.

The natural restored habitat feature was extended in the site's overall landscape design. A bioswale was inserted in the area of bad soils, creating an aesthetically pleasing solution to a complex construction issue.

Other challenges included the unique design and functional considerations required to accommodate the placement of six overhead 30-ton bridge cranes. These cranes are necessary to move heavy pieces of equipment into and out of the showroom space, and to situate equipment involved in the manufacturing process.

Special isolated foundations were required to support the specialized equipment. For example, the six overhead 30-ton bridge cranes had to be integrated with air conditioning ducts and positioned while maneuvering around the ceiling clear height, lighting and ductwork above them.

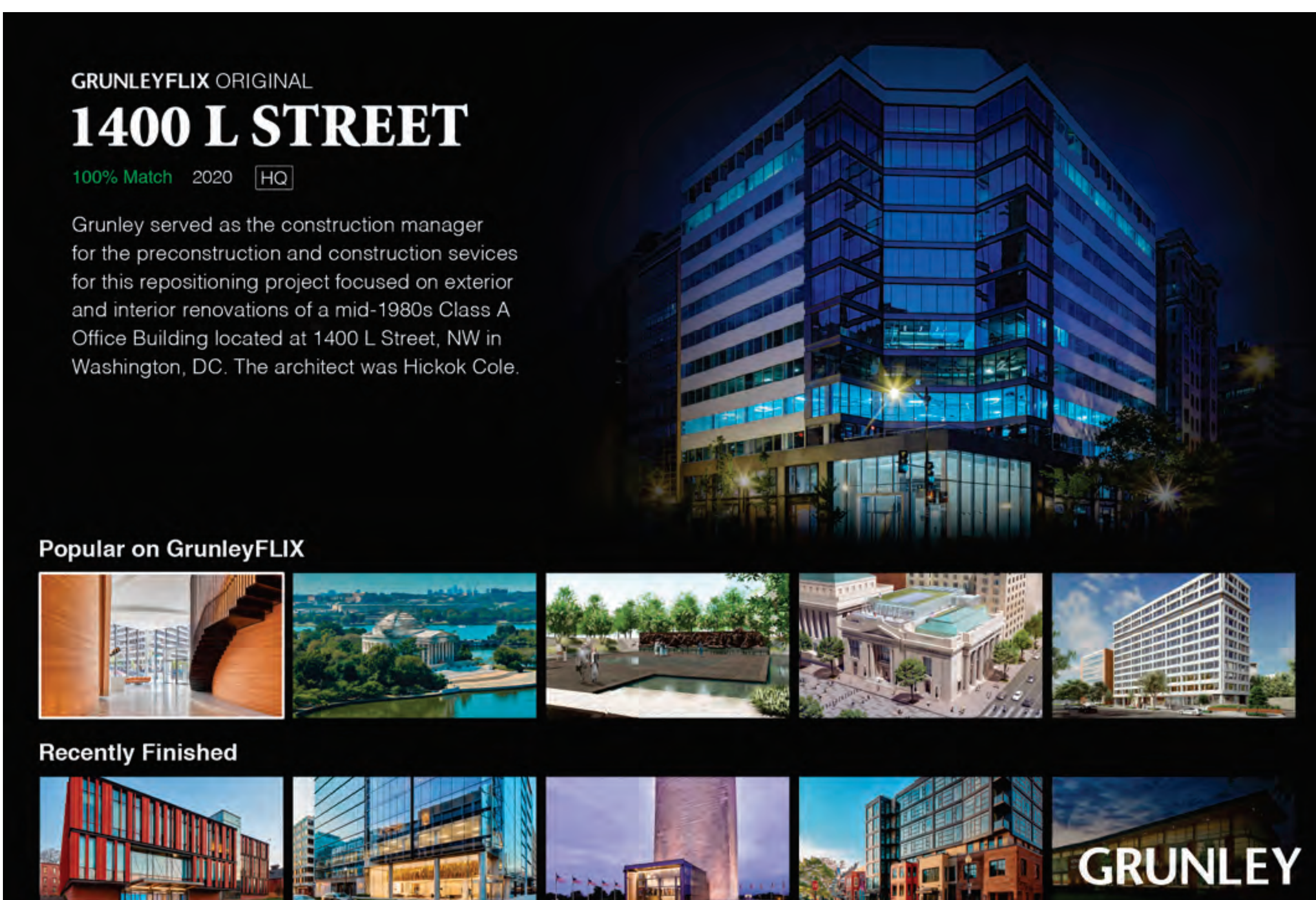
Interior Focus: Branding and Collaboration

In the interior, the glass showroom that overlooks the restored habitat is experienced via a catwalk bisecting the showroom on the east and the manufacturing floor to the west. This creates a dramatic focal point and unifying element to the facility. The area is flanked by vertically stacked frameless glass hospitality rooms and a central large frameless glass cantilevered conference room, designated "The Matterhorn," that allows customers to experience 360-degree views of the showroom and the manufacturing floor.

These frameless glass conference rooms presented a design challenge. The floor and ceiling structures could not be hung due to allowable defection in the roof structure. Large cantilevered steel frames were required to isolate the 10-foot-tall frameless glass panels from any roof defection. The glass is protected from cracking, and column supports are visibly concealed. The solution required two wide flange steel columns that are hidden behind the showroom wall. These columns support two rigid steel, 24-inch-deep channel box frames above and below The Matterhorn conference room, which projects 15 feet beyond the six-foot-wide catwalk and appears to be floating and unsupported.

Bystronic was also focused on creating a cohesive work environment that promotes interaction among all company departments. This trend of an integrated workforce drives interior planning for these new hybrid facilities. The locations of secured entry points for both visitors and employees are critical. The path of travel from check-in to workstation destinations must be efficiently laid out.

The Bystronic facility segregates employees from visitors with clearly defined "visitor experience" pathways. The overall goal was to have the interior design support a smooth direct flow from entry points, through common employee amenity spaces, to individual work areas. The employees



The demand for hybrid industrial and office facilities continues to increase because of the tangible and intangible benefits they produce. These range from the reduced costs of a combined footprint to the enhanced efficiencies of a collaborative work environment, to the unified image it portrays to clients and prospects.

enter a central Grand Hall Café space that is directly adjacent to bathrooms and lockers. From this central location, employees split off to office or manufacturing work areas that are immediately adjacent.

The Grand Hall Café space is a focal point. The central two-story hall serves as the main gathering space. It integrates the entire building population and serves as café/bistro and town hall for both plant and office workers, as well as for visitors to the training facility. It is a place for random and unpredictable interactions between the diverse populations. A game room overlooks this space from a mezzanine. The space is "branded" with an 18-foot-tall, 105-inch-long panoramic photograph of the Swiss Alps countryside.The graphic and the Grand Hall are highly visible features of the I-90 façade.

The demand for hybrid industrial and office facilities continues to increase because of the tangible and intangible benefits they produce. These range from the reduced costs of a combined footprint to the enhanced efficiencies of a collaborative work environment, to the unified image it portrays to clients and prospects. Further, the infusion of a company's branding elements and distinct, high-profile design elements creates a sense of internal pride and external imagery that enhances a company's positioning and potential for recruiting new employees. ■

Karl Heitman, AIA, LEED AP BD+C, is the president of Heitman Architects.

Tradepoint Atlantic: A Modern Industrial Revival

A former steel mill site is being redeveloped into a major East Coast logistical hub.

By Kerry Doyle & Marc Salotti

Tradepoint Atlantic in Baltimore has transformed a former steel mill into one of the largest global logistics hubs in the country. The 3,300-acre site offers access to deep water berths, rail and highways. It is projected to generate more than 10,000 permanent jobs and $2.9 billion in annual economic impact by the time it is fully built out, which is expected to take about 15 years.

A History Forged in Steel

Sparrows Point, once home to the largest iron- and steel-making facility in the world, closed in June 2012 after 125 years in operation. In 2014, Tradepoint Atlantic purchased the site for $110 million and began developing it.

"Sparrows Point was iconic in the Baltimore region, a symbol of strength and ingenuity, supplying steel for two world wars and employing generations of families," said **Aaron Tomarchio**, Tradepoint Atlantic's executive vice president for corporate affairs. "But when it closed, it left many asking, 'What does the next chapter look like? How do we reuse a site like this, and how are we going to clean up the environmental legacy left behind?'"

Sparrows Point, once home to the largest iron- and steel-making facility in the world, closed in June 2012 after 125 years in operation. In 2014, Tradepoint Atlantic purchased the site for $110 million and began developing it.

Courtesy of Tradepoint Atlantic

Construction continues at Baltimore's Tradepoint Atlantic, 3,300-acre global logistics hub that eventually will be one of the largest in the country.

Working With the Community

For more than a century, the steel plant at Sparrows Point played a vital role in the lives of its employees and the overall community. That has continued with Tradepoint Atlantic. Since the project began, the development team has prioritized hiring from within the community, working with the community, and keeping communications with the community open and transparent.

"We continually outreach to local stakeholders and hold regular open house events to build relationships and trust," said Tomarchio. "We work directly with the community, from business owners who want to understand the redevelopment plans for the site and the potential impact to their operations, to real estate agents who want to understand the opportunities in the surrounding market; from environmental groups who want to understand the environmental cleanup that is underway, to neighbors who want to understand the changing landscape around their community."

A key aspect to the growth of Tradepoint Atlantic has been support from both local and statewide elected leadership. This has enabled the site to transform from an aging steel plant into a modern logistical hub.

From Maryland's congressional delegation, to Governor **Larry Hogan**, to multiple Baltimore County executives, as well as key leaders in the state General Assembly, the team at Tradepoint Atlantic has communicated the development process, timeline, and why the overall mission of the site is pivotal to the economic growth of the local community and to Maryland as a whole.

Incentives to Partner

Tradepoint Atlantic offers competitive federal, state and local economic incentives to qualifying companies and is actively engaged with the Maryland Department of Commerce and Baltimore County to identify additional incentives. These include the following:

Baltimore Foreign Trade Zone. Located in or near U.S. Customs and Border Protection (CBP) ports of entry, Foreign Trade Zones (FTZ) are the U.S. version of what are known internationally as free-trade zones. They allow delayed or reduced duty payments on foreign merchandise. Active FTZ users can store, assemble, repackage or manufacture foreign and domestic merchandise.

Baltimore Gas and Electric (BGE) Smart Energy for Economic Development (SEED) Program. The SEED Program allows qualifying businesses to reduce BGE charges for service extensions and temporarily decreases energy distribution charges. BGE's SEED Program offers eligible commercial customers a 25% reduction on electric and natural gas distribution and demand charges and a 75% discount on service extension costs (for businesses located in a Maryland Enterprise Zone).

Baltimore County Enterprise Zones. Enterprise Zone incentives include the following: The Real Property Tax Credit allows eligible companies that make improvements to real property in the Enterprise Zone to benefit from property tax credits over a 10-year period. The State Income Tax Credit allows eligible companies located in the Enterprise Zone to benefit from a state income tax credit for newly hired employees. The BGE "Rider 7" Electricity Price Reduction Program offers price rate reductions on new or incremental electricity load increases of 200kW or more per month for companies that increase employment by at least 10 full-time equivalent persons.

More Jobs For Marylanders Act – Tier 1 Location. This legislation promotes the growth of manufacturing in Maryland by providing tax incentives for manufacturing job creation, encouraging manufacturers to invest in new equipment through accelerated and bonus depreciation, and funding job training and apprenticeship programs to help strengthen Maryland's workforce. In 2019, the tax credit program was expanded to non-manufacturers that locate or expand in Opportunity Zones and create new manufacturing jobs and to non-manufacturers that locate or expand in Maryland Opportunity Zones. The benefits are available for a 10-year period.

Sales and Use Tax Exemption on Construction Materials/Equipment. Qualifying businesses can take advantage of 6% state sales and use tax exemption on construction materials, warehousing and manufacturing equipment. ■

"Tradepoint Atlantic and the world-class companies they continue to bring to Maryland is nothing short of an incredible success story," said Hogan. "Our administration has made increasing business at the Port of Baltimore a top priority, and it is clear those efforts are paying dividends."

Over the past six years, Tradepoint Atlantic has been able to secure several federal, state and local grants, which have helped invest in core infrastructure to move the project forward at critical times. For example, in October 2020, the development received a $9.8 million grant from the Department of Transportation's new Port Infrastructure Development Program that will help build crucial infrastructure for shipping activity. This includes rail loops, conveyor systems and storage domes.

A Focus on Sustainability

A dedicated team monitors and manages an ongoing $68 million environmental clean-up process while in-house planning, engineering and design teams are actively working on building out 15 million square feet of vertical development.

In 2019, the team finished removing sediment and capping the Tin Mill Canal, which had collected wastewater, process water and stormwater for decades before the steel mill closed. Sediment containing unhealthy levels of oil and grease was excavated and removed, and the canal was covered with an engineered barrier that will support acceptable stormwater conveyance while improving and protecting water quality.

"Tin Mill Canal is living proof of the tremendous progress in the overall cleanup of Sparrows Point after more than a century of steelmaking," said **Ben Grumbles**, secretary of the Maryland Department of the Environment. "The cleanup being done by Tradepoint Atlantic under Maryland Department of the Environment and U.S. Environmental Protection Agency oversight shows the value of working in partnership to benefit Maryland's economy while ensuring the environment and public health are protected."

Built to Accommodate

Tradepoint Atlantic was built and designed to accommodate many types of industries, from e-commerce giant Amazon to urban farming company Gotham Greens. It offers the largest multimodal site available in the land-

Over the past six years, Tradepoint Atlantic has been able to secure several federal, state and local grants, which have helped invest in core infrastructure to move the project forward at critical times.

constrained Washington/Baltimore market with the ability to deliver build-to-suit or raw land for development.

With over 8 million square feet of newly constructed facilities, the site features more than 1,000 readily developable acres and an additional 7 million square feet of future development opportunities for logistics, distribution, manufacturing and retail.

Tradepoint Atlantic has benefitted from an efficient and proven fast-track process. The Maryland Department of the Environment, the Environmental Protection Agency and Baltimore County government have worked to ensure that approvals and permitting have gone smoothly.

Creating Jobs for the Future

From the start of Tradepoint Atlantic, it was understood that the success of the project would largely depend on attracting major companies to locate, invest and grow their logistics operations at the site. The list of 30 companies that now call Tradepoint Atlantic home includes FedEx, Home Depot, Under Armour, Purdue, Volkswagen, BG&E and BMW, among many others.

With these partners and more in the pipeline, it is anticipated that Tradepoint Atlantic will meet and exceed the goal of 10,000 jobs on site in 2021.

Tradepoint Atlantic is a member of the Port of Baltimore, the economic engine for Maryland's regional economy and one of the fastest-growing ports in North America. Benefits of this location include available land, flexible industrial zoning and proximity to the third-largest consumer group in the country. Additionally, the Baltimore region is home to a diverse labor force of more than 740,000 skilled professional and technical workers.

By Road, Sea or Rail

Tradepoint Atlantic was designed to increase efficiency for its clients through a combination of access to marine, rail and land channels. One of the unique assets found at Tradepoint Atlantic is the 1,200-foot-by-199-foot dry dock.

After a year of work and planning, Tradepoint Atlantic welcomed BAE Systems' "Titan" floating dry dock for ship maintenance and repair in June 2020. With the arrival of the Titan, Sparrows Point is once again playing a role supporting America's defense readiness.

And the largest privately owned shortline railroad on the East Coast serves the site with 70 miles of track. It connects to two Class I railroads, CSX and Norfolk Southern, which helps tenants and shippers reach markets across the U.S.

Looking Ahead

While the COVID-19 pandemic has changed so much about the ways people live, work and do business, it's clear that its effect on the supply chain and e-commerce will continue to be felt for years to come. Tradepoint Atlantic is positioned to adapt to the ever-changing and often unpredictable world of global logistics and commerce. ■

Kerry Doyle and **Marc Salotti** are managing directors for Tradepoint Atlantic.

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Upcycling: Reimagining Underutilized Commercial Space as Public Space

A project in Pittsburgh demonstrates the potential of activating common areas in older retail destinations.

By Philip Wilkinson and Teresa Bucco

For nearly two decades, online shopping has seen steady growth in both traffic and sales, which has forced traditional retailers to think of new ways to draw people into brick-and-mortar stores. In more recent years, shifts toward experiential retail saw many retailers overhauling store designs to give shoppers more hyperlocal, boutique or high-end encounters while encouraging online buying and in-store pickup.

However, concepts such as Wal-Mart's Neighborhood Market and Target's City Target — launched to reach transit-oriented communities and supplement declining sales at traditional big-box locations — were often slow to catch on or showed mixed results, according to a 2019 Mashed article.

Then the COVID-19 pandemic accelerated the decline of in-person buying. Digital Commerce 360 reports that total online spending in 2020 reached $861 billion, up 44% from 2019, accounting for 21.3% of total retail sales. Adobe's Digital Economy Index shows that 2020 accelerated the typical year-over-year growth of e-commerce by four to six years. Conversely, sales from brick-and-mortar retailers fell an estimated 14% to just $4.2 trillion in 2020, according to a June 2020 Insider Intelligence study. Due to the rise of e-commerce and the economic effects of the pandemic, it's clear that commercial centers must evolve to become more than just shopping destinations.

Long before COVID-19 struck, real estate industry professionals, along with architects and designers, grappled with the question of how to give commercial space a boost.

Long before COVID-19 struck, real estate industry professionals, along with architects and designers, grappled with the question of how to give commercial space a boost. But in Year 2 of the pandemic, a second, parallel conversation has surfaced: How might the urgent demand for vibrant, safe and accessible public space fuel the reinvigoration of these waning commercial centers? What if the public spaces where people want to spend their time were renewed, pandemic or not?

The architecture, engineering and construction (AEC) community has an opportunity to partner with developers and community leaders to "upcycle" these spaces to increase the social, environmental and financial value of existing real estate. Upcycling real estate is a process in which elements of properties that might be considered outdated are transformed into something more valuable. By using real-time scenario testing, market research and data-driven development strategies that ensure feasibility, design teams can work with developers to optimize each project in both the short and long term.

Meeting the Need for Vibrant Year-Round Destinations

Pittsburgh's SouthSide Works development is one such upcycling project, which architecture firm AE7 tackled along with development partners SomeraRoad and Cana Development (Canadev). SomeraRoad, which focuses on reinvigorating distressed assets, invested $37 million in the site.

Once a thriving, retail-based destination located in a historic waterfront neighborhood, SouthSide Works was built on the site of a former steel mill that had been shuttered in 1986. After the steel mill's closure, the Urban Redevelopment Authority of Pittsburgh (URA) led the site's transformation into a mixed-use development that opened in 2004. It was anchored by American Eagle Outfitters' global headquarters, the outdoor retailer REI, and UPMC Sports Medicine Complex. In addition to retail, the site hosted a fitness center, riverfront pavilion, 200-room hotel, brewery, restaurants and movie theater.

Despite this mix, SouthSide Works fell victim to the changes in retail consumer trends and a lack of density. Of its 34-acre footprint, 52% was dedicated to retail, and only 70% of that was leased and in use. Not only did the development's program need to be rebalanced, but larger changes were also needed to turn the property into a true destination.

SomeraRoad saw the potential for further reinvention of the site. Together with Canadev, it brought in AE7 to focus on ways to re-energize the public realm, with new amenities slated to

Courtesy of AE7

A rendering of the reimagined SouthSide Works Town Center in Pittsburgh, which is scheduled to open in June.

open in June 2021. AE7 collaborated with local retailers to develop a plan that would draw in more visitors while supporting the existing community. The project converts 3.75 acres of what were once open plazas and empty lawns into an area with cafes, pop-up retail, try-and-buy outdoor trails, playgrounds, dog parks and performance areas. This reuse increases the amount of activated outdoor public space in the development by 775%.

In meetings with local community groups, residents supported the idea of adding outdoor amenities and emphasized the impact they would have on existing and new residents alike. AE7's challenge was to create an amenity that served the Pittsburgh community, as well as the residents of neighboring apartments. To attract the wider community into SouthSide Works, SomeraRoad utilized the declining emphasis on retail as an opportunity to expand office and residential space.

The new plan increases office space in the development by 47%, in part by transforming a defunct movie theater into a modern 77,000-square-foot office that will be called Box Office in a nod to the building's past life. Leasing is currently underway. The upcycled theater is expected to add an estimated 500 people to the number of daily visitors to SouthSide Works.

The allotment of residential space will also see a dramatic increase, growing by 400%. The former SouthSide Works held 83 residential units, but the completed project will house 230 multifamily units. This shift will facilitate the development's integration into the community and provide a steady flow of traffic to the businesses in the area, turning what was once primarily a weekend destination into an everyday lunchtime haunt as well.

The team also worked with anchor tenants to develop amenities that complement and further strengthen the existing retail offerings. For instance, the try-and-buy outdoor trail is a partnership with outdoor recreation retailer REI. It will allow customers to test bikes and other equipment prior to purchasing. Before this trail was developed, there was nowhere in Pittsburgh to test mountain bikes.

According to Canadev's **Mike Morris**, the strategy at SouthSide Works is already paying off.

"Vendors see this as a great way to expose their ideas and brands in an impactful way with little risk (tied to both economics and pandemic)," he says.

Design Considerations for Post-Pandemic Commercial Space

From a planning and design perspective, optimizing the program mix in open-air retail spaces like SouthSide Works is important for creating connected, engaging, year-round spaces that cater to a wide array of visitors. By giving end users more and better reasons to linger, destination retail could have a better chance of remaining relevant and profitable in a post-COVID world. While some additional considerations would come into play, this same design approach can be used to re-energize indoor commercial spaces as well.

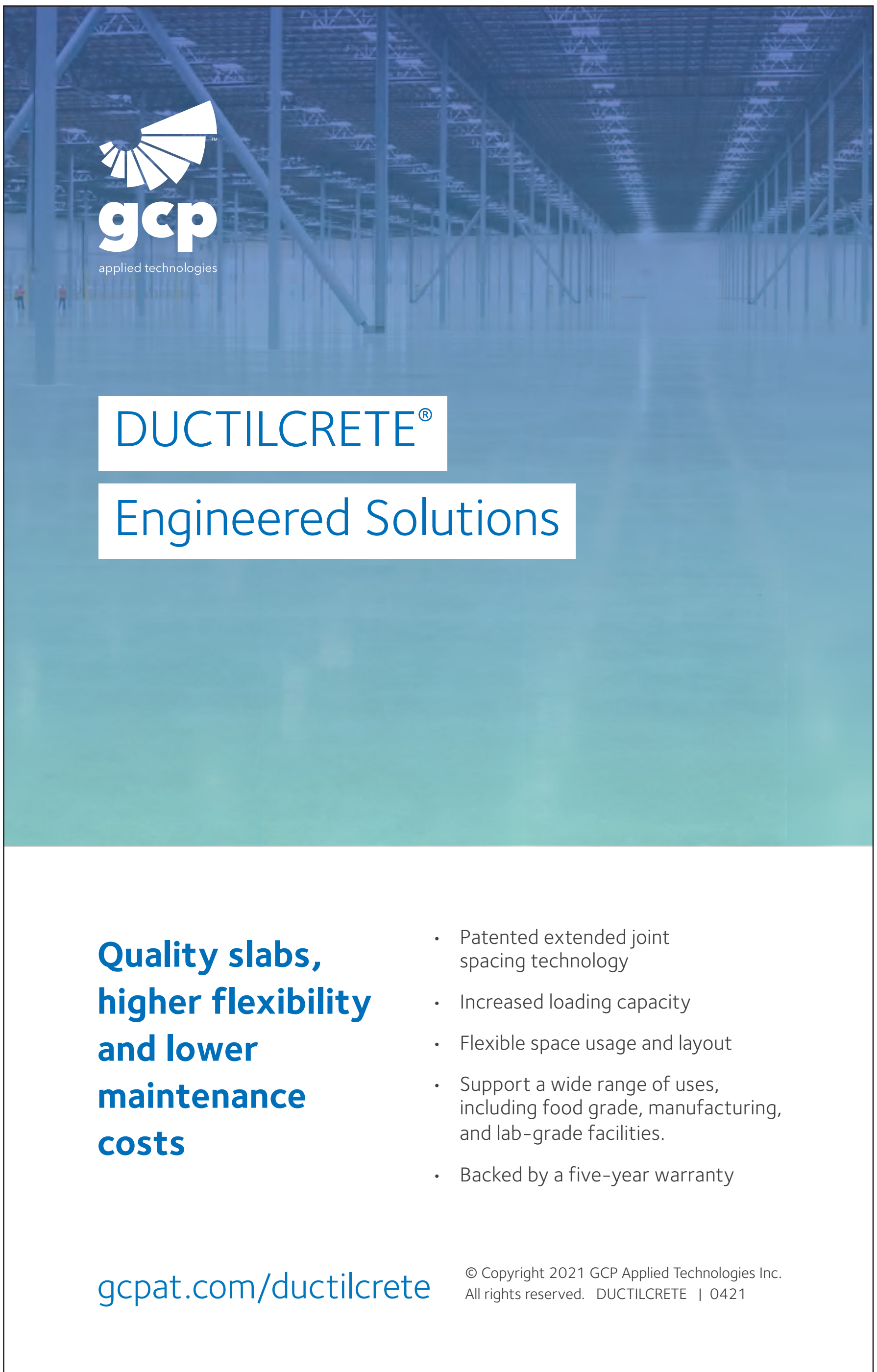
When tackling indoor retail projects, including shopping malls in the U.S., Canada, Ireland and South Korea, AE7's team of designers and development strategists applied many of the same upcycling principles that it leveraged in the SouthSide Works project. To be successful, new or reimagined retail projects must have:

- A balance of public spaces that are designed for specific activities and those that are flexible in use.
- Engaging opportunities for visitors to stay, such as entertainment zones and authentic local food and beverage vendors.
- Accessible health and wellness offerings like salons, spas and active play spaces for children.

While some additional considerations would come into play, such as maximizing opportunities for opening retail space to the outdoors, these considerations will help create a destination that is more than the sum of its individual offerings.

As access to COVID-19 vaccines accelerates in the coming months, coinciding with summer's warmer temperatures, much of the nation's cooped-up population will be looking for a chance to emerge from what feels like a lost year. Designers and developers can deliver newly energized public spaces by implementing new uses for outmoded retail centers. Designs like this not only create places for people to gather; they also encourage public health and safety. ■

Philip Wilkinson is a principal and **Teresa Bucco** is a senior architect at architectural firm AE7.



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CEO on Leadership: Jean V. Kane, Former CEO of Colliers International-Minneapolis/St. Paul

The former leader of Colliers International-Minneapolis/St. Paul and 2014 NAIOP National chair talks about how she took a locally owned real estate company and made it part of an international firm with 18,000-plus employees and 400 offices in 67 countries.

By Ron Derven


Jean V. Kane

"Each person I work with has made an impact on me and inspired me, and the only possible result is success."

— Jean Kane, former CEO of Colliers International-Minneapolis/St. Paul

Development: *What led you to a career in commercial real estate?*

Jean Kane: I landed an unpaid marketing internship with a local Minneapolis real estate developer when I was in college. He allowed me to shadow him, and it was the first time I had ever seen how the built environment could make an impact on neighborhoods or communities. I also saw the power of private, public and philanthropic or mission-driven groups coming together. I said, "Wow, I want to be part of this."

After college, it took two years for me to get my first job in real estate because of the economy in the Twin Cities. But I was eager to move up quickly in the business, so I started looking for other opportunities after working there for two years. I got two job offers: one paid $20,000 a year and another $25,000. I took the job with Welsh Companies for the lower salary because it offered big opportunities. The rest is history…I was with the same company for over 30 years. When I say the same company, it really isn't the same because it has adapted and grown with different ownership structures and is now part of Colliers.

Development: *How did you achieve a top leadership position at the company?*

Kane: I am a people person. I love people; I love building relationships. Without a doubt, you cannot be successful in real estate — you cannot be a successful leader — if you do not like people. Further, I love positive change, and I am a planner by nature. Success in real estate is not about being the biggest or the strongest. It is about being resilient, adaptable and embracing change.

Development: *What does leadership mean to you?*

Kane: When I think about leadership, I think about surrounding myself with motivated, talented people who are good at what they do. Each person I work with has made an impact on me and inspired me, and the only possible result is success.

Development: *What was your primary role as CEO of Colliers International-Minneapolis/St. Paul?*

Kane: My role was leading the Minnesota region for Colliers. It was about focusing on growth and specializations that we could add, creating an environment within the business to allow our people to better support our clients, and encouraging a culture within the company that people can trust and where they can build a career.

Development: *You have beeen an outspoken advocate for diversity and inclusion for years. Share with us your thoughts on D&I.*

Kane: Diversity and inclusion has been near and dear to my heart from early in my career. I am very thankful to NAIOP and our Executive Board of Directors. When I was serving as chair of NAIOP, I had the full support of the Executive Board to fully embrace diversity and inclusion. Diversity and inclusion is not about the bottom line; it is about doing the right thing. It is

"Success in real estate is not about being the biggest or the strongest. It is about being resilient, adaptable and embracing change."

— Jean Kane, former CEO of Colliers International-Minneapolis/St. Paul

the only way to lead our businesses and our industry into the future. The Twin Cities have been and will continue to be in the national news over the death of **George Floyd** while in police custody. In addition, this pandemic has shone a bright light on the social inequities in society. I think it is important for all of us who have the ability to make change to stand up and do our part to drive diversity and inclusion.

Development: *You took a considerable risk spinning off Welsh Companies in 2011. Could you tell us about it?*

Kane: It actually started in 2010. Welsh had the service lines of brokerage, real estate management, architecture, construction and property engineering. We were also involved in development and acquisitions, and we owned real estate in syndications or in joint ventures with institutional partners. We tried to go public in 2010; unfortunately, due to the global market and IPO conditions, we opted to pull the offering and move to Plan B, which was partnering with a private equity firm. Early in the partnership, we made the decision to split up the service side of the business from the asset-based business. I would take a majority ownership in the service side and separate from our parent company, which was asset-based. I put all my equity into brokerage, estate management, construction, architecture and property engineering. The charge for me was to grow the business and position it to a point where I had options to bring in a different kind of strategic partner.

We grew our earnings significantly and paid down enormous amounts of debt. I am forever grateful for all the people who stood with me and supported me, and to my husband for believing in me as we put a lot of our chips on the table. We eventually sold most of the business to Colliers in 2017. I didn't want to sell all the business. I still wanted to have skin in the game. So I retained a minority piece.

Development: *What didn't you know about spinning off a business in 2011 that you know today?*

Kane: I knew I was taking on significant risk and had to sign personally for all bank loans. But what I did not realize was that the banks would look at me as a start-up business. Even though I had been in business for 30 years, every bank looked at me as a brand-new CEO. Further, I did not know how hard it would be to get bank debt — but I had colleagues in our organization and clients who stuck with me, and we produced impressive results. That is the power of relationships.

Development: *You have contributed greatly to NAIOP over the years. Has NAIOP in return helped you to grow professionally?*

Kane: The personal connections I have made with NAIOP members such as **Mike Mullen, Molly Carson, Gene Riley, Larry Pobuda, David Confir** and **Douglas Howe**, to name a few, have been priceless. There are so many people that I have gotten to know through NAIOP that have made a positive impact on me professionally. While serving as chair, I had the opportunity to travel across North America and meet with our members on their home turf. The kindness that was extended to me was an amazing experience.

Development: *What is the best advice you have been given over the years?*

Kane: I grew up in a small town in southern Minnesota with three older brothers. Most little girls back then, when they thought about what they would do when they grew up, thought about being a mom. If they thought at all about a career, it was being either a nurse or a teacher. My brother, who is 12 years older than me, told me to dream big. But he also said I needed to have a plan in addition to dreams. Better yet, have a Plan A, a Plan B and a Plan C. Then you must execute on the plan so that it is more than just a dream. Another great piece of advice my parents gave me when they were dropping me off at college was to always be myself, know my worth and to find the courage to leave the table if I were no longer being listened to or respected. That was powerful stuff to tell a young woman, but they were absolutely right.

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

Kane: It is OK to be different because that is what sets you apart. Be honest and ethical because your reputation is priceless, and always be true to your word.

Development: *Do you have any tips specifically for women coming into the business today?*

Kane: Work hard, be authentic and guard your reputation.

Development: *What will be next for you?*

Kane: My next move will be guided by my values, experiences and relationships that got me here. I am very interested in serving as an independent board director in which my board and ownership experiences and thought leadership would be additive to a board and company. ■

Ron Derven is a contributing editor for Development magazine.

Why Connectivity in Commercial Real Estate is Just as Important as Location

Modern facilities require strong internet connections to help tenants conduct business and to power the growing trend of investments in smart building technologies.

By Dennis Thankachan

A new factor is rising in importance for commercial properties — quality connectivity. Tenants expect commercial buildings to provide reliable, high-speed, customized internet access. Connectivity is an essential feature that satisfies tenants' requirements and ultimately affects commercial building occupancy rates.

Getty Images

Greater technology demands, including for remote communication tools such as Zoom, make internet connectivity much more important for commercial properties.

Increasing Importance of Connectivity in Commercial Property

Studies confirm that most tenants view connectivity and location as necessities when selecting commercial real estate. A 2018 WiredScore report indicates 90% of tenants surveyed in major metropolitan areas ranked location as the most important factor in leasing office space. Internet connectivity and quality followed a close second among 87% of respondents. Research also reveals that connectivity can boost property valuation. A 2015 white paper by the Fiber Broadband Association found a fiber connection added an average of 3.1% to a property's value. These valuations jumped by an additional 1.8% for properties with connectivity speeds of 1Gbps or more because a growing number of tenants expect not just connectivity but fast, high-quality internet connections.

Since there is no one-size-fits-all solution for connectivity, commercial properties need to offer internet access options that appeal to a broad range of tenants. Some may be satisfied sharing connectivity with other building or business park tenants. Other tenants may require dedicated dark fiber connections for reliable high-speed, high-capacity connectivity. For example, tenants that have migrated mission-critical, high-bandwidth applications to the cloud will almost certainly need dedicated connections, as well as those offering co-location or web hosting services.

Digital Transformation and Tenant Workplace Changes Drive Connectivity Requirements

"Connectivity, connectivity, connectivity" is fast becoming commercial real estate's new mantra, and digital transformation is a key element driving this. Cloud-based applications such as collaboration and productivity tools (e.g., Zoom and Slack) are transforming how and where a business is conducted, along with SaaS (software as a service), PaaS (platform as a service), UCaaS (unified communications as a service), CCaaS (contact center as a service), and IaaS (infrastructure as a service) applications. Moreover, a massive paradigm shift is occurring as companies adopt a hybrid workplace model that supports in-office and remote working. Although this rapid change in workplace policies was in response to the COVID-19 pandemic, it is becoming the new norm rather than the exception.

Additionally, tenants are focused on maintaining a modern network, and chances are they have utilized (or considered using) newer applications such as SD-WAN (software-defined networking in a wide-area network) and SASE (secure access service edge) technologies. These offer flexible, secure and scalable connectivity that exceeds the status quo. If a commercial real estate

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building wants to stay on the bleeding edge of telecom infrastructure innovation, partnering with the providers of these new technologies will go miles to set it apart from the competition.

Other Ways Connectivity is Shaping the Commercial Real Estate Industry

Connectivity goes beyond enabling tenants to have a basic LAN with full-strength WiFi bars on their laptops or supporting dedicated internet speeds and uptimes (or best efforts, for that matter). Savvy tenants are interested in smart building technologies and automated building management, which further drive the need for connectivity.

For example, remote lighting control and temperature management, driven by IoT (Internet of Things), are becoming expected features rather than luxuries. This is particularly relevant in a time of lowered occupancy rates and hybrid workplace models. Tenants and property managers can save on overhead expenses by using smart building systems to only light up and heat or cool the areas in use.

Commercial property owners and managers must be agile, with the ability to quickly pivot to accommodate evolving tenant requirements and respond to disruptive events such as the COVID-19 pandemic.

Smart building systems can also track usage data and be programmed to make changes in response to external temperatures and real-time occupancy. To provide such capabilities, buildings need both internet connectivity and equipment such as sensors for temperature and motion connected to IoT devices.

The Future of Commercial Real Estate: 2021 and Beyond

Commercial property owners and managers must be agile, with the ability to quickly pivot to accommodate evolving tenant requirements and respond to disruptive events such as the COVID-19 pandemic. Digital transformations and changing workplace models have had a significant impact on commercial properties in recent years, so imagine what the next five years will bring.

Energy efficiency initiatives may dictate the greater use of smart building technologies. There could be a permanent reduction in business travel, with companies relying more on cloud-based communication and collaboration tools. Cloud-based infrastructure could continue to replace on-site data centers, decreasing the square footage tenants require while increasing their need for reliable high-bandwidth internet access.

Regardless of what may come, one thing is undoubtedly here to stay — an ever-increasing demand for internet connectivity and capacity. Now is the time to conduct strategic reviews and invest in the future. Making sound, data-driven decisions can help commercial real estate companies weather the storm today and future-proof their properties. Those who wait risk being eclipsed by more forward-thinking competitors. ■

Dennis Thankachan co-founder and CEO of Lightyear.

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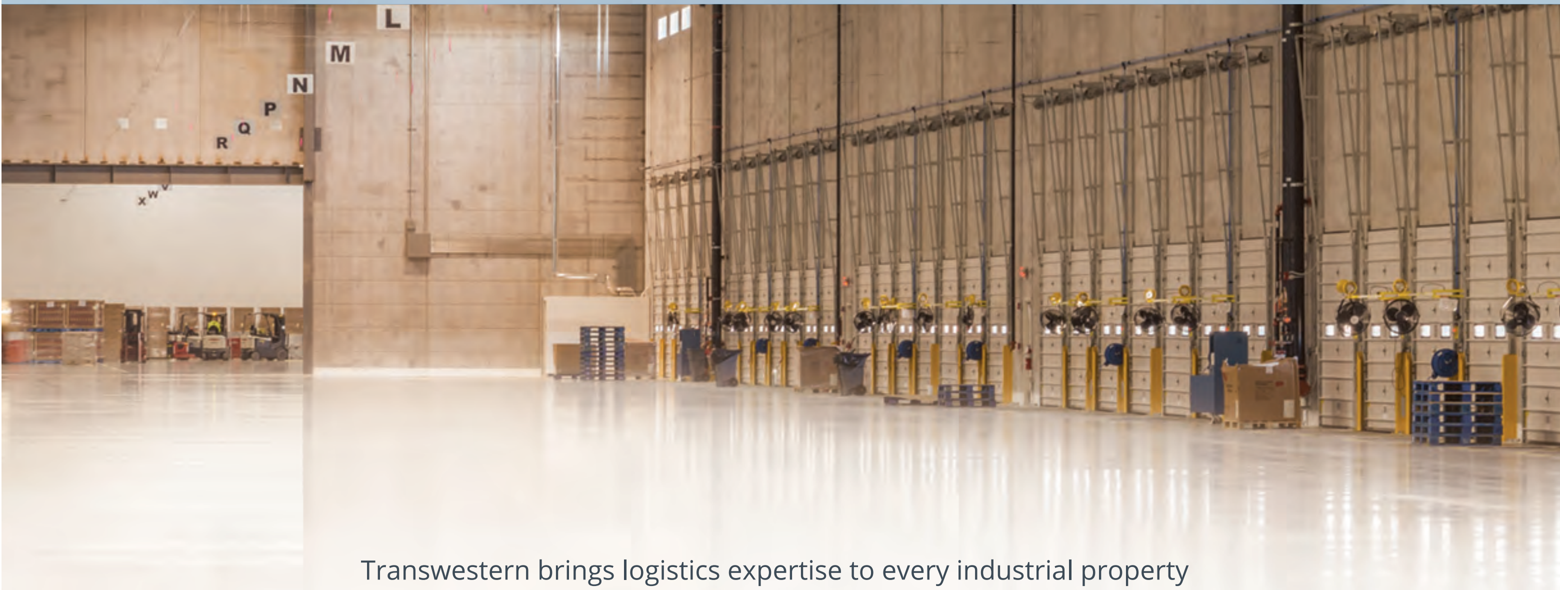

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Build-to-Suit vs. Spec: Which Building is Right For a Specific Company?

Businesses that are young and growing might lean toward spec; older, established firms could favor build-to-suits.

By K.J. Jacobs, AIA, LEED AP

When it comes to choosing the right building, there are several questions an organization must ask itself. Is the company at a place where it can invest in a building that will attract prospective employees? Is the company looking for a more temporary or flexible workplace? Is the facility able to support the organization's needs for production, research, collaboration or innovation?

Since each company's requirements, goals and operations are unique, as are each facility's offerings and characteristics, the answers will vary depending on who's asking.

Speculative, or "spec" buildings, are built by developers with the goal of attracting tenants during or shortly after construction. Typical spec building tenants can include professional services firms, call centers and other businesses.

Build-to-suit buildings are purpose-designed, built and typically owned by a specific organization to accomplish specific goals. Build-to-suit buildings can vary widely in size, function and design depending on the owner organization's needs. Owners of these custom buildings are usually well-established companies with long track records that have the capital and staying power to make a long-term investment in a physical asset.

Derrick Simpson, McMillan Pazdan Smith

Hubbell Lighting's built-to-suit headquarters in Greenville, South Carolina, is an example of a highly customized building design.

To determine which option is suitable for a particular organization, decision makers should understand the common design elements and limitations of each type of building.

Spec Buildings

Spec buildings are usually rectangular in shape, because a rectangular floor plan allows for the most efficient use of space. Irregular building shapes may provide an opportunity to create visually interesting architecture, but that can result in inefficiencies and underutilized space. Furthermore, a rectilinear shape is inherently flexible as space needs for an individual tenant change or as tenant turnover brings new users and space requirements.

Spec buildings are usually rectangular in shape, because a rectangular floor plan allows for the most efficient use of space. Irregular building shapes may provide an opportunity to create visually interesting architecture, but that can result in inefficiencies and underutilized space.

In the vertical direction, the floor-to-floor height of a speculative office building should be optimized to be high enough for tenants to have ample space without driving up the cost of the building's exterior skin. A typical open office environment has acoustical tile ceiling heights of 10 feet, with adjacent private offices and other support spaces having 9-foot-high ceilings.

In recent years, there has been greater interest in a slightly more industrial aesthetic where ceiling tile systems are omitted, exposing the ductwork and other overhead building systems. These open ceilings give each floor the feel of being more spacious and loftier without sacrificing building economy.

While the ideal spec office floor plate size used to be around 25,000 square feet, this has been reduced to 22,000 to 23,000 square feet in the last decade. The geometry of the smaller floor plate means the exterior of the building is more visible and accessible by everyone inside. However, the efficiency of a floor plate is diminished below 22,000 square feet because the amount of core space increases relative to the available usable office area, which translates to a tenant paying for more rentable square feet for the same amount of usable square footage.

A well-amenitized spec building should have a variety of conference spaces, spill-over rooms, a fitness center and common spaces in addition to ample workspace area.

Custom Buildings

Since custom buildings are usually designed with a specific user and purpose in mind, the design elements can vary greatly. A custom corporate office headquarters is obviously going to be different than a custom manufacturing center. Across sectors, what custom buildings have in common is their purpose: to optimize the usefulness of the asset while attracting and retaining talent.

A call center could certainly be set up in either a spec or custom building, but a custom-built call center could make for a higher-performing space because the designers can eliminate the inefficiencies of more generic speculative space for the use before ground is broken. Spec buildings are designed to have a wide appeal across industries and end users. By nature, they are *close* to what a lot of users need, but aren't *exactly* what anyone needs. The most efficient geometry of a given space can vary between applications, meaning some redundancies won't be able to be solved in an existing spec building. With build-to-suit, it is possible to customize to exact specifications.

For example, a manufacturing client of McMillan Pazdan Smith Architecture is creating a custom building for the sole purpose of attracting new employees and retaining existing talent. The manufacturing space in the building will be air-conditioned — an uncommon design element in industrial

projects. Warehouse workers, assembly technicians and process engineers who are used to working in high-temperature environments, especially in the Southeast where the client is located, will be able to complete a full workday without being subjected to extreme heat.

The goal behind this relatively uncommon feature in a manufacturing space is to win the war for talent in a region where there is a severe shortage of qualified workers. Broadly speaking, the goal of most custom buildings is to create a high-performing environment that employees will want to spend time in.

Amenities such as fitness centers, coffee bars, meditation or spinning rooms, and outdoor activity and meeting spaces — which have become more desirable since the onset of the pandemic — can all serve as attractive recruitment tools.

Building location can also influence available amenities. For example, the site of a build-to-suit office in Greenville, South Carolina, was adjacent to the popular Swamp Rabbit Trail, a 22-mile-long multiuse path that provided a natural outdoor amenity that was useful in recruiting and relocating employees.

Which Real Estate Type Makes Sense?

Since no two organizations are exactly alike, the type of real estate chosen depends largely on the current state and future goals of a particular company.

An established organization with staying power is generally more suited to designing and constructing a custom building.

A company focused on short-term growth should lean toward spec buildings. Leasing a spec building doesn't require nearly the amount of up-front capital investment as commissioning a custom building. A lease has a shorter planning horizon, often just three to 10 years, compared to a build-to-suit office building designed for a 15- to 20-year commitment. Build-to-suit should be seen as a long-term investment. For a company that just needs a certain amount of workspace without specialized systems, layouts or utilities, spec buildings may be the wiser investment.

Simply put, spec buildings offer a place for a developing organization to keep growing their business without dipping heavily into operational budgets and other capital investments.

An established organization with staying power is generally more suited to designing and constructing a custom building. Depending on the size and scope, a custom building is usually a much larger capital investment than leasing a spec building. While a custom project is more expensive up front, it can yield long-lasting results that improve an organization's productivity, processes and culture.

For example, the air-conditioned manufacturing space will draw talent in a talent-scarce region, improving productivity, employee morale and quality of work. The space also enforces a culture in which employees feel cared for, comfortable and happy to work where they work. This sort of culture increases retention and employee engagement, which both factor in greatly to the performance of a company.

According to a study by the Queens School of Business, which examined medium-sized businesses (between 50 and 399 employees) over a 10-year period, "engaged" employees are those who are committed to the success

A company focused on short-term growth should lean toward spec buildings.

of the organization. The study found that businesses with highly engaged employees see:

- 65% greater share-price increase.
- 26% less employee turnover.
- 100% more unsolicited employment applications.
- 20% less absenteeism.
- 15% greater employee productivity.
- up to 30% greater customer satisfaction levels.

Research by Gallup found that companies with a strong organizational culture saw 85% increases in net profits and 138% improvement in patronage over a five-year period.

While improving employee engagement and company culture is a multidimensional endeavor, a thoughtfully designed custom building can certainly create an environment for engagement to thrive.

Custom buildings also offer endless opportunities for specialization. If a company is in the business of research and development, they can design a building to house the specific equipment, laboratories and utilities needed. If a company's product relies on creativity, they can design a space specifically geared toward spurring creativity and innovation.

The question of whether to go custom or spec is an introspective one. An organization must first examine its goals, culture, capitalization and growth projections to find the right answer. ■

K.J. Jacobs is a principal and director of the corporate office studio at McMillan Pazdan Smith, a regional, studio-based architecture, planning and interior design firm with offices in South Carolina, North Carolina and Georgia.

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Why Investors are Homing in on Joint-Venture Strategies

This investment vehicle is gaining popularity, especially for overseas real estate.

By Riaz Cassum

Joint-venture structures, while common, are rising in popularity among real estate investors as an attractive route into new markets and sectors, as well as a way for existing owners, developers and operators to diversify risk, create new relationships and retain assets under management.

Joint-venture structures were primarily used for new developments and acquisitions but are now routinely employed for asset and portfolio recapitalizations.

Getty Images

There are many advantages to joint ventures in commercial real estate, which JLL data indicates is most frequently used in the U.S. for office acquisitions.

How Joint Ventures Work

While there are many kinds of joint ventures, one of the most common involves a general partner and one or more limited partners. The general partner is typically the operator, developer or manager of the venture while the limited partner is, most often, a relatively passive capital source. The general partner is responsible for managing the assets of the venture and executing the agreed-upon business plan.

While the limited partner(s) provide most of the required equity capital, most general partners provide a meaningful amount of co-investment capital alongside the limited partner(s), allowing for an alignment of interests among all parties. The general partner is compensated via fees (acquisition, asset management, development management, etc.) and a disproportionate share of the profits for successfully executing the venture's business plan.

While there are many kinds of joint ventures, one of the most common involves a general partner and one or more limited partners.

Joint-venture agreements are most commonly structured as limited liability companies or limited partnerships. Details of the venture agreement include a focus on the business plan goals and objectives, financial commitments, how profits will be split, management responsibilities, ownership rights and exit mechanism. Financial investment structures can range from a 50/50 venture all the way to 90/10 or 95/5 in terms of co-investment and ownership interest.

Virtually every type of capital source including pensions funds, endowments, sovereign wealth funds, insurance companies and family offices, to list a few, are active investors as limited partners in joint ventures. Overseas investors, in particular, stand to benefit in multiple ways by investing in the U.S. with partners via joint ventures.

For example, sovereign wealth funds and certain qualified pension funds that are subject to Internal Revenue Service Rule 892 enjoy significant tax savings when making U.S. real estate investments via minority ownership positions in joint-venture partnerships. (According to a November 2011 tax alert from law firm Akin Gump, Rule 892 "exempts from U.S. income taxation certain investment income from stocks, bonds and other securities derived by a foreign government, where a 'foreign government' is defined as an integral part of a foreign sovereign, or a Controlled Entity.")

More recently, the pandemic, with its travel limitations, has provided more incentive to deploy capital in overseas real estate via joint-venture partnerships. Capital is seeking high-quality and reliable operating partners with a local presence to help find and man-

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age investment opportunities in an environment where representatives of the capital partner may not be as free to spend time in the markets where the best investment opportunities are available.

Additionally, some countries, such as Israel, have regulations in place preventing certain types of investors, such as insurance companies, from owning more than 50% of an overseas asset.

An emerging trend in the industry is recapitalizations of assets, portfolios or sometimes entire funds. For example, when a closed-end fund comes to the end of its life, the fund sponsor is forced to sell the asset(s) per the original fund structure. However, increasingly, the fund sponsor can recapitalize the asset or portfolio of assets via a joint-venture partnership with a capital source that is interested in owning the assets long term.

Such a recapitalization in lieu of an outright sale offers the operating partner an opportunity to repay its current fund investors while continuing to own and manage these assets. The incoming capital partner's capital may be better aligned with the risk profile of the investment going forward, both in terms of the cost of capital and investment horizon.

A Note of Caution

Of course, joint-venture strategies are not without challenges. If entering into a joint venture, make sure to have like-minded partners in terms of risk tolerance, investment horizon

Virtually every type of capital source including pensions funds, endowments, sovereign wealth funds, insurance companies and family offices, to list a few, are active investors as limited partners in joint ventures.

and business plan. There needs to be a meeting of the minds on the investment thesis, including the hold period/exit mechanism and how major decisions will be made. The terms get much more complex as the number of stakeholders increases.

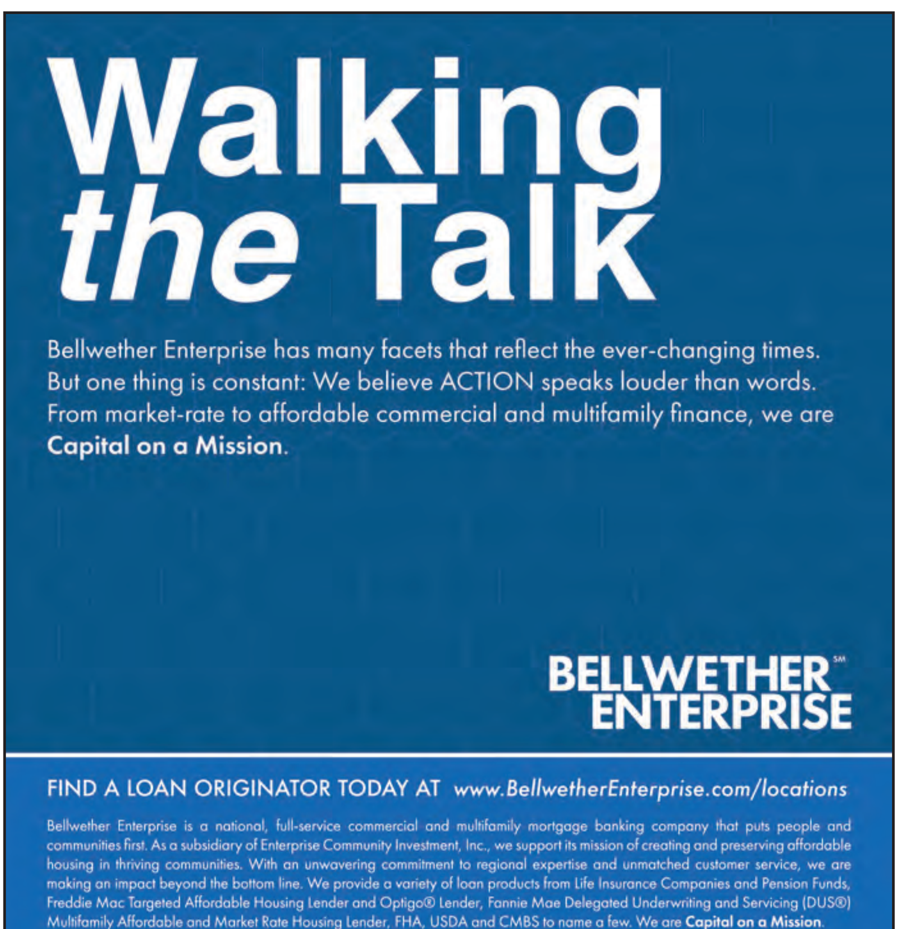
While joint-venture acquisition volume in the U.S. is pervasive across all property types, office accounted for most joint ventures entered into in 2020, according to JLL data.

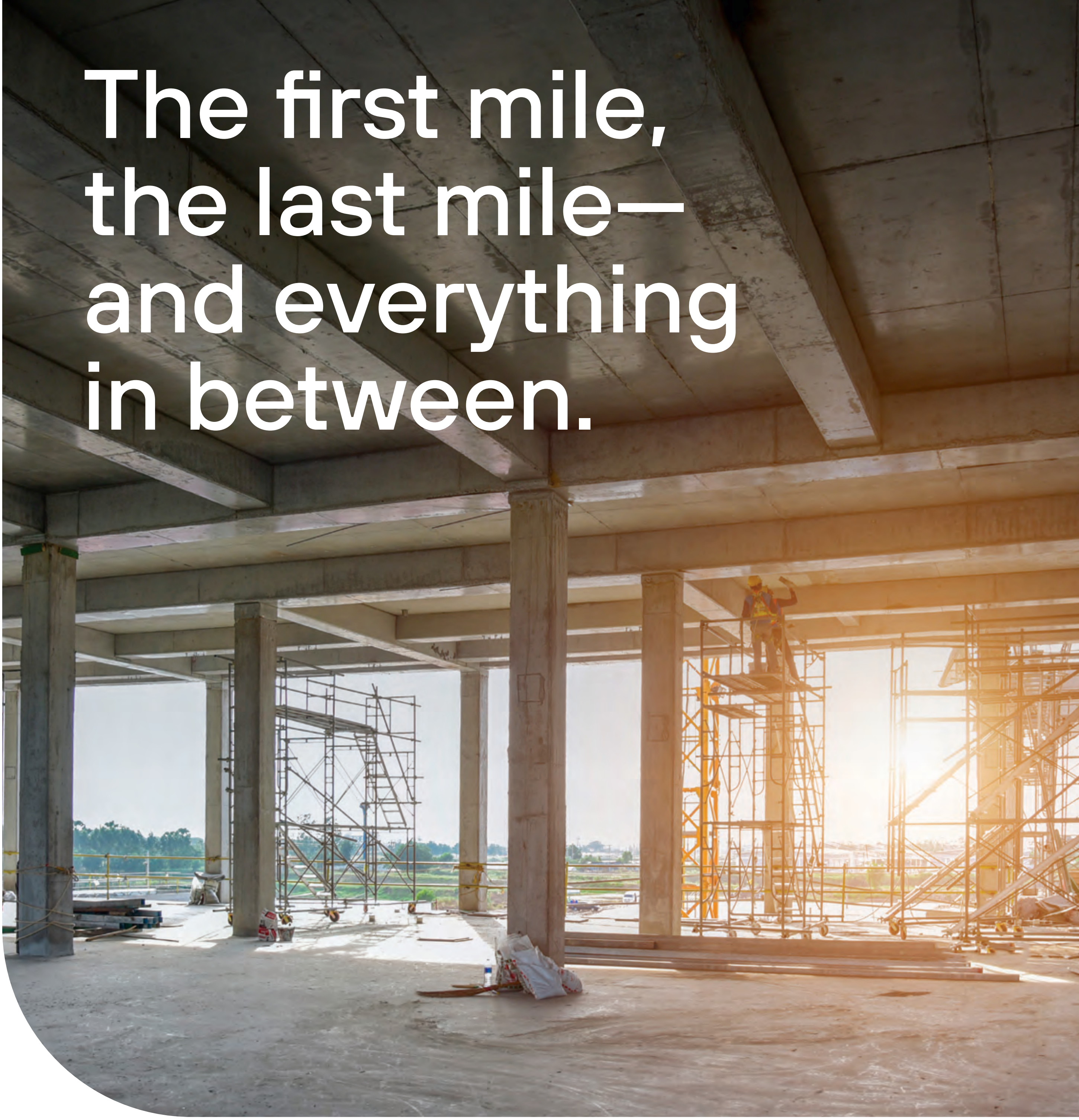
Also, according to JLL data, between 35% and 40% of transactions above $100 million in Europe, the Middle East and Africa are already in some form of joint venture.

Globally, 27% of investors plan to increase their allocations to joint ventures, according to an INREV survey. Just 4% said they expected to decrease their use of the strategy. INREV also notes that roughly 45% of European investors are expected to increase their allocations to joint ventures through 2022.

There is a real opportunity for owners and managers to capitalize on strong ongoing demand as investors continue to see the benefits of using joint ventures to enter new markets, gain direct access to assets and align themselves with specialized management expertise. ■

Riaz Cassum is JLL's executive managing director, capital markets and global head – international capital coverage.





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CMBS Coupon-Clipping: Tips for Commercial Mortgage Shopping

Liquidity returns to the market as pandemic disruptions begin to subside.

By Andrew Foster and Cody Charfauros

Getty Images

Loans backed by properties such as hotels are seeing substantially higher delinquency rates than other capital sources.

The commercial mortgage-backed securities (CMBS) market has gone full-cycle in a short time, from active in the first quarter of 2020 to effectively shut down in April/May, to now back open for business in 2021.

A confluence of factors related to the COVID-19 pandemic caused the interruption, including a rapid spike in CMBS delinquencies, forbearance requests, loans transferred to special servicing and others. According to MBA's February 2021 CREF Loan Performance Survey, the balance of non-current commercial and multifamily mortgages decreased in February to its lowest level since April 2020. In that month, 94.8% of outstanding loan balances were current, up from 94.3% in January. Loans backed by lodging and retail properties continue to see the greatest stress. Because of the concentration of hotel and retail loans, CMBS loan delinquency rates are substantially higher than other capital sources.

The Trepp CMBS Delinquency Rate in March 2021 was 6.58%, a drop of 22 basis points from the February number. That marked the ninth straight month of decline. The peak delinquencies reported in mid-2020 and the fear they caused, along with a rapid and dramatic blowout in corporate bond spreads, gave CMBS lenders and the broader capital markets a reduced appetite for new commercial real estate-backed loans for a period. Now, with CMBS delinquencies trending down and a potential recovery in sight, substantial liquidity has returned to the market. For deals in demand and with the right shopping tips in mind, one would be hard-pressed to find a better time to be a borrower.

Brother, Can You Spare 50 Basis Points?

Whether looking for permanent or short-term financing, shopping around in a competitive and low-rate environment like today can help secure the best deal.

The CMBS narrative over the past six months can be summed up by two words: *spread compression*. According to the Commercial Mortgage Alert, spreads in February for AAA CMBS bonds were at 58 basis points, down from the April 2020 peak of 350 basis points. That has translated into real loan spreads on commercial assets in the standard 50%-59% loan-to-value (LTV) range as low as the 160-190 basis points over SWAPs for interest rates just under 3%.

The recent run-up in U.S. Treasury yields has seen real coupons rise as well, though not basis point for basis point due to spread compression. Higher leverage continues to be possible, though higher debt yield (debt yield is underwritten cash flow divided by loan amount) and debt service coverage ratio requirements are preventing LTVs from stretching too high.

For deals that fit a particular pool's credit needs, CMBS originators are competing heavily for business, often down to the last basis point, and they are doing what they can to reduce or eliminate problematic CMBS structure issues to remain competitive, namely strict lockbox trigger language, downgrade language on credit tenancy or restrictive reserves. Lockbox triggers restrict a borrower's ability to access certain revenues unless certain

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To maintain as much transparency as possible, loan originators and credit underwriters are requiring highly detailed information on tenant relief, collections and common-area maintenance (CAM) reconciliation upfront.

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conditions are met, while downgrade language on tenancy matters relate to ratings migration when a tenant's credit profile shifts negatively.

A Tail Risk of Two Asset Classes

Still, it is not all good news. Uncertainty and questions are on investor's minds for some asset types. For example, Fitch Ratings, a go-to agency for CMBS and CLO bond credit ratings, issued revised property cash flow and other underwriting assumption criteria when the MBS market reopened in May 2020. Those more restrictive underwriting assumptions affect retail and office assets, which are more likely to be affected by temporary collection issues with tenants or, in the case of hospitality, interruptions in revenue per available room (RevPAR) due to the COVID-19 pandemic. According to their report, Fitch will continue using these revised guidelines to evaluate underwriting on a loan-by-loan basis until it "sees meaningful signs of economic recovery and the negative impact on property performance subsides."

To maintain as much transparency as possible, loan originators and credit underwriters are requiring highly detailed information on tenant relief, collections and common-area maintenance (CAM) reconciliation upfront.

The reactions to more stringent criteria are translating into two net results: fewer deals overall are eligible for competitive pricing, so those that do qualify are able to compete for best-in-class terms; and there is currently less incentive for significant variation across originators, further commoditizing the CMBS space. But borrowers should expect that as the recovery continues, there could be more variation in underwriting and risk-based pricing and therefore opportunities to exploit market inefficiencies in the CMBS market over time.

A Bridge Over Troubled Water: CRE CLOs Weather the Storm

Amid all the volatility in CMBS delinquency rates and forbearance agreements, less attention has been paid to the CRE collateralized loan obligation (CLO) market, which performed relatively well in 2020 from a credit perspective. A large share of the CRE CLO loan market outstanding is tied to multifamily collateral properties, which partially helps to explain this outcome. The delinquency rates for CRE CLOs came in just over 2% as of September 2020 compared to a CMBS delinquency rate of approximately 9% according to Moody's Analytics.

CRE CLO pool loans to non-stabilized properties grew significantly for several years pre-COVID before screeching to a halt in the April-May 2020 period. According to Trepp, 2019 CRE CLO issuance grew to $22.4 billion, a 26% increase from the $17.7 billion issued in 2018. The 2018 issuance volume doubled the previous year in terms of dollar volume. Since the begin-

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ning of 2021, the market has seen a resurgence in appetite for new CLO issuance and a corresponding tightening of spreads.

Non-Banks with Gas in the Tanks

There appears to have been a significant increase in bridge loan requests because of COVID-19 impacts. Bridge loans offered by banks, debt funds, mortgage REITs and some insurance companies typically have short durations (12-36 months) and are put in place to "bridge" specific issues that make traditional term financing more challenging. While many bridge lenders utilize warehouse lines (a line of credit that financial institutions provide to mortgage lenders), their balance sheet or investment funds, the CRE CLO market can be an attractive additional funding mechanism for some. As the CRE CLO market picks up steam again in 2021, look for this additional financing option to put downward pressure on the rates passed on to borrowers. All lender types have money, are bullish for 2021 and need to get money out the door even for non-stabilized properties.

It's important to understand the fine print when getting a loan. Each lender and capital source works a little differently. Take the time to get educated on how different products may work in various scenarios including balance sheet vs. securitized products. Even within securitized products, a conduit loan, which is a commercial mortgage packaged with similar loans in a pool that is then sold to institutional investors, is very different than a bridge loan earmarked for a CRE CLO.

In Closing

While the COVID-19 era has shined a light on the cracks in certain business models, the commercial mortgage space remains highly active, with deals that can survive slightly greater underwriting scrunty receiving much greater competition and better terms at historically low rates. Borrowers who prepare themselves for a comprehensive presentation of the facts and for in-depth questioning can enjoy some of the best terms of an era, whether offered by a CMBS, insurance company, agency, bank or non-bank lender. ■

Andrew Foster is associate vice president of commercial real estate with the Mortgage Bankers Association. **Cody Charfauros** is a member of the structured finance team at Slatt Capital.

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Asset Managers Can Play a Key Role in Tenants' Return-to-Workplace Plans

A new framework for mitigating disease in the office focuses on air quality, changing behaviors and building occupant trust.

By Rob Naso

Getty Images

Before COVID-19, workers in buildings with open-office floor plans sat close to one another. Expect that to change as people begin to return to work.

The COVID-19 pandemic has redefined the role that office landlords play in creating safe, healthy work environments. While most office workers packed up their laptops and headed home to ride out the pandemic, building owners and property managers had to pivot quickly to elevate safety measures for the essential workers who remained, in an environment with fast-changing public health guidelines. Now, they face the next stage of recovery — ensuring tenants feel comfortable returning to the workplace as vaccination rates increase.

The landlords that return their buildings to thriving, active communities will be those that expand the definition of their role to also become socially minded strategists charged with creating safe and healthy environments, setting the stage for tenants to safely return to the workplace. Positioned at the forefront of containing future outbreaks while enabling businesses to resume activity, the responsible asset manager has become the tenants' partner in their return-to-workplace strategy.

Many of the world's top building owners embrace this redefined role — in fact, they're thinking beyond their own assets and coming together as an industry to create new standards for preventing the spread of disease in commercial buildings. In 2020, BentallGreenOak and several other companies came together with academic advisers and Fitwel — a leading global certification for health and wellness in the built environment — to create the Fitwel Viral Response Module, a framework for mitigating the spread of contagious diseases within buildings.

The landlords that return their buildings to thriving, active communities will be those that expand the definition of their role to also become socially minded strategists charged with creating safe and healthy environments, setting the stage for tenants to safely return to the workplace.

The Viral Response Module requires that owners take steps to enhance indoor environments, encourage behavior change and build occupant trust, and it offers valuable guidance for asset managers looking to protect occupant health and safety.

Enhance Indoor Environments

The pandemic has put a spotlight on the importance of proper ventilation and filtration systems, not to mention cleanliness. Air quality is the most important factor in helping U.S. employees feel comfortable returning to the workplace, according to a recent study by office furniture maker Steelcase. Adherence to safety protocols and facility cleanliness ranked closely behind.

As businesses strive to help employees feel safe in their workspaces, building owners should be prepared to provide clear evidence of the steps they are taking to enhance indoor air quality, as well as cleaning, disinfecting and maintenance protocols.

For example, BentallGreenOak engaged UL, a global leader in safety science and testing, to investigate the indoor environment of all Fitwel-certified assets. The evaluation, which included HVAC hygiene, filtration, ventilation, indoor air quality, water quality and janitorial efficacy, identified areas for improvement, such as adjusting air pressure in certain building areas.

Enhanced indoor environments will provide lasting benefits long after the threat from the pandemic has subsided. The air we breathe has never been more closely scrutinized, and the measures that asset managers take are an important first line of defense that tenants and their employees will be examining.

Encourage Behavior Change

Even the best air filters and the most responsive, detail-oriented janitorial team can't stop the spread of disease if building occupants don't do their part, too. Responsible asset managers are extending their reach into the operations realm to understand and

implement policies that encourage safe behavior among all individuals who enter their building. The promotion of healthy practices such as social distancing and hand hygiene through signage and the availability of hand sanitizer in common areas establishes important new norms that can also carry over into tenant spaces.

Most building owners are now directly involved in setting guidelines for the requirement of personal protective equipment (PPE) in common areas. As vaccines increasingly help slow viral transmission, more states and municipalities will roll back mask mandates in their buildings, which can introduce complications for building owners.

An approach that defers to an abundance of caution informed by science should be the source that governs rules around PPE usage so tenants understand both the motive and the expectation.

Air quality is the most important factor in helping U.S. employees feel comfortable returning to the workplace, according to a recent study by office furniture maker Steelcase. Adherence to safety protocols and facility cleanliness ranked closely behind.

Viral Response Strategies

Fitwel's Viral Response Module requires companies to follow these baseline strategies to mitigate the spread of infectious respiratory diseases:

Enhance Indoor Environments

- Establish an enhanced indoor air quality policy (MR*)
- Establish a humidity control policy
- Establish an enhanced indoor air quality testing and monitoring protocol
- Establish a Legionella water management plan
- Establish an enhanced cleaning, disinfecting and maintenance protocol (MR)
- Establish an enhanced green purchasing policy

Encourage Behavioral Change

- Establish a plan for surface hygiene stations
- Establish PPE guidelines (MR)
- Support hand hygiene (MR)
- Provide select educational health promotion signage (MR)

Build Occupant Trust

- Establish a contagious disease outbreak preparedness plan (MR)
- Establish viral response design guidelines
- Establish a communication plan (MR)
- Establish a paid sick leave policy (MR)
- Establish a family support policy (MR) ■

**MR = minimum requirement*

Build Occupant Trust

Trust is essential to successful workplace re-entry. Office workers must trust that their employer is doing everything possible to prioritize their health. And company leaders, in turn, must trust that their landlord is taking every possible step to sustain a healthy building environment.

A well-maintained building goes a long way toward building trust. Research conducted by CfAD found that signs of disorder, such as poorly maintained greenery and the presence of litter, are associated with decreased civic trust. That concept extends to the workplace. Employees will feel more secure when they see that a property management team prioritizes frequent sanitation of surfaces, keeps up the general building appearance, regularly empties trash and ensures personal hygiene supplies are fully stocked.

Beyond day-to-day facilities management, tenants want to know that their landlord has plans in place in the event of a virus outbreak in the building. What steps will the property management team take to contain an

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Even the best air filters and the most responsive, detail-oriented janitorial team can't stop the spread of disease if building occupants don't do their part, too.

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outbreak, and how will they communicate with building tenants? The experience of the past year has made it clear that every asset manager must be prepared to answer these questions through clear and intentional communications. Proactive and timely communications will help tenants understand these landlord-driven initiatives and make important strides toward building confidence and trust.

Key Steps for Fitwel Viral Response Certification

Asset managers that wish to achieve Fitwel Viral Response Certification should expect a two-step process. The first step, Entity-level Certification, involves establishing entity-level policies that apply to a group of properties. For example, BentallGreenOak developed policies that applied to its U.S. office portfolio, which were certified by CfAD in a six-week, double-blind review process. After achieving entity-level certification, the manager can seek Asset-level Approval to verify that the strategies have been put into practice.

Go Beyond Checking the Box

Frameworks such as the Fitwel Virus Response Module offer helpful guidance on best practices for maintaining healthy buildings. Yet even when every box has been checked, a building's tenants may have unique needs and concerns that go beyond the industry standard. Maintaining high satisfaction requires listening to tenants and partnering to create an environment where people feel safe.

The tenant-landlord relationship is a partnership, and in the current state of the space markets, asset managers are the power brokers in establishing trust where and when it is most needed. The role of the asset manager has evolved to become a social ally for tenants in a shared experience, unlike any other, that binds both our physical safety and commercial well-being to one another. ■

Rob Naso is the head of U.S. asset management with BentallGreenOak.

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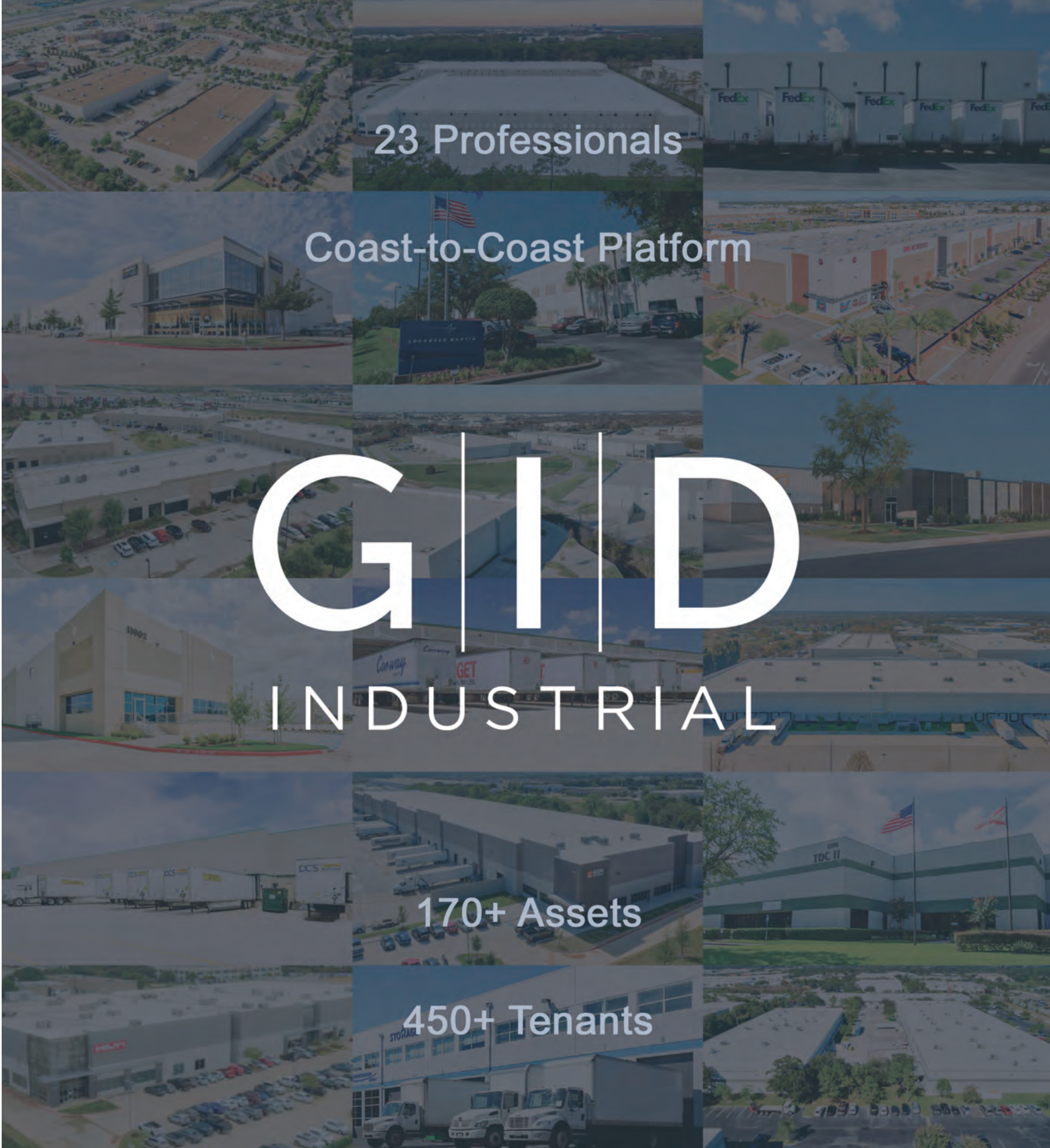

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Stairs on the Rise

Monumental stairs can inspire greater interaction, reduce energy costs, and improve employee health and fitness.

By Shantala Weiss

In the wake of COVID-19, workplaces are presented with a unique opportunity to shape the future of corporate culture and to use physical space to foster a sense of community and innovation that can't be offered when working from home. Building elements that align with the goals of active, sustainable and universal design have the potential to play a crucial role in post-pandemic commercial real estate.

COVID-19 has challenged vertical transportation strategies in buildings, which have historically relied on elevators. Ongoing concerns about physical distancing and touching surfaces mean that people may be reluctant to use elevators. A well-dimensioned featured stair offers enough space for people to both ascend and descend simultaneously, giving occupants more room to move compared to a narrow fire escape or elevator.

Photo by Kat Ambrose, courtesy of Lovett Commercial

One of three monumental staircases in Lovett Commercial's Post Houston project. It's designed to fit within a fairly small footprint.

"COVID-19 noticeably accelerated the trend of monumental stairs in offices and other commercial spaces," said **Jim Admiraal**, executive vice president of sales and preconstruction at Synergi, a national stair design-led subcontractor. "We saw an immediate spike in design plans featuring stairs as a primary vertical mode of transport for major projects all over the U.S."

> Activity-friendly buildings can be created by integrating active design philosophies into a building's circulation systems — especially its stairs and elevators.

Beyond COVID-19

Pandemic-related concerns aren't the only reasons stairs are becoming a prominent consideration in buildings, said **Hansoo Kim**, principal and design director at architecture firm Gensler.

"Architectural staircases have been a trend in projects going back several years, as companies aim to make workplaces healthier and encourage movement," he said. "The pandemic has brought an even greater focus on health and wellness at work, so we expect to see that trend continue."

Extending far beyond hygiene and social distancing guidelines, the COVID-19 crisis has illuminated a wider point about workplace wellness standards. Positive and engaging work cultures have a direct impact on performance, and face-to-face interactions are by far the most important activity in an office, according to a recent Harvard Business Review article. Because of that, companies should examine whether the design of their workspaces helps or hurts performance.

"Accidental collisions" — impromptu conversations that lead to creative

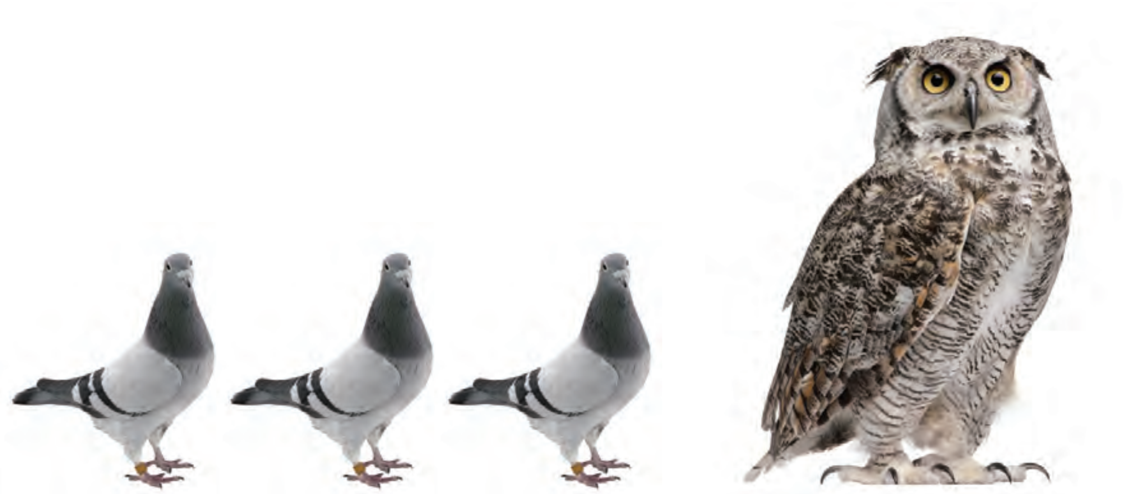
According to a study published by the American Journal of Preventative Medicine, seven minutes of stair climbing a day over 10 years halves the risk of a heart attack.

collaboration — are key to innovation and play a crucial role in workplace satisfaction, according to Work Design's article "How to Create More Collisions in Your Workplace." These chance meetings encourage employees to connect in ways they might not otherwise and can have surprisingly positive results. These unexpected conversations create opportunities for collaboration, and that kind of engagement pays for itself.

"We're acutely aware of the importance of good staircase design; we're working to make stairs more prominent in our building design to encourage people to take advantage and reap the benefits," said **Brian Collins**, who leads Microsoft's Real Estate and Facilities Change Management Program. "We know stairs offer the benefits of being healthier and more mobile in the workplace, but they are also a tool to drive connections and conversations between employees they see and meet on the stairs."

A Way to Step Up Physical Activity

The role building elements play in encouraging physical activity depends largely on their design, according to a recent NPR article, "One Step to Combat Obesity: Make Stairs More Attractive." The design of stairs can either promote or deter activity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through their availability, convenience, desirability, safety and comfort. Poorly placed stairs, non-ergonomic design and elevators are just a few of the features that not only discourage physical activity but potentially neutralize other features designed to promote it.

Activity-friendly buildings can be created by integrating active design philosophies into a building's circulation systems — especially its stairs and elevators. Because stairs are already present in almost every building and readily used without presenting any major lifestyle changes, they have potential for accessible, effective and economical impacts on health. According to a study published by the American Journal of Preventative Medicine, seven minutes of stair climbing a day over 10 years halves the risk of a heart attack. The same study also found that just two minutes of stair climbing a day was enough to offset the average American's middle-age weight gain of one pound a year.

Building users are looking to be more active at work, with many owners now obtaining Fitwel and WELL accreditation for their buildings. Prominently featuring and giving people access to stairs is a key aspect of WELL; it encourages occupants to move about, socialize and stay fit. WELL Fitness Feature 64, for example, recognizes designs that encourage workers to be active indoors with "accessible, safe, and visually appealing stairs, entryways, and corridors."

Design strategies that improve health (active design) also tend to benefit the environment. For example, elevators and other conveying systems can account for up to 10% of a building's energy consumption; decreasing their use creates significant energy savings. Further energy is conserved when open stairs double as a lightwell, illuminating spaces that would otherwise be dark.

Monumental Staircases in Action

Lovett Commercial is showcasing three monumental staircases in three separate atriums in its Post Houston project, which is a redevelopment of the former Barbara Jordan Post Office in Houston. Despite featuring 40,000 square feet of available space in the building's food hall, staircase design considerations for the atriums prioritized maximizing the allotted ground level space for the roughly 30 food and retail vendor and kiosks anticipated to operate within it.

The resulting "O" staircase is optimized to fit within a relatively small footprint, and its double-helix design lands double the impact in terms of vertical mobility for occupants — just in time for its unveiling to the public in a post-pandemic world.

A spokesperson for Lovett Commercial shares some cost and design considerations for building Post Houston's monumental staircases:

- **Renovation vs. new construction.** "Lovett's decision to retain and redevelop the historic building differed from other interested parties who would have demolished the building and built something new. Embracing the history of the building resulted in a unique design unlike anything else in the city."
- **Attachment to an execptionally strong superstructure.** "The structure of the existing building is remarkably robust. Built to federal building standards in the 1960s, it even includes two nuclear bomb shelters. The over-engineered concrete structure allowed us to build additional structures on the roof, including restaurant pavilions and landscaping."
- **Taking advantage of incentives.** "The building is listed on the National Register of Historic Places, and we are taking advantage of the Historic Tax Credit program to offset development costs. Additional support is coming from the Downtown TIRZ (Tax Increment Reinvestment Zone) to offset costs of improvements that benefit the public like landscaping, streetscape improvements, and a rooftop farm and park."
- **Directing occupants to amenities using design.** "The 40,000-square-foot food hall, which features a dramatic double-helix stair, connects the dining area to office space above, and ultimately leads to the most prominent amenity feature, a 5.5-acre rooftop farm and park. The park is open to the public and includes restaurants and bars with dramatic skyline views." ■

Because not everyone can easily navigate stairs — consider wheelchairs, strollers and heavy packages, for example — monumental stairs may seem counterintuitive to accessibility. Americans with Disabilities Act (ADA) guidelines and universal design strategies generally focus on elevator use as the primary means of vertical circulation unless there is an emergency. Most building codes regulate stairs as the primary means of emergency egress while discouraging elevator use for emergency evacuations.

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Accessibility Considerations

However, an integrated vertical circulation system incorporating stairs *and* elevators can enhance accessibility for both ambulatory and mobility-challenged occupants. Buildings that feature stairs as a primary vertical pathway means occupants will be more familiar with and likely to use stairs in the event of an emergency. That will leave more elevators available for those who rely on them.


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Buildings that feature stairs as a primary vertical pathway mean occupants will be more familiar with and likely to use stairs in the event of an emergency. That will leave more elevators available for those who rely on them.

"In a post-pandemic world, staircases also provide an alternative to small elevator cars, which may have reduced capacity or be prioritized for those who cannot use stairs," Kim said.

The stairs themselves can be designed to improve accessibility for the able-bodied.

"We want to ensure our stair design is accessible, so we're including tactile surfaces at each stair landing with high-contrast stair nosing to aid people navigating our workplaces who may be blind or have low vision," said Collins. "We're also using continuously graspable stairway handrailing to help users navigate stairs more safely with handrails on both sides of the stairs for bidirectional travel."

While the recent "rediscovery" of interconnecting stairs as a design feature was catalyzed by COVID-19's social distancing guidelines, stairs are a building tool that meet the goals of many prominent design trends. Increases in stair use can have positive health and lifestyle effects, create a more sustainable future, and improve accessibility beyond just the able-bodied when integrated with elevators. ■

Shantala Weiss is the senior marketing manager with Synergi.

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How Ascent Is Pushing **Mass Timber** to New Heights

At a Glance

- $125 million hybrid timber tower
- Height: 284 feet – projected as world's tallest mass timber building
- 25 stories – 19 timber floors atop 6-story concrete podium
- 259 luxury 1-, 2- and 3-bedroom apartments
- Seventh-floor wellness center with indoor/outdoor pool
- 10,000-square-foot club-level entertaining space with wine tasting room
- Completion expected Summer 2022

An artist's rendering of the Ascent building in Milwaukee. It's expected to be the tallest mass-timber building in the world when it's completed in Summer 2022.

@alycek.peterson

Partnerships, planning and perseverance are all critical components of a unique project in Milwaukee.

By Jim Villa, CAE

The footings are in. The foundation is coming together. And hundreds of wood beams await assembly into a new $125 million luxury residential building.

In downtown Milwaukee, Ascent is finally on the rise.

But this new mass timber composite tower, which will be the tallest of its kind in the world when completed in Summer 2022, has had a long climb just to get to this point. The three years of planning and legwork it's taken thus far are a testament to what it takes to build bigger and bolder in a commercial real estate market like Milwaukee, which has remained stubbornly conservative for years.

"The story with almost every innovative project is that no one knows exactly what the impediments are going to be when they're starting. But that's innovation, right?" said **Tim Gokhman**, managing director of New Land Enterprises, the developer of Ascent. "You take a risk, you're faced with challenges, and you figure out how to do it."

In solving the challenges thus far, Ascent has benefitted from close collaboration among the multiple firms working to move the project forward. New Land and Wiechmann Enterprises are the developers, with design led by Korb + Associates Architects, structural engineering by Thornton Tomasetti, timber sourcing by Timberlab, a Swinerton Company, and a joint venture of Catalyst Construction and C.D. Smith as general contractors.

Creating 'Something Truly Different'

New Land is no stranger to trying new things in residential development. For example, the company has been at the forefront of using efficient and space-saving hydronic radiant heating systems, which pump heated water from a boiler into tubing that is embedded into flooring. (These systems, which don't dry out the air and don't

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Ascent's seventh-floor swimming pool features operable floor-to-ceiling windows.

require ductwork, will be included in Ascent). But for this project, the developers wanted to do something else to set it apart.

"We looked at the marketplace and said, 'All right, we believe we have the best location. We think we have the best floor plans. But we want to make it bulletproof. How do we really make this building unique?'" Gokhman said.

The answer came in the team's growing interest in mass timber. **Jason Korb**, principal architect with Korb + Associates, had been looking for an opportunity to do a mass timber project ever since seeing a presentation by **Michael Green**, an early advocate of mass timber in North America.

As a result, Ascent, as Gokhman put it, will be "something truly different": a 284-foot, 259-unit luxury apartment tower with 19 of its 25 floors built primarily with cross-laminated timber (CLT). The CLT structure will sit atop a six-floor concrete podium (hence the "hybrid timber" designation) that will house parking and retail.

When complete, Ascent will surpass Mjøstårnet in Norway as the world's tallest mass timber building by four feet, according to the Council on Tall Buildings and Urban Habitat (CTBUH).

Mass Timber on the Ascent

CLT has been in widespread use in Europe for a decade, but the material is just beginning to take hold in North America. Timberlab is sourcing Ascent's columns, beams and floor slabs from a manufacturer in Austria that has been in the game for decades.

Proponents of CLT often cite its sustainability and aesthetics. The material comes from sustainably managed rapid-growth forests cultivated specifically for forestation, with the wood beams effectively capturing and holding carbon from the atmosphere.

For example, the wood that will go into Ascent will store carbon equivalent to taking nearly 2,400 cars off the road for a year, according to Thornton Tomasetti.

Ascent will be special not only for its height and materials, but also for its amenities and aesthetics. Residents will enjoy an interior highlighted by exposed wood beams and ceilings in all living rooms and bedrooms. They'll also take in city views from a seventh-floor swimming pool with operable floor-to-ceiling windows and a 10,000-plus-square-foot entertaining space.

This combination of innovation and amenities has attracted attention for Ascent from around the world, with presentations at the 2018 international Council on Tall Buildings and Urban Habitat (CTBUH) conference in Dubai, the 2019 international CTBUH conference in Chicago, and the 2019 and 2021 International Mass Timber Conference in Portland, Oregon.

The fitness studio at Ascent in Milwaukee will also be located on the seventh floor near the swimming pool.

The Lending Legwork

Until recently in Milwaukee and similar midmarket Midwestern cities, an unusual development like Ascent would not have gotten off the ground. Financing often proved a major hurdle.

The Ascent team struggled to convince investors that there was a market need for a high-end rental property. Initially, nearly all the potential lenders Gokhman met with had the same reaction.

"Investors weren't interested in Milwaukee," he said. "And that's not a Milwaukee-specific problem. That's a problem, obviously, if you're not in a primary market. But even if you're not in Denver, Austin or another hot market, like Nashville, the conversation becomes a lot harder when you're talking about doing something like this, because their question right away is, 'Well, who's going to live in it?'"

That question lingered throughout numerous conversations with lenders, although the team strongly believed in Ascent's potential.

Then in 2018, a different development helped open up the Milwaukee market and change people's minds. Northwestern Mutual's 34-story, $100 million 7Seventy7 building successfully brought a luxury high-rise apartment project to life in the city.

"People saw its success and thought 'we do need a product like that in the marketplace,'" Gokhman said.

But even with the newfound interest in luxury development, Ascent still faced plenty of hurdles. One of those, of course, was the challenge of going to market in early March 2020, heading right into what turned out to be a global pandemic.

There were also questions about the depth of the market. Potential lenders asked if 7Seventy7 had already filled the market demand. And that was only the beginning of the scrutiny the Ascent team would face.

"Financing projects that are over $100 million is a whole different ball game," Gokhman said. "You're dealing with lenders that have a different set of expectations, requirements and underwriting standards. And you start getting into metrics that you didn't necessarily have to deal with before, like debt yield. All the fact checking that goes into it, the amount of detail and documentation that you have to provide, is exponentially greater."

All the partners quickly aligned behind the need to come in especially well researched and well prepared.

"A big component of it is that you really have to be one or two steps ahead and try to anticipate all of the possible questions," Gokhman said.

That approach would be essential for another of Ascent's major hurdles: building code variances.

Inside the Code Complexities

The vision for Ascent pushed well beyond current building code limits for timber structures. Per the International Building Code Wisconsin utilizes, any timber building over 85 feet and six stories tall needs variances to move forward.

The primary issue? Fire prevention. The Ascent team would need to demonstrate that CLT could match the fire resistance of other materials approved for the height sought by Ascent.

The Ascent design team, headed by Korb, looked to build on the efforts of other industry innovators. Fire tests that had been done for a mass


Courtesy of C.D. Smith

A drone photo shows the Ascent construction site in Milwaukee during the early days of the project.

timber project called Framework — designed by LEVER Architecture and fully permitted but never built in Portland — laid the foundations for Ascent's variance campaign.

The Ascent team managed to win a federal grant from the U.S. Forest Service Madison Forest Products Lab for further fire tests, which were conducted in late 2019 at the Forest Products Lab and in Madison, Wisconsin, and observed by the Milwaukee Fire Department. Those additional tests demonstrated that the wood columns met the three-hour fire rating required by code.

Thanks to these relationships and the research, Ascent won its variance approvals from the city of Milwaukee in July 2020.

Mass Timber on the Upswing

Ascent, as well as the mass timber market in North America, appears poised to have a breakout moment. First implemented as a building material in the 1970s and '80s, mass timber is increasingly well-established in tall buildings in Europe and Australia.

But it wasn't until 2012 that CLT was used in North America. There are only 384 mass timber buildings in the U.S., according to New York Times reporting, but industry figures show 500 more mass timber buildings in development. The number of projects under construction could double each year to over 24,000 by 2034, according to the Forest Business Network.

However, the pace of construction could slow amid soaring lumber prices. According to Forbes, lumber futures increased 375% between April 2020 and April 2021.

And while many distributors of mass-timber products have their own forests, this young industry is still subject to larger market forces.

Greg Howes, the founder of Mass Timber City and CutMyTimber, told the sustainability website Treehugger that projects are being delayed because of high lumber prices.

"And of course, mass timber is being heavily impacted because it uses so much fiber," he said.

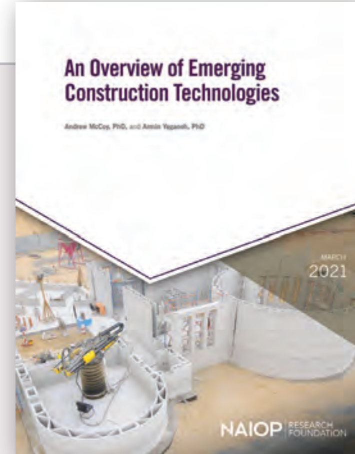
Despite that, **Anne Koven**, director of the Mass Timber Institute, told Treehugger that prices should come down eventually.

"Lumber prices have a very long history of being volatile, and spikes such as those we see today may affect short-term decisions," she said. "But in the long term, supply and demand come into balance so short-term spikes, either way, should not affect the long-term prospects of mass timber as a building material."

Sustainability is a Major Driver of This Growth

Significant amounts of greenhouse gases are emitted by the production of steel and concrete. Wood, on the other hand, stores carbon. In addition, the extensive off-site prefabrication of CLT and other mass timber materials dramatically reduces material waste and energy use at the construction site.

NAIOP Report Focuses on New Construction Technologies



The NAIOP Research Foundation's latest report, "An Overview of Emerging Construction Technologies," explores emerging construction technologies and their implications for the construction and real estate development industries. Authors **Andrew McCoy**, Ph.D., and **Armin Yeganeh**, Ph.D., draw from interviews with researchers and industry practitioners to evaluate the current benefits and limitations of new technologies.

To view and download the report, visit: naiop.org/Research-and-Publications/Reports/An-Overview-of-Emerging-Construction-Technologies

In addition, wood weighs less than concrete or steel, so building foundation sizes can be reduced, further saving on construction time, cost and emissions.

But perhaps even more important to the market is the environment *inside* a mass timber building. CLT beams are an ideal component of the biophilic design philosophy, which holds that incorporating natural elements in interior spaces enhances people's physical and emotional well-being.

The concept gained traction beginning in 1984 with the publication of "Biophilia" by Harvard biologist **Edward O. Wilson**. In the book, Wilson suggested that people are genetically predisposed to feel better in natural surroundings. Spending time in green spaces has correlated in multiple studies to less stress, stronger memory, and increased creativity and reduced symptoms of ADHD and depression.

Ascent residents will enjoy natural elements in nearly every space, with about half of the building's wood ceilings, beams and columns exposed (mostly in living areas).

"It's not just aesthetics," Gokhman said. "It's the feeling you get from being in a building that has texture, that has warmth, that has natural elements in it. You feel better in it."

The Value of Virtual Design and Construction

Even with the sustainability and quality-of-life advantages of mass timber, there is still the challenge of the additional cost of the material compared to steel and concrete. But mass timber has another advantage in the extensive off-site prefabrication it accommodates.

Through more than 50 meetings that included representatives from all the firms involved, the team has followed a rigorous virtual design and construction (VDC) process. They've built Ascent floor by floor, and not just the structure, but the HVAC and plumbing.

"It's double-check and triple-check, and a lot of coordination with structural engineers. You have all these different disciplines that you're trying to bring together in this model," said **Rich Severson**, VP at general contractor C.D. Smith. "It's about planning, visualizing and doing the entire building before you're actually building the building."

Before being shipped, most of the materials will be manufactured by computer numerical control (CNC) machines to exacting size specifications. The CLT slabs and glulam beams will be pre-drilled, so that all that's left to do on site is put them in place and apply fasteners.

"It's Lincoln Logs," Korb said about the build process. "Once they get above that concrete podium, basically, the superstructure goes up twice as fast as a normal building."

That speed is key to Ascent's cost competitiveness.

"That's how we overcome the hurdle, because our rate of productivity is higher," Severson said. "Our labor force is 700 proud, strongest in the Wisconsin market from a carpenter and ironworker perspective. And we're going to erect Ascent faster than anybody else can."

Until then, through another of the project's vital partnerships, the CLT beams are being stored at the Port of Milwaukee. And to further expedite the build process when that time comes, C.D. Smith has been in discussions with a tool manufacturer to help determine the best tools for the unique installation job.

The partnerships, planning and perseverance of the team all lead to the all-important bottom line.

"Ultimately, the cost is the same. That's the power of it, the only thing that will truly make it adopted by the mass market," Gokhman said. "There's no compromise on performance. There's no compromise in aesthetics. There's no compromise on the price."

Jim Villa, CAE, is the CEO of NAIOP Wisconsin.

CRE: Emerging Stronger After COVID-19

Eight Crucial Post-Pandemic Takeaways for the Industry

Getty Images

Building owners will have to create clean, safe environments to encourage workers to return to the office in the aftermath of the COVID-19 pandemic.

At a Glance

- Technology will play a key role in helping workers return to offices.
- The industrial market will be undergoing a lot of changes.
- Retail will require a great deal of creativity to remain relevant. ■

■ By Ron Derven

COVID-19 delivered a gut punch like no other to the commercial real estate industry last year, with transactions in the second quarter of 2020 plummeting approximately 40% over the same period in 2019.

By the fourth quarter of 2020, however, sales activity had nearly recovered, according to **John Chang**, director of research with Marcus & Millichap.

"Investors adapted to the new climate and devised new solutions to address the many obstacles to getting business done," Chang said. "Barring a new, severe and deadly outbreak, COVID-related challenges ahead will likely be speed bumps for the commercial real estate industry rather than roadblocks."

As vaccine distribution continues to ramp up and cases decline, here are eight key takeaways that developers and owners can use to get people back to work and play at their properties, to monitor how various asset classes are emerging from this catastrophe, and to mitigate the financial impact of potential future shutdowns.

CRE in the Next Five Years

As the pandemic recedes, what lies ahead for commercial real estate? Will it be a dynamic part of a booming economy or will the economy and CRE sink into recession once the massive federal stimulus packages have played out? Experts in the industry share their views:

Tom Weeks, Rockefeller Group: "I expect a strong backlash — in a positive sense — where most people want to make up for the time lost and return to a sense of living normally. This mind-set will impact all the places where people work, live or socialize. The best projects from that perspective have the potential to be even stronger than before. For similar reasons, people will be driven even more to work where they want to live rather than the reverse, making project location decisions even more critical."

John McDermott, SVN Chicago Commercial: "The next five years in commercial real estate may be one of the most interesting and transformative periods we will see, compared to the last 30-plus years. What we face globally today is not just economic; it is world health and the well-being of the entire human race — effectively all of humanity. That is a much different driver than sub-prime mortgages, trade wars, oil embargos, dot.com bubbles, stock market crashes, inflation, and even swaps and derivatives. This is now about life, survival and our personal well-being. Of course, with this new perspective of what is profoundly important comes a new view of real estate at every level. How we adjust, adapt, convert, demolish, build and develop both residentially and commercially will all be driven or affected by this new reality. Some new darlings of our industry will include: lab space, research and development facilities, high-tech manufacturing facilities, hospitals, medical offices, clinics, storefront medical services, ghost kitchens, drive-through anything, take-out and delivery restaurants and, of course, all businesses designing, creating and providing online services, Zoom meetings and virtual conferences."

Adam Weers, Trammel Crow: "We are extremely optimistic [about the next five years]. We feel there is a lot of opportunity remaining in many of the product types that we have been focused on in the past few years. Again, industrial tops our list. Multifamily is on that list as well. We also feel that office will present some great opportunities. There are also newer product types that we are interested in. Data centers and life sciences come to mind." ■

1. Use all available technologies to create safe and healthy environments in new and retrofitted buildings.

"Developers know what's top of mind right now — health, safety and wellness — factors that have to be woven more tightly into the mix of criteria that people base their real estate decisions on," according to **Tom Weeks**, executive vice president and head of development for the Rockefeller Group in New York City. "We are designing projects to meet that new reality."

John McDermott, executive director, SVN Chicago Commercial, an advisory and brokerage firm, added that new buildings must have superior HVAC and air purification technologies in place. In addition, he offered a shopping list of smart recommendations:

- Add A.I. and voice- or motion-activated electronics, which he said are key to reducing "physical touch points" in any building;
- Redesign restrooms to include double-swing entry doors so that occupants can use their bodies or arms to enter and leave the space, auto-flush toilets, auto water faucets, auto soap dispensers, auto towel dispenser, open

waste receptacles and touchless hand sanitizer dispensers;

- Design socially distant common areas and furnish them accordingly;
- Install automatic entry doors on buildings with temperature-taking capabilities nearby for admittance;
- Develop single-story buildings to avoid elevators;
- Install higher-capacity elevators in the case of multistory buildings, which could accommodate dividers within them for individuals;
- Install escalators.

Spencer Levy, global chief client officer and senior economic advisor for CBRE, agreed that changes related to clean air, improved janitorial services and touchless tech should be at the forefront of efforts to make buildings safer. He did, however, forecast a great change in what people consider "market-standard HVAC." Right now, "market-standard HVAC is considered forced air, which blows air around and in a space," he said. "Some of it is recirculated."

He anticipates a future in which more air will be recirculated to the outside of the space, not just on a closed-loop, inside-the-building basis. There are new systems coming in, one of which is hydronic HVAC, which pumps hot or cold water into the walls to heat and cool instead of forced air. Levy noted that some older buildings will not be able to be properly retrofitted, so they will be converted to another uses.

"Visit The New York Stock Exchange in Manhattan," he said. "Look around at the old office buildings around it. Many have been converted to multifamily and condos" because they could not be retrofitted.

Getty Images

The industrial segment underwent rapid changes during the past year, and more changes are on the horizon.

According to **Adam Weers**, COO of Trammel Crow, the company is building health and safety into projects that will come to market over the next two to three years.

"In the past year, we have intensely focused on indoor air quality," he said. "We are also focusing on touchless technology and how to design space more flexibly. We are adding additional outdoor spaces to our projects."

2. Design the workplace for a continually evolving workforce.

One of the most important insights gained from the pandemic is that employees want the flexibility to work from anywhere — home, the office, the outdoor amenity space or the coffee shop next door, said JLL's president of property management, **Mark Zettl**.

"What that requires on the back end for property owners and investors is an investment in digital infrastructure to support that flexibility to move about seamlessly," he said. "This was already on the horizon with 5G; however, the pandemic allowed us to beta-test the work-from-anywhere scenario and understand the exact needs of employees going forward."

There is a greater need for insights into tenants' philosophies, business structures and their intended use of space, according to SVN's McDermott. In addition to technology for seamless meetings between in-office and at-home workers, developers should consider a "great room," with social distancing capabilities for in-office meetings and a robust WiFi system for smoothly streamed Zoom meetings with remote workers, he said. At the same time, McDermott sees less need for conference rooms and meeting rooms. He said that coffee and food services facilities in the office need to be re-engineered for social-distancing considerations.

3. Diversify geographically and by product type to avoid being severely damaged by a local shutdown.

During the COVID-19 pandemic last year, cities like New York became virtual ghost towns overnight. Major city tenants began to look around for alternatives, according to **Ed Guiltinan**, senior vice president leasing at Mack-Cali.

"The pandemic has presented many challenges to companies with office space in Manhattan and caused many of them to consider leasing office space outside of the city as an alternative," he said. "Our properties in Jersey City, which is an urban market, are proving to be attractive opportunities for these companies."

Rockefeller Group, long associated with New York City, has nevertheless long sought to diversify by product type and geography to mitigate risk, according to Weeks.

"We do plan to be in suburban and more rural markets with some of our multifamily and industrial developments," he said. "But we also have three projects in the very early stages of planning that will have major office components, and they're all in urban core locations with some very familiar names — Denver, Washington, D.C., and Atlanta. We continue to believe in the future of urban centers, with the dynamism that people may crave even more following the pandemic, as well as all of the benefits downtowns provide like ease of access, workplace collaboration, culture and community."

Trammell Crow Company, which is also well diversified geographically, has a strong belief in the future of urban centers as well.

"We are particularly bullish on new development, particularly new office development at core urban infill sites," said Weers. "A couple of examples: we are currently about to break ground on a large build-to-suit here in Washington, D.C., for a government agency. In a couple of other markets like Dallas and Atlanta, we have spec office deals underway. In all these instances, they are core infill office development."

COVID-19 Pandemic and CRE: 'Acceleration of Trends' or a 'Distortion'?

Are the changes taking place in the commercial real estate industry today an "acceleration of trends" or a "distortion"?

Spencer Levy, global chief client officer and senior economic advisor for CBRE, is in the camp that it is a distortion.

"The reason I use the word distortion is because given the severity of the shock that we just went through — and we're still going through — you would have expected a much worse outcome," he said. "A worse outcome — not just for real estate — but also for the economy as a whole. The reason that the economy has not tanked is because more money has been pumped into it by the government on a real basis for COVID-19 than was pumped into it for World War II. That money has caused positive distortions."

What are those distortions?

"First and foremost, we saw very few corporate bankruptcies; we saw very few tenants go bankrupt, which stabilized occupancy in office; and we saw a boom in e-commerce — which is expected to continue — which has solidified industrial indefinitely," Levy said. "We have seen additional government support and multifamily buying, with a shortage of housing overall, which bodes well for that space over the long term."

That distortion, he continued, is impacting the cost and availability of capital.

"While we have seen a short-term rise in interest rates, we don't think interest rates will get past 2% this year or 2.5% in 2022," he said. ■

4. Approach lease negotiations with greater flexibility.

Developers and owners naturally want tenants to sign long-term leases on space, but the best strategy for new lease negotiations may be to offer greater flexibility to accommodate tenant needs and uncertainties, according to those interviewed. Weeks said there is no "one-size-fits-all" lease. He said that at the height of the pandemic last year, Rockefeller Group was still signing long-term office space commitments with growth-oriented technology companies, even as other companies announced decisions to sign short-term renewals until they could get more clarity on what was happening.

"As a landlord, we want to provide as much flexibility and responsiveness as we can, but we acknowledge that long-term leases have historically been in the sweet spot for return on investment (ROI) on the tenant side as well as for access to financing on the ownership side," he said.

TCC's Weers added: "It is a big deal for a tenant to make an office location decision. It is also a big investment for all sides — the tenant and the developer. If the tenant has a significant workforce and is making a significant investment, I don't think a short-term lease really works well."

Although CBRE's Levy acknowledged that U.S. developers and owners are concerned about leases getting shorter, he noted that the average lease in London has been reduced from 15 years to seven years over the past two decades, tenants have accepted them, and buildings have continued to increase in value.

One of the biggest changes in leasing that Levy has seen is the amount of flex space that large companies are opting to take.

"The biggest change will be that a larger percentage of the corporation's footprint will be in flex space rather than the direct lease," he said. "Prior to the pandemic, assume that 100% of the corporation's space was in 10-year — plus or minus — leases. Now it will be like 80% to 90% in 10-year leases and the rest in flex."

The greatest impact on leasing due to the pandemic may fall to retail leases. Levy expects changes not only in the length of retail leases, but also in the partnership relationship between retailer and landlord.

"That doesn't just mean percentage rent, which has been around for a long time," he said. "I think landlords will begin to participate in the internet sales in addition to base rent of their retailers in their trade zones."

5. Embrace better communications with employees, tenants and local municipalities.

As the full impact of the pandemic hit home last year, some developers and owners did not have effective systems in place to communicate with their tenants and local municipalities. Trammell Crow was one developer that bucked that trend.

"Clear, consistent internal and external communication was crucial," Weers said. "We were dealing with many situations that in some cases were changing by the hour. Our teams and our business units have strong relationships with municipalities. That allowed us to demonstrate that we were running operations in a safe manner that followed COVID-19 protocols."

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The retail sector, which struggled during the COVID-19 pandemic, will have to embrace creative solutions to remain viable.

6. Stay focused on the rapidly changing industrial market.

Industrial development is in an ideal place right now with e-commerce sales surging due to the pandemic, but it is not without its risks, and developers and owners need to focus on rapid changes taking place in the sector.

Weers is optimistic about industrial, but he does have a warning.

"Industrial has been evolving at an incredibly rapid pace, and it is continuing to do so," he said. "An example of this is the use of Sprinter vans (**see story, facing page**). The use and proliferation of that type of vehicle seems to be growing, and you need to be able to incorporate and adapt to it both inside and outside the building. Another example is electric charging stations. Even if we are not using electric semi-trucks today, you probably need to have the ability to put charging stations into the facility."

Weers said that there are changes taking place outside the warehouse as well. He said that the so-called hub-and-spoke model warehouse has been around for some time. In the past, the model was set up to transport goods from warehouse to store, a B2B model. Weers said that the model is quickly shifting to a B2C model with goods moving from warehouse to consumer.

"That changes where you want to put your spokes and even what your spokes look like," he said.

Supply risk will remain a threat to the performance of some industrial segments and areas as well, according to Chang.

"Big box facilities in intermodal/trans-shipping hubs could face development risk," he said. "Over the past two years, new supply has outpaced still-steady demand, resulting in rising vacancy rates. Smaller infill facilities and most port markets where there are greater barriers to development face less risk. Likewise, specialty industrial segments including data centers and cold storage will likely sustain strong market dynamics. Although industrial properties are currently a favored investment opportunity, close examination of potential local supply risk, obsolescence risk and long-term demand drivers will be important considerations for investors."

7. Anticipate continuous change in the retail sector.

Levy is expecting a great deal of creativity to flow from retailers post-pandemic.

"In those areas of New York and San Francisco that went dark, you will see some of the best, new (retail) concepts emerge," he predicted. "They will get into some of these spaces at rents that are much cheaper than they were before the pandemic."

On the other hand, there are many older retail properties that will simply have to be converted to other uses.

"These (older retail) buildings will be converted to live/work/play environments or they will be scrapped and become either pure industrial or 'four-wallers,'" Levy said. "What's a four-waller? It is a Lowe's, a BJ's Wholesale Club, a Sam's Club, a Home Depot, a food store with cold storage in the back."

According to Chang, the retail sector is once again demonstrating incredible resilience, though it still faces many challenges.

"Portions of the retail sector, particularly those that already faced severe challenges prior to the pandemic such as outdated shopping malls, will likely be candidates for adaptive reuse," he said. "Other retail segments such as grocery-anchored shopping centers and quick-service restaurants quickly adapted to the new climate. Entertainment, experiential retail and sit-down restaurants, the most favored segments of retail prior to the pandemic, still face an uphill battle, but the accelerating pace of vaccinations will likely ignite a wave of pent-up demand by summer."

Chang said that the combination of federal stimulus, more than $3 trillion of excess savings and renewed mobility will rapidly bolster retail and hospitality demand. Retail and hospitality real estate will take time to recover, but during the second half of 2021 these property types could make significant headway assuming vaccine distribution maintains momentum and remains effective, enabling people to move freely once again.

8. Look for hospitality to be the "comeback kid."

Hospitality is already coming back, according to CBRE. Vacation hotels are already at 80% capacity. Business hotels will likely come back at the beginning of next year. International hotels may take longest to come back.

"The beauty of the hotel business is also its weakness," said Levy. "The weakness of the hotel business is that the average lease is one night; the beauty of the hotel business is they're able to price their services down to zero (if necessary) to build back market share, and that's what you're going to see."

Levy said this dynamic is already happening on cruise ships.

"I went on a cruise ship website the other day and the price of a three-day cruise from Miami to the Bahamas was $200," he said. "With prices like that, people will get back on those boats as soon as they feel safe." ■

Ron Derven is a contributing editor for Development magazine.

New Warehouse Design Priorities: Sprinter Vans and Charging Stations

Over the past 10-15 years, Trammell Crow Company has designed warehouses to maximize efficiency and safety mainly for two types of vehicles: the traditional 53-foot tractor trailer and employee automobiles. A new focus for the company is on the best way to incorporate Sprinter vans into the facility as well as the placement of electric charging stations throughout the buildings, COO **Adam Weers** explained:

"How smaller-format delivery vehicles — i.e., Sprinter vans — operate in this environment is unique," he said. "Tractor trailers typically access the building by backing up to a loading door. Sprinter vans are more likely to drive into and through the building, entering and exiting in a different area. A tractor trailer could take hours, and sometimes days, to load and/or unload; Sprinter vans are often loaded in minutes. Getting these vans into and out of the buildings, while loading in a safe and efficient manner, is a more recent design challenge. These vans can also be harder to segregate from employee autos. Dimensionally speaking, Sprinter vans don't fit naturally in either traditional car or trailer parking areas, so new sizing standards for this van parking must also be considered. In pursuit of more sustainable business practices, many occupiers are opting to make many of these vehicles electric. Providing power to all parts of the site to allow for charging stations is another new design priority." ■

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Starting a Lab Facility:
A Primer for Real Estate Professionals

At a Glance

- The laboratory sector is among the fastest-growing in CRE.
- There are many different types of laboratories.
- Labs have construction requirements not seen in other property types.

Getty Images

Life sciences real estate in general, and lab space in particular, have garnered a lot of attention from investors since the start of the COVID-19 pandemic.

This fast-growing sector can be complex to navigate for developers.

By Daniel Castner, Brian Spence and Trevor A. Boz

The scientific research market has grown substantially over the past 10 years. With a global pandemic top of mind, investors are looking at the life science industry now more than ever.

This expanding market is evolving into one of the fastest-growing real estate investment sectors, yet some developers, investors and real estate professionals may be intimidated or confused by the complexities in site selection, design and construction of lab facilities. Familiarity with industry-related terms and a basic understanding of what is needed to develop a successful lab research facility are key starting points.

Scientific research requires an appropriate environment to conduct experiments, process data, foster collaboration and inspire creativity. Proximity to potential clients and talent, availability of public transportation, tax incentives, zoning restrictions and surrounding neighborhoods are intrinsic traits that must be considered when finding a suitable location to build a project. The configuration of the space can be adaptable to accommodate unknown needs of a program or a future tenant, or it can be targeted toward a specific type of science.

Types of Labs

Scientific research encompasses a wide range of disciplines requiring specifically designed environments to achieve success. Adaptability in a lab space is achievable, but it comes with financial and space implications. Advanced knowledge of the type of science and research being conducted allows for a targeted design process to create an efficient space that satisfies the program needs while allowing for future growth.

Chemical and biological matter are analyzed in wet labs to develop drugs and therapies. They require power, water, direct ventilation, and often specialized piped utilities and gases.

Biosafety labs (BSLs) are a type of wet research lab space used to study infectious substances. The labs must be designed to ensure the end user's safety. BSL-1 contains the least hazardous materials, while BSL-4 contains the most hazardous materials. Most biosafety lab spaces are either BSL-1 or BSL-2.

Dry laboratory space types are defined as laboratories that work with dry stored materials, electronics and/or large instruments with few piped services.

Vivariums are highly controlled animal research facilities. They require specialized, dedicated mechanical systems to eliminate external pathogens. Vivariums, and the animals within, require continuous maintenance and monitoring without disruption or downtime.

Clean rooms provide a hyper-controlled environment for research and can be custom built or manufactured to fit into an existing space. Cleanroom cleanliness is defined by the ISO 14644-1 standard and ranges from ISO Class 1 (the cleanest) to ISO Class 9 (least clean). Typical open lab space is considered ISO 9, and most clean room spaces are ISO 7.

Computational labs facilitate the use of computers to perform scientific research and data analysis. High-performance computing includes many scientific disciplines and may require intricate IT coordination, backup power and specialized temperature and humidity controls to support the research.

Zoning and Location Considerations

In the U.S., the scientific research industry spans from coast to coast, but the successful hubs thrive off centralized resources that provide an ideal environment for the industry. These hubs are often situated near award-winning hospitals and highly ranked educational institutions that produce successful research and large numbers of graduates in sciences. Some of the top hubs in the U.S. are the San Francisco Bay Area, Boston and San Diego.

Confirming that the building is within the correct zoning code is critical at the beginning of the planning process. Typically, cities that support life sciences have appropriate zoning regulations for biomedical facilities to be in manufacturing and light industrial districts, depending on the type of facility and its chemical and biohazard maintenance. However, New York City and Los Angeles, with a blend of mixed-use buildings and dense land use, have been working to create specialty districts to become life-science clusters that will generate a larger workforce and increase capital.

When determining whether to build a new space or renovate an existing space, it is important to keep in mind that new buildings allow the team to design and build without running into unforeseen issues caused by existing infrastructure. There is typically at least a 20% cost increase for renovation vs. a new build due to additional infrastructure modifications to accommodate mechanical and electrical systems for the research. The cost can be significantly more than

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Laboratory planning must factor in safety, security, waste management, storage and amenities.

20% if the space was not originally designed for scientific research or there are other factors like asbestos removal.

Building costs for research labs may vary significantly from region to region, depending on the cost of labor and availability of materials. However, overall, the construction cost for a lab fit-out may be two to three times the cost of office construction. Specialty laboratories such as BSLs, vivariums or clean rooms are typically at least five to six times the cost of an office construction fit-out. The greatest contributor to lab costs is the infrastructure that is required to support a functional laboratory space, including complex mechanical and electrical systems that can account for approximately 50% of the cost of the project. These systems can have extensive lead times and are often purchased during early bid packages to help expedite construction schedules.

Planning and Designing a Lab

Scientific discoveries expose new branches of research, and it can be difficult to predict what exact types of facilities will be needed. As a result, laboratory planning needs to factor in adaptability, and it must fully understand current trends and trajectories within the market. Regardless of the type of science being conducted, there are common approaches to lab design with key programming elements that can cover a range of research. Workflow, user needs, mechanical, electrical and plumbing (MEP) requirements, safety, security, waste management, storage and amenities are elements of the design that factor into the

This expanding market is evolving into one of the fastest-growing real estate investment sectors, **yet some developers, investors and real estate professionals may be intimidated or confused by the complexities in site selection, design and construction of lab facilities.**

adaptability and function of the research space.

MEP system infrastructure is a critical component of creating a successful laboratory project. System selection will have large impacts on cost, flexibility, performance and space within the building. With a known program, such as a single-occupant new build, systems can be appropriately sized to meet the needs of the research and can avoid oversizing, which becomes costly and inefficient to operate. With an unknown program, such as a developer spec lab building or a building designed for multitenant use or varying programs, assumptions must be made for appropriate air-change rates, the capacity for chemical fume hoods, and a strategy for routing and placing tenant-provided supplemental systems that require outdoor or roof space such as fans, process chillers or back-up generators.

It is typically more cost- and energy-efficient to have a single large central HVAC and electrical infrastructure within a building as opposed to multiple smaller systems. Large systems require less of a footprint for equipment compared to multiple smaller pieces of equipment. They also provide more vertical efficiency by requiring fewer duct and pipe risers in a multifloor building, achieve higher energy efficiency by more efficient components, and attain operational efficiency by having fewer pieces of equipment to maintain.

One disadvantage of large central systems is that they often require an entire system to run, even when a small portion of the building may require service. Laboratories using chemicals are required to be ventilated continuously; however, other portions of the building may

Getty Images

Plumbing considerations for labs must include connections for eyewash stations and other elements not typically seen in an office building.

be able to shut down when not in use. They are also usually designed to best satisfy the general need for the building and may not be suited to a tenant's specific needs, which would require specialty equipment.

The size of casework, equipment and MEP systems creates specific spatial requirements for research laboratory spaces. Design issues to consider include framing depth and floor-to-floor height. The ceilings height in labs should be a minimum of nine feet, and 10 feet where possible. Mechanical and structural space above the ceiling typically requires four feet to six feet of space, which results in a slab-to-slab height of roughly 16 feet. Other building considerations include slab thickness, which affects the trenching of utilities, and column spacing, which impacts lab casework and equipment layout.

The correlation between lab space, support space and corridors is a crucial factor that affects the overall efficiency of a building. The type of research and experiments performed will determine the best

Scientific research encompasses a wide range of disciplines requiring specifically designed environments to achieve success. Adaptability in a lab space is achievable, but it comes with financial and space implications.

use of space, whether the benches are located on the perimeter of the building to maximize daylight, or along the core of the building to access specific services.

Designing an adaptable lab space gives a tenant the option to reconfigure the space as needs change without having to undergo major renovations. The 11-foot planning module is common across the industry. It allows for two workspaces on either side of a five-foot aisle. Research laboratories that adapt to the evolving changes in science with a technology-driven focus will future-proof the research lab space. Digital technologies improve scientific workflow and innovation, and automation improves the quality, efficiency and safety of laboratory research.

Safety and Security

Safety concepts that are fundamental to research lab design include safe working zones, safety equipment, first aid stations, eyewashes at lab sinks, safety showers, the availability and use of biological safety cabinets (which are used to protect biological samples from contamination), fire extinguisher locations, air pressurization zones, and fume hoods for working with flammable and hazardous material. Safety showers should be provided approximately every 100 feet for use in case of a chemical spill on a person.

Research laboratories are considered a high-security risk. It is important to consider the specific vulnerabilities of the work conducted in the facility to establish a security plan for protecting valuable equipment, specimens, chemicals, staff and facilities. During early planning, security measures should be placed at building perimeters,

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HVAC systems in lab spaces typically have much higher requirements for filtration and air exchanges per hour than those found in office buildings.

primary and secondary building entrances, access points at each department and sensitive areas such as storage, management offices and waste-management areas.

Loading and delivery spaces should be placed strategically throughout the facility for easy access by all labs and workspaces. Storage planning can vary, with each department having its own storage spaces with appropriate locks or other forms of restricted access. Multiple storage closets may be needed to separate equipment or substances that cannot commingle with others or need specialized temperature and ventilation requirements.

Planning for waste management can vary depending on the type of research being conducted. If off-site management is needed, the lab needs to be located an appropriate distance from the treatment facility. If considering a lab without central accumulation areas, there should be multiple hazardous containers placed close to working areas in all labs for quick transfer of hazardous materials without cross-contaminating waste. Institutions with central disposal centers must prepare

Typically, cities that support life sciences have appropriate zoning regulations for biomedical facilities to be in manufacturing and light industrial districts, depending on the type of facility and its chemical and biohazard maintenance.

Building costs for research labs may vary significantly from region to region, depending on the cost of labor and availability of materials. **However, overall, the construction cost for a lab fit-out may be two to three times the cost of office construction.**

for the commingling of waste. Electrical systems should be non-explosive, and floors and containers should be conductive, grounded and bonded. Ventilation systems require appropriate customization, along with the utilization of fume hoods for sorting waste, appropriate fire systems, and sewage considerations to prevent contamination in case of spills.

Hazardous materials are produced and used in research laboratories, and their removal and remediation can be costly. Current environmental regulations state that a property owner will be held liable for the release of contamination caused by its tenant under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also known as the Superfund program). Property owners should therefore expect tenants to confirm compliance with the policies and guidelines of all applicable environmental agencies.

Space Types

Property owners can meet the demand for research space by providing laboratories on spec. The design of these types of labs assumes a typical program based on an understanding of the market and typical needs while understanding there is a level of risk and that some customizing will be required once a tenant is confirmed. Some companies are growing faster than construction can keep up with; facilities built on spec can fill the need for an immediate furnished space.

If providing multitenant space, property owners need to consider giving amenity spaces to attract new tenants. Open collaboration zones, terraces, outdoor gathering space, and opportunities for public dialog through gathering and small auditorium spaces are highly desired. Common eating areas and barista zones may also provide a backdrop for cross-collaboration between tenants. The ratio of collaborative space to the office/administrative zone is approaching a ratio of 3:4.

The potential program within the research zone must also be considered. The ratio of lab/lab support space vs. office/administrative space typically hovers around 1:1, although the ratio can range from 2:3 to 3:2. Within the lab zone, the typical ratio of open lab space vs. lab support space is 3:2. The ratio depends on the type of scientific research being conducted and the business strategy of the tenant, but current trends in specialty research will increase the need for lab support space.

Understanding the economics of prospective tenants is also a key factor for developers and property owners when determining the types of spaces to offer. Property owners can provide the infrastructure for some services that tenants cannot afford to build, or they can specifically build out these spaces and offer them as amenities to the tenant. These types of amenities can be offered in a communal area, at the back of the house, near the core or cellar, or potentially near a freight elevator.

Putting it All Together

The rapid growth of the scientific research industry has accelerated the demand for research laboratories in hubs across the country. Although the research conducted and the size of facilities vary, adaptability of space is paramount to the success and function of a research lab in a constantly evolving industry.

Research lab facilities inherently require more time and resources to develop compared to commercial projects; however, the contribution to the industry and the potential for multitenant success are drivers for the investment being made across the country. Starting a research lab facility requires careful consideration during the initial stages of development. By selecting a location, building a team, and applying sound principles of laboratory planning, it is possible to create efficient research and development buildings that can support, and inspire, the scientific community. ■

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Will Technology Impact Manufacturing Reshoring?

At a Glance

- Manufacturing is a much lower share of U.S. GDP than it was 50 years ago.
- Returning manufacturing to the U.S. involves supply-chain challenges.
- Technological advances could help reshore manufacturing to the U.S. ■

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High-tech manufacturing is returning to the U.S. after being outsourced to other countries for decades.

And what are the implications for industrial space demand?

By TJ Parker, CFA, CAIA

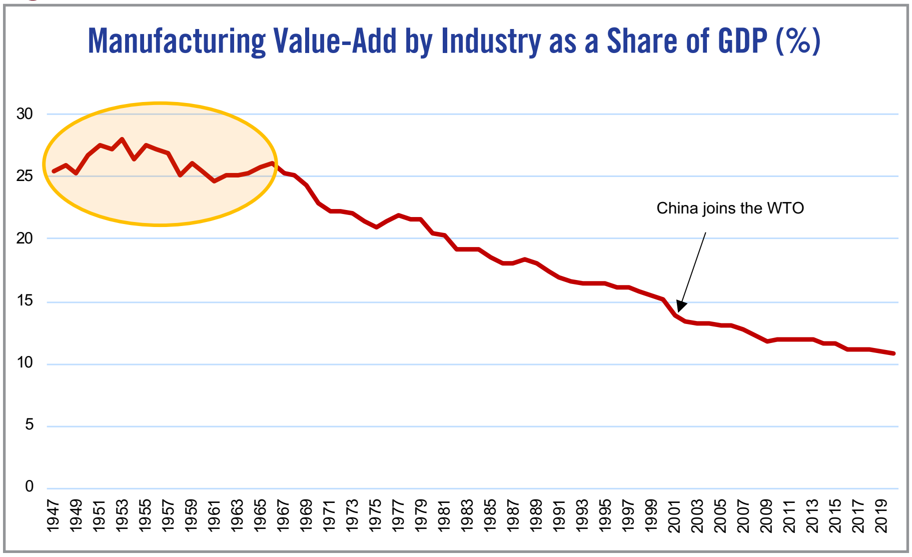
The U.S. manufacturing renaissance is an evergreen topic — and one that resurfaces every election cycle, given that the economic implications are so profound. This article examines the potential impact of technology on the reshoring of previously outsourced industries. It also looks at the history of domestic manufacturing, which can provide context for understanding what the future may hold.

Manufacturing accounts for only 11% of GDP today, but this was not always the case. For nearly a quarter of a century following World War II, the manufacturing value-add share of GDP remained relatively stable at around 25%, before gradually declining to its current value (Figure 1). A natural question arises: What was so unique about the postwar period and, more importantly, can the conditions for manufacturing primacy be replicated today?

The postwar economic expansion in the U.S. was unique in that it was a period of virtually uninterrupted economic growth — bringing about elevated levels of home and car ownership and record levels of durable goods purchases consumed by the baby-boom generation. That mass consumption, in turn, spurred the successful reconversion of several wartime manufacturing industries to civilian production. Scarce foreign competition and abundant, inexpensive sources of energy were factors that led to dominance and complacency in some domestic manufacturing sub-sectors. This was particularly true in the automotive industry, which ultimately made it more vulnerable to a challenging set of developments that followed in the 1970s.

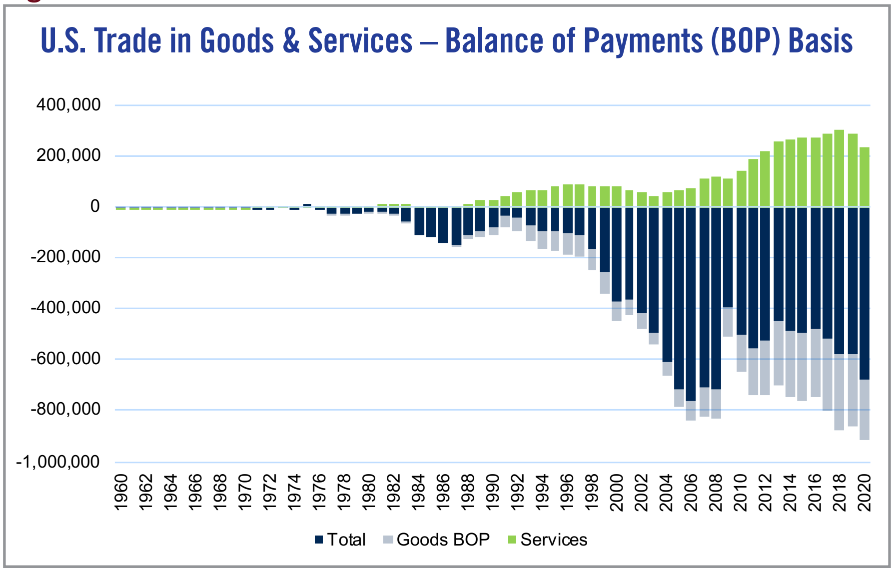
The 1970s brought with it several structural forces that went on to have a significant impact on the U.S. economy. First, the U.S. terminated the Bretton Woods system, which in 1944 set up the rules for financial relations among North America and Western

Figure 1



Source: U.S. Bureau of Economic Analysis (BEA): Underlying Detail of Economic Accounts Data [NAICS 2012], Barings Real Estate Research

Figure 2



Source: Census Bureau U.S. Trade in Goods and Services – Balance of Payments (BOP) Basis, Barings Real Estate Research

The postwar economic expansion in the U.S. was unique in that it was a period of virtually uninterrupted economic growth — bringing about elevated levels of home and car ownership and record levels of durable goods purchases consumed by the baby-boom generation.

Europe, Australia and Japan. This rendered the dollar a fiat currency and enabled the U.S. to indulge in deficit-financed consumption, which ultimately led to a persistent trade deficit (Figure 2).

Second, the U.S. became increasingly reliant on foreign oil. Along with this came explosive growth in the container shipping industry, which significantly expanded the scope of imports to the U.S. from low-cost production centers in Asia.

Finally, the U.S. re-engaged with China, which supported that country's ascendancy in global trade. These structural forces were too powerful for domestic manufacturing to contend with, resulting in a gradual demise in its primacy.

State of Domestic Manufacturing Today

Fast-forward to today, and although the U.S. has once again achieved energy independence, domestic manufacturers need to contend with a fresh set of challenges. In addition to the increased competitiveness of foreign producers — especially the dominance of China in the global manufacturing value chain — emerging markets are becoming attractive from both a production and a consumption standpoint.

Additionally, there are also several supply chain challenges that could accompany any sort of plant repatriation, as well as the more immediate concerns of costs, capacity and capability — which limit how quickly previously outsourced production can be reshored.

Given the limitations, the manufacturing sectors that will likely continue to grow are those where the U.S. has a comparative advantage. These sectors can be identified through the analysis of both employment and the value-added share of overall GDP across manufacturing subsectors.

Looking at employment trends first, total manufacturing employment indicates that domestic manufacturing is in a secular decline. However, the aggregate trend is not representative of developments within individual sectors. Food and beverage, for example, has gained in terms of employment, while apparel manufacturing has lost over 90% of its employment level since the 1990s. In contrast, some capital-intensive manufacturing sectors such as transportation equipment (which includes automobiles), machinery, and fabricated metals and chemicals (which includes pharmaceuticals) have gained employment in the recent economic expansion.

Unsurprisingly, analyzing the value-added share of manufacturing to overall GDP helps us identify some of the same manufacturing sectors that are reporting employment growth. Durable goods sectors such as computer and electronic products, fabricated metals and machinery, as well as non-durable goods sectors such as food and beverage and chemicals, are all identified as key contributors to manufacturing's share of economic activity.

Getty Images

Robotics play a crucial role in modern manufacturing processes.

The Importance of Emerging Technology to Manufacturing

This leads to the critical question: Can previously outsourced manufacturing industries such as apparel be reshored, and can the U.S. maintain its comparative advantage in other labor- and capital-intensive sectors such as food and beverage and computer and electronic products?

Consider the example of apparel. Although mass-market fashion brands and retailers are currently focused on low-cost production, technological advances and responsible consumerism could shift the value proposition away from costs and toward sustainability, flexibility and speed-to-delivery. For unit-cost savings to be realized under this new paradigm, technology will either have to make current processes more efficient or bypass inefficient processes altogether.

There are start-ups working on both solutions. U.S. companies such as Softwear Automation are attempting to completely automate the sewing process, for instance, while companies like Ministry of Supply are employing emergent technologies including gluing, bonding and 3-D knitting to make existing sewing processes more efficient. However, many of these technologies and start-ups are currently in the nascent stages, and therefore better suited to small-scale batch production than to mass production and commercialization, which are ultimately required to trigger a large-scale reshoring effort.

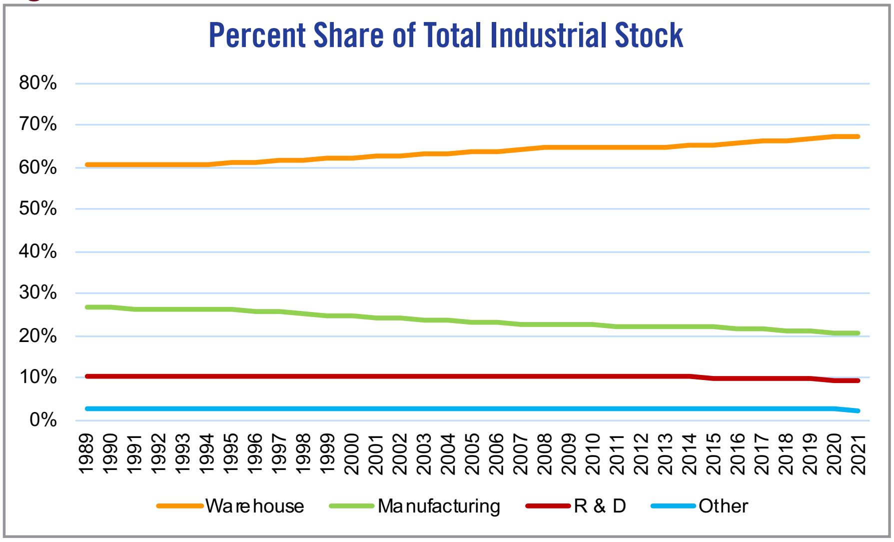
Technology is also making its mark in food & beverage, and it has the potential to help the U.S. maintain its lead in this labor-intensive manufacturing sector. The health risks associated with repetitive motion and heavy lifting were a concern prior to the pandemic. However, these concerns have now been overshadowed by the social distancing and hygiene considerations brought to the forefront by COVID-19. As a result, many leaders in this industry, such as Tyson Foods, have committed to investing in automated solutions.

But in some cases, smaller firms are leading the way. Gourmet food company Daniele Inc., which uses robots to perform most of the physical work in its plants, is an example. Other examples of successful automation come from related industries such as warehousing, where players like Ocado — a global software and robotics business that provides end-to-end solutions for online grocers — have shifted the value proposition of what technology can achieve.

Finally, in the computer and electronics industry, the U.S. is deliberating increasing the share of its semiconductor manufacturing. While the industry had largely outsourced production to overseas markets such as Taiwan, Mainland China and South Korea over the past several decades, recent trade tensions between Mainland China and the U.S. have increased government and private interest in reshoring previously outsourced chip fabrication. Intel's recent announcement to build two chip fabrication plants in Arizona is an example of this emerging trend.

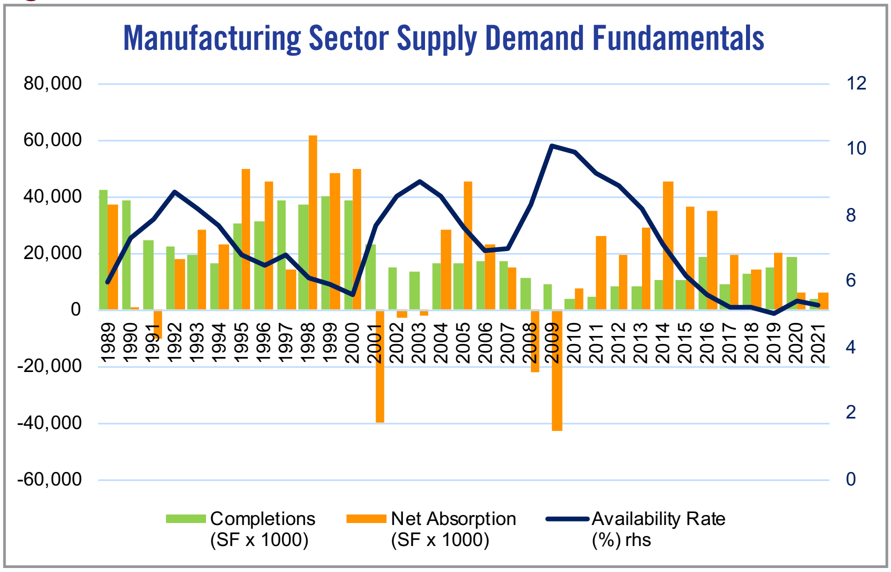
However, tech disruptions need to be assessed on a case-by-case basis — sometimes even within the same industry — and it is more likely that we will see technology-enabled scale and cost savings achieved in the medium- to long-run, rather than in the short run.

Figure 3



Source: CBRE-EA Q4 2020, Barings Real Estate Research

Figure 4



Source: CBRE-EA Q4 2020, Barings Real Estate Research

Fast-forward to today, and although the U.S. has once again achieved energy independence, **domestic manufacturers need to contend with a fresh set of challenges.** In addition to the increased competitiveness of foreign producers — especially the dominance of China in the global manufacturing value chain — **emerging markets are becoming attractive from both a production and a consumption standpoint.**

Implications for Commercial Real Estate

Against this backdrop, there are questions around the implications for commercial real estate, and specifically for the industrial real estate and manufacturing sub-sectors. Unsurprisingly, in terms of current inventory, the warehouse sub-sector accounts for almost 70% of the industrial footprint nationally, according to CBRE research. While flex/R&D and the "other" sub-sectors of industrial have maintained their share of overall industrial inventory, manufacturing has lagged in space additions and given up share of total industrial (Figure 3). Completions have also lagged demand in manufacturing over the last two decades, resulting in tighter space market fundamentals, most notably in the last expansion (Figure 4).

In addition to technology and the resulting investment in domestic CapEx to reshore, functional obsolescence also has the potential to drive additional space demand

This leads to the critical question: Can previously outsourced manufacturing industries such as apparel be reshored, and can the U.S. maintain its comparative advantage in other labor- and capital-intensive sectors such as food and beverage and computer and electronic products?

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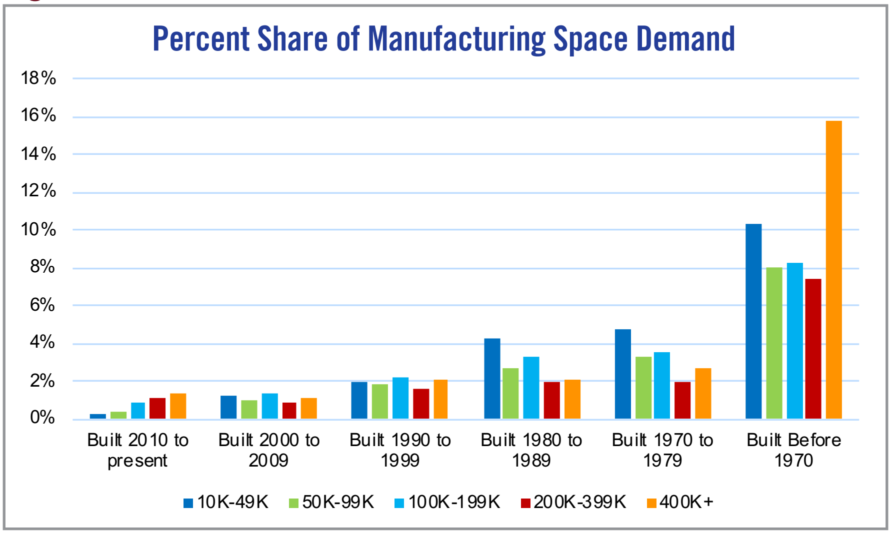
Global supply chains are facing greater scrutiny following disruptions caused by the COVID-19 pandemic.

Figure 5



Demand measured in square feet. Source: CBRE-EA Q4 2020, Barings Real Estate Research

going forward. As revealed in Figure 5, more than half of the national stock of manufacturing space is more than 50 years old. In addition, according to the Bureau of Economic Analysis, domestic investment by multinational companies has historically lagged investment in their foreign facilities, resulting in older equipment with lower productive capacity in outsourced industries. The emphasis on domestic manufacturing and the rapid pace of technological advances offers the opportunity for domestic manufacturers to invest in PPE that not only increases productivity but does so at lower costs — thereby increasing the value proposition of reshoring in some industries.

In conclusion, both structural and cyclical factors support additional space demand in the manufacturing sub-sector today, as well as in the warehouses that will be needed to accommodate the storage and distribution of any additional production. Developers and investors in industrial properties could benefit from focusing on these emergent trends. They could also diversify their industrial footprint by identifying and investing in both existing and new manufacturing bases that cater to this second production wave in select industries. ■

TJ Parker, CFA, CAIA, is managing director of real estate research with Barings LLC.

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Critical Supply Chain Considerations for Real Estate

Some sectors and industries are realizing opportunities and facing challenges resulting from the global disruption caused by the COVID-19 pandemic. In a session at NAIOP's I.CON Virtual 2020 in June 2020, speakers discussed successful industrial investment and lease decision-making, considering a multitude of factors.

"More than ever, real estate has to be connected to the needs of the business," said **Kevin Dollhopf**, vice president, global real estate & security with HanesBrands Inc. He is behind the real estate strategy for Hanes, which operates in 45 countries with 25 million square feet of supply chain space. "We spend most of our time trying to figure out how the consumer will transform next."

All panelists agreed that it's critical to consider the behaviors of consumers, listen to occupiers and understand what's driving their decisions around renewing leases or expanding for an effective supply chain strategy. The speakers landed on a few key themes that emerged during the pandemic.

Redundancy and Resiliency

Managing risk, in the form of increasing supply chain redundancy and resiliency, was a major topic of discussion.

"If a company was only bringing their goods in through the Port of Long Beach, they might now decide to diversify, and that will have an impact on their warehouse network and how they distribute goods," said **Taylor Malfitano**, vice president of national accounts with Link Industrial Properties.

What do resiliency and redundancy look like currently, and how do you set up a supply chain if a major disruptive event happens again? All speakers agreed that they foresee an increase in reshoring and onshoring.

"The preliminary conversations we're having with clients about moving manufacturing into the U.S. is happening across all product types," said **Tray Anderson**, logistics & industrial services lead — Americas with Cushman & Wakefield.

Dollhopf also pointed out that globalization may be waning — countries are becoming more protectionist, and tariffs are increasing.

"There will be some significant onshoring so companies can ensure a supply to their customer base," he said.

Malfitano said he doesn't see major trade routes changing, or companies exiting major players like China completely, but rather diversifying.

Flexibility

Another buzzword among the group was flexibility. For example, Hanes did not have a PPE business at the height of the pandemic. But the company expected that it would manufacture more than 1 billion protective face masks by the end of 2020.

"We've adjusted our entire supply chain in the face of COVID-19," Dollhopf said.

Now the issues the company faces from a supply chain standpoint are: What will happen to that new business unit? Will demand peak and stop? The answers to these questions all have tremendous implications for the supply chain and where to make capital investments.

Pre- and post-COVID-19, ROI is always key – but where that ROI is sourced has changed over time.

"We're hearing more about the right mix of CapEx and flexibility – the ability to ramp up when needed and scale back down," said **Bryan Jensen**, chairman and executive vice president, St. Onge Company.

"Cost is always going to be an important driver but [occupiers] are also looking at the big picture – the long-term horizon, operations costs, and the ability to shift quickly, as they've had to this year," said Anderson.

"Real estate is typically a long-term play, but businesses want more and more flexibility," agreed Dollhopf.

Labor and Automation

While automation is often cited a potential solution or stopgap for a labor shortage, Jensen discussed some automation being more effective in a complimentary role — "automation as assistant" — in the form of Automated Guided Vehicles (AGVs), for example.

"When you bring in robots vs. labor, it comes down to which is most effective for distributing your product while still being cost-effective," he said. "I think the picking robots aren't there yet — you still need people to look, see the product and make decisions."

Regardless of how things unfold in the aftermath of the COVID-19 pandemic, it's likely that all industrial space users and investors will be approaching their supply chain decisions differently moving forward. ■

— **Brielle Scott, NAIOP communications senior manager**

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- Acquisitions
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Biden's Infrastructure Policies Would Transform Post-Pandemic Economy

The 10-year, $2.65 trillion plan goes far beyond "roads and bridges" and would impact many industries, including commercial real estate.

By Aquiles Suarez

In March, the Biden Administration unveiled its proposal to increase federal investment in the nation's infrastructure. The plan amounted to a 10-year cost of nearly $2.65 trillion, according to estimates by the Committee for a Responsible Federal Budget. The proposal sought not only to fund infrastructure, but more importantly, to transform the U.S. economy in the aftermath of the COVID-19 pandemic and achieve broader policy goals envisioned by **President Biden**.

The economic dislocation caused by the pandemic focused attention on issues of income inequality, the vulnerability of supply chains for drugs and other goods, the lack of internet access for many, and other issues that have long been policy priorities for the Democratic Party. Coupled with initiatives designed to combat climate change, the urgency to address issues highlighted by the pandemic provided a rationale for the Biden team to go beyond the traditional "roads and bridges" definition of infrastructure and push for a more expansive program.

The resulting proposal, named the American Jobs Plan, includes numerous policy initiatives which, if enacted, would have far-reaching implications for the nation's industries. For commercial and residential real estate,

Getty Images

President Biden's American Jobs Plan includes $300 billion to strengthen manufacturing supply chains for critical goods.

three areas in particular illustrate its potential impact. These include policies aimed at promoting domestic manufacturing and addressing supply-chain issues raised by the pandemic, infrastructure investments to increase energy efficiency in structures, and funding for infrastructure needed to transition to a carbon-neutral, "clean energy" economy.

Increasing American manufacturing and measures to promote the resiliency of supply chains will impact the commercial real estate industrial sector, affecting warehouse production and distribution. The Biden plan proposes $300 billion to strengthen manufacturing supply chains for critical goods, including allocating $50 billion to create a new office at the Department of Commerce dedicated to monitoring domestic industrial capacity, and funding investments to support critical goods. The plan would provide $50 billion to invest in semiconductor manufacturing and research. Biden is also calling for Congress to invest $52 billion in domestic manufacturers, including specific supports for modernizing supply chains, such as in the automobile sector.

Increasing American manufacturing and measures to promote the resiliency of supply chains will impact the commercial real estate industrial sector, affecting warehouse production and distribution.

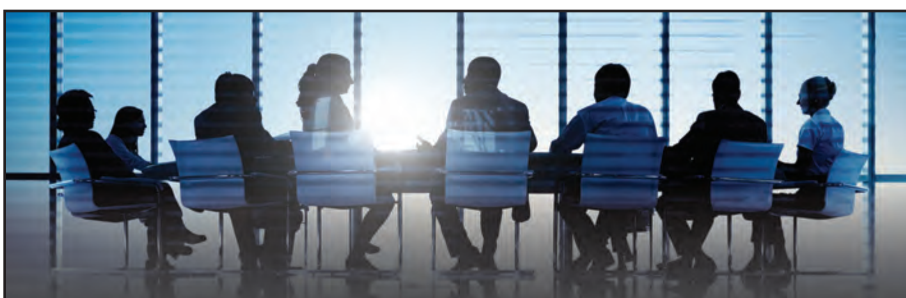
Reducing energy usage in the building sector is another goal included in Biden's infrastructure plan, in keeping with the broader aim of reducing carbon emissions and addressing the

Reducing energy usage in the building sector is another goal included in Biden's infrastructure plan, in keeping with the broader aim of reducing carbon emissions and addressing the effects of climate change.

effects of climate change. The Biden administration proposes to produce and retrofit two million homes and commercial buildings, with a particular emphasis on building affordable housing. It proposes extending and expanding home and commercial efficiency tax credits and provides $27 billion for a "Clean Energy and Sustainability Accelerator" with the aim of increasing private investment in retrofits of residential, commercial and municipal buildings, among others.

While not initially included in the original proposal, bipartisan legislation introduced in Congress and backed by NAIOP would establish a 10-year accelerated depreciation period for energy-efficient qualified improvements to commercial buildings — a proposal that could be incorporated into an infrastructure bill as it advances through Congress.

Finally, consistent with the goal of transforming to a carbon-neutral, "clean-energy" economy, Biden's infrastructure plan would provide $174 billion to invest in the expanded use of electric vehicles (EVs). This would include consumer rebates for purchasing EVs, funding to build 500,000 new charging stations, as well as replacing and electrifying the federal vehicle fleet. Coupled with an additional $400 billion in clean energy tax credits to hasten the economy's transition, the strong push toward EVs will inevitably be felt in the commercial real estate



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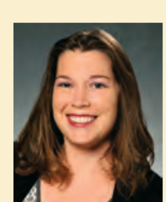

Celeste Tanner
Chief Development Officer, Confluent Development
2021 Chair, NAIOP National Forums
Member, Office Development II Forum

industry, with the provision of electric vehicle charging stations possibly becoming a tenant demand of office developers.

States and localities could find their regulations governing commercial vehicle traffic to warehouses or industrial properties outmoded. For example, California air-quality regulations mandating reductions in the hours of operation for commercial trucks would be unnecessary as more of these are replaced by electric vehicles.

States and localities could find their regulations governing commercial vehicle traffic to warehouses or industrial properties outmoded. For example, California air-quality regulations mandating reductions in the hours of operation for commercial trucks would be unnecessary as more of these are replaced by electric vehicles.

Of course, many of the Biden proposals in the American Jobs Plan will face resistance, particularly in the Senate, and it will be a challenge for Biden and congressional Democrats to navigate the plan through Congress if they refuse to concede enough ground to win over Republican support. House Speaker Nancy Pelosi (D-CA) has set July 4th as the target date for passage of a bill by the House of Representatives, with the hopes that the Senate could then pass a bill by the August congressional recess.

More likely, some version of an infrastructure bill will be sent to President Biden's desk in September. In all likelihood, that legislation will contribute to shaping the post-pandemic commercial real estate market for years to come. ■

Aquiles Suarez is NAIOP's senior vice president for government affairs.

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Chapter Profile: NAIOP San Francisco Bay Area

The global tech and life sciences hub continues to see significant investments despite the pandemic.

By Trey Barrineau

"The Bay Area is where intellectual capital meets venture capital," says NAIOP San Francisco Bay Area President **Adam Lasoff**, managing director in the San Francisco office of JLL Capital Markets Americas.

The region is world renowned as a hub for technology and life sciences, and the intense focus on investment in those sectors has a huge impact on real estate development around San Francisco and Silicon Valley.

Of course, the CRE industry is important to California's economy as a whole. According to NAIOP's "Economic Impacts of Commercial Real Estate 2020" report, commercial real estate contributes $34.5 billion to California's GDP, generates $13.6 billion in wages and salaries, and creates or supports more than 235,000 jobs.

Lasoff spoke to Development magazine about commercial real estate in the Bay Area.

"Longer term, the city of San Francisco policymakers and voters continue to show a propensity for raising taxes and increasing regulations on business and commercial real estate."

— Adam Lasoff, president, NAIOP San Francisco Bay Area

Development: *How are the market conditions for member companies in the Bay Area?*

Lasoff: The major tech companies continue to hire in the Bay Area. According to EMSI hiring analytics, job postings for Facebook, Amazon, AirBnB, Apple, Alphabet, Netflix, Salesforce, Square, Nvidia, Intel, Tesla, Twitter, Microsoft and Pinterest have actually increased compared to the fourth quarter of 2019. In fact, there were approximately 20,000 job postings for technology, sales and management positions in the Bay Area in Q4 2020 compared to 19,000 for Q4 2019.

Through the fourth quarter of 2020, Bay Area start-ups received $47.1 billion in venture capital (VC) investment, approximately 42% of total VC domestic spending. On the exit side, 44 firms went public in 2020, realizing a market cap of over $225 billion. While the stock market is not a reflection of the economy, it does boost a company's capacity to invest and grow. It also results in considerable dry powder for its investors (i.e. VC houses), enabling them to re-invest their returns into additional start-ups. They are likely to take on new ventures, and a good share of their "winnings" will likely be invested in the Bay Area.

Development: *What are the challenges you're facing in either the business or regulatory climate in California and the Bay Area?*

Lasoff: Near-term challenges relate to reconciling and grappling with the many inconsistencies between local and state orders and requirements in connection with the COVID-19

"Our chapter is making a renewed focus on outreach and relationships with local policymakers, especially in the city of San Francisco."

— Adam Lasoff, president, NAIOP San Francisco Bay Area

pandemic (i.e. time periods on eviction moratoriums, safety and health regulations required by landlords, etc). Longer term, the city of San Francisco policymakers and voters continue to show a propensity for raising taxes and increasing regulations on business and commercial real estate. This past November, three new taxes were levied that will have a significant impact on the climate of local business and, as an extension, commercial real estate. San Francisco's Proposition I increases the transfer tax rate on real estate sales and leases of 35 years or more to 5.5% for transactions between $10 million and $25 million and to 6% on transactions of more than $25 million. Proposition L adds a gross-receipts tax on companies whose CEOs earn more than 100 times the median employee salary. Proposition F increases the tax rates for the existing gross-receipts tax that the city imposes.

Development: *During the height of the pandemic, there were a fair number of media reports that suggested investment might flee urban areas like San Francisco. But in early March, Kilroy Realty sold The Exchange building in San Francisco for $1.1 billion. At $1,440 per square foot, it was the highest price ever paid for a major*

Getty Images

Despite many challenges brought about by the COVID-19 pandemic, San Francisco remains a global center for research in technology and life sciences.

property in San Francisco. Is that a sign that investment remains strong in the Bay Area?

Lasoff: The fact that a major institution invested over $1 billion in one fell swoop should imply that San Francisco continues to be top global gateway market. It also underscores the fact that the West Coast office REITS continue to be undervalued based on where their assets are trading in the private market.

Development: *What are the big opportunities in commercial real estate in the Bay Area right now?*

Lasoff: We see the life sciences sector benefitting the most in the near term. While Boston has the highest concentration of life science workers as a percentage of the workforce, the Bay Area has the largest number of workers with over 130,000. It ranks second in National Institutes of Health funding behind Boston with $1.6 billion in investment but first in private investment with over $21 billion in investment over the last five years. Successful biotech IPOs have only accelerated private investment in life sciences with $3.1 billion invested in Bay Area companies in the third quarter of 2020 alone. We are the tip of the spear in the life science cycle and expect to see sustainable tenant demand both in the Tier 1 locations (i.e. the Peninsula and East Bay) along with new pioneering locations in both San Francisco and Silicon Valley.

Development: *What are some of your legislative priorities?*

Lasoff: Our chapter is making a renewed focus on outreach and relationships with local policymakers, especially in the city of San Francisco. We have engaged hometown public relations expertise and partnered with the local Chamber of Commerce on certain initiatives to help drive support for small businesses. We feel that proactively meeting with local policymakers to introduce our organization and tell the story about who we are as a commercial real estate industry is the best way to get a seat at the table that ultimately will drive policies that support real estate and the wider business community.

Development: *Education is an important part of NAIOP's mission. Have there been recent educational sessions specific to the Bay Area or your chapter recently?*

Lasoff: In April 2020, our chapter launched a robust and popular new program called the "NAIOP SFBA Zoom-in Webinar Series." In 14 one-hour webinars, we have featured 46 highly respected local industry professionals leading critical dialogues around the topics on everyone's mind related to the public health crisis and its impact on our industry. Topics included San Francisco Bay Area office leasing, capital markets, debt markets, local retail leasing, life sciences and many more. We are looking forward to continuing to provide these unique local insights for our members in 2021. ■

"We are the tip of the spear in the life science cycle and expect to see sustainable tenant demand both in the Tier 1 locations (i.e. the Peninsula and East Bay) along with new pioneering locations in both San Francisco and Silicon Valley."

— Adam Lasoff, president, NAIOP San Francisco Bay Area

Trey Barrineau is the managing editor of Development magazine.

Shedding Light on Development Approvals

A new tool helps real estate professionals compare local permitting processes.

By Jennifer LeFurgy, Ph.D.

Obtaining permits and entitlements is a critical and often complex step in the development approvals process. It often requires a substantial investment of time, effort and money, and it can present significant risks for investors. Fees, delays, lack of information and uncertainty can cloud the process and, in some cases, deter development and lessen a jurisdiction's economic competitiveness. The pandemic stalled or forced online many municipal services, which added to existing complications. A NAIOP member survey earlier this year indicated more than 60% of developers reported added delays in obtaining permits and entitlements.

The NAIOP Research Foundation recently commissioned the creation of an index that allows commercial real estate professionals to compare development-approvals processes in different jurisdictions. The tool, which is highlighted in a new NAIOP Research Foundation report entitled "The Development Approvals Index: A New Tool to Evaluate Local Approvals Processes," can help developers "make more informed decisions and helps local governments benchmark their processes against neighboring jurisdictions."

> **The index is designed to be used by commercial land use professionals in the private and public sectors. NAIOP chapters and members are encouraged to fill out the index and share their findings with the NAIOP Research Foundation, their local planning agencies and economic development authorities.**

Author and NAIOP Research Foundation Distinguished Fellow **C. Kat Grimsley**, Ph.D., researched existing methods for evaluating development approvals, examined local approval processes, and interviewed NAIOP chapter executives and developers. The report describes the methodology, provides instructions on using the index, explores its potential applications and includes a pre-formatted Excel spreadsheet with data inputs for up to five jurisdictions.

What to Expect from the Index

The index is designed to be used by commercial land use professionals in the private and public sectors. NAIOP chapters and members are encouraged to fill out the index and share their findings with the NAIOP Research Foundation, their local planning agencies and economic development authorities. It should be noted that the index collects data around building plan reviews, permitting and inspections (zoning approvals were intentionally left out for simplification purposes), but it can be used for any product type.

Using the provided Excel spreadsheet, an individual can input data on several performance metrics (e.g., fees, review process, staffing levels) from readily available public sources, preferably jurisdictional websites. Using online data rather than telephone calls or working from memory improves the index's accuracy and helps determine informational availability. If certain information is not easily available, it should be included on the spreadsheet. The results are then automatically scored, weighted and sorted according to each jurisdiction's approval processes' transparency, accountability and consistency.

Any jurisdiction can be indexed. For example, suppose a developer is curious about permit approvals in different markets. In that case, information from Dallas, Phoenix and Las Vegas can be entered and analyzed. Similarly, an economic development agency can see how local regional jurisdictions compare. It is estimated that it would take about an hour or less to complete the information for each municipality, depending on how easily they make the information available.

Get the Report

To view and download "The Development Approvals Index: A New Tool to Evaluate Local Approvals Processes," visit naiop.org/Research-and-Publications/Research-Reports. ■

In Memoriam – Byron Pinckert


Byron Pinckert

Byron Warren Pinckert, husband, father, architect and novelist, passed away on March 3, 2021, in Long Beach, California. Pinckert was the author of both editions of NAIOP's influential publication "Rules of Thumb for Distribution/Warehouse Facilities."

Byron was born on September 28, 1950. After graduating in 1968 from Pacific High School in San Bernardino, California, he earned a bachelor's degree in architecture from the University of Southern California (1968-1972), followed by a master's degree in architecture (MArch) from Harvard University Graduate School of Design (1972-1975).

In 1980, Byron and **Dennis L. Hill** formed their own architectural firm, the Irvine, California-based HPA, focusing on commercial buildings. They sold the firm in 2008 to the current partners, and Byron continued at HPA, maintaining an active role in design and teaching. The firm has currently designed more industrial facilities than any other architecture firm in the country.

Byron is survived by his wife **Nancy Tormey Pinckert**, his daughter **Virginia Christine (Ginnichris) Pinckert**, his son **Dylan Warren Pinckert**, his sister **Toni Pinckert Bancroft (Robert)**, his half-brother **Warren E. Pinckert Jr. (Connie)**, and half-sister **Pam Borell**.

The family suggests that donations be made to the General Fund of Westerly School of Long Beach, California, in Byron's honor. ■

Conversation Catalyst

The index is not intended to solely rank or "report card" municipalities. Instead, the data-collection process and results can enhance public- and private-sector knowledge about approval processes and lead to conversations about what aspects could be improved and what is working well. Jurisdictions can use index results as an objective benchmark to track improvements to their processes, while developers, economic development authorities and other groups can advocate for best practices in their local jurisdictions. For example, if a municipality's website does not contain much of the information needed to complete the index, it can spark a conversation or recommendations about improving online guidance for approvals.

The index can be shared publicly or used internally. NAIOP chapters can ask their members to complete the index and then discuss the findings at a local meeting. The index can also be filled out by real estate students and used as an educational tool.

Many developers would like to have a clearer picture of what they can expect when interfacing with jurisdictions, and the Foundation's Development Approvals Index can help. NAIOP members can play a leading role in the adoption of the index and can help guide its future use. The index will continue to be refined and adjusted according to feedback. Please contact **Shawn Moura**, Ph.D., research director at NAIOP, regarding questions or comments about the index. ■

Jennifer LeFurgy, Ph.D., is the vice president for Knowledge and Research at NAIOP.

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Survey Shows Progress in Diversity Efforts in Real Estate Investment Management

However, a lot of work remains despite tangible advances in recent years.

By Trey Barrineau

Women and minorities have made some progress in reaching the C-suite in commercial real estate investment management firms during the past few years, but the 2021 NAREIM Diversity & Inclusion Survey shows that there is still a lot of work to do.

"Material, sustained changes will take time to show through in the data," said **Zoe Hughes**, CEO of NAREIM, in a release. "But what is clear is that there is a mandate and momentum for DEI (diversity, equity and inclusion) to be a priority within the real estate investment management industry."

The survey, conducted by NAREIM and executive recruitment firm Ferguson Partners, reveals that the real estate investment management industry as a whole is mostly male and white. Men, who are 49.2% of the U.S. population according to U.S. Census, comprise 60% of full-time employees in the real estate investment management, and non-Hispanic whites, who are 62.8% of the U.S. population, represent 73% of workers. (Blacks make up 6% of the industry, while Asians and Hispanics each represent 10% of CRE investment-management staffing.)

However, despite strides in recent years, C-suite jobs remain heavily skewed toward white men. The survey shows that women and minority professionals each compose 15% of executive management positions in real estate investment management. In 2016, NAREIM's survey showed that women held 12% of executive positions and minorities represented 10% of C-suite positions. Since a previous NAREIM survey in 2017, women increased their representation in C-suite jobs by 25%, while minorities saw their executive representation grow by 50%.

"You are not going to flip on a light switch and overnight have a materially more diverse industry, but you are seeing the right steps take place to move in that direction," said **Erin Green**, managing director at Ferguson Partners, in a release.

While there is plenty of room for improvement, the real estate investment management industry appears to be committed to change. The 2021 NAREIM survey shows that 96% of respondents have a DEI program or initiatives to improve DEI within their organizations, and 71% of participants

"Material, sustained changes will take time to show through in the data. But what is clear is that there is a mandate and momentum for DEI (diversity, equity and inclusion) to be a priority within the real estate investment management industry."

— Zoe Hughes, CEO, NAREIM

Other Voices

The 2021 NAREIM Diversity & Inclusion Survey held a series of conversations with real estate investors on how they are approaching diversity. Here's a sample of the comments:

"You're not going to, all of a sudden, create a field of female and diverse middle or senior management. You've got to start at the bottom, at the analyst level, and grow them internally." — **Christina Scarlato**, Principal Portfolio Manager for Real Asset Investments, The World Bank Pension Fund

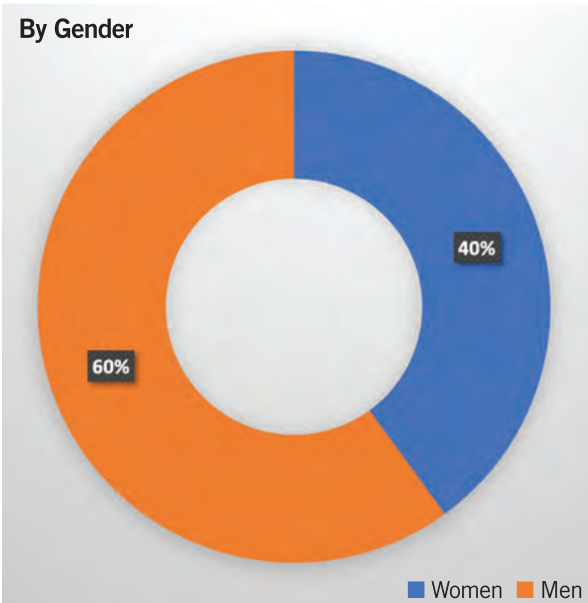
"We don't think that diversity in investing is just about firms satisfying an ownership percentage threshold. However, we do like to see a diverse person in the ownership structure. We do care about them having a seat at the table and a voice in decision-making." — **Alisa Mall**, Managing Director of Investments, Carnegie Corporation of New York

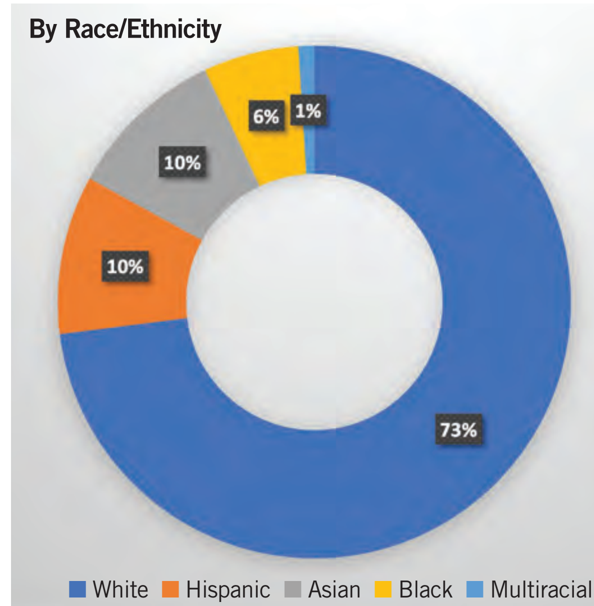
"This isn't just some 'social do-good.' You can truly add alpha and value to your portfolio by focusing on these issues. And it behooves us to pay attention and make sure we're not missing something." — **Bob Sessa**, Director of Real Estate, Employees Retirement System of Texas

"We ask for pictures of the management and investment teams when they come and present to us, whether an existing or a potential relationship. It helps us identify the people who work on our account, which was the original goal; however, we have now found that it also lays out for all to see the diversity of the team — or lack thereof." — **Mike DiRé**, Director of Real Estate Investments, California State Teachers' Retirement System (CalSTRS)

Breakdown by Gender, Race and Ethnicity in 2020

The 2021 NAREIM Diversity & Inclusion Survey revealed that women represented 40% of full-time employees within real estate investment management organizations compared to 39% in 2017. Almost three-quarters of the industry is white, largely unchanged from 2017.





Source: NAREIM Diversity & Inclusion Survey 2021

said they have staff dedicated to DEI, either via specific job roles or through employee committees. In 2017, just 37% of survey respondents said they had such programs in place.

The survey also highlights the goals of these DEI programs. It shows that 78% of respondents are seeking a greater number of diverse employees, 72% are in search of a more diverse management team, and 51% want more leadership roles for women.

For the first time, the survey measures gender disparities across job functions at real estate investment management firms. For example, roles such as human resources, administration, and corporate marketing, PR and communications skew heavily female, while roles such as acquisitions, portfolio management and research skew heavily male. Job functions such as sustainability, finance and accounting, legal and compliance, and capital raising and investor relations show greater gender balance.

The 2021 NAREIM Diversity & Inclusion Survey goes beyond demographic measurement to examine the impact of diversity on the bottom line. This was done through exclusive interviews with representatives from investment firms.

GCM Grosvenor Managing Director and Head of Real Estate **Peter Braffman** said his research, which compared the performance of diverse real estate investment managers against the Burgiss real estate benchmark, found that "there was no sacrifice of performance from an investment in diversity," according to the report. Additionally, diverse real estate investment managers outperformed two well-known metrics used to calculate return on investment, internal rates of return (IRR) or multiple on invested capital (MOIC), in six out of the seven years between 2012 and 2018.

"As an industry, we need to demystify the notion that if you're investing in emerging or diverse managers, you're limiting your subset and therefore you're sacrificing performance," Braffman said. "This blanket statement is out there. But it's just not true."

Suzanne Tavill, global head of responsible investing at the StepStone Group, said that focusing on diversity can be a long-term investment in an organization's decision-making process.

"We believe strongly that to make effective investment decisions in a sustained manner, you have to have a broad funnel when sourcing your team and curating a diverse team," she said.

The 2021 NAREIM Diversity & Inclusion Survey was conducted between September and November 2020, comprising 74 organizations representing more than $2 trillion of assets under management. ■

Trey Barrineau is the managing editor of Development magazine.

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

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Current and past issues are available online and are mobile-responsive for those who want to read Development magazine on-the-go.

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The Chair's Outlook

Like every organization, NAIOP pivoted throughout the past year to meet the changing needs of our members as the pandemic reshaped our businesses. While we're still navigating these challenges, I'm confident that our industry will emerge stronger, more innovative and better prepared to face future challenges. Development magazine asked me about my thoughts on our industry and association, and I'm pleased to share my responses here.

Molly Ryan Carson

Where do you see our industry in the traditional cycle?
I believe that we are squarely in the expansion stage, about 24-36 months from the peak of this cycle. Even throughout the pandemic, construction has continued in the U.S., with the industrial sector leading the pack thanks to accelerated e-commerce demand. The multifamily sector is also growing, and the health care sector will hopefully soon be able to focus on its real estate, infrastructure and expansion needs as it continues to see a decline in COVID-19 patients. In the office sector, I believe we'll see a surge in space remodels and new construction as the COVID-19 vaccine becomes more widely available and employees return to the office.

All About Molly Ryan Carson

Education: Saint Mary's College in Notre Dame, Indiana, with majors in psychology and business.

Years in the industry: 20.

How you got involved in NAIOP: When I began at Ryan Companies in 2001, NAIOP was the first organization our developers recommended that I join, saying it was the most relevant and helpful organization for the commercial real estate business.

Last book read: For business, "Mindset" by **Carol Dweck**; for fun, "The Thirteenth" by **Randall St. James**.

Best vacation spot: Anywhere with deep snow or an ocean.

Industry mentors: I've been blessed to have several. **Jean Kane**, a past NAIOP chair, and my father are at the top of that list.

Best words of wisdom you ever received: "Always do the right thing" and "When you get a 'yes,' stop talking," both of which are from my father. ■

Why do you find this industry engaging?
Real estate provides creative brick-and-mortar solutions to industries and businesses, helping them grow and become most productive and impactful in our communities. We literally get to create places for people to thrive, and at its heart, our industry is all about the people.

What are the strengths of your home market of Greater Phoenix?
I've spent the past 11 years in the Southwest, and during this time the state of Arizona has grown and changed in so many ways. Greater Phoenix is one of the fastest-growing markets and offers a vibrant quality of life that is important to companies, including a strong talent pool, solid infrastructure and real estate, and essential connectivity options. Its business-friendly environment helps us attract, retain and grow a wide variety of businesses of all sizes. Arizona has worked to diversify its economy by focusing on the financial services, tech, manufacturing and automated vehicle sectors, among others. Our region has an extremely competitive workforce while maintaining one of the lowest costs for labor in the nation.

What are the biggest changes the industry will see coming out of the pandemic?
The pandemic hasn't so much changed our industry as it has accelerated the inevitable. How and where people work is continually in flux, but typically at a much slower pace. The pandemic forced us to modify our behaviors almost overnight, and there's no doubt some of our new work habits and ways of communicating are here to stay. However, our industry and many others depend upon relationships — our teams need to be together to create, operate and innovate. This cannot all happen remotely. As we return to the office, spaces will look different and be used in new ways. Open areas and meeting spaces will be segmented into more private workspaces, and we'll likely see an increase in remote workdays. Through it all, what will remain most important is a company's culture — what it stands for, how it positively affects the community and world, and how its employees reflect its values. ■

Molly Ryan Carson, Senior Vice President of Real Estate Development, Market Leader, Ryan Companies US, Inc.
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