Commercial Real Estate Development WINTER 2021/2022

Development®

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Brownfield Redevelopment

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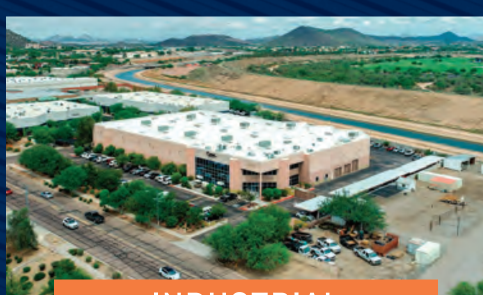

INDUSTRIAL

Phoenix, AZ
SqFt: 55,312

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Kearny, NJ
SqFt: 135,000

Real Estate Investment Sales | Financing | Research | Advisory Services

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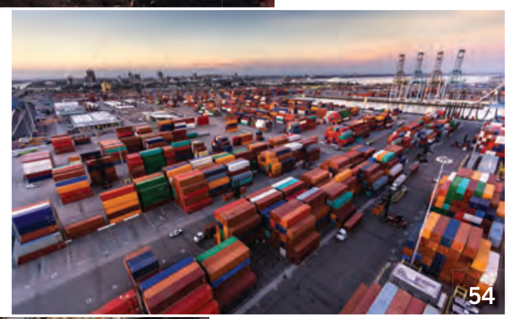

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Suburbs, Office Space and — Peanut Butter?

In September, NAIOP brought together national research directors and academics for an in-depth discussion of the future of the office in the aftermath of the COVID-19 pandemic.

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The Challenges of Building for Sustainability

It requires effort at every stage of the process, according to those in the field.

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Jessup, MD
853,520 SF
Sold on behalf of:
Grandview Partners

NATIONAL DEVELOPMENT INDUSTRIAL PORTFOLIO
Greater Boston, MA
544,993 SF
Sold on behalf of:
National Development

456 SULLIVAN AVENUE
South Windsor, CT
304,249 SF
Sold on behalf of:
Roebling Management

SANTA FE SPRINGS COMMERCE CENTER
Santa Fe Springs, CA
157,669 SF
Sold on behalf of:
AEW

PORTSIDE 55
Tacoma, WA
428,010 SF
Sold on behalf of:
Avenue 55

THE BOX YARD
Los Angeles, CA
261,528 SF
Sold on behalf of:
Bridge Development Partners

BLOOMFIELD LOGISTICS PORTFOLIO
Bloomfield, CT
566,000 SF
Sold on behalf of:
Sponzo Properties

MISSION OAKS CORPORATE CENTER
Camarillo, CA
749,725 SF
Sold on behalf of:
Greenlaw Partners & Walton Street

855 WIGWAM
Henderson,NV
232,856 SF
Sold on behalf of:
an Institutional Investor

CABOT INDUSTRIAL PORTFOLIO
Mansfield, MA
248,969 SF
Sold on behalf of:
James Campbell Company

280 RICHARDS STREET
Brooklyn, NY
312,000 SF
Recapitalization on behalf of:
Thor Equities and PFA

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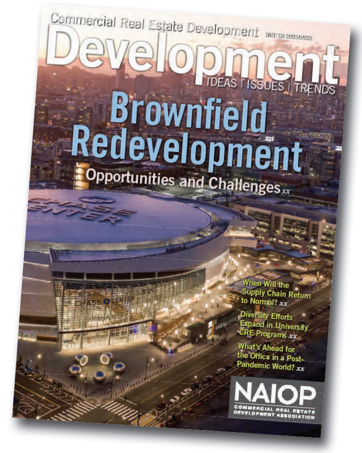

Photo by Jason O'Rear

San Francisco's Chase Center, home of the Golden State Warriors, features seating for more than 18,000 fans and 580,000 square feet of office, retail and restaurant space. It is located in a reclaimed brownfield area.

Development ®
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A Note From the Editor

Optimism Abounds as a New Year Arrives

As 2021 comes to an end, CRE is back on an upswing. The industrial sector continues to perform strongly while the office market is experiencing a gradual increase in net absorption. According to Kastle data, over one-third of U.S. workers are back in the office.


Jennifer LeFurgy

Not only has how we do business changed over the past year but who we do business with is evolving as well. Supply chain adjustments, technology advancements and new construction materials have certainly changed the landscape, but commercial real estate firms are broadening their diversity and inclusion efforts. At the corporate and chapter levels, NAIOP is a longtime supporter of diversity, equity and inclusion (DEI) programs and believes the industry should reflect the communities it serves. Recently, NAIOP Raleigh Durham partnered with the North Carolina Central University (NCCU) School of Business to increase diversity in the real estate industry by supporting NCCU's new MBA concentration in real estate (see article on page 62).

These changes will drive the industry to become more resilient and profitable while, most importantly, building better relationships.

Wishing you happy holidays,
Jennifer LeFurgy, Ph.D.
Editor-in-Chief

Brownfield remediation can be an important tool to carve out space for industrial properties, especially in areas where the supply of available land is constrained. (Page 46)

Future NAIOP Events

- **Chapter Leadership and Legislative Retreat**, January 31-February 2, 2022, Washington, D.C.
- **I.CON West 2022: The Industrial Conference**, March 23-24, 2022, Long Beach, California
- **National Forums Symposium 2022**, May 10-12, 2022, Houston, Texas
- **I.CON East 2022: The Industrial Conference**, June 9-10, 2022, Jersey City, New Jersey
- **CRE.Converge 2022**, October 9-12, 2022, Chicago

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

Supply chain issues are causing shortages for many industrial and consumer products, and there are no easy answers to fixing this complex problem. (Page 54)

Diversity initiatives within commercial real estate programs at colleges and universities could play a crucial role in expanding the pipeline for underrepresented groups in the industry. (Page 62)

In September, industry researchers gathered to discuss the near-term and long-term outlook for the office sector. (Page 68)

The soaring costs of construction that have dogged contractors for the past year could begin hitting developers in the wallet very soon. (Page 8)

For design, construction and commercial development firms focused on sustainability, getting buy-in for those principles at every stage of the process is critical. (Page 74)

Most Popular From Fall 2021

1. **"Hudson Pacific Properties: At the Epicenter of Tech and Media"** (naiop.org/21HPP), page 58
2. **"Second-Tier Cities Thrive in the Post-Pandemic World"** (naiop.org/21cities), page 66
3. **"The Senior Living Sector is Poised for Growth"** (naiop.org/21seniorliving), page 82
4. **"Suburbs, Edge Cities and Santa Fe: A Conversation with Joel Garreau"** (naiop.org/21Garreau), page 74
5. **"CEO on Leadership: Mike Lafitte"** (naiop.org/21Lafitte), page 32 ■

Cultural venues such as theaters can help elevate mixed-use developments by providing plenty of foot traffic, which can boost property values. (Page 20)

Molly McShane, the leader of The McShane Companies in the Chicago area, discusses taking over a family-owned business and focusing on smart, sustainable growth. (Page 28)

Real-time estimating is a technique for examining costs on construction projects that involves frequent updates at every step of the process. (Page 18)

"Last mile" industrial has been the main focus of investment in recent years, but "first-mile" facilities are starting to attract attention as well. (Page 23)

Modular construction is gaining market share across many sectors, but it's important to keep an eye on the potential legal risks that can arise from this technology. (Page 13)

Real estate tokenization involves selling fractional shares of equity in individual properties, which allows for a wider pool of investors to own a stake in a building. (Page 10)

To design tall buildings for human interaction, it's vital to consider findings from neuroscience that show the factors that make people embrace some environments more than others. (Page 32) ■

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Developers May Soon Feel the Workforce Woes Hitting Contractors

Fewer workers, higher wages and vaccination issues roil the construction industry.

By Ken Simonson

Developers hoping to remodel or build any type of commercial property need an extra dose of patience this year. Projects are being bombarded with unbudgeted costs and unanticipated shortages and delays. Unfortunately, resolution of these issues is not yet in sight.

Consider construction labor. At first glance, it might appear there is no shortage of construction workers. Total construction employment as of September 2021 was running slightly ahead of total nonfarm payroll employment in terms of adding back workers who had been laid off in March and April 2020, according to the monthly payroll report from the Bureau of Labor Statistics (BLS). But the recovery is limited to residential construction — principally single-family homebuilders and residential subcontractors.

In a survey released in September by the Associated General Contractors of America, 90% of the more than 2,100 responding nonresidential contractors reported they had openings for hourly craft workers. For each of 21 crafts, at least 70% of the firms that were trying to hire a worker said the position was hard to fill.

Employment at residential building and specialty trade contractors in September 2021 exceeded the February 2020 level by 80,000 workers. In contrast, nonresidential builders, specialty trade contractors, and heavy and civil engineering construction firms had 281,000 fewer employees than in the month before the pandemic.

Those missing workers do not appear to be in any rush — or perhaps any condition — to return to construction jobs, however. Many of them have left the industry, dropped out of the workforce altogether, are coping with COVID-19 or other health conditions, or aren't eligible to work where they are needed.

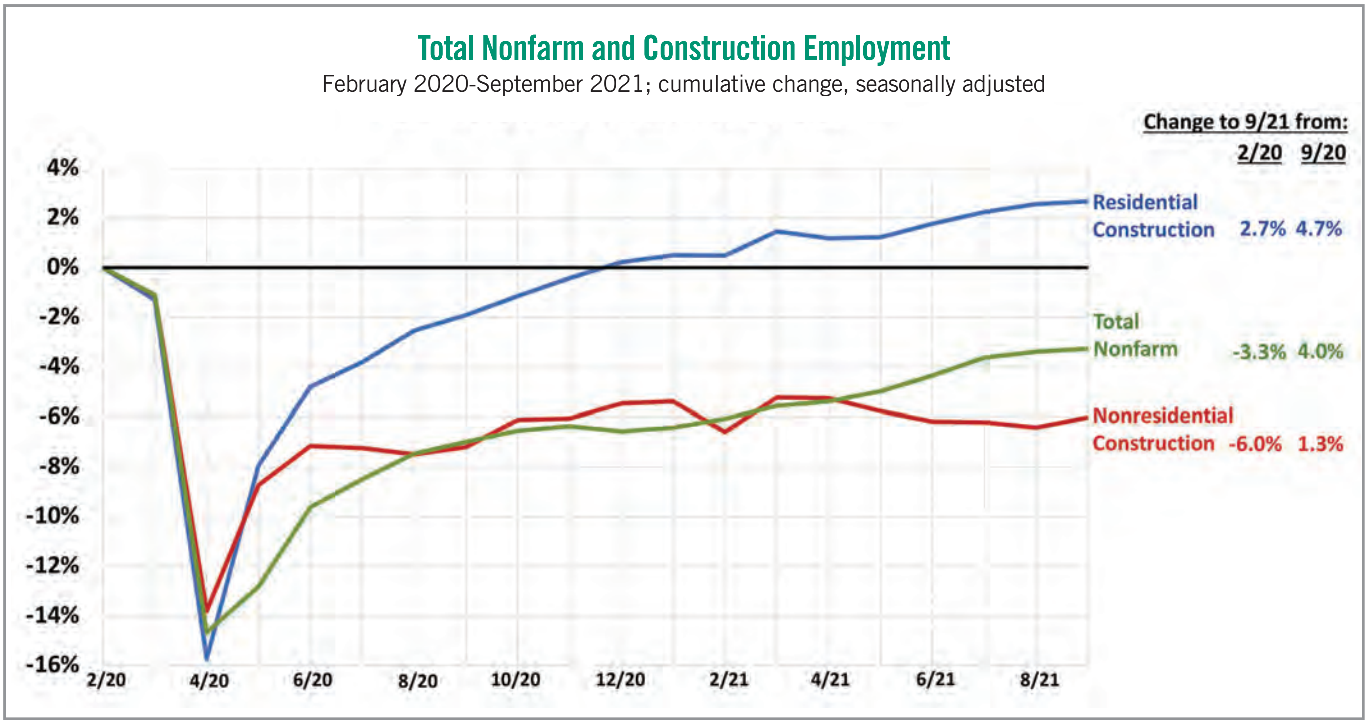
In a survey released in September by the Associated General Contractors of America, 90% of the more than 2,100 responding nonresidential contractors reported they had openings for hourly craft workers. For each of 21 crafts, at least 70% of the firms that were trying to hire a worker said the position was hard to fill. These results reinforce the news from BLS's monthly Job Openings and Labor Turnover Survey, which found 344,000 job openings in the construction industry at the end of August, a leap of 38% from August 2020 and the highest August total in the survey's 21-year history.

As the federal government and many other property owners impose more stringent COVID-related restrictions for anyone entering their premises, contractors are likely to struggle even more to field a healthy and qualified workforce. That is in part because construction workers have lower vaccination rates and higher vaccine hesitancy rates than other occupations. A daily survey of Facebook users by the Delphi Group at Carnegie Mellon University found that, as of late September, only 54% of workers in construction reported being vaccinated, compared to 81% of all other occupations. Conversely, 42% of construction workers were "vaccine hesitant," vs. 17% of other respondents.

A daily survey of Facebook users by the Delphi Group at Carnegie Mellon University found that, as of late September, only 54% of workers in construction reported being vaccinated, compared to 81% of all other occupations.

For owners, these worker shortages imply projects will take longer (even apart from delays resulting from slow deliveries and lack of materials) or cost more, as contractors incur more overtime costs for the workers they have on hand or boost pay and incentives to attract additional workers. The higher labor costs have begun to appear but are likely to accelerate in 2022.

In September, production and nonsupervisory employees in construction — craft workers, for the most part — worked an average of 40.9 hours per week, according to BLS calculations. That was the most for any month since the series began in 1947. Meanwhile, average hourly earnings for those work-



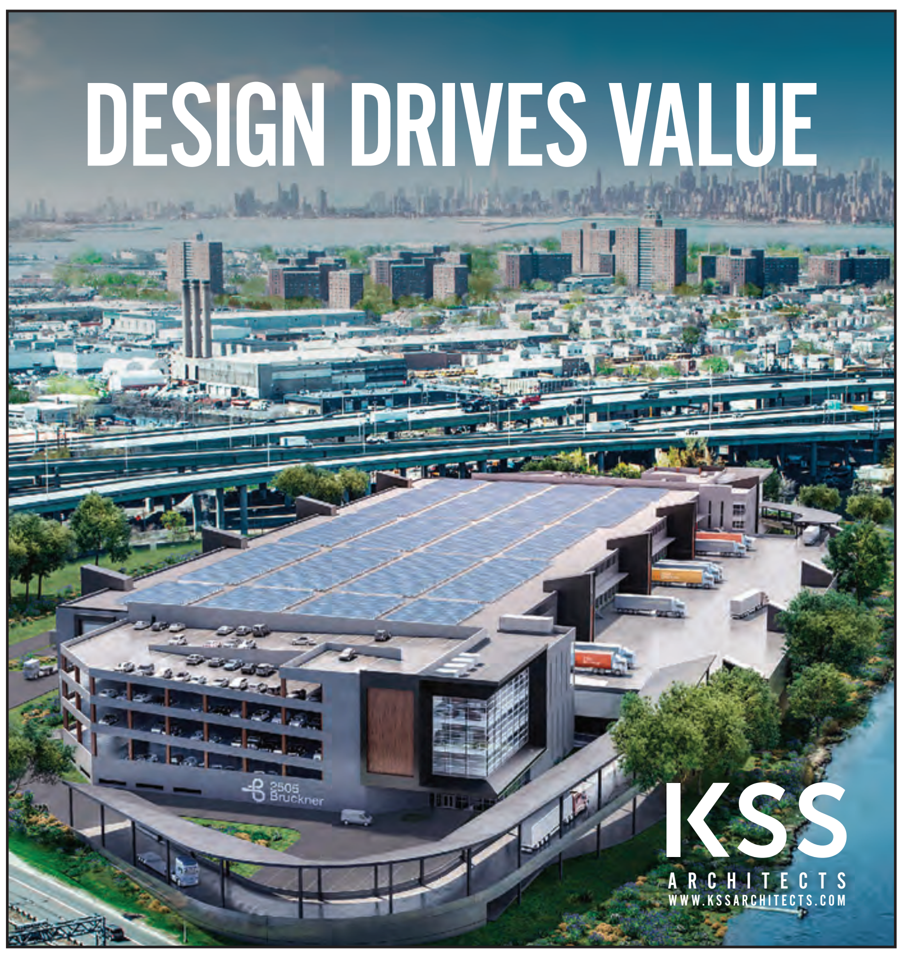
Source: BLS current employment statistics, www.bls.gov/ces/

ers climbed 5.8% from a year earlier to $30.79 per hour, the steepest year-over-year increase since 1982.

To date, contractors have not passed along the bulk of their labor or materials cost increases. Another set of data from BLS, producer price indexes, shows that the cost of materials and services (such as wholesale and trucking services) that go into new nonresidential construction soared 19.7% from September 2020 to September 2021. Meanwhile, an index that measures the price contractors say they would charge to build a fixed set of new nonresidential buildings rose 5% over those 12 months.

Thus, both materials costs and construction labor costs are rising faster than contractors' bid prices. That situation cannot last for long. Developers should prepare to see higher bids and/or fewer contractors willing to bid on projects without price protection. ■

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



How Real Estate Tokenization Could Revolutionize Future Capital-Raising Efforts

Selling fractional ownership of properties has the potential to unlock much more investment.

By Ryan Zega

How do you make bricks and sticks liquid? This is not a riddle or from a chemistry exam; it is a vital question that investors have posed to owner-operators in the real estate investment market since the industry's earliest days.

So how do you bring liquidity to an illiquid asset class? According to the MSCI Real Estate Market Size Report 2021, the global real estate investment market sits at over $10 trillion, despite its inflexibility and lack of accessibility for the majority of retail investors. The options that do exist for retail investors are primarily limited to publicly traded and non-traded REITs. However, the introduction and continued application of digital securities within the real estate market has greatly expanded choices.

BusinessWire

The St. Regis Aspen Resort in Aspen, Colorado, is one of the first examples of the tokenization of a commercial real estate property.

How Does It Work?

Digitization or "tokenization" is the process of adding digital elements to an otherwise traditional investment, such as stocks, bonds or real estate. These digital elements (sometimes referred to as "tokens") are visible on a blockchain. In certain cases, they can be purchased, sold and traded freely on regulated marketplaces.

How does digitization benefit the real estate investment market? It turns equity in individual properties, portfolios, funds and non-traded REITs into small, fractional stakes with greater flexibility. Similar to the public markets, it is up to the issuer to determine the share price and the number of shares outstanding for the market cap.

This can increase investor diversification in markets that have been closed off to those without significant financial means. This broadening of the investor pool not only benefits those for whom real estate investment was previously too cost-prohibitive and restrictive, but also general partners who are now granted more avenues with which to enable liquidity optionality and raise capital for their projects. General partners can have more flexibility related to asset hold periods and access to a wider demographic of investors.

Additionally, the digitized equity can be accessed by this broad group of investors through a trading platform that is regulated by the U.S. Securities and Exchange Commission. Following any applicable regulatory lockups or holding periods, these investors would have the freedom to trade equity in a real estate investment as easily as shares of Apple or General Motors.

What are the prospects for the real estate digitization market? A December 2020 Bain & Company brief titled "For Digital Assets, Private Markets Offer the Greatest Opportunities" noted that global real estate is worth an estimated $317 trillion, but only $10 trillion of that is managed by funds and available to a broader investor base. Real estate digitization could greatly increase that.

Strong Growth

Since the start of the year, the nascent real estate digital security market has experienced significant growth. The Security Token Market's December 2020 Real Estate Report put the total market cap of real estate tokenization

How does digitization benefit the real estate investment market? It turns equity in individual properties, portfolios, funds and non-traded REITs into small, fractional stakes with greater flexibility.

at over $25 million. By June 2021, that market cap had risen to over $32 million, an increase of more than 25% in six months. With the introduction of easily accessible brokerage apps and secondary markets geared toward the retail investor, the real estate digitization market could be poised for exponential growth in the coming years.

One of the earliest entrants into the space is tZERO, a financial technology firm that brings together issuers and financial firms seeking a transparent, automated, digitally enabled marketplace and investors seeking access to a range of digital and conventional assets. It was launched by online retailer Overstock.com in 2014 as part of its Medici Ventures blockchain-focused subsidiary.

The St. Regis Aspen Resort in Aspen, Colorado, a digital security that trades on the tZERO ATS (Alternative Trading System), provides a case study for real estate tokenization. In July 2020, tZERO entered into an agreement with Elevated Returns, the property's owner-operator, to digitize equity interests representing approximately 19% of the ownership interests.

New & Noteworthy

3.4 million sq. ft.

CapRock Partners is developing **CapRock West 202 Logistics**, the largest **speculative industrial real estate project** ever built in the city of **Phoenix**. CapRock is transforming one of the largest remaining infill land sites in the Southwest Phoenix submarket into an eight-building, Class A industrial warehouse complex totaling 3.4 million square feet. The building will have clear heights between 32 feet and 40 feet. All buildings will feature dock-high and ground-level loading with secured concrete truck courts.

1 million + sq. ft.

Midway recently broke ground on its 150-acre **mixed-use East River development** in **Houston's** urban core. When finished, the project will encompass more than a million square feet of new construction extending 60 city blocks. Centrally located less than a mile from downtown along Houston's waterfront, East River will serve a wide range of residents and housing price points, as well as companies, retail and restaurant concepts, and institutional, educational and recreational opportunities.

1.4 million sq. ft.

KDC will develop three additional **office towers** at **CityLine** in **Richardson, Texas**. The new buildings will add nearly 1.4 million square feet of space to the 204-acre transit-oriented development, which is home to State Farm's regional hub and Raytheon's office complex. Five CityLine is an 18-story tower with 513,000 square feet, while Six CityLine is a 13-story tower with 356,000 square feet. The third tower, Seven CityLine, offers 15 stories at 507,000 square feet. CityLine now contains 2.6 million square feet of office space and more than 200,000 square feet of restaurant, retail and entertainment space.

Despite the promise of digitalization, there are a few barriers. Though it's growing rapidly, the ecosystem is still young, which is less attractive to established, institutional players.

Within six weeks, the St. Regis Aspen digital security (ASPD) commenced trading. The opening price was set at $1.25 per share based on an implied valuation from an appraisal completed by JLL. Since then, ASPD has experienced narrow trading pricing volatility in a challenging economic climate for the hospitality industry.

According to **Solomon Tesfaye**, head of business development and capital markets at tZERO, the company recently entered into a partnership with real estate private equity firm MarketSpace Capital to support the trading of $6.5 million in securities representing equity in an active adult living (55+) real estate development in Dallas, Texas.

While this is MarketSpace Capital's first real estate digitization project, the firm has more than $400 million in assets under management, with plans to digitize and onboard more investments in the future.

Real estate digitization is a nascent industry that is garnering interest among domestic and international real estate owners due to the many benefits of the underlying technology.

Despite the promise of digitalization, there are a few barriers. Though it's growing rapidly, the ecosystem is still young, which is less attractive to established, institutional players. Both general partners and limited partners must be educated on tokenization and secondary trading. Additionally, some limited-partner agreements and loan documents must be amended to be conducive for secondary trading.

Real estate remains one of the most coveted and lucrative investments in the world, and digitization can help solve the issue of liquidity. It has the potential to revolutionize the way investors access real estate investments and owners raise capital. ■

Ryan Zega is the associate director of business development and capital markets at tZERO.

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Modular Construction Faces Unique Risks

Anticipating and addressing them can help ensure successful projects.

By Daniel F. McLennon

The global modular construction market is set to skyrocket in the coming years. A July 2020 study by market research firm Reports and Data sees modular construction growing at a rate of 6.4% per year, and the market will reach $191.62 billion by 2027. According to the Modular Building Institute's 2020 Permanent Modular Construction Report, there are "over 250 regional manufacturers in North America building everything from construction site offices to single-family homes and hotels." This rapidly growing part of the construction industry comes with its own unique risks — practical and legal — that should be anticipated and addressed.

Modular Basics

Modular construction prefabricates the components of a construction project in a factory. Traditional construction has done this for years — consider steel trusses, cabinets and window units, for example. The recent modular movement goes further. The Modular Building Institute defines the method as "a process in which a building is constructed off-site, under controlled plant conditions, using the same materials and designing to the same codes and standards as conventionally built facilities."

Modular components are being used to construct apartment buildings, residential homes, stadiums, airport terminals, bridges, industrial worksites and even skyscrapers. According to a June 2015 report from CNN, a Chinese

New & Noteworthy

700,000 sq. ft.

Riverside Investment and Development will partner with Convexity Properties to develop **1900 Lawrence**, a proposed **office tower** in downtown **Denver**. The 30-story tower is comprised of 700,000 square feet of rentable office space, including 11 tenant floors equipped with private outdoor terraces. Its central business district location at the conjunction of Denver's LoDo and Ballpark neighborhoods will offer future tenants protected views of the Rocky Mountains and immediate access to the city's core.

596,400 sq. ft.

Mohr Capital is building a 596,400-square-foot **speculative industrial facility** in **McCarran, Nevada**. Located at the Tahoe-Reno Industrial Center in Reno's East Valley industrial submarket, the new facility is Mohr Capital's first industrial development in Nevada. The cross-dock facility will feature 36-foot clear ceiling height, three access points, 96 dock doors, four 14-foot-by-16-foot drive-in doors, 374 auto and 100 trailer parking spaces, motion-sensor LED lighting and more.

288,000 sq. ft.

Standard Communities has completed **Jules on 3rd** in **Boise, Idaho**. It is an eight-story, **mixed-use multifamily development** that encompasses 285,000 square feet above 3,000 square feet of street-level retail space. Jules on 3rd features first-class amenities, including a rooftop pool and sundeck with mountain views, a fitness and wellness studio, Sky Lounge Club Room, outdoor kitchen with BBQ grills, outdoor fireplaces, a conference room, a dog park and spa, covered parking for resident and public use, and storage for 192 bicycles.

company used modular construction techniques to assemble the parts for a 57-story skyscraper in a factory over a four-month period, then erected the building in just 19 days. A video of the construction process went viral. Since then, the use of modular in high-rise construction has continued to proliferate. For example, according to the Building Design & Construction Network, two 40-story luxury apartment buildings in Singapore were completed in 30 months, six months ahead of the initial timeline. The towers became the world's tallest modularly constructed buildings in 2019.

Modular Benefits

As the examples of the Chinese and Singaporean skyscrapers illustrate, the greatest potential benefit of modular construction is the ability to complete projects faster than traditional construction. According to the research consulting firm McKinsey & Company's 2019 report on modular construction, "[r]ecent modular projects have already established a solid track record of accelerating project timelines by 20%–50%." With modular construction, entire rooms for apartments, offices or hotels can be completed while the building's structure is put into place. In conventional construction, for example, the workers tiling a bathroom would ordinarily have to wait for site preparation, foundational work and framing to be completed before they could begin their jobs.

Additionally, modular components are constructed in factory settings where work conditions are completely controlled. This promotes better workmanship, because workspaces can be organized so that workers have room to maneuver, resources can be carefully planned and laid out, and weather impacts are removed. This leads to significant efficiency and time savings. Additionally, waste is reduced, making modular construction environmentally friendly, because the materials are precut to exact sizes and raw materials can be ordered in correct sizes to accommodate precise pre-cutting.

Getty Images

Transporting modular components to a jobsite is one of the riskiest aspects of this up-and-coming construction technology.

Modular components are being used to construct apartment buildings, residential homes, stadiums, airport terminals, bridges, industrial worksites and even skyscrapers.

What is The Uniform Commercial Code?

According to the website of the Uniform Law Commission, the Uniform Commercial Code (UCC) "is a comprehensive set of laws governing all commercial transactions in the United States. It is not a federal law, but a uniformly adopted state law. Uniformity of law is essential in this area for the interstate transaction of business. Because the UCC has been universally adopted, businesses can enter into contracts with confidence that the terms will be enforced in the same way by the courts of every American jurisdiction. The resulting certainty of business relationships allows businesses to grow and the American economy to thrive." ■

Modular Risks

The main legal risk areas involve the financial condition of the modular manufacturer, the potential loss of units that are damaged or lost during transit or storage, regulatory compliance issues, and the ripple effects of failures in these areas. Additionally, issues in the supply chain will impede modular projects worldwide because shipping interruptions will have major effects on a modular project's schedule. The following are some questions that should be considered before beginning a modular project.

What happens when the prefabrication firm goes out of business or is un-

With modular construction, entire rooms for apartments, offices or hotels can be completed while the building's structure is put into place. In conventional construction, for example, the workers tiling a bathroom would ordinarily have to wait for site preparation, foundational work and framing to be completed before they could begin their jobs.

able to complete the components for whatever reason? This scenario came to pass when high-profile modular construction firm Katerra — which was once valued at $6 billion — went bankrupt in June 2021 and was unable to complete many projects. Some owners had the foresight to require Katerra to provide payment and performance bonds for their projects. Those without bonds, however, had to fend for themselves, at their own cost. Moreover, all projects suffered delays while alternative modular construction could be arranged. Katerra failed because its vertical business model, where it would manufacture everything from the concrete casts to light bulbs, was too bold; but many modular construction firms have gone under largely due to the impacts of COVID-19 globally. Therefore, careful vetting of a modular fabricator is essential.

Does the prefabrication firm have the financial ability to complete all units before installation? Generally, owners pay for materials only after delivery to the site. Constructing modules takes tremendous resources, and fabricators

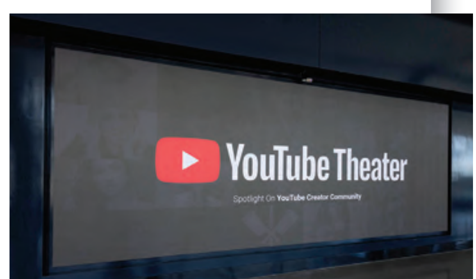
New & Noteworthy

285,415 sq. ft.

Holland Partner Group recently opened **Volta on Pine**, an infill **mixed-use development** in downtown **Long Beach, California**. It features 271 apartment units, 1,300 square feet of ground-level retail, subterranean parking and extensive sidewalk space to activate the pedestrian experience. Located on two adjacent lots, the mid-rise buildings are linked by a sky bridge across a separating alleyway. Volta on Pine features a rooftop terrace and sky lounge, fitness center, swimming pool with sun deck, hot tub, outdoor grills and firepits, parcel lockers and electric vehicle charging stations.

227,000 sq. ft.

YouTube Theater, the new 6,000-seat **performance venue** in **Los Angeles**, opened in August. It is part of Hollywood Park, a nearly 300-acre sports and entertainment destination being developed by Los Angeles Rams owner/chair **Stanley Kroenke**. (The centerpiece of Hollywood Park is SoFi Stadium, home of the NFL's L.A. Chargers and L.A. Rams.) The 227,000-square-foot theater places an emphasis on the live experience. The farthest seat in the house is only 164 feet from the 6,100-square-foot stage, creating an intimate environment for fans and artists.



101,200 sq. ft.

Hines will bring the firm's timber **office concept**, T3 (timber, transit and technology), to **Austin, Texas**. Dubbed **T3 Eastside**, the project will feature a heavy timber office and a boutique residential experience featuring 15 loft-style units. The complete project structure will be constructed using sustainably sourced wood, a first for Hines in the residential space. This Class-A, mass timber office and residential building will consist of 92,000 square feet of office and 9,200 square feet of residential space.

The main legal risk areas involve the financial condition of the modular manufacturer, the potential loss of units that are damaged or lost during transit or storage, regulatory compliance issues, and the ripple effects of failures in these areas.

cannot be expected to finance all the modules before payment. But owners do not want to pay for work that they may never receive. Also, owners need to be sure that their money actually goes to constructing their units. Carefully devised payment processes must be put into place. Payment and performance bonds are critical to protect against this risk.

What happens if components are lost or destroyed before installation? Prefabricated modules coming from overseas, or even from domestic factories, can be lost or damaged during delivery. Parties must ensure that their contracts and insurance, including general liability and builder's risk insurance, will allocate and cover these events, along with resulting schedule delays and consequential damages such as rental losses due to delayed completion. However, project policies may decrease in price and scope because a substantial portion of the risk is cut from the worksite.

Because they must be transported via ship or truck, modular components face size and design constraints. The parties must ensure that delivery routes can accommodate oversized loads, which many crowded urban settings cannot. Moving such loads in urban areas may require special permits. Overhead wires must be avoided. Once the materials are delivered to the site, they must be protected and adequately stored.

Modular Contracts

Arguably, modular units could be treated as products, like cars or refrigerators. The Uniform Commercial Code (UCC) would thus apply to sales of such units. (See box, page 14.) On the other hand, common law applies to the provision of services. Most courts generally hold that modular construction contracts provide for services, and they apply common law. But some courts have found such contracts to be for the sale of goods and have applied the UCC. Depending on the issue, the UCC or common law favors one party over the other. The parties must be careful to draft their contracts to specify which law applies.

In September 2020, ConsensusDocs, a coalition of 41 leading design and construction industry associations, published the first-ever industry standard modular construction contract — ConsensusDocs 753, Standard Agreement Between Constructor and Prefabricator. This form contract allows the parties to stipulate whether the UCC or common law applies.

Modular Licensing and Permitting

Modular construction projects must comply with licensing and permitting requirements detailed in state and local building codes. There are three potential levels of permitting required for a modular project: worksite permitting and licensing controlled by state and local law; state regulations governing fabrication of modular units; and local regulations and approval requirements for modular projects.

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In September 2020, ConsensusDocs, a coalition of 41 leading design and construction industry associations, published the first-ever industry standard modular construction contract — ConsensusDocs 753, Standard Agreement Between Constructor and Prefabricator.

For example, in New York City, prefabricators must work closely with regulators in the city's Department of Buildings to ensure that the components are up to city code. ConsensusDocs 753 stipulates that work shall comply with the state and local licensing requirements of the state where it is performed; and to the extent allowed by law, the law of the state of the fabrication site will govern all licensing requirements related to the construction of the components.

Wrapping it Up

Modular construction is a rapidly growing global industry. Because of reduced costs, quicker schedules and demand for environmentally conscious construction work, many owners are becoming more interested in modular construction. Consequently, the construction industry will continue to see a proliferation of modular projects. Prudent owners and contractors will vet modular fabricators, allocate and provide for risks carefully by contract (including specifying whether the UCC applies), provide for protective payment processes, and ensure that proper insurance and bonds are in place. ■

Daniel F. McLennon is a partner in the San Francisco office of construction industry law firm Smith, Currie & Hancock LLP.

New & Noteworthy

60,000 sq. ft.

Aedis Real Estate Group is building **Hope on Hyde Park**, a five-story, 60,000-square-foot **residential community** in **Los Angeles**. Constructed from fabricated steel modular building units, the community is designed to be transitional housing for the chronically homeless. It will include studio and one-bedroom options ranging from 400 to 480 square feet. Tenants will receive support from the Los Angeles County Department of Health Services and the nonprofit Brilliant Corners. Construction firm C.W. Driver Companies partnered with architecture firm KTGY on the project.

44,000 sq. ft.

The IDI Group Companies of Arlington, Virginia, is transforming the 18.5-acre property formerly occupied by Pope Paul VI High School in **Fairfax, Virginia**, into **Boulevard VI**. The **mixed-use development** preserves and adapts the original 1934 portion of the school building into destination retail and includes townhomes, single-family homes, condominiums and 44,000 square feet of retail. The 24,000-square-foot former school will be the focus, flanked by two 10,000-square-foot buildings to form a horseshoe around a lawn.

8,700 sq. ft.

Ware Malcomb recently completed the **Chicago DIRTT Experience Center (DXC)**, an immersive experience showcase for DIRTT, a manufacturer of prefabricated interior construction solutions. The DXC's 8,700-square-foot **office remodel** features a dynamic mezzanine, hosting areas and an innovation lab. DIRTT offers frameless glass solutions in office and huddle settings and strategically placed phone booths with high acoustical quality. ■

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.

The Benefits of Real-Time Cost Estimating

The technique can save money, but it's important to understand how it differs from milestone-based estimating.

By Michael O'Reilly

Real-time construction cost estimating offers owners some important advantages over the traditional milestone estimating model. With estimators supplying pricing data quickly and frequently, instead of only at established points in the design process, costs are proactively managed rather than reactively summarized.

In milestone-based estimating, building costs are developed using historical data, benchmarked expenses or an overall price per square foot. As the project moves ahead, with specific materials, systems and details coming into focus at the design development phase, the cost estimate becomes more fact-based and precise, but the possibility of "sticker shock" also looms as the design coalesces. This has its own set of consequences. Budgetary bombshells at this late stage can often trigger a protracted period of value engineering, possibly putting the schedule in jeopardy as the drawings are revised to reflect the redesigned project.

The design team provides periodic updates (usually in the form of a 3-D model, or BIM) for the estimating team to review. With each decision made by the team, it's possible to track their impacts on the budget in real time.

Getty Images

Real-time estimating for construction costs involves more frequent examination of costs than traditional milestone-based estimating processes.

An alternative to conventional milestone estimating, real-time estimating (RTE) entails making more frequent, albeit less comprehensive, checks on costs. Rather than waiting weeks or months for each milestone to wrap up before running the numbers, RTE takes the pulse of the project at every incremental step.

The design team provides periodic updates (usually in the form of a 3-D model, or BIM) for the estimating team to review. With each decision made by the team, it's possible to track their impacts on the budget in real time. Providing owners with this information enables them to clearly see the cost implications of their decisions earlier, helps them balance their priorities, and ultimately steers them to make more informed decisions about critical issues before cost-based conflicts become a serious problem.

This is especially critical now, as current supply chain issues are creating significant impacts on the schedule and costs of construction projects. RTE provides a positive strategy to help mitigate those impacts because it calls for increased involvement during the evolution of the design. In this way, RTE allows teams to flag potential issues as they occur and before final decisions about construction materials and assemblies are made. By giving owners early notifications about long lead times and potential cost spikes for certain materials, they can resolve any potential issues in real time.

Evaluating Choices

Real-time estimating is extremely flexible. It can be performed on a project as a whole, or it can zero in on a specific segment of the scope that the designer or owner is particularly concerned about, such as materials, building performance or mechanical systems. This kind of targeting is not possible with ground-up, milestone estimating.

The nimbleness of RTE does have some trade-offs when compared to milestone estimating. Because real time estimating is an ongoing series of updates, essentially snapshots of a design-in-progress, it may not be as comprehensive as a milestone estimate. It may not capture everything, and as a result it may be less accurate than milestone estimates. RTE may also incur a higher fee than milestone estimating because of the ever-moving line in the sand, but its value typically offsets that cost.

To RTE or not RTE?

Certain types of projects stand to benefit from RTE more than others. Large buildings, where the cost of small details is exponentially magnified due to the scale of the project, are good candidates for the technique. For instance, when a designer adds a light cove running around the perimeter of a sports stadium or airport terminal late in the project, they might be unaware of how large an impact that can have; if it's priced out at $500 per linear foot, it could result in a $1 million surprise as the project heads into the construction documents phase. The same reasoning can be applied to highly repetitive buildings — such as hotels and high-rise office buildings — where every design element and decision is multiplied hundreds of times over.

Real-time estimating is also useful with complicated projects that require evaluating and comparing numerous design alternatives and options for siting, earthworks, life-cycle studies or sustainability/performance goals.

Early Integration

To implement real-time estimating, cost estimators need to be on board from Day 1 of the project, at the onset of the programming/concept phase. This is when many key decisions are made, and estimators can collaborate and coordinate with owners, designers and all stakeholders to help establish the parameters of the project. Jumping in any later can dramatically curtail estimators' roles. Integrating the cost estimator with the team early on will help align project expectations with budgets.

When construction cost estimators are a foundational part of the project team, real-time estimating isn't just a service; it provides clients with cost certainty, enabling them to maximize both their investments as well as their returns. ■

Real-time estimating is extremely flexible. It can be performed on a project as a whole, or it can zero in on a specific segment of the scope that the designer or owner is particularly concerned about, such as materials, building performance or mechanical systems.

Michael O'Reilly is an associate principal at Rider Levett Bucknall, leading the firm's Boston office.

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How Cultural Venues Can Elevate Mixed-Use Developments

These spaces provide the prestige — and foot traffic — that can help boost property values.

By Daniel Ordower

As with many other industries, the COVID-19 pandemic functioned as a catalyst in the performing arts venue construction business. It accelerated pre-existing trends and changes, not just in health and safety, but also in how venues are used, their purpose and location, and the community's needs.

One compelling pre-pandemic trend was a shift away from municipalities investing in large performing arts venues as a means of revitalizing central cores and toward the idea of private developers including small arts centers in community-based mixed-use developments. Accessibility to the arts can be crucial for the creation of vital urban centers, and developers and small-arts organizations have come together in a symbiotic relationship to great success. Americans for the Arts' 2017 report on the connection between the arts and economic prosperity found that even before the pandemic, more than 65% of attendees of arts events lived within the local ZIP code area.

One compelling pre-pandemic trend was a shift away from municipalities investing in large performing arts venues as a means of revitalizing central cores and toward the idea of private developers including small arts centers in community-based mixed-use developments.

The Concept in Action

In the past decade, projects with a cultural component have opened. Crosstown Concourse in Memphis transformed an abandoned 14-story, 1.5 million-square-foot former Sears distribution center into a vertical mixed-use development that features a contemporary arts center.

Including a cultural amenity in a new development can have a positive impact on the economic health of the surrounding neighborhood as well as increased value of residential and commercial units.

For example, the U.S. Census Bureau categorized the immediate area around Crosstown Concourse as a "severely distressed neighborhood" before it was redeveloped by a non-profit organization. A year after opening in 2017, the reinvigorated building achieved 96% occupancy — 99% residential, 97% commercial and 85% retail — and was a Gold Medalist in the Rudy Bruner Awards for Urban Excellence.

According to the case study for the awards, "less than two years after its completion, Crosstown Concourse … has fostered a modest uptick in neighboring commercial investment, and residential property values have increased significantly in the surrounding community. One neighborhood resident cited an almost 20% increase in values since 2015."

Similarly, when describing a faster increase in home values closer to Wisconsin's Kenosha Public Museum than in surrounding areas, a 2010 study on the impact of culture by the Center for Creative Community Development concluded that "cultural organizations make the community a more attractive place to live, and as a result people who are seeking a residence to buy or to rent will have an increased willingness-to-pay for accommodation in the community."

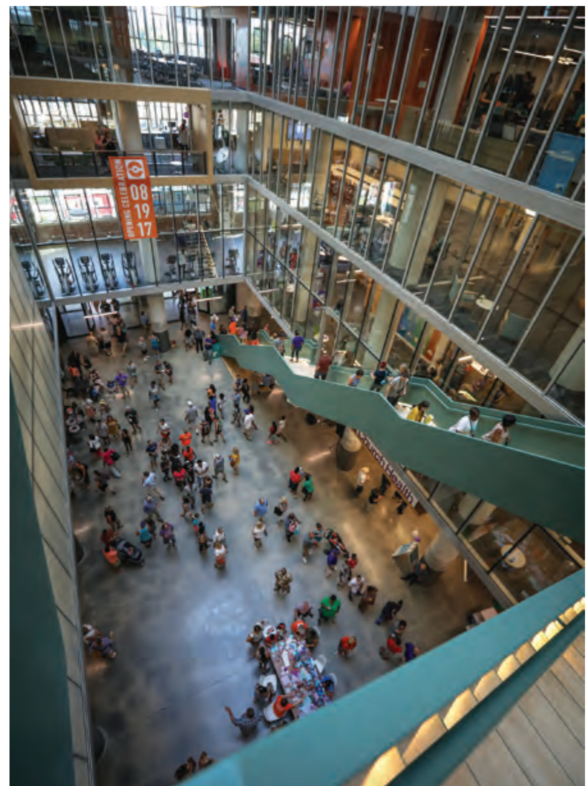

Photo by Jamie Harmon

Crosstown Concourse in Memphis turned a former Sears distribution center into a vertical mixed-use development that features a contemporary arts center.

Performance venues should be viewed as amenity spaces whose contribution to a development are measured through the vibrancy, vitality and sustainability of the development, not by their ability to generate rent. For tenants and residents of developments with a cultural component, these spaces bring energy, desirability and foot traffic. Fully programmed performance venues are often booked five to six nights a week, and cultural attendees tend to arrive early and spend money at nearby restaurants or shops.

According to the Americans for the Arts' AEP5 report, each member of an arts audience spends, on average, $31.47 at local businesses per event, not including the cost of admission. A 2019 report by the Initiative for a Competitive Inner City suggests that restaurants, bars and shops tend to cluster around and are often anchored by cultural amenities. Mixed-use developers can leverage this phenomenon by creating cultural districts that generate revenue directly for their projects.

Additionally, politicians, activists and community members find a new arts venue more palatable than another big-box store, so developments with cultural amenities may have an easier time gaining city approvals. Since New York City pioneered incentive zoning in the mid-20th century, many municipalities have encouraged cultural amenity development in new projects through a combination of relaxed zoning rules and tax abatements. Land-use agencies also are usually receptive to developers who are responsive to the needs of the local community.

The pandemic demonstrated that cultural venues have uses beyond performances and can serve a vital purpose in times of crisis. Multi-purpose venues built with adjustable and retractable seating, adjustable acoustics, highly networked technology infrastructure and inherently efficient crowd control can easily pivot to non-cultural uses if needed. They can be repurposed as manufacturing centers, shelters, polling places and vaccination centers.

Performance venues should be viewed as amenity spaces whose contribution to a development are measured through the vibrancy, vitality and sustainability of the development, not by their ability to generate rent.

While cultural amenities have been included in developments for years, the pandemic highlighted that communities can and will support more hyperlocal cultural venues. One of the most striking trends of pandemic living has been people reconnecting with their local communities. While central city cores emptied out, and the chain restaurants and large centralized cultural venues went dormant, people rediscovered restaurants and grocers close to their homes.

Along those lines, there is a growing market for intimate venues near where people live. And as more companies announce flexible or part-time office hours, workers may want to spend

more time in their local neighborhoods. Developers and operators who can provide entertainment alongside dining options will reap the benefits of increased rents through greater desirability.

The performance organizations that are natural fits for small, local performance venues generally do not have the name recognition, fundraising capability, or administrative structure to properly develop and run a purpose-built venue. But their inclusion in multi-use developments will bring them increased exposure through their proximity to other tenants, both commercial and residential.

Additionally, if a venue is considered a development-wide amenity and the rent or maintenance is subsidized by the developer, small arts organizations can spend more time and money on their artmaking. The benefits can include better art, cheaper tickets for audiences, more inclusive programming, and, in turn, a stronger brand and reputation — for the arts organization and the developer.

Getting Started

So, how can developers connect with arts organizations to begin the conversation about building, using and leasing these hyperlocal venues?

First, create a local or regional inventory of existing arts and culture resources, with a particular focus on community-based organizations with no permanent home. Then, developers and landlords can consider partnering with an organization that fits the development's vision and goals. There are many operational options for developers to select from, depending on their risk tolerance and desire to contribute to the venue's arts programming.

If the developer doesn't want to operate the venue, there are many artistic programmers who are willing to plan and book events. If developers want control over and input in running events, they can invest in a small office staff and a qualified executive.

Another appealing option may have a resident arts organization occupy the space. While the facility costs and physical plant are the owner's responsibility, the resident company would create interesting content to bring in audiences and keep the venue active year-round.

It may even make sense to partner with several local arts organizations to share the facilities and coordinate their work to offer varied and diverse programming. Their performances can be supplemented by touring performers and private events to raise additional revenue.

As noted earlier, technologies and techniques have advanced in recent years to such a degree that a single venue can comfortably host numerous types of performance from live theatre to concerts and film screenings. These flexible spaces are now common — and not just in traditional performing arts environments. They're inside retail facilities, corporate spaces, museums, hotels and more.

Developers who offer a wide mix of entertainment near where the audience lives can drive revenue for their investors and tenants and create a strong sense of community. ■

Daniel Ordower is the general manager of Theatre Projects.

Industrial Real Estate Opportunities in U.S. First-Mile Markets

Investors target these markets as demand for e-commerce continues to surge.

By TJ Parker

Industrial remains the darling of commercial real estate during the current cycle. Investor enthusiasm has remained strong, with total returns as measured by the National Council of Real Estate Investment Fiduciaries (NCREIF) in double-digit territory over the past cycle and demand showing no signs of slowing, especially as supply chain issues remain a crucial consideration for businesses and real estate developers. While last mile industrial has been the focus of much of this investment, first-mile industrial is starting to attract attention.

What is the First Mile?

According to academics such as **Jean-Paul Rodrigue** of Hofstra University, a first-mile node is a terminal that offers an intermodal interface between a local or regional distribution system and a national or international one. Freight is assembled and/or consolidated at first-mile nodes, then transported via road, rail, air and/or water to last-mile population clusters. There, goods are disassembled for final delivery and consumption. Figure 1 illustrates the supply chain framework and its corresponding real estate footprint.

"Production" and "consumption" nodes occasionally overlap, as they do in major industrial markets such as Chicago, Inland Empire, Dallas and New York. However, production and consumption often remain separate in other first mile markets such as Indianapolis, Memphis and Kansas City, as well as in emerging East Coast port markets.

Investors have gravitated to last-mile industrial markets for most of the latest cycle. However, the search for yield has also pushed some institutional


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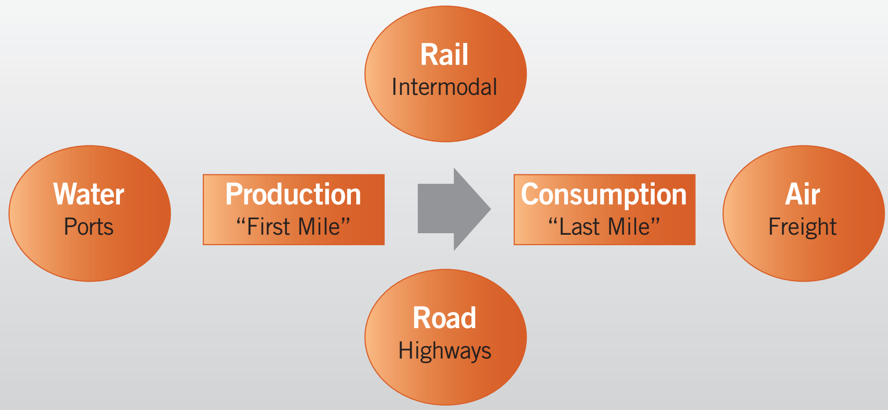
investors to add first mile markets to their target universe. This trend should continue to strengthen.

First, omnichannel customer distribution modes, and specifically e-commerce, are here to stay. The pandemic increased e-commerce adoption and elevated its share of total retail sales by an additional 2.2% in 2020, according to the U.S. Census Bureau. Several forecasts indicate high single-digit growth in e-commerce sales over the next five years.

Second, freight distribution has evolved to meet enhanced "speed-to-delivery" customer expectations and to fulfill demands for a seamless shopping experience. This is pushing retailers, manufacturers and third-party logistics providers to boost both their first mile and last mile footprints.

Figure 1: Supply Chain Framework and Corresponding Real Estate Nodes



Source: Barings Real Estate Research

Furthermore, in many infill submarkets with rising land costs and restrictive zoning regulations, it is critical to diversify supply chain footprints beyond the last mile to meet customer expectations for same-day or next-day delivery. This has increased the importance of first mile industrial nodes.

First Mile Hot Spots

Given these structural factors, examining first mile markets in the context of both space and capital markets can reveal why they offer compelling investment opportunities in the current cycle.

Table 1: Performance for a Select Set of "First Mile" Markets

	Capital Markets Performance			Space Markets Performance and Outlook			
	NCREIF Industrial 10-year Returns						
"First Mile" Markets	Total Returns	Appreciation Returns	Income Returns	Industrial Inventory ('000 sf)	Mkt Rent GFC Peak to Current	Mkt Rent Growth Forecast 2yr	Mkt Supply Growth Forecast 2yr
Trenton, NJ	18.5%	12.9%	5.1%	37,070	42.8%	4.0%	3.7%
Las Vegas, NV	13.7%	7.0%	6.4%	125,754	0.5%	5.8%	5.5%
Stockton, CA	13.6%	7.7%	5.6%	185,291	106.3%	7.0%	4.5%
Reno, NV	13.0%	6.6%	6.1%	95,659	49.2%	21.8%	3.2%
Cincinnati, OH	12.0%	5.0%	6.8%	317,554	18.6%	3.4%	1.6%
Indianapolis, IN	11.3%	5.1%	5.9%	355,045	22.9%	7.1%	3.2%
Baltimore, MD	11.2%	5.2%	5.8%	260,303	13.2%	7.5%	1.4%
Newark, NJ	11.1%	5.3%	5.6%	226,572	32.2%	5.7%	1.6%
Total Industrial	13.2%	7.5%	5.4%	14,846,331	24.1%	4.2%	1.9%

Source: Barings Real Estate Research, CBRE-EA Oxford Economics scenario Q1 2021, NCREIF annualized returns as of Q1 2021. Total industrial represents NCREIF overall U.S. annualized industrial returns as a capital markets benchmark and CBRE-EA's sum of markets performance and outlook for space market relative comparisons.

Table 1 on page 24 illustrates the 10-year annualized NCREIF returns as of the first quarter of 2021 for a set of first mile markets, along with several key space market metrics.

Many first mile markets reported strong income returns and strong appreciation during the last cycle. While some low-barrier first mile markets such as Indianapolis and Baltimore had underperformed the national average rent growth benchmark over the 10-year period, rent growth in these markets has firmed up during the past year. These areas also have above-average performance forecasts for the next two years, according to CBRE-EA.

Finally, current and future supply conditions across markets show conditions that support the fundamentals.

While this small sample set is not comprehensive and is not indicative of the broader first mile opportunity set, it illustrates structural shifts in some first mile markets that support the case for institutional investment. For example, Las Vegas, traditionally a first mile node, has emerged as a regional distribution center for Southern California and several Western states during the latest cycle. This is due to its location, superior transport infrastructure, access to a qualified labor pool and favorable zoning regulations.

Similar conditions make the case for investment in other first mile nodes on the West Coast such as Reno, Nevada, and Stockton, California, as well as in key distribution nodes in the Midwest and on the East Coast.

In conclusion, first mile markets allow distributors to build and maintain a responsive supply chain for their end users. This demand will continue to create potentially attractive opportunities for institutional investors seeking to increase their allocation of a sought-after property type that is supported by strong structural tailwinds. ■

TJ Parker, CFA, CAIA, is the managing director of Barings Real Estate Research.

"Worth Repeating"

Sound bites from NAIOP's CRE.Converge, held September 27-29 in Miami Beach, Florida:

"All the markets we're in, we're seeing increasing rent growth, and that's helping us offset increasing construction costs, which I think has been a major issue in our industry." — **Jon Paul Pérez**, *president, Related Group*

"In this day and age, a public space is only as good as its utilization." — **Mike Morris**, *principal, Cana Development*

"All of these companies now have a lot of data but either they aren't looking at it or they don't know what to do with it — and it's not changing anything about the way business is done." — **Bryan Colin**, *CEO, View Labs*

"This has been a golden era for real estate." — **Robert Griffin**, *U.S. head of capital markets, Newmark*

"Don't underestimate the power of interest rates and how they can be leveraged. The current broad-based downward pressure on cap rates is a result of two things: the incredibly low cost of debt and the resounding release of pent-up demand, supporting job growth and economic expansion." — **Hessam Nadji**, *president and CEO, Marcus & Millichap*

"We have more capital and more landlord and investor groups chasing this asset class (life sciences) than we ever have before." — **Lauren Gilchrist**, *managing director for research, Longfellow Real Estate Partners*

"Flexibility and adaptability are critical for this hybrid workforce. But they're also very important to our resilience. If we exercise that resilience muscle, we'll be stronger going forward." — **Kristin Jensen**, *principal and co-managing director, Gensler*

"So many young people of color or people from different backgrounds don't have the access or the relationships. So, I think at the internship level, getting that experience is hugely important." — **Grant Hill**, *founder and chair of Hill Ventures and member of the Naismith Basketball Hall of Fame*

"The supply chain is so out of whack, while the demand has gone through the roof. As they say, the solution for high prices is high prices — because it will drive down demand and then drive prices back down." — **Bill Finfrock**, *president, Finfrock*

"When you buy a site in South Florida, you may be sitting on that site, non-monetizing that asset, for two years. It's a 12- to 18-month process to get your entitlements, site plan approvals and your permits before you can even start anything. It takes patience in this market for sure." — **Stephanie Rodriguez**, *regional senior vice president for Florida, Duke Realty*

Basketball legend Grant Hill was the most popular keynote speaker during NAIOP's CRE.Converge in Miami Beach.

"I believe NAIOP's growth and success is a true testament to the value our members experience through their chapters and the knowledge, education and advocacy delivered by the corporate staff. Together, our chapters and NAIOP create a strong value proposition — one that sets us apart and drives longtime loyalty to the association." — **Jeff Milanaik**, *principal/market officer, Bridge Development Partners, 2022 NAIOP chair* ■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CEO on Leadership: Molly McShane

The leader of The McShane Companies, headquartered in Rosemont, Illinois, talks about taking the reins of the 35-year-old family-owned business and focusing the firm on smart, sustainable growth.

By Ron Derven

Molly McShane

> **"I absolutely love working in the industry — there are so many rewarding career opportunities. Our challenge is to make these opportunities more visible for more people."**
>
> *— Molly McShane, CEO, The McShane Companies*

Development: *Could you tell us about your background and what led you to a career in commercial real estate?*

Molly McShane: Being part of a family company, most people presume it was a foregone conclusion to go into the business, but nothing would be further from the truth. Like most people I meet in real estate, my path into this career wasn't a direct one. After college I went into marketing, but quickly concluded it wasn't right for me. My dad convinced me to give construction and real estate a try, because he thought I would really enjoy it and find it fulfilling. It's an industry in which you can have such a big impact, and what you do really matters to people.

I joined the company knowing I had a lot to learn. I cut my teeth working on jobsites for McShane Construction, and simultaneously went to graduate school at night. I transitioned into real estate development when I went to work for one of our other companies, Conor, and now I lead all our businesses.

I absolutely love working in the industry — there are so many rewarding career opportunities. Our challenge is to make these opportunities more visible for more people.

Development: *Only 40% of family-owned businesses survive to the second generation. What were your major challenges coming into the business and eventually leading it?*

McShane: The dim statistics are well-known to those of us in family businesses. Being part of one is different because in addition to the complex set of business challenges, there are family relationships to care for. I think that open communication, empathy and respect are key to navigating the inevitable challenges that can arise within that context. We've spent a good amount of time over the years studying the issues commonly problematic to family businesses and have so far worked effectively to minimize them.

I learned very early on when I came to work for my dad, that many people may have pre-conceived notions of who you are and what your abilities are — whether they be positive or negative. My mindset has been to work hard, ask thoughtful questions and learn from the people around me. Let your work speak for itself, and lead with integrity.

Development: *As CEO, what are your core areas of focus?*

McShane: We are focused on smart, sustainable growth within all our businesses. To accomplish that, a fair amount of my attention is centered on our teams and our unique culture. People want more than just a paycheck, so we spend a lot of energy on providing tangible opportunities for career growth, supporting personal growth and making positive impacts in the communities in which we work.

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

McShane: It sounds obvious, but an individual's ethics come first. Everyone thinks of themselves as ethical, though, so it requires some digging to understand if you have a shared definition of ethical decision-making and behavior. Getting to know the candidate on a personal level is important. It also informs the level of cultural alignment that we share. One person — especially in a senior position — can have an enormous impact on the culture of the team. Once we are comfortable with the character of an individual and their strong functional expertise, we will then look for specific qualities such as interpersonal skills, communication skills and a forward-looking, strategic mindset.

***Development:** You were named CEO of The McShane Companies at a time of crisis with COVID-19 worsening. Could you talk about your challenges during this period and how you successfully navigated the company through this crisis?*

McShane: We have 10 offices throughout the country, and our team members come from all sorts of different backgrounds and represent a variety of perspectives. As you might expect, there have been different reactions to the challenges we have faced over the last year and a half of the COVID pandemic.

It's idealistic to think we'll find consensus on all the issues we face together, but I believe it's important to hear everyone's perspectives and then make the best decision possible. In what has unfortunately turned into a highly emotional and polarized environment throughout the country, empathy and respect go a long way.

I am so proud of how our leadership team is managing these challenges in a very transparent, data-driven way.

"We are happier when we can authentically bring our whole selves to work and participate in open communication and decision-making."

— Molly McShane, CEO, The McShane Companies

We have routinely gathered information and proactively communicated to employees what we know, and how it might affect them. Flexibility and adaptability have been instrumental, because no matter how well-thought-out our plan is, we inevitably get a new set of facts right before we implement it. We maintain an open mindset and expect our approaches to evolve over time.

***Development:** You have a reputation as an innovative leader who has spearheaded major strategic initiatives across McShane's portfolio of services. How do you guide your team toward your new vision?*

McShane: Most people aren't resistant to new ideas, in my experience. In environments like ours that promote an entrepreneurial mindset, people want to grow and tackle new challenges. If change is necessary, folks need to understand why to embrace it.

***Development:** You have worked to create an inclusive and family-oriented environment at McShane. Could you tell us the impact this initiative has had on the company and its employees?*

McShane: We're all human beings with different stresses and sources of joy. We all have lives outside of work that are important to us. And we are all looking for that elusive work/life balance. We are happier when we can authentically bring our whole selves to work and participate in open communication and decision-making. When we respect that, we are more productive. People are more inclined to chip in when they can and ask for help when they need it.

***Development:** You have contributed your time and talent to NAIOP over the years. How has NAIOP helped you develop as a real estate professional?*

McShane: I've been a NAIOP member for many years, and it's been helpful for me at every stage of my career. Many of my fellow NAIOP Chicago board members from over the years are leaders in their own organizations. Together we've been able to tackle larger industry-wide challenges that wouldn't be feasible on an individual basis.

***Development:** What is the best advice you have been given over the course of your career in real estate?*

McShane: Surround yourself with smart people who aren't afraid to speak up and disagree.

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

McShane: Be humble. Ask thoughtful questions. Put energy into authentic relationships. Learn about things outside of your job description. Engage in your community.

Development: *Do you have any tips — specifically for women — coming into this still male-dominated business?*

McShane: Don't work for people who don't value and support you at every life stage. Know what you are worth. Do not underestimate your qualifications. Actively sponsor other women.

> **"It's idealistic to think we'll find consensus on all the issues we face together, but I believe it's important to hear everyone's perspectives and then make the best decision possible. In what has unfortunately turned into a highly emotional and polarized environment throughout the country, empathy and respect go a long way."**
>
> *— Molly McShane, CEO, The McShane Companies*

Development: *What are the most important lessons you have learned during your years in the business?*

McShane: Take smart risks, instead of no risks.

Development: *Leading McShane must be challenging. How do you relax during your off hours?*

McShane: I find that both physical activity and outdoor time ease my stress. Channeling mental energy into movement is a good thing for me. ■

Ron Derven is a contributing editor for Development magazine.

REAL ESTATE SOLUTIONS

ARE REAL ESTATE CHALLENGES HOLDING BACK YOUR BUSINESS?

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Rethinking Tall Buildings for Human Interaction

Or, a developer, a neuroscientist and an architect walk into a skybar …

By Ryan Mullenix, Greg Smith and Dr. John Medina

Tall-building innovation has been driving architectural conversations for centuries. Society has long marveled at structures that brought humanity closer to the heavens. From the time of the construction of the 138-foot-tall Home Insurance Building in Chicago in 1885 (widely considered the first modern high-rise) to the 2010 opening of Dubai's 2,723-foot-tall Burj Khalifa, the tallest buildings grew approximately 20 times in just 125 years.

This ambition is both understandable and applaudable. Tall buildings create more value for less land, not only in increased square footage but ideally through less lifecycle resource expenditure. Tall buildings also help address population challenges. According to research from the University of Texas, earth provides around 24.5 million square miles of habitable land, but as the number of people has increased almost five times in the past 100 years, the amount of habitable land has stayed relatively the same. The acreage per person has been reduced by about 80%, from almost 10 acres in 1900 to just over two in 2020.

For those looking to build higher, where has the conversation been focused? Most discussions on high-rise innovation tend to address three areas: conveyance (how one moves up and down), structural design and materials (how a building resists wind and earthquakes), and exterior walls (how energy performance can be improved). Recently, mechanical system efficiency and speed of construction have entered the dialogue. Given the significant impact of each of these factors, it's no surprise that the design of the building core, a concrete block filled with elevators and shafts, usually demands the most attention.

NBBJ

When finished, The Net building currently under construction in Seattle will feature a three-tiered rooftop garden called Sky Park.

What is surprising, however, is that these topics remain similar to those that surfaced over a century ago, when technological advancements first enabled society to build higher. The conversation is still rarely around how people — or organizations — stay healthy.

Humanizing Skyscrapers

A substantial number of developers and corporations see the future of the built environment as one centered on community. In recent years, buildings such as the Commerzbank Tower in Frankfurt, Leadenhall Tower in London and Tencent's HQ in Shenzen (which includes elevated gardens, porous ground floors and amenity-based sky bridges) emphasized the importance of interaction. Their investigations prompt a powerful question: if high-rises were designed around people — not systems — how would that process begin?

To answer this, it's important to explore the intersection between the science of buildings and the science of the brain.

What Makes us Human?

Designing high-rises in a people-centric manner requires an active knowledge of how the human brain responds to built environments. The first insight from the cognitive neurosciences is frustrating, however. The human brain reacts to the modern world as if it were still living in the Rift Valley of East Africa, many thousands of years ago.

How is that gap bridged? Humans evolved to be social animals. Relational interactions soon became a

In contrast to what benefits the human physiology, tall buildings are comprised of a substantial number of floors that are isolated; massive structures and greater distances from the ground or roof reduce interactions with colleagues, urban experiences and the outdoors.

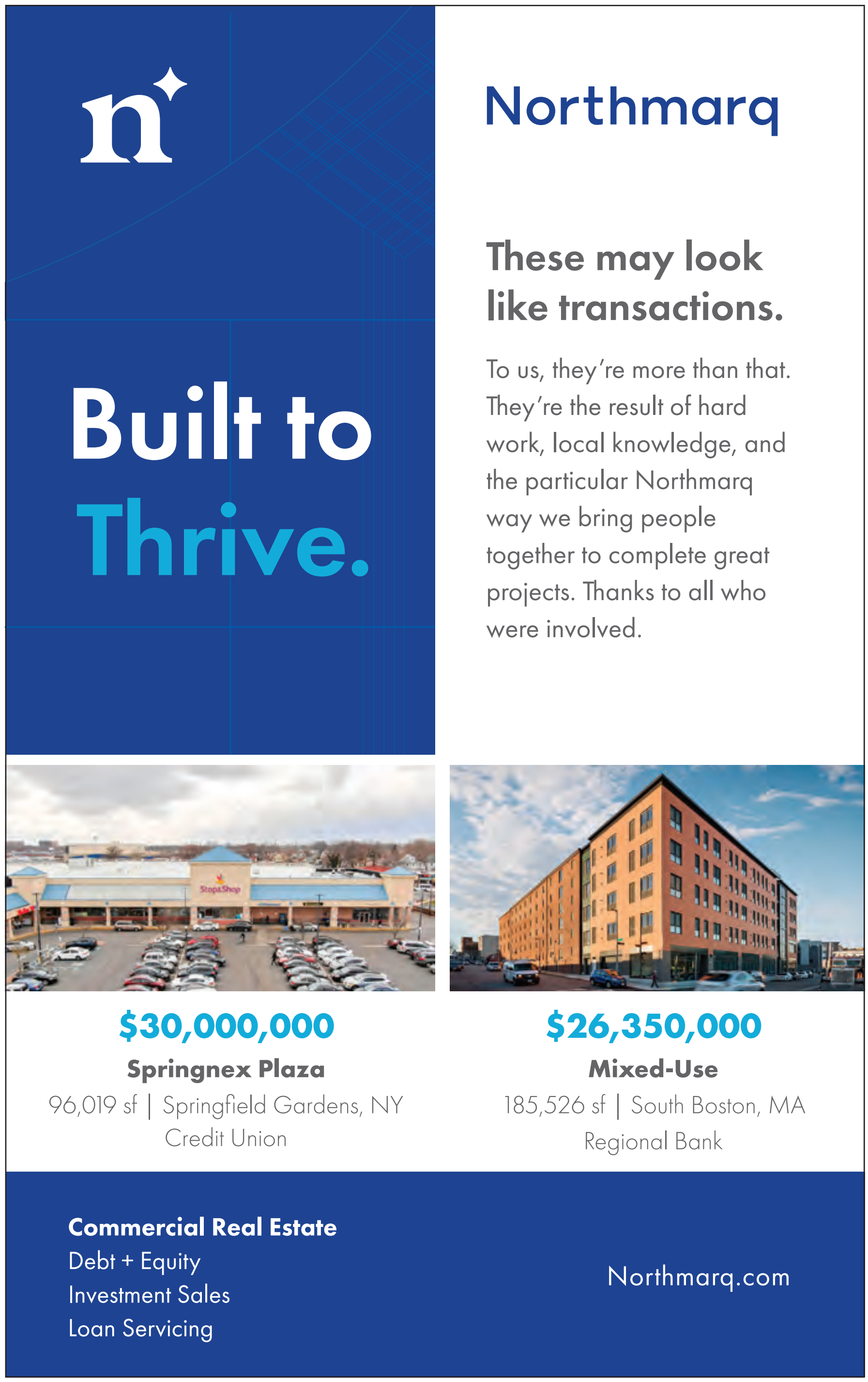
crucial part of human survival, a fact that was underscored by the COVID-19 pandemic. Any building that supports such interactions is likely to be successful.

A second insight occurs in humans' ability to adapt. Though we appear to be creatures of habit, we actually don't like being in places that are static. We appreciate experiences that are repetitive enough for simpler navigation, but those spaces must be unique enough to ensure our environment isn't boring. Though we often hate change, the brain is surprisingly good at it.

Integrating Tall Buildings and Humans

In contrast to what benefits the human physiology, tall buildings are comprised of a substantial number of floors that are isolated; massive structures and greater distances from the ground or roof reduce interactions with colleagues, urban experiences and the outdoors. Although the exterior may be dynamic, the tenant experience is often anything but.

Given this context, the following ideas provide insights on how to broaden the dialogue to include innovative



thinking for both buildings and human performance.

Spaces to think. Ceiling height influences different types of cognition. According to neuroscience research, a tall ceiling supports divergent thinking, while a compressed ceiling helps us focus on detailed resolution. Skyscraper floors are typically undifferentiated — the repetitive floorplate dictates a repetitive layout under a non-varying ceiling.

At The Net in Seattle — a new 36-story high-rise that recently broke ground — high-volume spaces throughout the building will create unique environments for various modes of creativity. The ground floor offers a 24-foot-high daylit solarium and a range of conditions throughout. The uppermost floor provides 30-foot ceilings for ideation sessions and events that are immediately adjacent to a three-story landscaped park.

Spaces to move. Our ancestors used to walk up to 12 miles a day. In a high-rise, going for a stroll likely requires an inconvenient elevator ride to a small ground-floor lobby that squeezes out onto the sidewalk. Placing egress stairs — usually an artificially lit element buried in the center — next to the exterior wall implores occupants to think

Our ancestors used to walk up to 12 miles a day. In a high-rise, going for a stroll likely requires an inconvenient elevator ride to a small ground-floor lobby that squeezes out onto the sidewalk.

twice about how to get from A to B. At The Net, a 36-story stair is adjacent to the elevator bank and occupies part of the façade. A code-required element, the stair now provides benefits to tenants without reducing rentable square footage.

Spaces to learn. Winding paths, plenty of nature and varying types of unpredictable movement are ideal for how we focus and retain information.

Outdoor spaces in tall buildings — if provided at all — tend to be relegated to any roof area that remains after cores and mechanical penthouses are placed. Direct floor access to the outdoors is rare in office projects over 10 stories tall. Stacked atriums that combine natural worlds to discover with verticality are a powerful mixture that can improve cognition. Even simple balconies can provide benefits.

Spaces to comfort. Pandemic-enforced isolation has taken its toll on the mental health of the worldwide workforce. Most tall buildings are limited in their ability to support multiple configurations for diverse work needs, including emotional and mental health. Elevator arrivals tend to occur in the center of the floor, and high-traffic areas like restrooms and service elevators have a large impact on acoustics and privacy. Spaces for refuge are rare.

Can a high-rise building environment aid in addressing mental health? Possibly. To take one short-term example, tall buildings might embed places where tenants could find temporary relief from psychological stress at work (WIRED calls them weeping paths).

At The Net, moving the core from the center of the building creates an open floorplate that is readily reconfigurable based on needs. Instead of being constrained to a single lease depth between the core and the exterior wall, spaces can be more graciously created

At The Net in Seattle — a new 36-story high-rise that recently broke ground — high-volume spaces throughout the building will create unique environments for various modes of creativity.

for arrival and collaboration, and, just as importantly, respite. This footprint allows for different tenants to craft an experience that reflects how they work now and to adjust an experience based on how they need to evolve.

Initiating the Next Discourse

The past 125 years of high-rise dialogue has yielded some remarkable outcomes. Developers, designers, architects, engineers and contractors have collaborated to achieve unbelievable heights on properties that are often smaller than a football field.

High-rises can add value to their inhabitants. They can ignite greater creativity and cognition. Tall buildings can encourage healthier bodies and teams. They can enable individual choice and control for those moments when life and work intersect. Adding an unexpected but unsurprisingly relevant mindset like neuroscience can ensure that, as we build taller in the years to come, the distance between us and the ground does not increase the distance we feel between each other. ■

Ryan Mullenix is a partner at architecture and design firm NBBJ. **Greg Smith** is the founder and CEO of Urban Visions. **Dr. John Medina** is a developmental molecular biologist and an affiliate professor of bioengineering at the University of Washington School of Medicine who collaborated on the design of The Net.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The Multiple Benchmarks of a Post-LIBOR World

SOFR and CSR are key ingredients in the alphabet soup of solutions for interest rates.

By Derek Taylor and Paul Dombrowski

The London Interbank Overnight Rate, or LIBOR, exhibited enough flaws during and after the global financial crisis to necessitate its replacement as a worldwide benchmark interest rate. Despite that, LIBOR did have its virtues. Among those were familiarity and widespread adoption. Both lenders and borrowers could readily "think" in terms of LIBOR and could more easily assess the economics of deals that contained a floating rate. Dealmakers carried around in their heads acceptable spreads vs. LIBOR and could quickly calculate how spreads should change as new information emerged or as deal conditions changed. LIBOR was a kind of lingua franca for lenders and borrowers.

Lenders are transitioning away from LIBOR in earnest, and the transition to a new benchmark rate won't be without its challenges. To date, no replacement rate enjoys the near-universal currency of LIBOR. Instead, there are competing rates, each with its own strengths and weaknesses. Over the past 12-18 months, lenders in the commercial real estate space have taken a variety of approaches for an interim rate, including Federal Funds Rate, Prime Rate, fixed rates, and more recently, AMERIBOR and BSBY.

Getty Images

Every day, officials at the Federal Reserve Bank of New York publish the Secured Overnight Financing Rate (SOFR), which measures the actual cost of borrowing cash that is collateralized by U.S. treasuries.

SOFR has Strong Backing

The Alternative Reference Rates Committee (ARRC) — a working group established by the Federal Reserve to ease the transition to a new benchmark rate for dollar-denominated loans — has recommended that lenders transition to the Secured Overnight Financing Rate (SOFR). SOFR is published each day by the Federal Reserve Bank of New York and measures the actual cost of institutions borrowing cash overnight collateralized by U.S. treasuries. The New York Fed collects data on these overnight secured transactions and calculates the volume-weighted median rate charged, which is then published as the daily SOFR.

Lenders are transitioning away from LIBOR in earnest, and the transition to a new benchmark rate won't be without its challenges. To date, no replacement rate enjoys the near-universal currency of LIBOR. Instead, there are competing rates, each with its own strengths and weaknesses.

One of the reasons LIBOR is being phased out is past occurrences of rate manipulation, and on that front, SOFR is clearly superior. It measures actual daily transactions in an incredibly active and liquid market where U.S. treasuries serve as collateral. But there are some shortcomings. Because SOFR is only published as an overnight rate, any benchmark must be an average SOFR to smooth the volatility of the daily rate. Additionally, SOFR tracks transactions with extremely low-risk profiles; critics claim that SOFR lacks appropriate levels of credit sensitivity.

During the fourth quarter of 2021, some of the largest financial institutions have already started to incorporate Term SOFR as the replacement rate in their form loan documents, with several prohibiting any LIBOR-based loans for new money loans originating in Q4 2021 or after.

The Case for CSRs

In light of these concerns, Credit-Sensitive Rates (CSR) have emerged as a possible replacement for LIBOR. Similar to LIBOR, CSRs are forward-looking term rates sensitive to creditworthiness. CSRs are often calculated based on primary/secondary market yields and data on instruments such as CDs, commercial paper, bank deposits and/or bank bonds. In this way, a CSR is responsive to credit conditions, market conditions and term length in calculating the published rate used as the benchmark.

Several CSRs are published daily, each calculated from a different set of data and including different tenors. Published by the American Financial Exchange LLC (AFX), AMERIBOR is calculated daily as an average rate AFX users charge one another for unsecured overnight loans. As such, AMERIBOR reflects the actual credit-sensitive cost of unsecured borrowing by banks and financial institutions. BSBY is published by Bloomberg Index Services Ltd. and is calculated daily based on wholesale primary market funding transactions, such as interbank deposits and CD data and commercial paper rates. BSBY is published with tenors of one, three, six and 12 months. In addition to these two primary CSRs, the Bank Yield Index and the IHS Markit Credit Rate have been proposed as other CSR benchmarks, calculated from the cost of international banks borrowing U.S. dollars and Markit's proprietary credit data, respectively.

Similar to LIBOR, CSRs are forward-looking term rates sensitive to creditworthiness. CSRs are often calculated based on primary/secondary market yields and data on instruments such as CDs, commercial paper, bank deposits and/or bank bonds.

CSRs also have their shortcomings, primarily owing to the variety of rates that are available and the lack of industry support for any one rate. This might seem like a challenge easily surmounted — and sometimes it is — but choosing the most appropriate CSR for each transaction and then explaining to each counterparty why the chosen rate should be the rate of choice would certainly slow down dealmaking by introducing operational friction and additional obstacles.

One of the reasons LIBOR is being phased out is past occurrences of rate manipulation, and on that front, SOFR is clearly superior. It measures actual daily transactions in an incredibly active and liquid market where U.S. treasuries serve as collateral.

The 'Term SOFR' Solution

During the summer, ARRC put forward a possible solution by recommending the forward-looking term rates published by CME Group based on SOFR. This "Term SOFR" rate would solve for one of SOFR's shortcomings by providing market participants with a forward-looking rate; however, whether the Term SOFR rates capture enough of the "right kind" of credit sensitivity has worried some critics. Conversely, how Term SOFR rates, which are based on transactions in the derivatives market, would behave in a financial crisis or periods of heightened market volatility is something of an open question. Further questions persist about whether Term SOFR is the best reference rate for certain loans of great importance to the real estate community, such as construction loans and mezzanine loans.

Absent a financial crisis that reveals unforeseen flaws in a Term SOFR approach, Term SOFR is likely to become the benchmark rate of choice for many transactions; however, CSRs will likely continue to be employed by many lenders. There are material differences in how the competing reference rates affect the economics of both legacy and new transactions. The cessation of LIBOR as the reference rate requires borrowers and lenders to slow down and think through the options, both as a day-to-day operational matter and as a longer-term regulatory concern. ■

Derek Taylor and **Paul Dombrowski** are partners with the law firm Husch Blackwell, where they counsel clients on all facets of finance and real estate law.

Cradle to Cradle: Understanding Whole Life Carbon

Complex calculations go into determining the environmental impact of construction.

By Alice Devine

Getty Images

The concrete industry is one sector of construction that has embraced third-party Environmental Product Declarations (EPDs), which can be likened to nutrition labels for building products.

Increasingly, consumers can make buying decisions based on carbon footprint. That recent airline ticket or running shoes purchase? Sportswear companies and airlines now list carbon emissions alongside prices. The built environment is following suit. However, distilling the carbon footprint of a structure from the extraction of building materials to their eventual disposal is a layered calculation. The simple equation is that the sum of embodied carbon plus operational carbon equals whole life carbon.

According to MIT's Center for Real Estate, approximately 40% of emissions in the U.S. can be attributed to the built environment. Decarbonization could greatly reduce those impacts. Although the real estate industry has tended to focus on energy savings, whole life carbon demonstrates how an overarching perspective might best achieve sustainability.

A Focus Shift from Energy Usage

From one perspective, attention to energy usage and efficiency could provide the optimal path to sustainable practices. The Department of Energy reports that it is "essential to reduce energy consumption in buildings in order to meet national energy and environmental challenges" as the sector accounts for 76% of all electricity use.

Others, however, embrace a more holistic perspective. A report from Sacramento, California-based Integral Group notes that focusing solely on annual energy use "is significantly inaccurate and significantly incomplete." Measuring electrical usage can be inaccurate depending on the time of day or night. Also, an energy-usage metric ignores the climate impact of building attributes such as structure and mechanical systems during operation. Focusing on whole life carbon allows the industry to widen its environmental lens.

Embodied Carbon

Whole life carbon includes the embodied carbon in building materials. During production, materials progress from raw extraction, to processing, to product manufacture, to sales distribution, to transport to the building site. Reducing emissions at any of these stages helps.

Whole life carbon includes the embodied carbon in building materials. During production, materials progress from raw extraction, to processing, to product manufacture, to sales distribution, to transport to the building site. Reducing emissions at any of these stages helps.

Mass timber buildings are an example of a reduced footprint. Timber is harvested from fast-growth forests, then laminated. Because the wood weighs less than steel or concrete, it takes less energy to transport. It arrives at the construction site in a partially pre-assembled state, which along with its lighter weight allows for shallower pile driving and faster construction.

The operational aspect of carbon, although less visible, provides long-term emission savings. Its life stages include use, maintenance and refurbishment.

Thus, embodied carbon relates to capital investment. When translated to lower construction costs or quicker construction (and occupancy), choosing carbon-smart materials can make economic sense.

Carbon-Smart Estimating

Quantitative tools such as calculators and industry labels help assess carbon. The Embodied Carbon in Construction Calculator (EC3), developed by a collaboration of nearly 50 industry partners, focuses on the "upfront supply chain emissions of construction materials." With decentralized information and no standard units of measurements, analyzing various materials becomes an exercise in frustration. The EC3 tool eliminates some of that, although not every material has such a label.

The calculator pulls data from construction estimates or BIM (building information modeling) and matches it to third-party Environmental Product Declarations (EPD) to display procurement information in a straightforward format. Owners, architects and contractors can decide — line item by line item — where they might make better sourcing decisions. With 15,000 users, the free, cloud-based tool has gained so much traction that contractors seek employees versed in this methodology.

Labels such as EPDs are like nutritional food labels, except that they are even more detailed. According to UL, an EPD "tells the life cycle story of a product in a single, comprehensive report. The EPD provides information about a product's impact upon the environment, such as global warming potential, smog creation, ozone depletion and water pollution."

Anthony Hickling, managing director at the Carbon Leadership Forum, says that certain material groups, such as concrete, have embraced the label system. A comparison via EC3 "helps professionals understand what higher-performing concrete looks like, and

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Over a typical 50-year lifespan, the operational impact of a building rises relative to embodied carbon. Triple net leases allow incentives to be split, although there might be a disincentive for an owner to pursue operational carbon savings.

can use that knowledge to influence decision-making," says Hickling.

Operational Carbon

The operational aspect of carbon, although less visible, provides long-term emission savings. Its life stages include use, maintenance and refurbishment. Green roofs, such as that at San Francisco's California Academy of Sciences, collect rainwater, restore habitat, increase open space, reduce the heat island effect and reduce water run-off. As a bonus, the wildflowers and array of rooftop plants make the building aesthetically pleasing.

Over a typical 50-year lifespan, the operational impact of a building rises relative to embodied carbon. Triple net leases allow incentives to be split, although there might be a disincentive for an owner to pursue operational carbon savings. If a landlord makes a substantial capital improvement that reduces operating expenses over a long lifetime — such as a radiant floor that reduces heating, venting and air conditioning costs — the tenant benefits directly with reduced expenses. Unless the landlord can market the sustainable building at a higher rent or attract tenants who desire this type of space, the landlord has less economic incentive to pay for lighter carbon materials if they are more expensive than traditional ones.

Emi LaFountain, regional sustainability manager at Turner Construction, notes this barrier to lighter carbon footprints: the lack of shared information between the budgets for capital expenditures and operating expenditures. Lender requirements and a focus on imminent construction expenses grab more of the spotlight than the long-term operating budgets. LaFountain believes that owner-occupied campuses present an opportunity to enable more efficient design adoptions of lower life-cycle carbon impact.

Behemoth glass buildings exemplify aesthetic choice over performance. Innovations such as vacuum-insulated glass, suitable for smaller glass spans, provide an alternative. Traditional double- or triple-paned glass often contains a space filled with argon or other gas. Vacuum-insulated glass, however, eliminates the internal gas and air trapped in the panes. Its high efficiency results in long-term expense reduction due to the lack of reflection and less heat generated. According to LaFountain,incorporating the expenses that a landlord and tenant do *not* pay should be part of the investment decision.

Disposal and Reuse

Although disposal and reuse are commonly associated with the end of a building's life cycle, a truly circular economy demands attention at the start of design and construction. TRUE (Total Resource Use and Efficiency) calls itself the "first zero waste certification program," whose goal is to divert 90% of waste from landfills, incinerators and the environment over a period of 12 months.

Although disposal and reuse are commonly associated with the end of a building's life cycle, a truly circular economy demands attention at the start of design and construction.

Construction sites demonstrate techniques for such disposal and reuse. For instance, dumpsters labeled "wood," "cardboard," "mixed debris" and "container recyclables" allow for on-site sorting that eases downstream diversion. Upstream efforts involve recycling and reuse. The 400,000-square-foot California Academy of Sciences insulates its walls with recycled jeans in lieu of fiberglass, an apt use considering that California's gold seekers in the 1800s created the denim pants.

Culture Change

Hickling notes that the "Buy Clean" legislation underway in California, New York, Colorado and other states will require public projects to report carbon percentages for specific materials used. Soon, entities will need to meet baseline standards for carbon emissions.

"As we design for the climate of today, we also need to design for the climate of tomorrow," LaFountain says, and pay particular attention to MEP so that systems are not undersized to counteract any potential effects from global warming. ■

Alice Devine lectures at UC Berkeley's Haas School of Business and is the award-winning author of "Suite Deal, the Smart Landlord's Guide to Leasing."

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More Destinations or Faster Roads: Thinking of Traffic Congestion Like a Traveler

Access to jobs and services could be a more important metric than time spent commuting.

By Bob Dunphy

Transportation concerns in urban areas have largely focused on congestion and the best techniques to reduce it. The usual solution is to propose more capacity to serve population growth and improve speeds on roads.

However, a broader measure of how well the transportation system meets people's needs is not how fast you go, but what you can reach — for work, shopping, school or other activities. Incorporating such measures would create a better understanding of the performance of urban transportation.

Getty Images

Traffic congestion is about more than slow driving times. It's also about the degree to which it prevents people from easily accessing jobs.

In an article in the May 2021 issue of the ITE Journal, published by the Institute of Transportation Engineers, analysts **Eric Sundquist** and **Chris McCahill** suggest that "in an ideal world, we would use quantifiable measures of accessibility to develop the best projects." Such a place-based approach also makes it possible to address the needs of minority communities, which have often been harmed by past transportation decisions, especially highway projects.

What Congestion?

Across the U.S., automobile congestion almost disappeared when COVID-19 shut down much of the economy starting in the spring of 2020. The impact on travel was immediate and dramatic. According to the Texas A&M University Transportation Institute's Urban Mobility Report for 2020, the congestion curve flattened dramatically in the 494 urban areas studied during the initial shutdown period, and shorter rush hours returned to cities when the "closer to normal" period hit in the fall.

The estimated yearly delay per auto commuter was cut in half across all urban areas, dropping to a level last seen in the 1990s. Among areas with populations greater than 3 million, delays during the September-to-December period remained 40% below the first quarter.

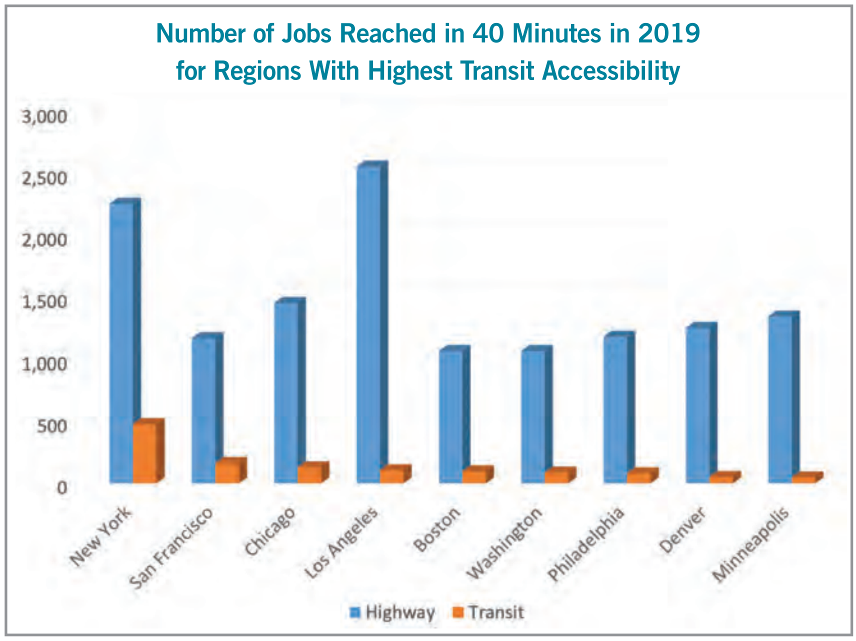
The bigger picture for travelers was the sharp drop in average delays per commuter. There was at least a 60% decline for Los Angeles, Washington, D.C., Seattle, Miami, Phoenix and San Diego. Such dramatic changes for these regions, and nearly every other metro area, were unimaginable within the traditional approaches to managing congestion; widening roads, expanding transit and encouraging people to reduce travel.

As COVID-19 curtailed commutes across the country, it invited a broader approach to evaluating the impact of transportation. For example, instead of measuring delays caused by congestion, a different metric could compare how many employment opportunities can be reached from a location.

How Many Jobs Are Within Reach?

As COVID-19 curtailed commutes across the country, it invited a broader approach to evaluating the impact of transportation. For example, instead of measuring delays caused by congestion, a different metric could compare how many employment opportunities can be reached from a location.

Meanwhile, mass transit produced significantly lower levels of accessibility than driving because of slower speeds and longer waiting times. Workers in the New York region were able to reach only a fifth as many jobs in a 40-minute transit commute as they could by car.



Source: University of Minnesota Accessibility Observatory

Accessibility is a broader measure of the performance of a transportation system. It can be used across different modes of travel, from driving to mass transit as well as walking and biking. It reflects not only the speed of transportation, but also the extent to which land use trends are moving people and jobs farther from urban cores or closer in. For example, the pre-COVID 2019 data from the University of Minnesota's Accessibility Observatory showed that despite growing congestion overall, there were 10 metro areas with large increases in job accessibility by auto, almost all of them in the Sun Belt.

Additionally, studies by the Accessibility Observatory have found that in 14 of the largest urban regions, residents can reach more than a million jobs in a 40-minute drive, even before the pandemic shutdowns. Even in Los Angeles and New York, two of the nation's most congested regions, the average worker was able to reach more than 2 million jobs in 40 minutes, creating vast opportunities for workers making an average commute.

Meanwhile, mass transit produced significantly lower levels of accessibility than driving because of slower speeds and longer waiting times. Workers in the New York region were able to reach only a fifth as many jobs in a 40-minute transit commute as they could by car. Mass transit in San Francisco reached about 14% of jobs in 40 minutes compared to commuting by car, and in Chicago, Boston and Washington, the figures ranged from 8%-9%. Despite substantially lower accessibility for mass transit compared to automobiles, the absolute level of jobs reached was almost 500,000 in New York, more than 100,000 for Los Angeles, Chicago and San Francisco, and almost 100,000 for Boston, Philadelphia and the Washington, D.C. region.

These levels of accessibility were for 2019, before the substantial reductions in transit ridership, and in some cases service, due to rider concerns during COVID-19. In April 2020, ridership on New York City's subway system, the nation's largest, was just 8% of the normal volume, according to a September 2020 report commissioned by APTA and published by Sam Schwartz Consulting.

What Shops and Services are Available?

Beyond commuting, access to a range of services is a hallmark of a desirable community. Developers have frequently sought to incorporate schools and retail within or near residential communities, and planners have also sought such a balance. As a reaction to sprawling places where it is necessary to get into a car to get a quart of milk, planners are proposing initiatives such as accessible 20-minute neighborhoods to enhance livability.

For example, Ottawa revised its growth blueprint in 2019 to create a community of 15-minute neighborhoods where people can get to most of their daily destinations — schools, grocery stores, transit, parks and libraries — within a 15-minute walk.

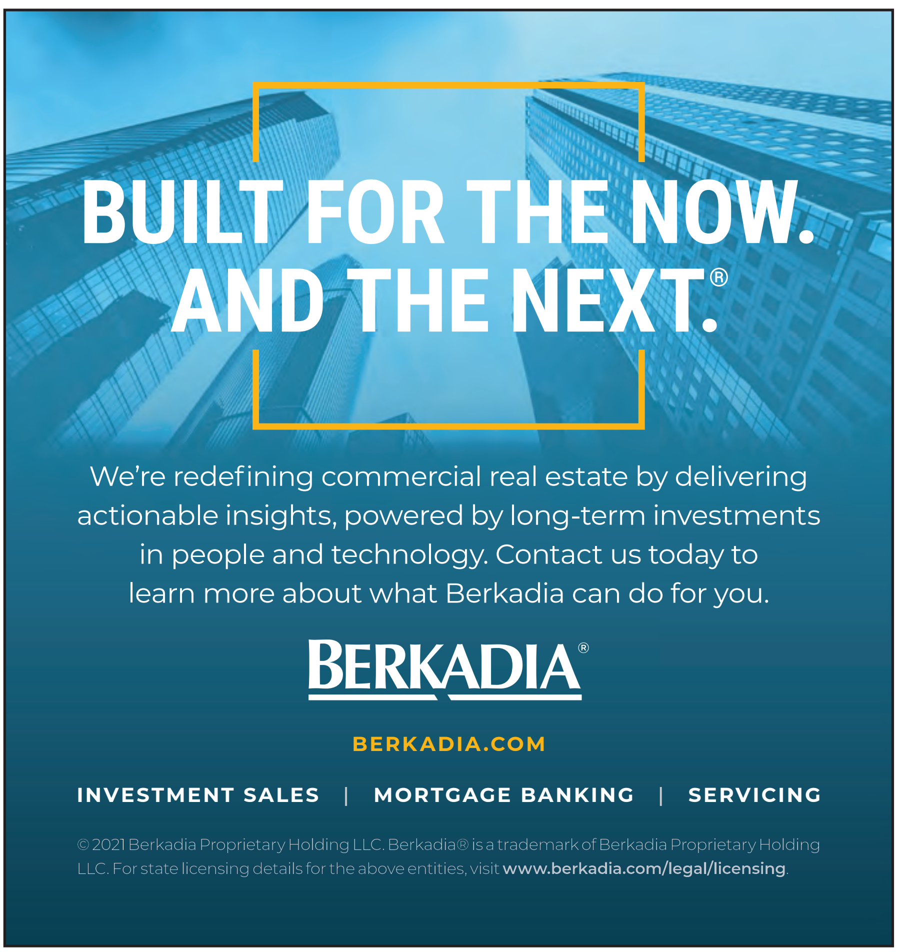
Portland, Oregon's "20-minute neighborhood" model, used since 2010, calls for 90% of residents to be able to easily walk less than 20 minutes to meet non-work needs such as grocery shopping, dining and transit.

Tempe, Arizona, has a goal of making daily needs, excluding commutes, reachable within 20 minutes for all its residents by walking, cycling and mass transit.

A significant aspect of these initiatives is the emphasis on creating and maintaining livable communities with pedestrian access rather than less road congestion. For example, some communities are actually reducing posted speeds in residential neighborhoods.

Comparing accessibility values for non-work purposes offers an opportunity to evaluate the adequacy of services for different communities. This has always been critical for emergency services such as police and fire to assure an emergency response within an acceptable time. It's also been useful for creating public school boundaries that minimize walking. Access to other public services like libraries and community facilities, as well as retailers, helps make communities more desirable. Enhanced accessibility for non-work activities probably requires a combination of transportation improvements and better planning for local services.

Given the seemingly obvious connection between transportation and land use decisions, it is probably surprising to most people that they are not usually connected at the policy level.



Making the Unusual Link Between Transportation and Land Development Decisions

Given the seemingly obvious connection between transportation and land use decisions, it is probably surprising to most people that they are not usually connected at the policy level. Land use and zoning decisions are the province of localities, while major transportation projects are generally funded by state departments of transportation, which try to avoid local politics.

Even local governments typically separate planning departments from transportation agencies. However, this is beginning to change in California, Hawaii and Virginia, which are using accessibility for planning. The Virginia Department of Transportation has incorporated accessibility analyses as a component for prioritizing funding of transportation projects.

Local governments are also recognizing the importance of local accessibility. The Southeast Michigan Council of Governments has benchmarked access to seven core services — fixed-route transit, jobs, health care facilities, supermarkets, parks, schools and libraries — to identify gaps and challenges where accessibility is low, and to help make regional transportation plans more responsive.

And in 2021, the Delaware Valley Regional Planning Commission asked Temple University graduate students to evaluate eight major transportation projects in the Philadelphia region on their impacts, including access from an equity lens. Such broader accessibility measures are more understandable to the general public and can help mitigate the harm of transportation projects on minority communities. ■

Bob Dunphy is a transportation consultant, an Emeritus Fellow of the Transportation Research Board, and an Adjunct Professor in Georgetown University's Real Estate Program in the School of Continuing Studies.

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Brownfields Redevelopment Requires a Cautious Approach

Strong industrial demand translates into rewarding investments for those willing to take on the risks.

Work underway at Bridge Industrial's project in Belleville, New Jersey. The company has gained extensive experience in brownfields remediation in recent years to serve the red-hot industrial market in the New York-New Jersey area.

Photo by Peter Downham, courtesy of Bridge Industrial

At a Glance

- Overwhelming demand for land to build logistics facilities near ports is driving the redevelopment of brownfield sites.
- It takes a lot of knowledge and experience to pull these projects together.
- Many states offer excellent programs to help developers.

By Ron Derven

As demand for space and rents jumps for last-mile warehouses in markets like northern New Jersey and New York and the availability of land shrinks to historic lows, developers are turning to long-neglected brownfields sites — some overlooked for 20 or 30 years. Leading practitioners advise that, in this hot market, it is essential to assemble an A-team, then proceed with caution. Brownfield projects come with extraordinary risks, but well-executed projects will yield benefits for investors and communities.

Developer **Jeff Milanaik**, a partner for the northeast region with Bridge Industrial in Parsippany, New Jersey, is well-versed in the highs and lows of brownfields-to-warehouse conversions. He brought in his first brownfields redevelopment in 2015 in Union, New Jersey, and his second project was the firm's 103-acre ePort Logistics Center in Perth Amboy, New Jersey. That site was originally home to American Smelt-

Aerial Photos of New Jersey

Bridge Industrial's 103-acre ePort Logistics Center in Perth Amboy, New Jersey, was built on the site of a former copper smelting facility that had sat unused since the 1970s.

ing and Refining's copper smelting facility, which closed in the late 1970s. The site was contaminated by slag, a byproduct of the smelting process, as well as other volatile pollutants.

"Since then, we have completed 12.5 million square feet of space worth in excess of $3 billion," he said.

Bridge also purchased a former Ingersoll Rand site in western New Jersey, where over 4,000 people were once employed. It has been vacant since the late 1970s. Over the past two years, the site's 380 acres have been transformed, with almost 4 million square feet of logistics facilities employing hundreds of local residents.

But given Milanaik's experience in the business, he still urges caution to those approaching this development niche.

"I don't breathe easy until the project is out of the ground because the surprises are always in the ground," he said.

Competition Heats Up

Milanaik said he first looked at many of the sites he is dealing with today 10 or 15 years ago.

"They are no different today than they were back then," he said. "The only difference is that the market has caught up with them, and a developer can now spend the dollars to remediate them."

He said his firm is paying considerably more for contaminated ground today than it was for greenfield parcels just a few years ago.

"It is the function of the market," he said. "In northern New Jersey right now, the supply of new Class A distribution space is under 1% for spaces over 300,000 square feet. No question, this raises rents, but then when you go out to do your next project, the price of land has increased significantly, so it is challenging."

Peter D. Downham, LSRP, principal scientist with Roux, an environmental consulting and management firm in Islandia, New York, agreed that the market is highly competitive.

"We are seeing our clients take risks that they probably would have passed on five or 10 years ago because the market is pushing them to do it," he said. "Companies are taking on significant environmental liabilities. The market for us right now is the last-mile industrial site." Roux is seeing the last-mile market spread down from northern New Jersey toward Philadelphia and into the Lehigh Valley area of Pennsylvania. He said that there is strong demand for large sites, but many of those have an environmentally checkered past.

> **"In northern New Jersey right now, the supply of new Class A distribution space is under 1% for spaces over 300,000 square feet.** No question, this raises rents, but then when you go out to do your next project, the price of land has increased significantly, so it is challenging."
>
> *— Jeff Milanaik, partner, Bridge Industrial*

Brownfields vs. Superfund Sites

What's the difference between a brownfields site and a Superfund site? Brownfields are usually abandoned industrial and commercial facilities that are suspected of having contaminants in the soil or the groundwater. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) — informally called Superfund — allows the EPA to clean up the most contaminated sites in the U.S. It also forces the parties responsible for the contamination to either perform cleanups or reimburse the government for EPA-led cleanup work. When there is no viable responsible party, Superfund gives EPA the funds and authority to clean up contaminated sites. Some of the more infamous Superfund sites include Love Canal, New York; Tar Creek, Oklahoma; Pearl Harbor Naval Complex, Hawaii; and Gowanus Canal, New York. ■

Wanda Chin Monahan, an attorney who specializes in brownfields, characterized the market as a frenzy for properties right now, particularly those that lend themselves to light industrial use.

States Work More Closely with Developers

Realizing the economic opportunities generated by industrial demand, states are providing more incentives to redevelop brownfields. According to those interviewed, some of the states that are particularly good at working with developers on brownfield redevelopment are New Jersey, New York, Connecticut, Massachusetts and California.

Downham said New Jersey has made significant progress in cleaning up brownfield sites through its LSRP or Licensed Site Remediation Professional (LSRP) program. This program removed some of the hurdles by streamlining the Department of Environmental Protection (NJDEP) review process. Specifically, primary remediation oversight responsibility was transferred from the NJDEP to private-sector LSRPs. They, in turn, are overseen by a 13-member Site Remediation Professional Licensing Board.

"Now the LSRP is able to make decisions in real time as data is being received, rather than having to rely on the DEP," Downham said. "It allows the redevelopment of these sites to be undertaken more quickly and efficiently while still remaining protective of human health and the environment."

Similar programs have been implemented in Massachusetts and Connecticut as well. Since the program was enacted in New Jersey in 2012, the state has successfully closed between 15,000 and 20,000 sites.

While New York doesn't have an LSRP program, those interviewed said the state is nevertheless highly effective in working with the private sector to clean up brownfield sites.

"The state of New York and its regulatory officials really understand the value that real estate development can bring to a brownfields site, and their program is highly effective in getting the private sector to clean up brownfields sites," said **David Gockel**, PE, president and CEO of Langan in Parsippany, New Jersey, which provides engineering and environmental consulting services. "New York State has made a significant investment in the redevelopment of brownfield sites; in fact, there have been independent studies that show that through New York's efforts, it is generating $3.44 in tax revenue for every dollar spent on brownfields redevelopment."

Milanaik said the municipalities he works with are highly receptive to getting brownfield sites cleaned up and back on the tax rolls.

"They typically have two questions for us," he said. "The first question is: 'Are you for real?' That's because people have been coming into their offices for years telling them that they can clean up a particular site — but it doesn't happen. The second question is: 'How fast can you bring us jobs?' So now we are in the economic-development business as well as the brownfields-redevelopment business."

Legal Liabilities Abound

According to Monahan, despite strong demand and a more receptive regulatory climate, there are still legal liabilities that the developer must shoulder.

"There have been legal statutory changes and there have been improvements in the science of investigating and remediating contaminants that have made brownfield redevelopment a little less risky for developers," she said.

She noted that statute and regulation changes in recent years tend to provide more protections to

Injection pumps and mixing tanks are used to conduct in-situ chemical oxidation of contaminants at Bridge Industrial's project in Belleville, New Jersey. The site is within six miles of the Lincoln Tunnel, a major artery into New York City.

municipalities than real estate developers. For example, a town that has a gas station with tanks leaking fuel into the soil will now receive more protection when taking over the property.

"Twenty years ago, if the town foreclosed on the property, it would then be considered the owner and considered the liable party," she said. "Now, certain exemptions have been made to protect townships so that they can get a level of control of the property without risking exposure to environmental liability."

Once the town does get control, it can market the site to private developers who might be willing to take on the responsibility for the site and factor in the cost of remediation in redeveloping it.

"It's a win-win for everyone," Monahan said. "The town gets the contamination cleaned up and the property back on the tax rolls. There will be short-term construction jobs and long-term jobs once the site is redeveloped. And as the property is redeveloped, the developer will profit as well."

In New Jersey, if you are not the responsible party for the contamination and you want to clean up a property, you can be covered with an innocent party's defense, according to Milanaik.

"It is tricky," he said. "On one hand, you are not responsible for anything that existed on the site, but then if something is found that no one knew existed on the site, you could technically become liable. How we protect ourselves against that is to work with a reputable insurance company and get a pollution liability policy. No policy will protect you from anything that existed on the site — you have to identify and quantify what is there."

Choosing the Right Environmental Consultant

Once a potential brownfields site is identified, the first step is to have an environmental consultant study it to determine if a project is possible, according to those interviewed. Developers need "an experienced professional who does this type of work — day in and day out," said Monahan. Whether the project is a corner gas station or a 400-acre former industrial manufacturing site, the steps are the same; it is just the scope of the project that is different.

It is important that the consultant perform a Phase 1 Environmental Site Assessment (ESA), which researches the site's current and previous uses. The consultant must review all the relevant records and databases and conduct the site inspection looking for red flags such as pipes that go nowhere, stained soil, distressed vegetation or trenches, to name just a few.

Monahan said if the consultant discovers soil discoloration, for example, it is deemed an "area of concern." Soil sampling must be done to investigate the discoloration. If the tests come back nega-

Photo by Peter Downham, courtesy of Bridge Industrial

“We are seeing our clients take risks that they probably would have passed on five or 10 years ago because the market is pushing them to do it. **Companies are taking on significant environmental liabilities. The market for us right now is the last-mile industrial site.**”

— Peter D. Downham, principal scientist, Roux

tive, that potential area of concern can be ruled out. If it comes back positive, the consultant needs to find out the extent of the problem.

Because many of these sites have been studied repeatedly by developers over many years, there is work by other consultants that can be examined, Monahan said.

“However, you have to look at this work with a critical eye,” she said. “The prior consultants might have missed something important.”

What the consultant is trying ultimately to achieve, she noted, is a range of cost estimates for each area of concern. That gives the developer a strong idea of the worst-case scenario.

Suppose an area of concern will cost between $2 million and $5 million to remediate. In that case, the developers must consider the impact on profit if they must spend the entire $5 million.

Technology to the Rescue

Technology is playing a significant role in getting brownfields sites cleaned up and back on the tax rolls. Monahan said technology has progressed to such a point that the consultants who do the preliminary investigation of the site can be much more diagnostic in terms of the nature, scope and extent of any contamination at the site.

“Uncertainty is a death knell for developers,” she said. “The more we can narrow that gap, the better.”

Although technology has greatly improved to help developers better anticipate the costs and time involved in remediating sites, the EPA has identified major new contaminants that it is concerned about. Two of these are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). They are widely used and studied chemicals in the PFAS group. This could lead to the identification of more brownfield sites.

Funding Brownfields Redevelopment

When it comes to paying for brownfields redevelopment, Milanaik suggested working with institutional investors willing to tolerate some risk. There are also grants and incentive programs available to help with brownfields remediation both at the federal and state levels. The EPA offers a list of brownfields cleanup grants, and many states have their own programs. The Infrastructure Investment and Jobs Act, which was signed into law in November, could provide about $21 billion for brownfields and Superfund site cleanup as well. It

EPA Launches Superfund Redevelopment Mapper

The U.S. Environmental Protection Agency (EPA) recently launched the Superfund Redevelopment Mapper, a new GIS-based tool to help governments at all levels, along with developers, community development organizations and others, explore reusing and redeveloping land on or near Superfund sites.

Even after they are cleaned up, many Superfund sites sit idle or vacant with few or no benefits for the communities they are near. This new tool helps position these properties for revitalization and beneficial use as resources for a community. Superfund sites in reuse can grow local economies and create jobs. These uses include commercial, industrial and residential development.

The tool provides users with site locations and key information highlighting site features and characteristics of the surrounding area. Existing GIS layers can be added to the tool, allowing users to customize their site evaluation criteria, such as income levels, unemployment, land features and much more.

The Superfund Redevelopment Mapper was developed to ensure that Superfund site cleanups lead to more properties being returned to uses that benefit communities.

To learn more, visit epa.gov/superfund-redevelopment/superfund-redevelopment-mapper. ■


Aerial Photos of New Jersey

Bridge Industrial's Bridge Point 78 in Phillipsburg, New Jersey, was built on the site of a former Ingersoll Rand facility that closed in the 1970s.

would also provide $1.5 billion to scale up community-led brownfields revitalization.

While some observers say this bill is a drop in the bucket, Gockel sees the bigger picture.

"About 20% of the money in this bill will go to projects like roads, bridges and railroads," he said. "Much of it will yield enhancements of infrastructure that will bring many more brownfields sites to market. Suddenly an infrastructure improvement is going to make many brownfield sites more valuable. Now, the historic premium on that site associated with its environmental cleanup can be overcome because of the transformation in value created by an adjoining infrastructure improvement such as a new roadway."

Getting Started in Brownfield Redevelopment

For companies that are just beginning to look at brownfield redevelopment, here are tips for keeping a deal on track:

"New York State has made a significant investment in the redevelopment of brownfield sites; in fact, there have been independent studies that show that through New York's efforts, **it is generating $3.44 in tax revenue for every dollar spent on brownfields redevelopment."**

— David Gockel, president and CEO, Langan

Consider the timeline. Downham urged anyone new to the business to do their due diligence on a site from both an environmental and geotechnical standpoint. Go beyond the normal Phase 1 Environmental Site Assessment and evaluate all future environmental liabilities.

"Determine how long you will retain liability on the site and look at how long it will be before you can put a shovel in the ground to start the redevelopment process," he said. "After acquiring the land, if you get bogged down in environmental remediation that prohibits redevelopment, you are not able to get a return on your investment."

He said that on some sites his firm is working on, remediation could take between 12 to 18 months before redevelopment can start.

"Working closely with the development team, we are always looking for ways to allow for redevelopment of a site to begin while still implementing remedial actions to address both soil and groundwater impacts," he said. "Ultimately,

> “There have been legal statutory changes and there have been improvements in the science of investigating and remediating contaminants that have made **brownfield redevelopment a little less risky for developers.**”
>
> *— Wanda Chin Monahan, a New Jersey-based attorney who specializes in brownfields*

How Brownfields are Cleaned Up

The U.S. Environmental Protection Agency (EPA) has identified these as the most common methods for cleaning up brownfields and other contaminated sites.

Excavation. Contaminated soil is dug up at the site and transported to a landfill for treatment or disposal. Clean soil or other material can be used to fill the excavated area.

Tank removal. Soil contaminated with fuels is dug up, along with any underground storage tanks and pipe systems. The soils under the tanks can then be examined for contamination and removed if needed.

Capping. The placement of a barrier between the surface soil and contaminants, usually a geotextile, a layer of clean soil or both. Capping protects areas of cleanup, reduces exposures and prevents the spread of contamination.

On-site or in-situ treatment. Chemicals are injected into the soil to break down contaminants or convert them into less harmful substances. Binding agents can be used to solidify or stabilize the soil to prevent contaminant movement.

Bioremediation. Naturally occurring or adapted microbes are introduced at the site to consume organic pollutants. Active management at bioremediation sites includes adding nutrients, oxygen or chemicals that release oxygen to increase microbial growth. This allows them to degrade the contaminants over time to water, gas or less harmful or toxic substances.

Phytoremediation. Plant root systems release substances that help plants neutralize, stabilize or increase microbial degradation of contaminants in contaminated soil or water near roots. Select plants can also take up contaminants through their roots, reducing soil and water contamination over time.

Lead and asbestos abatement. Lead and asbestos are inspected and removed by licensed contractors who must undergo specialized training. ■

communication and planning is key to allow for a successful project.”

Assemble an A-Team. Milanaik noted that there is a real opportunity for value creation in the brownfield redevelopment business, but a developer needs to put together a “best in class” team.

“Bring in a great attorney for approvals and for handling environmental issues,” he said. “Put together the best environmental firms, the best geotechnical engineering firms.”

Listen to the pros. Attend NAIOP meetings and talk to people with brownfield remediation experience, Gockel said.

“Network with the NAIOP membership,” he said. “NAIOP is an organization where people are glad to share their experiences. Many members have real war stories they will be glad to share with others.” ■

Ron Derven is a contributing editor to Development magazine.

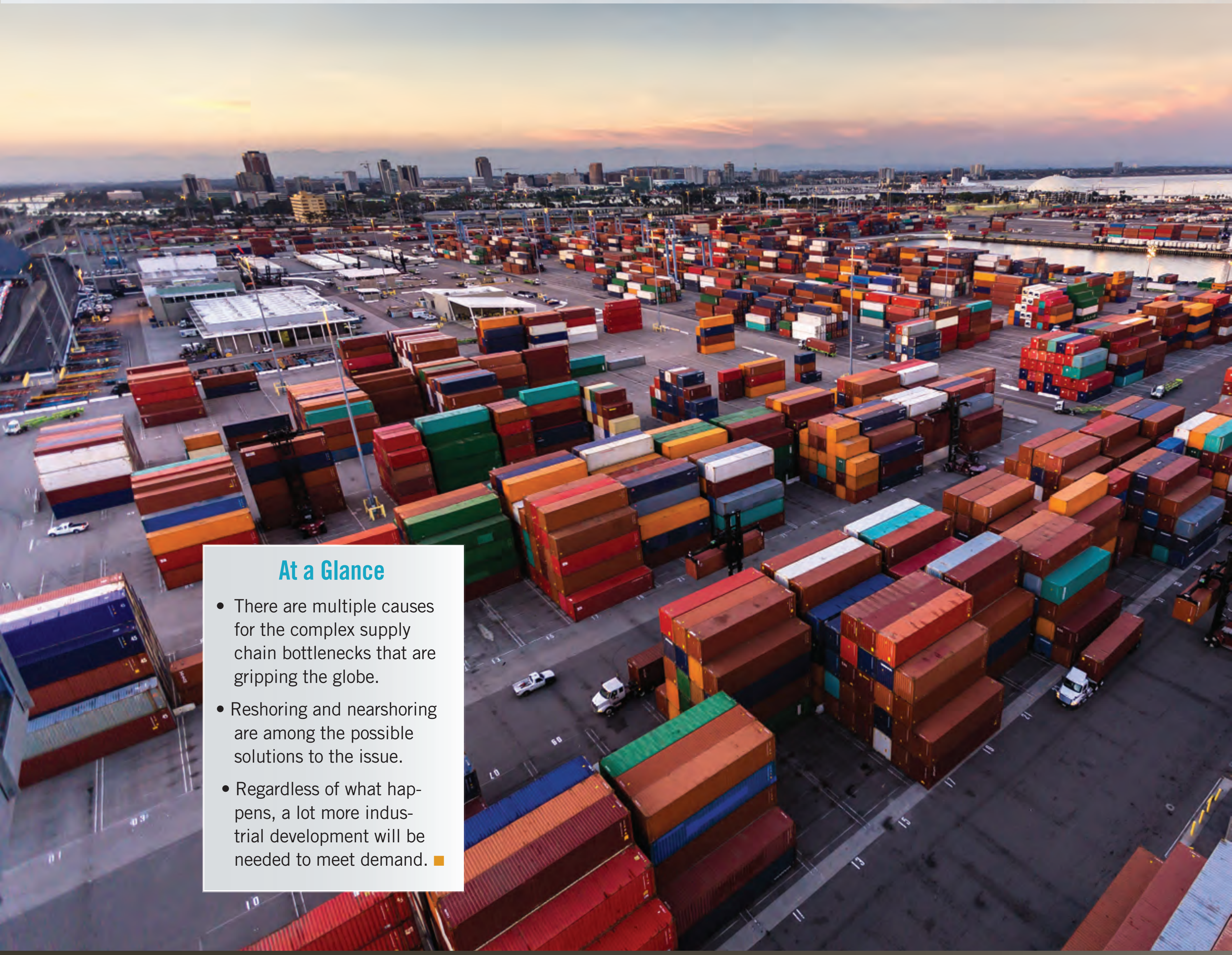
NAIOP’s Newest E-Book: Best Practices in Cold Storage Facility Development

Cold storage development is not for the faint of heart — it is complex, expensive and requires high-level expertise. This niche property type has been getting more attention due to the increasing demand for temperature-sensitive goods including online grocery orders, meal kits and pharmaceuticals. The growth in cold storage has become so great that speculative cold projects, unheard of five years ago, have become increasingly popular. To serve as an introductory guide to the topic, NAIOP has released a new e-book, “Best Practices in Cold Storage Facility Development.”

Industry experts from Ware Malcomb, FCL Builders and Cold Summit Development offer their latest insights along with specific design and construction considerations for build-to-suit and speculative projects, including Ware Malcomb’s new Cold Ready prototype. This 40-page e-book features over a dozen illustrations and covers topics such as predevelopment, site planning, building envelopes, insulated mental panel walls, roofs and racking.

To purchase a copy, visit www.naiop.org/coldstorage ■

All Eyes on the Global Supply Chain



At a Glance

- There are multiple causes for the complex supply chain bottlenecks that are gripping the globe.
- Reshoring and nearshoring are among the possible solutions to the issue.
- Regardless of what happens, a lot more industrial development will be needed to meet demand. ■

Containers stack up on the docks at the port of Long Beach, California. About 40% of ship-bound cargo to the U.S. moves through the ports of Long Beach and Los Angeles.

Getty Images

Logistics and transportation issues are top of mind in the commercial real estate industry — and around the world.

By Trey Barrineau

Supply chain problems have become pervasive in the wake of the COVID-19 pandemic. A vast, complex web of interconnected factors is fueling shortages of nearly every imaginable product, and the problems won't be going away anytime soon. (See box, page 57.)

For example, the Adobe Digital Economy Index noted that U.S. consumers received more than 2 billion out-of-stock messages while shopping online in October, a 250% increase from January 2020.

The highest levels of the U.S. government are paying close attention to the issue, which is contributing to rising inflation and could be a threat to the ongoing economic recovery. In June, the Biden administration announced a task force to address supply chain issues.

And while there were inklings of relief in late fall (according to the Wall Street Journal, manufacturing ramped up in Asia and ocean freight rates were down substantially from their highs in September), a full solution won't be coming anytime soon. In late October, Federal Reserve Chair **Jerome Powell**, speaking at a Bank for International Settlements-South African Reserve Bank conference, said that supply chain problems are "likely to last longer than previously expected, likely well into next year," according to a report from the New York Times. That echoes what experts in the logistics industry are saying. For example, **Jackson Meyer**, CEO of Australian freight forwarding firm Verus Global, told the country's 9News in October that shipping delays could last into 2023.

Getty Images

A lack of shipping containers has been a critical component of the ongoing supply chain issues.

"There's a massive backlog already and there's a huge demand continuing to rise," Meyer said.

That backlog has been visible for months off the coast of Southern California. This summer and fall, dozens of cargo ships were anchored off the ports of Los Angeles and Long Beach because there was no space to store their containers in the ports, and trucks and trains couldn't move unloaded goods inland fast enough. Together, Los Angeles and Long Beach handle about 40% of the ship-bound cargo that comes to the U.S. each year.

Some relief arrived in October, when the Biden administration reached an agreement with the International Longshore and Warehouse Union (ILWU), which represents dock workers in ports along the West Coast, to begin working 24 hours a day, seven days a week at the port of Los Angeles to clear the backlog of ships, some of which had been waiting up to three weeks to unload their cargo. (The port of Long Beach began round-the-clock work shifts a few weeks before that.) But labor issues could linger: the contract for the ILWU is up for renewal next year, and negotiations could be difficult. According to a July 2021 article by NFI Industries, the union is likely to oppose efforts to increase automation.

Meanwhile, shipping costs have skyrocketed. Before the pandemic, the price to transport a container from China to Long Beach was about $1,500. As of late September, some quotes were as high as $25,000.

"It's kind of hard to change plans when you're in the middle of it," **Will McIntosh**, global head of research with USAA Real Estate, said during a panel at CRE.Converge in Miami Beach in September.

McIntosh said the backlog of cargo ships is just the first obstacle in an interconnected chain of transportation and logistics stumbling blocks.

"I think about what happens when you bring those goods off the ship," he said. "Now you've got to bring them east, and that has its own set of problems. For example, there's a shortage of truck drivers. They carry more than 70% of all goods transported in the United States."

According to the Next Generation in Trucking Association, as of 2021, the industry is short 68,000 drivers, and 25% of current drivers could be retiring soon.

Why Did Supply Chains Lock Up?

The COVID-19 pandemic is the driving force behind the current supply chain problems. According to an October 2021 analysis by the Cato Institute, the pandemic "has scrambled the typically predictable global supply-and-demand patterns on which complex production and logistics networks have long been based."

Here's what happened: The reopening of the U.S. economy this past summer led to skyrocketing demand for consumer goods. However, the major exporting countries in Asia couldn't meet demand. At the same time, those Asian countries weren't purchasing as many goods from the U.S., such as agricultural products. Because of that, there was "a major imbalance in the usual shipping container flows to and from the U.S.," according to the analysis.

Additionally, there has been a "serious mismatch" between total available shipping capacity and abnormally high global demand. "Shipping capacity just can't keep up: Logistics firm Flexport estimates, for example, that global demand for ocean cargo space is 20 to 30 percentage points higher than available capacity, even though ocean carriers have deployed every ship they have," the report notes.

Those supply-and-demand imbalances then began impacting the logistics infrastructure in the U.S., "creating bottlenecks that have exacerbated the original problem," according to the report.

"Shipping containers, for example, have been stacked up at port, thus preventing additional boxes from being quickly unloaded," the report notes. "This is because there is insufficient truck and freight rail service available to pick them all up. Those backlogs, in turn, are reportedly due to a shortage of intermodal chassis — what shipping containers sit on when trucks move them across the country — and warehouse space. Without a nearby place to put their orders, U.S. importers have left their containers at the ports, using them as de facto warehouses." ■

McIntosh added that in addition to trucking problems, the rail system is getting overwhelmed, too. In October, the Association of American Railroads reported that in the first half of 2021, railroads handled the highest volume of intermodal traffic ever moved.

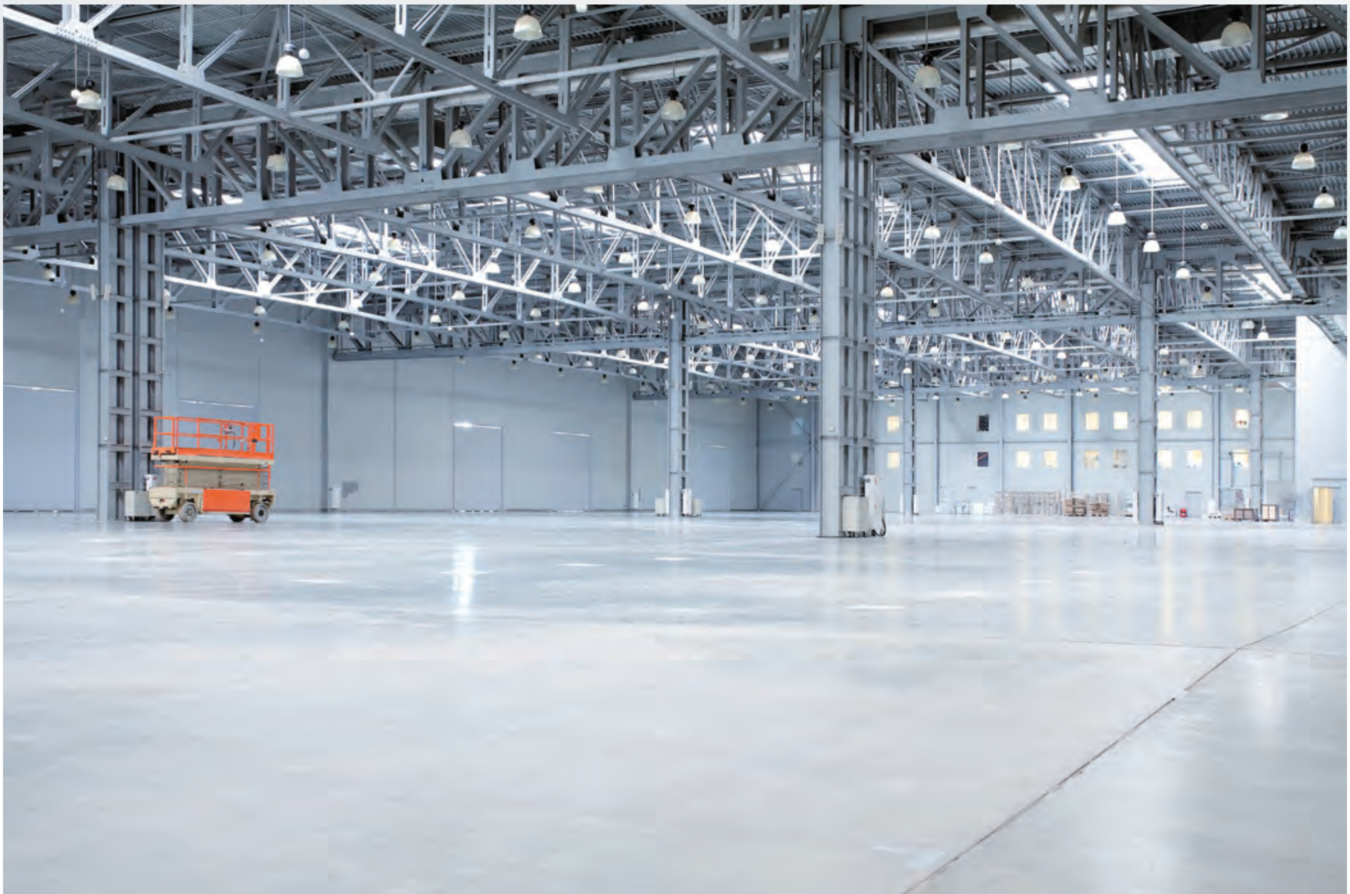
Michael Landsburg, chief development officer with NFI Real Estate, noted that while costs have gone up about 30% year over year in the red-hot industrial real estate market, the costs for other factors in logistics like transportation are going up just as fast or faster.

"Are you sending them by truck? All the costs have gone up and the availability has gone down," he said during CRE.Converge. "Total transportation makes up about 50% of costs. That affects where distribution centers go. It may be a smaller percentage, but it matters. The challenge is planning. Right now, it's hard to look out six months to a year."

A Focus on Reshoring

A May 2020 survey of logistics executives by McKinsey and Company found that 93% of them are plan-

This summer and fall, dozens of cargo ships were anchored off the ports of Los Angeles and Long Beach because there was no space to store their containers in the ports, and trucks and trains couldn't move unloaded goods inland fast enough. Together, Los Angeles and Long Beach handle about 40% of the ship-bound cargo that comes to the U.S. each year.



Getty Images

According to JLL, the demand for industrial space in the U.S. could exceed 1 billion square feet by 2025.

ning to increase resilience in their supply chains. Nearshoring and reshoring could play major roles in those efforts.

Beyond the current supply chain woes, rising labor costs in China is another factor that could lead to greater reshoring or nearshoring of manufacturing. According to a 2019 report from IVEMSA, a Mexican manufacturing back-office services provider and shelter company, labor costs in Mexico are about $4 per hour compared to roughly $4.95 in China, and there are far fewer transportation issues due to the 1,954-mile-long border with the U.S.

"You're going to see more companies looking for suppliers who are closer to the consumer," McIntosh said. "Approximately 80% of the ingredients that go into our pharmaceuticals come from Asia, as do 60% of our semiconductors. The current way of operating is not sustainable."

To illustrate his point, McIntosh shared an anecdote about a Utah-based company that manufactures hot tubs. The company gets parts from seven countries and 14 states. The firm estimates that there are 887,776 miles of travel to assemble a hot tub in Utah. In recent months, supply chain issues got so bad that the company had to charter flights to pick up parts.

"It went from taking a few weeks to make a hot tub to six months," he said.

Air transport is one option that some companies are using to reduce bottlenecks. However, only certain types of freight qualify, fewer passenger planes are available to accept shipments, and air cargo is also facing the same labor issues as every other sector of the logistics industry.

According to **Joe Dunlap**, managing director of supply chain advisory for CBRE, many firms are trying to pursue a supply chain policy that's been labeled "China plus one."

"If you were a company that had consolidated its sourcing to one country, you're in trouble," he said. "So, you should have suppliers in other countries. Generally, it would be China plus another Asian country, but it could be anywhere."

Where to Build Warehouses?

According to Julie Whelan, head of occupier research for the Americas at CBRE, technological advances could help with site selection for industrial properties as the sector continues its strong growth and the logistics industry seeks more space for warehouses to meet unprecedented demand.

"The industrial sector may want to consider other areas where technology could make up for the lack of available labor," she said during NAIOP's Research Directors Meeting at CRE.Converge (see related article, page 68). "Technology is getting easier to implement. Industrial sites could be a possibility in economically depressed towns where there is a supply of available land."

Matt Dolly, research director with Transwestern, noted that areas with great highway corridors are the next high-growth markets.

"In some markets like New Jersey and L.A., there's not much land to build on, so they go out to the Inland Empire or the Lehigh Valley in Pennsylvania," he said. "You still have to drive a little bit further, so they might get lower rents because of that move."

Dolly said growth in the Lehigh Valley, which is about a two-hour drive from the ports of New York and New Jersey, has been especially impressive.

"Transwestern has what it calls our Elite 11 industrial markets, and in terms of inventory, construction, deliveries and net absorption, the Lehigh Valley is near the top of those 11 markets, which include Southern California, Northern New Jersey and Atlanta," he said. "Right now, the rents are favorable, and there are lots of government incentives, too. And Central Pennsylvania is starting to become an extension of the Lehigh Valley."

Despite all the intense interest in the industrial sector, Dolly said he doesn't see a bubble developing.

"With the transportation costs being so much higher, they can increase the rents because it costs them more to deliver the goods than it does for the actual rent," he said.

However, Dolly said he'll continue to pay close attention to what's going on in this critical field.

"I used to read Sports Illustrated," he said. "Now I read Inbound Logistics." ■

Many companies are also scaling back on the longstanding practice of "just in time" inventory management, in which goods are shipped only when they're needed. **Instead, they're starting to focus on "just in case" inventory management, in which a surplus of products is kept in storage to ensure that an adequate supply is always available.**

Inland ports are also pitching in to relieve the pressure on supply chains. In late October, the port of Long Beach, the Utah Inland Port Authority and Union Pacific Railroad announced an initiative to boost the capacity of rail deliveries between California and Utah.

"The direct, regularly scheduled rail service connecting the Port of Long Beach to Salt Lake City will allow cargo destined for all of the Intermountain West to be rapidly evacuated from terminals in Long

Getty Images

Automation and robots could broaden industrial site selection by offsetting labor shortages.

Beach to Salt Lake City for further distribution throughout the region," said **Mario Cordero** of the Port of Long Beach and **Jack Hedge** of the Utah Inland Port Authority in a joint statement. "Much of this cargo traditionally moves to Utah, Colorado, Nevada and Idaho by truck, and thus must be removed from the port terminals one container at a time. Re-engaging this direct rail service will allow removal of blocks of containers at a time."

According to Union Pacific, millions of shipping containers move through the Intermountain West each year, but only 10% are carried by trains.

Just in Case vs. Just in Time

Many companies are also scaling back on the longstanding practice of "just in time" inventory management, in which goods are shipped only when they're needed. Instead, they're starting to focus on "just in case" inventory management, in which a surplus of products is kept in storage to ensure that an adequate supply is always available. McIntosh said many companies are already doing that, which will have a major impact on future industrial space demand.

"Walmart's inventory up is 20%," he said. "Target's is up 26%. And Home Depot's is up 40%."

That shift could be good news for the industrial sector, which was performing well even before the pandemic. JLL predicts that by 2025, there could be demand for more than 1 billion square feet of industrial real estate in the U.S.

JLL researchers also note that as of the second quarter of 2021, there was more than 400 million square feet of industrial space under construction in the U.S.

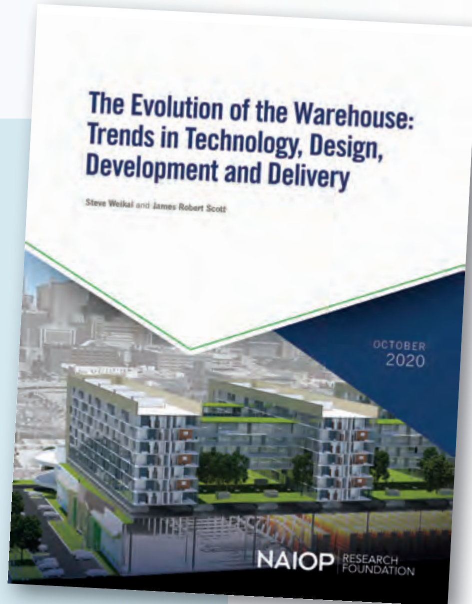
"The future demand for logistics warehouse space is off the charts," McIntosh said. "You see the forecasts for e-commerce and then the inventory that's picking up because they don't want to get hung up in a just-in-time systems. You add that in, and the demand is staggering."

According to CBRE research, the national vacancy rate for warehouse space is hovering around 3.5%. **John Morris**, executive managing director and industrial and logistics leader for the Americas with CBRE, told ABC News in November that level is "effectively zero."

Relevant Research

In October 2020, the NAIOP Research Foundation published a report titled "The Evolution of the Warehouse: Trends in Technology, Design, Development and Delivery," by **Steve Weikal** and **James Robert Scott**, researchers at the MIT Real Estate Innovation Lab. Weikal and Scott reviewed recent publications on emerging logistics and building technologies and interviewed industry practitioners to evaluate how these technologies will influence the future of logistics real estate. Continued advances in automation, data analytics and artificial intelligence promise to make industrial assets more productive and profitable, create new opportunities in building design, and blur traditional boundaries between property types.

To download the report, visit naiop.org/Research-and-Publications ■



"For the year, we have an effective shortage of space of about 300 million square feet," he said.

However, land and labor are major issues when it comes to building more industrial space, as is securing the timely delivery of construction supplies that are among the countless products stuck in the clogged global supply chain.

"We've done over 100 Amazon deals, but the problem is getting the construction materials," McIntosh said. "We've got the site, we're ready to start building and you get your materials ordered, and then they come back and say 'OK, prices have gone up. Here's your new price.' That's after you've already approved your budget. And then we have to go back to the investment committee and re-approve the new price. And then they say 'I've got more bad news: We told you we could get this for you in a few weeks. It's six months now.' So your construction's delayed and your delivery timing is delayed."

According to McIntosh, labor issues are a big factor for Amazon, which controls about 40% to 50% of the e-commerce market in the U.S.

"Right now, one of the first questions they'll ask if you've got a site for them is about the labor market," he said. "A tough part is getting the people they need to work."

That's where automation could fill gaps. Landsburg said NFI Real Estate is working on flexible automation that can move from facility to facility depending on need. And further down the road, technological advances could really take off, he said.

"Imagine driverless tractor trailers being operated by remote drivers," he said. "In the future, this kind of job could appeal to technologically inclined younger workers." ■

Trey Barrineau is the managing editor of Development magazine.

JLL predicts that by 2025, there could be demand for more than 1 billion square feet of industrial real estate in the U.S. JLL researchers also note that as of the second quarter of 2021, there was more than 400 million square feet of industrial space under construction in the U.S.

Expanding the Pipeline:

At a Glance

- Research shows that a more diverse workforce can help boost a company's bottom line.
- More students are seeking and earning degrees in real estate, which increases the talent pipeline.
- However, current real estate programs are less racially diverse than other academic programs. ■

Sue Peerson, AICP

Students in UC San Diego's B.S. in Real Estate and Development (RED) program. In the 2019-2020 academic year, 53.3% of RED graduates identified as Asian American or Hispanic/Latino.

Promoting Diversity in Undergraduate and Graduate Real Estate Programs

Universities can play a key role in encouraging the industry to build a workforce that better reflects the U.S. population.

By Shawn Moura, Ph.D.

Diversity initiatives support several strategic objectives for both the commercial real estate industry and individual firms. For example, a more diverse workforce can help firms access new markets, identify new business opportunities and close more deals. A study on diversity and innovation published by the Harvard Business Review in 2013 found that companies with high levels of diversity are 45% more likely to report annual growth in market share and 70% more likely to report having captured a new market. Additionally, a team member who is the same ethnicity as a client is 152% more likely to understand them.

Expanding the talent pool is also an important concern as a significant portion of the real estate workforce approaches retirement. According to the U.S. Bureau of Labor Statistics, the median age of workers in the real estate industry was 48.8 in 2020, six years older than the median for all workers (42.5).

Efforts to increase diversity often focus on attracting students to careers in real estate. In a positive sign for the future of the real estate workforce, the number of students graduating with a bachelor's or master's degree in real estate has been growing rapidly in the U.S. According to the National Center for Education Statistics (NCES), from the 2015-2016 academic year to 2019-2020, the number of students receiving a bachelor's degree in real estate or real estate development has grown at an annualized rate of 13%, to 1,785 degrees. Over the same period, the number of students receiving a master's degree in these fields grew at a more modest annual pace of 3.5% (to 1,396 degrees), but still faster than the average for all master's degree programs (1.2%).

The increase in the number of students receiving degrees in real estate reflects the growing number of students who see these specialized programs as a path into the industry or a way to acquire advanced skillsets to advance their careers. Growing enrollments also suggest that real estate firms can increasingly turn to these programs as an important source of talent. For these reasons, increasing the diversity of undergraduate and graduate real estate programs can be a particularly effective way to increase the diversity of the commercial real estate industry.

Table 1

Race/Ethnicity of Graduating Students, Real Estate Programs vs. Average for All Academic Fields

	Bachelor's Degree Programs				Master's Degree Programs			
Race/Ethnicity	2016	2020	Change	2019 Average, All Fields	2016	2020	Change	2019 Average, All Fields
American Indian/ Alaska Native	0.0%	0.2%	+0.2%	0.5%	0.5%	0.4%	-0.1%	0.5%
Asian	2.6%	4.7%	+2.1%	8.2%†	8.2%	7.9%	-0.3%	7.5%†
Black/African American	4.0%	5.4%	+1.4%	10.3%	8.2%	7.9%	-0.3%	13.4%
Hispanic/Latino	10.1%	11.4%	+1.4%	14.9%	10.8%	12.3%	+1.5%	11.3%
Native Hawaiian/ Pacific Islander	0.2%	0.2%	--	--†	0.0%	0.0%	--	--†
White	78.1%	73.3%	-4.8%	62.3%	61.8%	62.1%	+0.4%	64.3%
Two or More Races	3.3%	3.1%	-0.2%	3.9%	1.9%	1.6%	-0.3%	2.9%
Unknown	1.7%	1.7%	--	--	8.6%	7.8%	-0.8%	--

†Reported as combined category of Asian/Pacific Islander

Note: This table excludes data on the percentage of nonresident (international) students, for whom NCES does not collect racial/ethnic information. Sources: Demographic data for real estate and real estate development programs are from NCES's Integrated Postsecondary Education Data System. Demographic data for all bachelor's and master's degree programs is from the NCES Digest of Education Statistics (2018-2019).

Racial/Ethnic Diversity

Although the number of students graduating with a bachelor's or master's degree in real estate has been climbing, NCES data indicate that real estate programs are less racially and ethnically diverse than the average for all academic programs (Table 1). In 2019-2020, real estate programs graduated a slightly lower percentage of Hispanic/Latino students and just over half the percentage of Black/African American and Asian American students as the average for bachelor's programs in all academic fields. However, graduation data reveal that bachelor's degree programs in real estate have grown somewhat more diverse since the 2015-2016 academic year.

Sue Peerson, AICP

Students in UC San Diego's B.S. in Real Estate and Development (RED) program display one of their projects.

A 2016 report on diversity in higher education by the U.S. Department of Education found that students of color face unequal opportunities to access and complete an undergraduate degree due to factors such as unequal access to quality high-school education and inadequate resources to pay for college. However, this does not explain why undergraduate real estate programs are less diverse than others. Notably, other undergraduate business programs are more racially and ethnically diverse: White students accounted for 58.9% of bachelor's degree recipients across all business fields (including real estate) in the 2018-2019 academic year vs. 73.3% of real estate degree recipients in 2019-2020. The apparent difference in diversity between real estate programs and programs in other business fields suggests that students of color may be less aware of these programs or less likely to consider a career in real estate.

Table 2

Gender of Graduating Students, Real Estate Programs vs. Average for All Academic Fields								
	Bachelor's Degree Programs				Master's Degree Programs			
Gender	2016	2020	Change	2019 Average, All Fields	2016	2020	Change	2019 Average, All Fields
% Women	29.5%	29.0%	-0.5%	57.4%	29.7%	28.2%	-1.5%	60.9%
% Men	70.5%	71.0%	+0.5%	43.5%	70.3%	71.8%	+1.5%	39.1%

Sources: Demographic data for real estate and real estate development programs are from NCES's Integrated Postsecondary Education Data System. Demographic data for all bachelor's and master's degree programs is from the NCES Digest of Education Statistics (2018-2019).

Although the number of students graduating with a bachelor's or master's degree in real estate has been climbing, **NCES data indicate that real estate programs are less racially and ethnically diverse than the average for all academic programs.**

By contrast, master's degree programs in real estate have comparable levels of racial/ethnic diversity as programs in other fields, though they have graduated proportionally fewer African American students. The representation of different racial/ethnic groups within graduate real estate programs has not shifted much during the past five years, though there has been a slight increase in the percentage of Latino students.

Gender Diversity

Many initiatives to increase the diversity of the commercial real estate industry have focused on expanding the recruitment of women and creating more opportunities for their career advancement. However, NCES data on gender diversity reveal that women remain significantly underrepresented in both bachelor's and master's degree programs in real estate. Women made up only 29% of real estate bachelor's degree recipients and 28.2% of real estate master's degree recipients in the 2019-2020 academic year, roughly half the percentage of women who received degrees at each level across all academic fields (Table 2).

In contrast with the increasing racial/ethnic diversity of bachelor's degree programs in real estate, women's representation in these programs has remained nearly unchanged since the 2015-2016 academic year. Growth in the total number of degrees awarded in real estate and real estate development means that a larger number of women did receive degrees in these fields, but they remain outnumbered by male graduates. Women's representation in real estate programs is substantially lower than in other business programs: across all business fields, women made up 46.7% of bachelor's degree recipients and 48.5% of master's degree recipients in the 2018-2019 academic year.

Insights from a Diverse Program

NAIOP Distinguished Fellow **Mirle Rabinowitz-Bussell**, Ph.D., is director of undergraduate studies in the Department of Urban Studies and

North Carolina Central University

Anthony C. Nelson, Ph.D., dean of the School of Business at North Carolina Central University in Durham, led efforts to launch the college's new MBA concentration in real estate. It is the first of its kind to be offered by a historically black college or university. NAIOP Raleigh Durham and NAIOP Corporate will provide at least $175,000 to help fund the program.

Planning at University of California San Diego, which since 2018 has offered a B.S. in Real Estate and Development (RED). The program is significantly more racially and ethnically diverse than most other bachelor's degree programs in real estate or real estate development in the U.S.: 53.3% of RED graduates in the 2019-2020 academic year identified as Asian American or Hispanic/Latino.

Some of the RED program's diversity is attributable to the broader diversity of the undergraduate student body at UC San Diego, but the program has also maintained an explicit focus on recruiting diverse students. Rabinowitz-Bussell observes that the RED program contributes to the diversity of the real estate industry while also providing an opportunity for students from diverse backgrounds to obtain a degree that will prepare them for successful careers.

"When we were doing the research to develop the major, we came across anecdotal evidence indicating that many high-achieving minority students come to UC San Diego to pursue a degree in the STEM fields," she said. "When, for a variety of reasons, they change their major, they are eager to find an alternative degree track that will provide them with the technical competencies found in a B.S. degree and a clear professional development trajectory."

The program's curriculum incorporates diversity, equity and inclusion by requiring courses on the history of cities and land use planning that address topics such as redlining, mortgage discrimination and gentrification. The Department of Urban Studies and Planning has invited younger women and people of color to join the RED program's advisory board, and the department has a long-term goal to increase the diversity of its faculty.

NAIOP Raleigh Durham is working with the North Carolina Central University (NCCU) School of Business to **increase diversity in the real estate industry by supporting NCCU's new MBA concentration in real estate.**

Partnering with NCCU to Increase Diversity

NAIOP Raleigh Durham is working with the North Carolina Central University (NCCU) School of Business to increase diversity in the real estate industry by supporting NCCU's new MBA concentration in real estate. The concentration, which launched this fall, is the first of its kind to be offered by a historically black college or university. NAIOP Raleigh Durham and NAIOP Corporate will provide at least $175,000 to help fund the program and will support the concentration through a formal partnership with the School of Business.

According to the School of Business's dean, **Anthony Nelson**, Ph.D., the idea for the concentration began when a developer interested in increasing diversity in the local real estate industry asked him to help raise awareness among business students about careers in real estate. Nelson suggested that the developer could have a more significant impact on diversity by partnering with NCCU on a new graduate program in real estate. A series of conversations with local developers began that ultimately culminated in plans to launch a new MBA concentration in real estate. **Emil Malizia**, Ph.D., a research professor at the University of North Carolina at Chapel Hill's Department of City and Regional Planning, worked with NCCU to develop a curriculum for the new concentration and introduced Nelson to additional developers in the area. Developer enthusiasm for the new program helped the funding and curriculum for the program come together quickly.

"The relationships that we ended up building in the real estate industry were just beyond my expectations," Nelson said.

Tom Fritsch, senior managing director at CBRE-Raleigh and a NAIOP Raleigh Durham board member, has played an active role in the chapter's support for the new concentration. According to Fritsch, the chapter had recently formed a diversity and inclusion committee and was exploring new initiatives when members learned about plans for the new program at NCCU. After conversations with Nelson and Malizia, they realized that a partnership with NCCU would allow them to do more to promote diversity than other initiatives the diversity and inclusion committee might consider.

According to Fritsch, supporting the program was an easy decision.

"How do we really make an impact, at the end of the day, to connect commercial real estate in our market with more diversity and inclusion? And so, it just seemed like the right thing to do," he said.

According to Nelson, NAIOP Raleigh Durham is an important industry partner for the new concentration.

"We're very appreciative of that relationship through Tom and NAIOP Raleigh Durham executive director

Dennis Brack

"I firmly believe that talent is distributed equally, but opportunity is not," said Joe Ritchie, center, managing director of business development and head of diversity and inclusion at Tishman Speyer, during a panel at NAIOP's Chapter Leadership and Legislative Retreat in Washington, D.C., in February 2020. "I am one of very few African American corporate real estate executives. I happened to be in the right place at the right time. We're trying to get more folks in the right place at the right time." To achieve that goal, Ritchie helped the NAIOP Philadelphia chapter put together a 10-day summer real estate immersion program for minority high schoolers in collaboration with Drexel University. It combines classroom learning, site visits and industry events.

Jessica Freeman, who stepped up and really expressed their excitement about the program."

Fritsch will represent NAIOP Raleigh Durham on the new program's advisory board. The chapter will participate in mentorship and internship programs and provide input on updates to the curriculum.

Fritsch said that although he sits on the advisory board, "I don't pretend it's about me. You have all this knowledge at NAIOP and all the companies that support the members, and to just be a conduit for that is pretty cool."

Although the program just launched, several new MBA students have already expressed interest in the concentration. Nelson expects to eventually enroll 20 students in the program and graduate about 15-20 per year.

On June 30, the School of Business broke ground on a new building that will house a real estate center affiliated with the new MBA concentration. The center will focus on forging and maintaining relationships with real estate developers and associations, including NAIOP. Nelson sees these relationships as key to fulfilling the new concentration's objectives.

"We plan to make sure that the program remains viable and relevant and helps to diversify the real estate industry," he said. "We do a good job of attracting African Americans to the university. We do a great job of preparing them, and we'll do an even better job of placing them in the real estate industry, given the partnerships that we've forged."

Initiatives to Diversify Postsecondary Real Estate Programs

NAIOP and other commercial real estate organizations have sponsored a range of initiatives to promote diversity in undergraduate and graduate programs. Most initiatives either seek to attract women and people of color to the commercial real estate industry and related academic programs or provide those already enrolled in a program with additional support.

NAIOP is a founding sponsor of the Real Estate Exchange (REEX), which partners with universities to offer summer immersion programs for high school students of color. These programs expose students to careers in commercial real estate, provide them with information about undergraduate real estate programs and help prepare them for college. Students learn about business and commercial real estate fundamentals, participate in case studies and receive coaching from local commercial real estate professionals.

In addition to its sponsorship of REEX, NAIOP also offers four Diversity Student Scholarships to graduate students enrolled in programs at member universities to support them in their studies. Individual NAIOP chapters also offer current undergraduate and graduate students opportunities to network with commercial real estate professionals and participate in educational programs such as University Challenge case study competitions. Several NAIOP chapters have also teamed up with colleges to sponsor REEX and other high school summer immersion programs in CRE. ■

Shawn Moura, Ph.D., is research director at NAIOP.

Suburbs, Office Space and—**Peanut Butter?**

At a Glance

- While there were some population shifts to the suburbs during the pandemic, they weren't as dramatic as many people thought.
- Offices will have to fully embrace a hybrid model to keep workers coming back.
- Different generations have different needs, and that will impact how they approach the return to the office. ■

Getty Images

As companies begin to return to the offices they largely abandoned during the COVID-19 pandemic, they're going to have to transform the spaces into places where workers will want to be.

In September, NAIOP brought together national research directors and academics for an in-depth discussion of the future of the office in the aftermath of the COVID-19 pandemic.

By Trey Barrineau

The NAIOP Research Foundation held its National Research Directors Meeting in September during CRE.Converge in Miami Beach. The conversation, facilitated by **Jennifer LeFurgy**, Ph.D, NAIOP's vice president for knowledge and research, brought together some of NAIOP's Distinguished Fellows and research directors from national real estate brokerage, data and investment firms. It focused on the near-term and long-term outlook for the office sector.

Pandemic Population Shifts

The panelists largely agreed that the much-hyped population shifts that occurred during the COVID-19 pandemic were less impactful than many believed.

Will McIntosh, global head of research for USAA Real Estate, said his company used moving-van data from United Van Lines and change-of-address information from the U.S. Postal Service to determine population movement trends. He said they learned that the predominant pandemic trend was intra-market migration from central business districts out to the suburbs.

"This was a little bit counterintuitive, because a lot of people think there's this mass exodus that's occurring, for example, out of California, when in fact net outmigration trends for California remained relatively consistent the last several years," he said.

Glenn Mueller, a professor at the University of Denver's Franklin L. Burns School of Real Estate and Construction Management, said the data he's seen indicates that occupancy for suburban office has grown stronger than central business districts for the first time in history.

"Do you think that's because a lot of people started moving out of downtowns first, and then wanted the offices closer to where they lived, or was it firms wanting to spread people out more and taking advantage of the less expensive suburban spaces?" he asked.

McIntosh said he believed it was probably a mix of both, though workers didn't want to commute downtown using public transit at the height of the pandemic.

However, **Matt Dolly**, research director with Transwestern, noted that people were moving out to the suburbs before the pandemic.

"The largest part of the workforce is millennials, and the older millennials are starting to raise families. It can be difficult to raise kids in apartments," he said. "We saw some of that shift in New Jersey. Everyone was moving downtown for years before that started to happen."

Scott Homa, director of U.S. office research at JLL, said he didn't think the rhetoric of a pandemic-fueled suburban boom matched the reality.

"We saw tour activity and office occupancy higher in the suburbs compared to downtown during the height of the pandemic, which makes sense, because employees are able to avoid mass transit," he

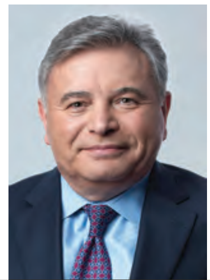
Participants

NAIOP Research Foundation National Research Directors

Scott Homa, Director of U.S. Office Research, JLL

Julie Whelan, Head of Occupier Research for the Americas, CBRE

Phil Mobley, Director of U.S. Occupier Research, Avison Young



Will McIntosh, Global Head of Research, USAA Real Estate

Lisa DeNight, National Industrial Research Director, Newmark

Steig Seaward, National Director of Research, Colliers

Amanda Ortiz, Director, National Industrial Research, Colliers

Matt Dolly, Research Director, Transwestern

NAIOP Research Foundation Distinguished Fellow

Glenn Mueller, Ph.D, Professor, University of Denver Franklin L. Burns School of Real Estate and Construction Management

said. "Coworking spaces have also seen stronger demand and more use in the suburbs than downtown. But I remain a skeptic on the suburbs longer term, because if you can work remotely and you have the cities, which are your central gathering places, then what's the point of having space in the suburbs that's not accessible to the entire workforce?"

However, **Julie Whelan**, head of occupier research for the Americas at CBRE, said certain suburban markets will continue to do well if they can offer experiences similar to urban cores.

"I think it's important to define what a suburb is," she said. "While they were less affected by the pandemic, structural vacancy is still higher in the suburbs, and it will continue to be. But way before the pandemic, CBRE did a study of suburbs that are more focused on live/work/play. These are suburbs that mimic cities in terms of density and walkability. Even at that time, they were outperforming some of the downtown markets. I think that will continue."

How Will Offices Change?

Next, the panel discussed what a full return to the office might look like. They all agreed that workers will be spending less time in the office, so it will be critical for companies to make that time richer and more meaningful.

"It's about the hybrid nature that the future holds," Whelan said. "Work is not a binary choice. Every company is going to have to look at who their workforce is, what motivates them and how that aligns with organizational objectives."

Whelan added that office conditions could vary greatly depending on where they're located.

"In Austin, the prevalence of remote work is very high, but the job growth in Austin has been extreme, and the office market has been a beneficiary of that growth," she said. "It's not like you get the expense of the office market, because there's more remote work. If there weren't more remote work, imagine how Austin could have been. The office market is changing, not disappearing, because of this new dynamic."

According to the U.S. Census, by 2019, about 10% of Austin's workforce had full-time virtual schedules, the No. 1 city in the country for that metric.

Whelan said unassigned seating coupled with utilization sensors that help companies understand who is in the office and how it is being used will help them better plan for space requirements.

"Many companies are starting off

Demand for coworking and flex space is expected to rise and fall, but it probably won't go away.

"**I think it's important to define what a suburb is.** While they were less affected by the pandemic, structural vacancy is still higher in the suburbs, and it will continue to be."

— Julie Whelan, head of occupier research for the Americas, CBRE

with a three by two," she said. "Employees are expected to come into the office three days a week, and depending on your team, you may have one or two days where everybody must come in the same day. The other one can be floating. That's going to help provide a more even distribution of people in the office. Then if you layer a scheduling tool on top of it, that could really drive efficiency."

"Making the experience at work just as good as the experience working at home is critical," Whelan said, adding that CBRE has been rolling out its Workplace 360 initiative at its corporate offices. Developed after several years of research that began long before COVID-19 struck, Workplace 360 "reimagines CBRE workspaces to promote flexibility, mobility and productivity through technology-enabled, free-address and reduced paper offices," according to the company.

Whelan said these new offices are based on activity-based workplace design principles.

"Think fewer dedicated seats in offices and more shared space, collaboration zones and social areas," she said. "It's all guided by a strong technology backbone. As someone who travels to a lot of different offices, no matter where I am, I feel like I'm a member of CBRE and I can engage with their technology and office just like I would if I were in my home office in Boston."

Workplace 360's focus on technology and collaboration reflects an important trend for the future success of office properties.

"People are going to spend less time in the office," Whelan said. "Before the pandemic, people were spending around 4.4 days a week in the office. We think that post-pandemic, it's going to be around 3.3 days a week. That's about a 24% reduction."

But that doesn't mean offices will require 24% less space.

"First, it's important to think about how often people come into the space," she said. "It is going to be very difficult to do a 'spread the peanut butter' approach to people coming into the office evenly Monday through Friday, so companies are going to have to plan for peak occupancy. Secondly, design principles are going to be different depending on the configurations before the pandemic. More space will be needed. Not for social distancing, which will go away, but more social space, more collaboration space, the ability to pick where you want to work and not have to be relegated to a private office."

Oversupplied or Under-demolished?

Whelan said CBRE research indicates that on average there will be about 9% less space needed per new office worker.

"But we don't think that means we're going to be in a less occupied state once we're recovered," she said. "We likely still have the right amount of space in the market, but the nuance is we may not have the right type."

Mueller said the commercial real estate industry needs to come up with a formula for the number of square feet per person if workplaces have hybrid schedules.

"The growth of employment in our country is going to be largely office-using jobs," he said. "Downtown office development has become a lot harder and takes a lot longer, typically about five years. We had a lot of space come online in 2020. Markets like Boston are oversupplied. They've got 20% demand growth, but 30% supply growth."

McIntosh said he's concerned that

An 'Uneven' Office Market Across the U.S.

Julie Whelan, head of occupier research for the Americas at CBRE, said lease renewals are dropping as a percentage of overall activity right now, while new leases are picking up.

"What's interesting is that subleases as a percent of new leases are 25% right now nationally," she said. "Austin is already a resilient market nearing if not at pre-pandemic levels. Whereas in San Francisco, Class A rents from the second quarter of 2020 have dropped 10% already and are likely to see more downward pressure before a recovery starts. Primary downtown markets were hit very hard by the pandemic, and it's going to take them some time to rebound." ■

the cost to upgrade less desirable office space could far exceed the benefit.

"I look at some of the office buildings out there and I think 'these things aren't going to survive,'" he said. "It reminds me of a lot of the retail out there. It's not oversupplied, it's under-demolished."

Whelan agreed. She believes that structural vacancies at certain tranches of the market will be persistently higher than before the pandemic.

"I read a recent article that said you'd have to trade those assets at around 50 cents on the dollar to even think about a reuse for it, whether that would be multifamily or other property types," she said.

Life Stages, Generations and the Return to the Office

The panel then discussed how generational differences will impact the return to the office.

"There's a lot at play here," Whelan said. "To get to full employment in a market where it's hard to find people right now, it's crucial to let people work in alternative ways. Companies must broaden their horizons and look at the needs of their current and future employees."

Whelan said research indicates that younger workers are the group most eager to return to the office.

"They want the knowledge exchange with the senior people," she said. "A lot of times, the office is their social anchor. It's where they're making friends when they move to the city."

Other generations have wants and needs specific to their life stage. For example, there's the sandwich generation, who are adults "sandwiched" between dealing with aging parents and young children.

"They're in mid-career and they have the network they need to get their work done," Whelan said. "They're going to be the ones who will really value that flexibility."

For those near the end of their careers, opinions on workplace flexibility are more mixed.

"Some say they want to be in the office more," Whelan said. "Others say they've found a newfound freedom and new interests during the pandemic, and they don't want to be as tied to the office. For the large number of people who will be retiring in the next decade, the idea of not coming in every day maybe allows for a smoother transition. They can stay on longer to transfer their knowledge to the younger generation."

Homa wondered whether many of these workplace changes are temporary.

"You have the needs and wants of the employees, and you have the needs and wants of the business, which sometimes are antithetical," he said. "There's a cloak of legitimacy behind working from home right now due to the pandemic, but even more important than productivity is innovation and growth, which is hard to accomplish when the workforce is highly dispersed."

> "**There's been almost 10 million square feet of tech expansion during the pandemic,** but at the same time, they keep saying that their workers don't have to come back to the office."
>
> *— Scott Homa, director of U.S. office research, JLL*

Homa said that's why megacap tech companies like Google, Amazon and Facebook have been building huge campuses filled with amenities to keep people there for long hours each day.

"There's been almost 10 million square feet of tech expansion during the pandemic, but at the same time, they keep saying that their workers don't have to come back to the office — employers can't be more heavy-handed in demanding that employees report to the office because it's such a tight labor market," Homa said.

McIntosh said his company's leadership wants to bring everyone back to the office as soon as possible.


Getty Images

While many tech companies fully support work-from-home policies, they've also spent hundreds of millions to build heavily amenitized campuses like Google's headquarters in Mountain View, California, shown here.

"Corporate culture is important, and the only way for new employees understand that culture is to be in the office working together," he said.

Steig Seaward, national director of research with Colliers, agreed that being back in the office is about much more than productivity.

"They're trying to get back the innovation and the ideation," he said. "All of us coming together and talking and brainstorming here in person in Miami has been great, but if we did this over Zoom, the meeting would be over. People would start multitasking, reading their e-mail, checking social media and other things."

Phil Mobley, director of U.S. occupier research at Avison Young, said relationship building is another important reason to be in the office.

"We work better with people we know," he said. "As frustrating as it might be sometimes when people stop by and shoot the breeze, that's actually better for the organization. In some cases, it can make sense to trade some productivity time to build connections."

The Future of Flex Space

As companies plan for peak occupancy in the future, what role will flexible space and coworking play? Whelan said companies need to be careful about the strategy decisions they're making for their portfolios.

"What we see today is a lot of big companies interested in it and doing surveys around it," she said. "They're trying to figure out what providers might meet their needs, but they're not pulling the trigger on it in massive ways. My theory is that if they're not welcoming their people back into an office that they can control, they can't put them in a third-party place where they have less control over their health and safety."

Co-locating with flex is a huge trend right now, Whelan said, at least from a sentiment perspective. And not just flex. There's also shared meeting space providers, like Convene.

"You don't have to build your own auditoriums and conference centers in your space, but you can share space or pay as you need it, which means more efficiency," she said. "That works for companies that have a lot of consultants who come in, and they might want to push them into the flex space. It might also work for companies in a hypergrowth cycle, but they may not be sure when that growth is going to come, so they can push the growth to the flex space. The beauty of flex is that there are so many different use cases for it. It just depends on what's driving your company."

Homa noted that in addition to shared conferencing from providers like Convene or Industrious, he's seeing a trend of building owners who are amenitizing their buildings.

"They'll turn the whole first floor, lower level or rooftop into a casual drop-in space with amenities and workstations," he said. "Landlords are investing vast sums into amenitizing their space to lure tenants back to the office."

Mobley said demand for flex space will rise and fall, but there will always be a need for it.

"If the big occupiers aren't going for it in a big way yet, I suspect that's because they don't need to yet," he said. "They are still trying to bring people back in. The people using flex space now are the people who want it. If you're the Gen Z person who couldn't move out of downtown, if you're the millennial with two young kids at home, then you're going to like having a coworking provider in your suburb. There is a small but meaningful portion of people who either really want or really need a workplace outside of their home." ■

Trey Barrineau is the managing editor of Development magazine.

The Challenges of Building for Sustainability

At a Glance

- When building for sustainability, it's important to understand the client's needs.
- Inertia can be a roadblock to rethinking traditional design practices.
- The relationship between design and construction has been likened to "marriage counseling."

The construction industry will play a critical role in ensuring that the built environment of the future can meet goals for sustainability and energy efficiency.


Getty Images

It requires effort at every stage of the process, according to those in the field.

By Melissa Stok and Jess Horowitz

A greater focus on the potential impacts of climate change is motivating a shift toward sustainability in the construction industry that is outpacing current standards and certification programs.

Two decades ago, LEED-certified buildings set the precedent for change. **Marc Truant**, founder of Marc Truant & Associates, a construction management firm based in Cambridge, Massachusetts, speculates that "20 years from now, there won't be LEED because it will all be in the building code."

Some construction and design firms are trying to do their part before that time. They are participating in programs like the American Institute of Architects (AIA) 2030 Challenge for carbon neutrality, while municipalities in states such as Massachusetts are developing stretch codes for higher efficiency standards.

The buildings that are erected today will stand for decades and even centuries. They need to match the green building standards that will be put in place in the future and be adaptable to technological advances. So who drives sustainability, and what are the roadblocks? Professionals and firms in the Boston area provided some insights into these questions.

Understanding the Client

Every construction project starts with the client. However, there are limitations to sustainability depending on the context of the project. In many cases, sustainability might not be a priority for the owner.

Luke Voiland, principal at national architecture firm Shepley Bulfinch, recounted a response from health care executives on the topic of sustainable construction. They told him that although it would be ideal, their primary concern is saving lives.

"It's not that they don't care about [sustainability], but they cannot afford to have a building not perform," he said.

Matthew Gifford, another principal at Shepley Bulfinch, elaborated with a specific materials example. If the design firm were to propose a new, more sustainable material for floor tiling for a hospital, they would likely be met with strong resistance from the owners because "if the floor fails, they have to shut down," he said. "So, they want to go with methodologies and materials that are tried and true, that they know are going to perform over a period of time and that they don't have to worry about."

Considering COVID-19 concerns, buildings now face a vital choice in weighing the trade-offs between energy costs and the health of occupants. Non-medical buildings like schools and offices are looking to upgrade the air filtration on their HVAC systems. Options range from filters with a minimum efficiency reporting value (MERV) of 15 or higher, which can prevent bacteria and viruses from circulating, to high-efficiency particulate air (HEPA) filters, which can remove up to 99% of all tiny particles from the air. Building owners are also considering ways to increase ventilation to mitigate aerosolized infectious particles, though this may increase energy use when heating is needed during the winter.

Getty Images

In the aftermath of the COVID-19 pandemic, many building owners will be looking to upgrade their HVAC systems. However, this can lead to higher energy usage.

University campuses also face unique sustainability considerations. **John Fernandez**, director of the Building Technology Program at MIT, recently advocated for a new MIT dorm to use Passive House design, which is an ultra-energy-efficient standard for heating, cooling and airtightness. However, Passive House in a large multipurpose building like a dorm carries a much higher premium than for a simpler structure like a single-family home. Ultimately, MIT settled for LEED Gold certification, which is the baseline for all buildings on campus.

Educational institutions, such as MIT, tend to be more budget constrained than private-sector developers. Boston's new corporate skyscraper, the 52-story Winthrop Center, chose to pursue Passive House design. As large as MIT's endowment may be, it is still finite when compared to the global capital available to the Winthrop Center. If the Winthrop Center can be expected to generate revenue and the added feature of aggressive energy efficiency holds value in the marketplace, then capital will be attracted to the project.

In situations where clients are not particularly interested in sustainability, the industry professionals interviewed for this story emphasized the need to meet the client's needs, understand their challenges and identify shared interests. If possible, firms should be able to explain to their clients how sustainable design and construction can benefit building owners and occupiers as well as the environment. For example, reduced parking spaces might be desirable for aesthetic reasons, and improved thermal performance could decrease work for maintenance staff. Although some clients may not show interest in sustainable design, those who are excited about sustainability have the power to move the whole industry forward.

The buildings that are erected today will stand for decades and even centuries. They need to match the green building standards that will be put in place in the future and be adaptable to technological advances.

Trial and Error

Gifford described the resistance to changing traditional design practices to more sustainable ones as "inertia." There is a certain amount of risk involved when deviating from traditional design practices. Performing research and analysis on new ideas, as well as finding and developing working relationships with suppliers and contractors, requires time and resources.

Speaking from a construction-management perspective, Truant said that "builders will install whatever's specified, but they own the warranties."

For example, bamboo composites and formaldehyde-free adhesives were plagued by problems when they were first introduced.

"The materials just delaminated and fell apart, and there were a lot of lawsuits and issues, and it was pretty painful," Truant said.

The Winthrop Center

The 52-story, $1.3 billion Winthrop Center is being developed by Millennium Partners Boston. Designed by Handel Architects, the building will feature more than 800,000 square feet of office space and 321 luxury condominiums.

The office portion of the project will be built to the strict Passive House standard, which began in Europe in the 1980s as a way to increases the energy efficiency of single-family houses. That part of the building is also expected to be certified WELL Building Standard Gold and LEED Platinum (The residential portion of the project will seek LEED Gold certification.)

"Passive House is a set of systems related to a building's walls, windows, ventilation and heat exchange," **John Fernandez**, director of the Building Technology Program at MIT who collaborated on the design of Winthrop Center, told The Architect's Newspaper in May 2021. "All elements must work together. Take any of them away and your energy efficiency decreases considerably."

According to a case study from Handel Architects, to reach Passive House standards, the Winthrop Center's curtainwall design "employs a robust, triple-glazed insulated glass window unit coupled with glass spandrel panel to obtain an average R-value of 7.35. To reduce energy loss, all connections between the exterior wall and the interior structure are thermally broken to minimize heat loss through thermal bridging, and all panel joints are gasketed and sealed to prevent air leakage."

Xxxxxx

The Winthrop Center is a 52-story skyscraper currently under construction in Boston. When completed sometime in 2022, it will be the world's tallest tower built to the highly energy-efficient Passive House standard.

Xxxxxx

Open-air office terraces will be a signature feature at the Winthrop Center.

Additionally, the Winthrop Center will also use high-efficiency energy recovery ventilators (ERV) that will provide up to 50% more fresh air than other high-rise office buildings. And the floorplates are designed to maximize the amount of natural light that can get in.

According to the designers, 95% of the working space will be within 35 feet of a window.

When completed in 2022, the Winthrop Center expects to use 65% less energy than buildings of similar size in Boston. ■


Courtesy of National Development

15 Necco in Boston is a life science building that is planned to be LEED Gold, Fitwell and Well Building certified. The developer, National Development, says the project will include several "state-of-the-art resiliency and sustainability features."

Eventually, chemists solved problems associated with these materials, and they are now widely used.

Truant also pointed out that working with new materials often poses a learning curve for builders. Nonetheless, he is optimistic that these problems can be solved with time. As the industry's collective knowledge about sustainable design and construction improves and the market for sustainable technology grows, the cost premiums will continue to decrease.

In some cases, clients might believe that sustainability will cost more than it does. A 2014 study by the U.S. Department of Energy determined that employing net-zero strategies can cost between 5%-19% more in commercial buildings, and conventional energy-efficiency measures can cost 1%-12% more. This rate is lower in single-family homes. For example, a Rocky Mountain Institute study found that a net-zero home costs on average 7.3% more to build, while a net-zero-ready home costs only 1.8% more. (A net-zero home is one that generates as much energy in a year as it will consume; a net-zero-ready home is generally 40% to 50% more energy efficient than a typical new home, and it has the potential to be converted into a net-zero home.)

A 2019 report from the U.S. Green Building Massachusetts Chapter (now called Built Environment Plus) used case studies to demonstrate that cost premiums for net-zero buildings can be less than 1%. And assuming a 5% cost premium, owners would break even within 6-19 years depending on the building type. The report notes that these statistics don't apply to buildings over 10 stories or ones that require high energy use. But for many homes, offices and schools, net-zero is not as far out of reach as many believe.

Every construction project starts with the client. **However, there are limitations to sustainability depending on the context of the project.** In many cases, sustainability might not be a priority for the owner.

Changing from the Inside Out

Firms play a vital role in educating clients on how they can implement sustainability into their design and what the true trade-offs in costs will be. This is why professionals themselves need to be knowledgeable about sustainability. When asked about the barriers to more sustainable design, **Meredith Elbaum**, executive director of Built Environment Plus, said that education is the biggest.

"The way that the industry works, you only learn so much in school, then you learn more when you get out of school," she said. "And the people that you're learning from are the ones who have continued to do the things that they're doing, and so it's a positive-reinforcing feedback loop."

Because of this, external organizations such as Built Environment Plus, as well as institutes of higher education, have an important role to play as dedicated sources of knowledge about sustainability. This knowledge then spreads from leading individuals and projects toward general practice.

Sasaki is a design firm known for its commitment to sustainability. The company's initial efforts were piloted by Elbaum before she joined Built Environment Plus, but they did not end when she moved on. **Tamar Warburg**, the current director of sustainability and resilience at Sasaki, said that "over the years that [Elbaum] worked on projects, she really raised this issue [of sustainability] and professionalized Sasaki's approach to be able to deliver these kinds of services."

A year and a half ago, Sasaki hired Warburg because "sustainability approaches and metrics are very dynamic, they're constantly getting more and more sophisticated." The firm recognized the importance of staying up to date with the industry's knowledge as it evolves. Having established a reputation for sustainable design, the firm now attracts clients who are equally as passionate about a sustainable built environment.

"I am very gratified that [Sasaki] is keeping up with a market that is increasingly asking for [a sustainability] approach," Warburg said. "In addition to institutional clients, corporate developers and office interiors projects are asking us to calculate the embodied carbon emissions of all our interiors. Who knew? That never happened before 2020."

> In situations where clients are not particularly interested in sustainability, **the industry professionals interviewed for this story emphasized the need to meet the client's needs,** understand their challenges and identify shared interests.

Unfortunately, many design, construction and CRE firms, especially larger ones, struggle with integrating sustainable practices across their organization.

Barbra Batshalom founded the Sustainable Performance Institute (SPI), which advises firms by looking at their workflow to identify how the organization as a whole can adopt sustainable design practices. She believes that a process called "change management" can help firms make sustainability a priority in all aspects of their operations.

According to Batshalom, this can be as simple as making sure any project timeline starts by setting goals, such as an energy usage intensity goal. It is also important to revisit these goals during the quality-assurance step of the design process. SPI developed a certification program that was adopted by the U.S. Department of Housing and Urban Development in 2011 to assess a firm's capability to deliver high performance consistently.

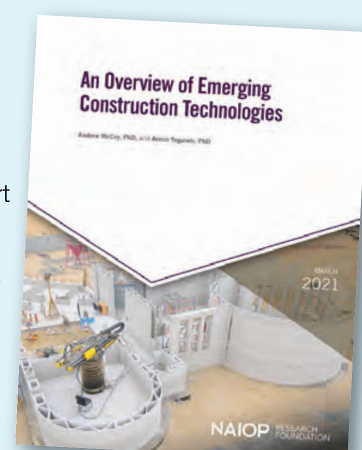
It's Like Marriage Counseling

Looking beyond the organization of a design or construction firm to the collaboration between companies on projects reveals more gaps that hinder the industry's ability to change. The relationship between design and construction often lacks continuous and transparent communication, which is why Batshalom

Relevant Research

In March 2021, the NAIOP Research Foundation published "An Overview of Emerging Construction Technologies." The report identifies how technology is making an impact on construction, an industry that had been historically slow to embrace innovation.

To view or download the report, visit www.naiop.org/Research-and-Publications ■



In some cases, clients might believe that sustainability will cost more than it does. A 2014 study by the U.S. Department of Energy determined that employing net-zero strategies can cost between 5%-19% more in commercial buildings, and conventional energy-efficiency measures can cost 1%-12% more.

refers to her work as "marriage counseling." Whenever possible, she recommends proactive engagement between architects and mechanical, electrical and plumbing (MEP) consultants. Collaboration can foster more sustainable building designs.

There are a few project delivery methods that foster different levels of collaboration between designers and contractors. In design-build, one entity provides a contract for the design and construction of a building. However, clients often favor design-bid-build, in which architects and contractors are on separate contracts, because it allows clients to compare proposals for a certain design. Because the contractor does not get a seat at the table in the initial stages of design, design-bid-build may create a disconnect between the concept and delivery of the final product if the architecture and construction firms do not collaborate effectively.

Coming from both an architecture and construction background, Truant observed this disconnect when he started in the industry. It inspired him to create his own firm that follows a construction-management model. He says that the construction manager being there from the start helps to shepherd the budget, scheduling, permitting and implementation of the original design concept, preventing initiatives for sustainable design from getting lost along the way.

"It takes real collaboration and creativity to get that kind of result," he said.

Carol Burns, principal at Taylor & Burns Architects, emphasizes the importance of feedback systems between owners, designers and contractors. Once a design is handed off, the design firm often receives little to no information on its actual performance during day-to-day operations.

Elbaum echoed this concern.

"In the industry, there's a lot of building as usual," she said. "There will be copy-and-paste details of how to build a wall assembly from one project to another. A big problem in the industry is that there's no money or time to go back to projects and see what worked and didn't work."

Collecting and analyzing data on building performance is the next step in moving beyond rating systems. Burns emphasized that this is the sort of knowledge that is useful in "connecting an individual act of design to the conviction that it will matter."

Moving Beyond Programs: Holistic Sustainability

Burns said that collaboration is not just more phone calls or meetings, but rather "better tools that can advance knowledge." More intelligent models of buildings that are shared between the architect and builder would be one such example. Another tool that is changing the industry is Tally, an Autodesk Revit plug-in developed by the architecture firm KieranTimberlake to integrate a life cycle assessment of embodied carbon into the design process of a building.

More recently, the Embodied Carbon in Construction Calculator (EC3) helps decrease emissions during the late design and procurement phases. And Batshalom hopes to address these issues with her new startup, BuildingEase, by connecting and streamlining the data throughout the workflow from design through procurement, making it fast and easy to get exactly the right information at the right time.

While building codes and rating systems like LEED serve as a baseline for sustainable design and construction, the leading edge is defined by what Burns describes as "getting to the bottom of things": holistic evaluation of the sustainability of a building, from its design to its construction to its performance. This should extend across various metrics such as energy usage, emissions and resilience. Burns urges the industry to "move beyond programs."

Rating systems and programs have played a vital role in bringing the industry to where it is today and creating a common language for sustainability, but it should aim even higher. Building owners and firms should look beyond programs into detailed metrics, which can be facilitated by harmonious collaboration between clients, builders and designers.

Design and construction firms must be bold enough to implement innovative, sustainable solutions, educate their clients and change their philosophy to sculpt a greener built environment. ■

Melissa Stok and **Jess Horowitz** are MIT undergraduate students who work in the MIT Environmental Solutions Initiative Rapid Response Group (RRG).

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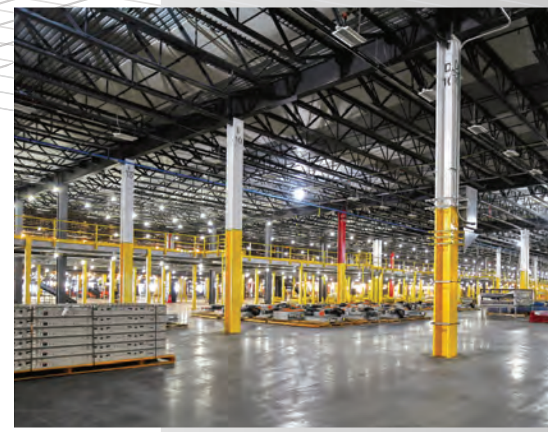

Canada Skates Through a Status Quo Federal Election

America's northern neighbor is looking ahead to a post-pandemic world.

By Paul J. Brown

If you are a U.S. citizen who occasionally thinks about Canada, America's biggest trading partner, it's OK if you missed the country's six-week federal election campaign that began on August 15 and ended on September 20. Aside from providing Canadian media and the talking heads with hours of content, not much happened. And the result left Canada with a Parliament much the same as before.

Getty Images

Canada's federal election in September didn't significantly change the composition of the country's legislative body. The Liberals only gained two seats in Parliament.

Prime Minister **Justin Trudeau** looked at favorable spring polls and called the election in the hope of gaining at least 170 of the 338 seats in the House of Commons. However, Canadians were not amused by the calling of the election in the middle of the COVID-19 pandemic, the Conservative leader gained some traction, and the Liberals were only able to win an additional two seats to reach 160, far short of their much-desired majority.

Trudeau remains prime minister, but his Liberal minority must still seek Parliamentary support from the left-leaning New Democratic Party (NDP) to pass legislation. Meanwhile, the Conservatives are the primary opposition party under their new leader **Erin O'Toole**, and there is the ever-present Quebec-focused Bloc Quebecois.

Many Canadians were left scratching their heads as to why the election was necessary. While minority governments have a general lifespan of two years, the current government is likely to survive longer than past minorities. Minority governments generally collapse when opposition parties see an opportunity for electoral gains, or the government sees a chance at securing a majority. The result of the recent election has all parties focused on dealing with leadership issues internal to each party, and resolving those issues will take more time than usual.

The Impact on CRE

As for the election's impact on commercial property owners and developers, little should change. Most issues affecting the sector happen at the provincial and municipal levels of government. Indeed, NAIOP Greater Toronto Area recently hosted Ontario Finance Minister **Peter Bethlenfalvy**, for a wide-ranging discussion of issues impacting commercial real estate, such as provincial plans for the fall economic statement (an overview of Ontario's economy ahead of a provincial election in June 2022), ongoing issues with property reassessment, zoning and transit plans.

Many Canadians were left scratching their heads as to why the election was necessary. While minority governments have a general lifespan of two years, the current government is likely to survive longer than past minorities.

That said, the federal Liberal focus on climate change issues could impact commercial properties. It's expected that federal efforts to reduce greenhouse gases could result in an even greater push toward environmental retrofits for buildings. This could require provinces to implement new "greener" building codes and accelerate the deployment of electric vehicle charging stations. On the tax side, someone needs to pay for all the spending of the past two years, and throughout the election campaign the Liberals and their NDP parliamentary allies openly discussed higher taxes.

The Return to Normal after COVID-19

There is a Canadian consensus in support of mandatory vaccinations, vaccine passports and testing. As a result, Canada has one of the world's highest COVID-19 vaccination rates. Over the past several months, companies have developed protocols for a return to work, and provincial governments are moving to allow a return to normal, including the opening of sporting venues and restaurants.

Early in the pandemic, the federal government moved aggressively to supply a range of financial support measures both to individuals and businesses. The direct payments to individuals helped thousands who lost their jobs due to COVID-19. Businesses received both direct and indirect subsidies to cover leasing costs, direct loans to offset operating losses, and wage subsidies. Most of the programs remain in place, but they are being curtailed and will likely be terminated in the coming months.

The pandemic has also had an uneven impact on the commercial real estate industry. Office buildings remain eerily quiet, but employees are slowly returning, albeit no longer on a full-week schedule. Provincial and municipal governments across Canada are taking a range of initiatives to support a return to work, both through extensive testing and vaccination mandates and support programs. On the industrial side, the demand for warehouse space is dramatically higher across Canada, with lease rates rising accordingly and significant new development activity.

As for the election's impact on commercial property owners and developers, little should change. Most issues affecting the sector happen at the provincial and municipal levels of government.

NAIOP's Greater Toronto chapter, along with the other Canadian chapters, will remain engaged with policymakers at every level of government on the issues impacting our industry as the economy continues to reopen. Economic activity within city centers will return as business restrictions continue to be lifted.

One final note: Canadians welcomed news that the U.S. will soon allow vehicle travel across the 5,500-mile-long border, so for those living near the 49th parallel or in traditional vacation spots further south, look for Canadian license plates once again. ■

Paul J. Brown is a principal with Campbell Strategies and the government relations advisor for NAIOP Greater Toronto.

Adding Another Dimension to Real Estate Market Analysis

A new model provides fresh insights into industrial and office markets.

By Shawn Moura, Ph.D.

Real estate services firms, industry organizations and academic researchers have created a variety of ways to rank and categorize commercial real estate markets. Although these rankings are often subject to debate, a market's categorization as primary, secondary or tertiary (or as a gateway city, a Tier 2 market or a 16-hour city) can affect whether investors and developers consider projects there.

The NAIOP Research Foundation's March 2020 report, "A New Look at Market Tier and Ranking Systems," examined how analysts construct market rankings and how they are used in commercial real estate. The report found that ranking markets may not always be the best way to categorize and compare them with one another. Although a broad range of data go into the creation of market rankings, the rankings themselves provide investors with little information about individual markets. Rankings that are created for a broad audience must also balance often-conflicting priorities: Which markets are attracting the most investment? Which should investors consider? Which markets are the safest? Which are the most profitable? The result of this balancing act is usually a ranking that is of limited use to individual investors and developers, who have different business strategies and risk tolerances.

Last year, the NAIOP Research Foundation commissioned the report's authors, **Maria Sicola, Charles Warren** and **Megan Weiner** of CityStream Solutions, to develop an alternative to traditional market rankings that would allow developers and investors to compare the characteristics of individual markets

NAIOP E-BOOK

Rules of Thumb for Distribution/Warehouse Facilities Design

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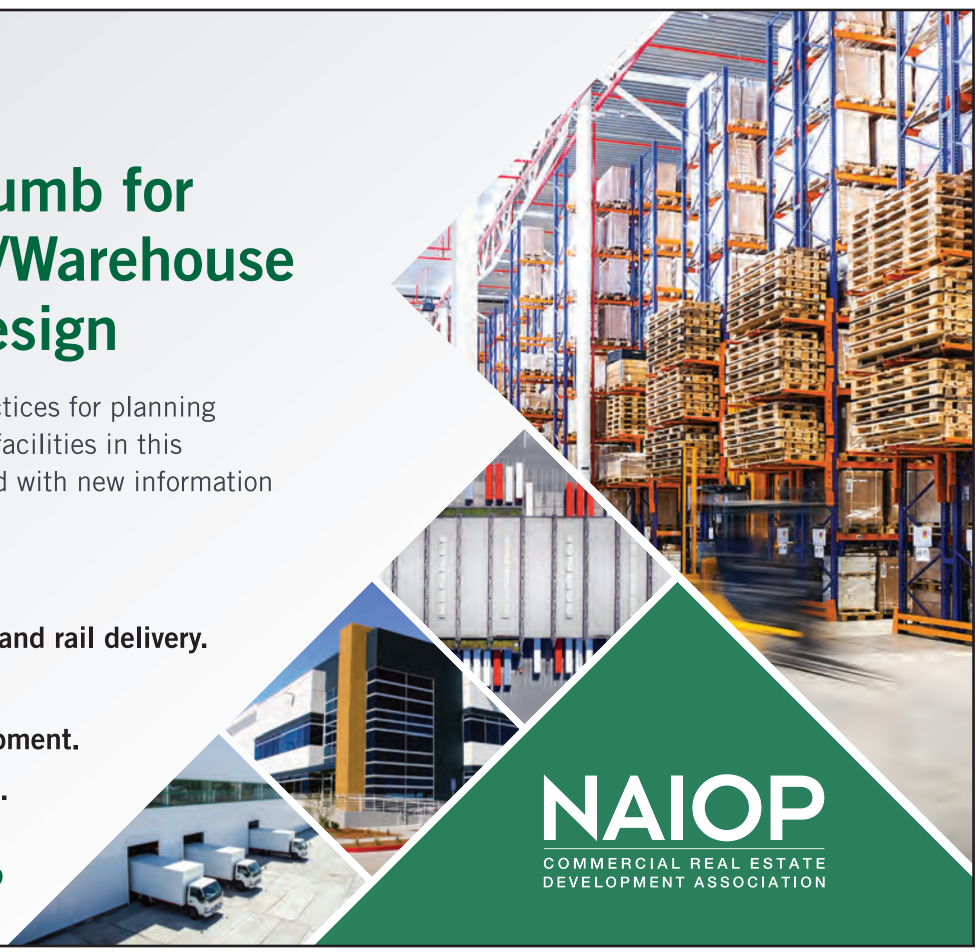

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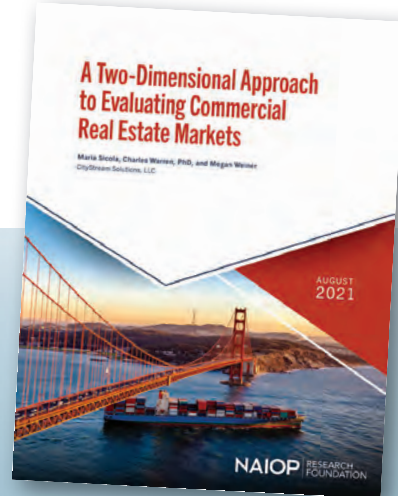
more easily. The resulting report, "A Two-Dimensional Approach to Evaluating Commercial Real Estate Markets," evaluates four different models for comparing commercial real estate markets. Using 15 years of market data, each model plots the 50 largest office and industrial markets on a two-dimensional grid that allows investors to quickly evaluate multiple characteristics. This approach allows investors to simultaneously compare a market's size or pricing to its past volatility and liquidity. The two-dimensional grids resemble the Morningstar Style Box that the investment firm developed to evaluate and compare stocks and mutual funds.

The COVID-19 pandemic has upended many commonly held assumptions about which commercial real estate markets are home to the best investments, with metropolitan areas that commonly top office market rankings

Get the Report

To view and download "A Two-Dimensional Approach to Evaluating Commercial Real Estate Markets," visit www.naiop.org/en/Research-and-Publications ■



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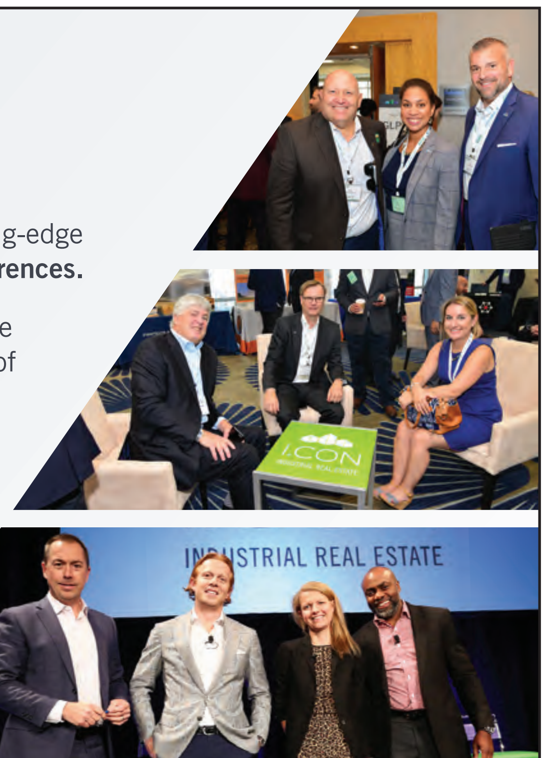

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like New York and San Francisco experiencing some of the largest downturns in leasing and investment activity. Although the pandemic may be a black swan event, the report's examination of historical market data reveals that attributes commonly associated with market safety, such as size, average sale prices and transaction volumes, are not reliable predictors of a market's volatility or its liquidity in a downturn. The largest, highest-priced markets are not always the safest, and some smaller, lower-priced markets have been less volatile than conventional wisdom would suggest.

Switching from a one-dimensional ranking to a two-dimensional grid allows investors and developers to more easily identify the markets that match their strategy and risk tolerance. For example, an office investor interested in increasing the yield on their portfolio without increasing its volatility might consider investing in markets like St. Louis, Las Vegas or Baltimore. These areas have experienced similar levels of volatility as larger markets like Los Angeles and New York, but they generally trade at higher cap rates. Alternatively, a developer who is willing to take on more risk might seek to capitalize on downturns in more volatile office markets like Houston, Nashville or Portland, with the expectation that a future rebound will allow them to sell at a higher price.

A two-dimensional approach to evaluating commercial real estate markets does not remove the need for additional research to identify suitable investments, but it can reveal potential opportunities that are often overlooked in traditional one-size-fits-all market rankings. ■

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

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Celeste Tanner

Chief Development Officer, Confluent Development

2021 Chair, NAIOP National Forums

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Chapter Profile: NAIOP New Mexico

Two long-serving executives (and spouses) who are retiring reflect on their time at the head of the organization.

By Trey Barrineau

For more than two decades, NAIOP New Mexico's 232 members and 144 member companies have been led by the husband-and-wife team of **Lynne Andersen** and **John Gallegos** (Lynne has served as chapter president for 26 years; John has been vice president for 21 years). They are retiring at the end of 2021.

"My husband joined me five years into my 26-year journey with NAIOP," Lynne Andersen recently told Development magazine. "He had just sold his business and was looking for something to do. Since he is better than I am at math, I convinced him that this partnership was going to be fun. Thanks to the incredible people we work with, it has been."

Lynne's background was teaching, marketing and publishing, and John was a small-business owner.

John Gallegos and Lynne Andersen are stepping down after more than two decades at the helm of NAIOP's New Mexico chapter.

"Together we have learned about the multi-faceted world of development from the ground up," she said. "I actually understand, and can discuss intelligently, issues such as impact fees, acre feet of water, cap rates, supply chains and other fascinating real estate topics."

Andersen says her most meaningful memory during her time leading the chapter demonstrated the kindness of the local real estate community.

"Our 28-year-old son was diagnosed with Stage 3 cancer and with multiple tumors throughout his body," she said. "The chapter rallied around us, working with our need to be out of state for months for special operations, jumping in to handle chapter needs and even setting up a GoFundMe account for our son. I don't want to sound maudlin, but the members were a warm blanket around all three of us. The happy ending is that our son is cancer-free."

Andersen asked members of NAIOP New Mexico to share their thoughts on what's going on in the state's commercial real estate markets.

Development: *How are the market conditions for member companies in New Mexico?*

According to **Debbie Harms**, CEO of NAI Sun Vista Commercial Real Estate and 2019 past president of NAIOP New Mexico, the state's member companies, from developers to contractors and brokerage houses, are seeing activity that is rapidly advancing to full capacity. However, they are also experiencing labor and material shortages caused by the pandemic.

"My husband joined me five years into my 26-year journey with NAIOP. He had just sold his business and was looking for something to do. Since he is better than I am at math, I convinced him that this partnership was going to be fun. Thanks to the incredible people we work with, it has been."

— Lynne Andersen, president, NAIOP New Mexico

Harms said Albuquerque's office market, which had lagged other property types, was finally recovering from the Great Recession when the pandemic hit.

"It's been a long, slow slog for our member companies," said **James Chynoweth**, managing director for CBRE's Albuquerque office and a past president of the New Mexico chapter. "Finally, in 2019 activity picked up, projects started, users were looking and everyone was busy. 2020 was going to be a great year, dare we say a breakthrough year. At least that was the plan."

Chynoweth said New Mexico's recovery will likely be a little slower than other states, but several factors should help it in the coming years.

"Quality of life is more important than ever in attracting talent," he said. "Big, dense cities are not as appealing as they once were. The lower cost of living here creates added lifestyle opportunities."

Getty Images

Albuquerque, New Mexico's largest city, has experienced growth in several sectors of office occupants, including IT, education, medical and government.

"Together we have learned about the multi-faceted world of development from the ground up and about all the professions engaged in this world. I actually understand, and can discuss intelligently, issues such as impact fees, acre feet of water, cap rates, supply chains and other fascinating real estate topics."

— Lynne Andersen, president, NAIOP New Mexico

During the past year, Albuquerque has enjoyed new growth in several sectors of office occupants (medical, government, labs, education, IT, etc.), and the growth/influx of these businesses is driving down the vacancy rate of office product. Chynoweth said vacancies in all product types across the state are very low. For example, multifamily occupancy is at 97%; office vacancy rates are at 15.1% marketwide but only 8.1% for Class A space.

Development: *What are the challenges you're facing in either the business or regulatory climate in New Mexico?*

"The Albuquerque/Santa Fe metro area is challenging and unpredictable regarding their entitlements and approval processes, even with Albuquerque's recent Integrated Development Ordinance (a 2017 streamlining of city zoning regulations)," said **Kurt Browning**, a partner with Titan Development and a 2015 past chapter president who also serves on the national NAIOP Board of Directors. "Neighborhood associations and multiple agencies have significant

input into developments, creating unpredictability and delays."

Browning said New Mexico's tax policy is outdated and does not encourage growth. For example, it has a gross receipts tax that immediately adds almost 8% to the cost of any development. There are state programs to assist relocating or expanding businesses, but they are difficult to navigate.

Development: *What are the big opportunities in commercial real estate in New Mexico right now?*

"New Mexico is ideally positioned for commercial investment and development in several sectors," said **Benjamin Gardner**, president of Dekker | Perich | Sabatini and a NAIOP New Mexico board member. "With a burgeoning film industry and the expansion of Netflix, NBC Studios and others, opportunities abound for service providers to become part of the supply chain for these industries. Most of these film companies are incentivized with state and local tax credits that are somewhat based on jobs created here and money spent on local services and materials."

Because of New Mexico's climate, 300-plus days of sunshine and unique topography, Gardner said solar and wind energy production and development are booming. They are gaining ground on New Mexico's No. 1 revenue generator, oil and gas. (New Mexico recently surpassed North Dakota to

> **"Our 28-year-old son was diagnosed with Stage 3 cancer and with multiple tumors throughout his body. The chapter rallied around us, working with our need to be out of state for months for special operations, jumping in to handle chapter needs and even setting up a GoFundMe account for our son. I don't want to sound maudlin, but the members were a warm blanket around all three of us. The happy ending is that our son is cancer-free."**
>
> *— Lynne Andersen, president, NAIOP New Mexico*

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become No. 2 in oil and natural gas production nationwide, according to the U.S. Energy Information Administration.)

Beyond film, renewables, and oil and gas, Gardner said aerospace activity is strong and diverse, with a multitude of commercial, industrial and defense contractors settling in or looking seriously at New Mexico for manufacturing and research and development facilities.

"We have also seen an increase in inquiries from firms looking at reshoring their manufacturing to New Mexico's inland port at Santa Teresa in the southern part of the state," he said.

According to Gardner, opportunities for commercial and industrial development are vast and so is New Mexico's landscape of available undeveloped land (it is the fifth-largest state by area in the U.S.). But available infrastructure, entitlement processes, tax structure, and a limited skilled workforce are challenges.

"The business community, the local NAIOP chapter, and New Mexico's universities and community colleges are all are working hard to help make New Mexico more business friendly and competitive by focusing on overcoming these challenges," he said.

Development: *Have there been educational sessions specific to New Mexico or your chapter recently?*

"Education has always been a core benefit for chapter members," Andersen said. "We have 11 luncheons a year with major speakers on important industry topics. In the first part of 2021, COVID-19 turned many of those into Zoom meetings, but we moved to in-person gatherings in June. Our Zoom meetings averaged 150 attendees. Our in-person meetings are averaging about 250 attendees at this point."

Topics covered included the impact of drought on real estate in New Mexico, an Albuquerque City Council candidate forum with nine candidates and the senior editor of Albuquerque Journal newspaper serving as moderator, and a "state of the state" session with New Mexico Gov. **Michelle Lujan Grisham**. ■

Trey Barrineau is the managing editor of publications for NAIOP.

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Developing Leaders Award Winners Share Career Advice

Outstanding young NAIOP members reveal what's helped them make their way in the industry.

By Marie Ruff

Commercial real estate has always been an industry based on relationships — with NAIOP playing a key role in bringing the right people together. An example is NAIOP's Developing Leaders program, which gives young professionals opportunities to learn from industry experts and build their networks.

Each year, the Developing Leaders Award are given to the most outstanding emerging leaders, ages 35 and under, in the industry. They were honored in September during NAIOP's CRE.Converge 2021 in Miami Beach, Florida, in recognition of their remarkable professional accomplishments, strong leadership and significant community involvement.

The recipients of this year's Developing Leaders Award talked about the commercial real estate professionals who have supported their career growth and offered advice to NAIOP members who are just starting out.

Lindy Deller
Development Manager,
Panattoni
NAIOP Northern Nevada

A person who has had a notable impact on your career:
"Our chapter executive director when I started in NAIOP, **Randi Reed**, has had the largest impact on my career. From the beginning of my career in CRE, Randi took me under her wing and introduced me to some of the largest players in our market, while also giving me great leadership and professional advice. With an in-depth knowledge of NAIOP and its benefits, Randi was able to ensure I had the same opportunities through NAIOP as she did. I am extremely grateful for her mentorship."

"Get involved with one of your local NAIOP committees. It is the best opportunity to network with other motivated CRE professionals, and it presents opportunities to reach out to other members or potential members with whom you'd like to meet."

— Lindy Deller, Development Manager, Panattoni

Advice for Developing Leaders early in their careers:
"Get involved with one of your local NAIOP committees. It is the best opportunity to network with other motivated CRE professionals, and it presents opportunities to reach out to other members or potential members with whom you'd like to meet. If possible, take the lead on a few projects such as heading a government affairs effort or planning a unique event from start to finish. This will help you understand what's involved and the process, making you a more effective leader."

Marianna Hunnicutt, P.E., ENV SP
Civil Engineer/Practice Builder,
Kimley-Horn
NAIOP Southern Nevada

A person who has had a notable impact on your career:
"**Jody Walker Belsick** and **Treasea Wolf**, career-long business partners and accomplished practice builders with Kimley-Horn, have had a tremendous influence on my career. These two powerhouse women — talented, intelligent and intentional — believed in me, challenged me and have always been there to help pick me up when I stumbled. I came across an anonymous quote years ago: 'It's a rare person who can take care of hearts while also taking care of business.' This defines the example of servant leadership Jody and Treasea embody, and that which I aspire to carry on."

“I’m a firm believer we each have the responsibility to take charge and accountability of our destiny. So go for it and empower those around you to do the same!”

— Marianna Hunnicutt, Civil Engineer/Practice Builder, Kimley-Horn

Advice for Developing Leaders early in their careers:
“Get out of your comfort zones — that is where all the magic happens! Sure, it’s scary, risky or maybe a bit (or a lot!) awkward. However, it’s all about the journey, and these moments are incredibly powerful building blocks toward something great. I’m a firm believer we each have the responsibility to take charge and accountability of our destiny. So go for it and empower those around you to do the same!”

Andrew Hunt
Director, Center for Real Estate, Marquette University
NAIOP Wisconsin

A person who has had a notable impact on your career:
“Two people stand out: first, **Larry Pobuda**, who was the 2010 NAIOP chair, hired me as a summer intern in 2007 and paid for my first NAIOP membership. He’s been a wonderful mentor over the years, and he changed my life by exposing me to this great organization. Second, **Mark Eppli**, Ph.D., who was my undergrad advisor and hired me twice at Marquette, was instrumental in helping me learn how I could impact the real estate industry by using this platform at Marquette. I am deeply indebted to both men.”

Advice for Developing Leaders early in their careers:
“Maybe more than anything else, you need to be willing to put yourself in uncomfortable situations to grow. This is especially true early in your career. That could mean attending a networking event where you don’t know anyone, joining a committee with people more seasoned than you, saying yes to projects at work that stretch your experience, and so much more. You cannot expect to get ahead without being willing to learn, and you learn by saying yes to things that might scare you.”

“You cannot expect to get ahead without being willing to learn, and you learn by saying yes to things that might scare you.”

— Andrew Hunt, Director, Center for Real Estate, Marquette University

Alexandra Stoelzle
Director of Development
BCG Holdings LLC
NAIOP Utah; NAIOP San Francisco

A person who has had a notable impact on your career:
“**Dennis Williams**, two-time president of the NAIOP San Francisco Bay Area chapter, has been an unwavering mentor throughout my career in commercial real estate. Since I was a student in his MBA Real Estate Development course at UC Berkeley, he has supported my career aspirations and helped me expand my breadth and depth within the industry. He has been the catalyst for my involvement in several NAIOP programs, but also other organizations such as the Berkeley Real Estate Alumni Association and Fort Mason Center for Arts and Culture, both non-profit organizations for which I currently hold board chair positions. Dennis’ passion for fostering the personal and career development of young leaders in the industry is unmatched, and I feel lucky and honored to call him a mentor.”

“The world is small, but the world of real estate is even smaller. Your network is everything.”

— Alexandra Stoelzle, Director of Development, BCG Holdings LLC

Advice for Developing Leaders early in their careers:
“Don’t underestimate the power of relationships and continuous learning. No matter your specialty — acquisitions, development, marketing, finance — real estate is, and will always be, a people business. Utilize platforms like NAIOP that offer networking and career-building opportunities. For example, the San Francisco Bay Area chapter offers a Young Professionals Group, which is a year-long program that gives Developing Leaders the opportunity to build relationships with their peers, as well as learn from and find mentors among the seasoned professionals who teach each course. The world is small, but the world of real estate is even smaller. Your network is everything.” ■

Marie Ruff is a communications senior manager with NAIOP.

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

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Jennifer LeFurgy, Editor-in-Chief, September 25, 2021

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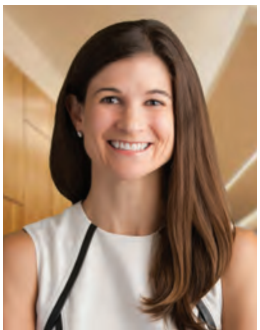


Molly Ryan Carson

It's been quite a year for our industry and association. While we've faced the prolonged impacts of the pandemic and worried about our tenants and our own employees, we've also experienced times of optimism about the strength of our industry and found creative ways of doing business.

Even though my time as chair was different than a typical year, I've had the pleasure of getting to work with our chapters, the Board of Directors and the NAIOP staff in new ways. Whether through virtual visits with chapters or online meetings with our association leadership, I'm proud of how this team has worked together.

Through our research and education, we've kept our members ahead of the curve with insights on how the pandemic continues to reshape our industry. We've helped our industrial members capture new opportunities and knowledge as their sector soars, and we're guiding our office and retail-focused members as they make their way forward in a new economic landscape.

This type of knowledge sharing is one of NAIOP's hallmarks, and one that is critically important as we grow and adapt. I cannot count the number of times I've learned from a fellow NAIOP member, whether at a chapter meeting, during a NAIOP conference or in a casual conversation.

Expanding our discussions on the importance of diversity and inclusion in commercial real estate was a priority for me this year, and I'm pleased that we've made progress. Our member companies and chapters have shared ideas and strategies on how they're integrating these initiatives into their programs and businesses, and we're all learning together how intentional DEI efforts can make a difference.

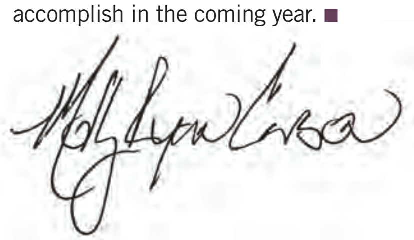
> **By the end of the year, we will have successfully hosted four in-person NAIOP conferences, and I can assure you that the energy at these events is unmatched. Simply having the opportunity to network one-on-one with colleagues from across the industry has sparked excitement.**

This issue isn't one that will be quickly solved, and we have much more to do in making our industry and association one where all voices feel appreciated and heard. I am pleased to say that our Executive Committee and NAIOP staff will continue this important work, and I thank them for their ongoing commitment.

By the end of the year, we will have successfully hosted four in-person NAIOP conferences, and I can assure you that the energy at these events is unmatched. Simply having the opportunity to network one-on-one with colleagues from across the industry has sparked excitement. If you haven't been to a corporate NAIOP event or within your chapter, I'd encourage you to attend one and make those valuable reconnections.

We accomplished so much even as we navigated the challenges brought on by the pandemic. I am confident that the year ahead will be one filled with even greater successes. Our organization is in good hands next year with 2022 Chair **Jeff Milanaik** at the helm. I've gotten to know Jeff over the years and look forward to all that he'll do in this role. I wish him all the best.

Thank you for the opportunity to lead this organization. I'm excited to see what our association and members accomplish in the coming year. ■



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