

A modern multi-story apartment building with balconies, featuring a mix of blue, grey, and orange architectural elements. The building is shown from a low angle, looking up. The balconies have glass railings and some have orange panels. The sky is a clear blue.

**MULTIFAMILYPRO+**  
DEVELOP / DESIGN / BUILD

# 2023 MULTIFAMILY ANNUAL REPORT

PRESENTED BY THE EDITORS OF

**BUILDING DESIGN  
+ CONSTRUCTION**





# SECURE. TWIST. MARVEL.

Now you can affordably incorporate HSS into your designs with Shuriken — a built-in wrench that lets you field bolt connections that used to require welding. So go ahead — design away!

See Shuriken in action at [atlastube.com/shuriken](http://atlastube.com/shuriken)



# TABLE OF CONTENTS

## MEET OUR EXPERTS

---

- 4 Contributors and Sponsors**  
The BD+C and Multifamily Pro+ editors connected with dozens of multifamily market experts for this special report. Meet our contributors and sponsors.

## CHAPTER 1 MARKET FORECAST

---

- 6 2024 Multifamily Construction Outlook**  
Tracking the current and future states of the multifamily markets: apartments, senior living facilities, student housing.

## CHAPTER 2 MULTIFAMILY SUBSECTOR TRENDS

---

- 12 Top 10 Trends in the Multifamily Rental Market**  
Chronic housing shortages raise value for market-rate multifamily products. But affordable supply still falls way short of demand.
- 22 Top 10 Trends in the Student Housing Market**  
As enrollment increases, demand for student housing surges. But rising construction costs could dampen projects.
- 32 Top 10 Trends in the Senior Living Market**  
The 65+ population is growing faster than any other age group. AEC firms are coming up with solutions to serve this burgeoning cohort.
- 38 Top 10 Trends in the Affordable Housing Market**  
Among affordable housing developers today, there's one commonality tying projects together: uncertainty.



## CHAPTER 3 EXCLUSIVE RESEARCH

---

- 46 Kitchen and Bathroom Amenities**  
Our inaugural K+B survey dives deep into the 106 amenities and finishes multifamily developers and their project teams are using.
- 52 4th Multifamily Amenities Survey**  
Our fourth Multifamily Amenities Survey reveals that multifamily teams are going beyond the usual offerings. How about a salt room?

## CHAPTER 4 INNOVATIONS ROUNDUP

---

- 58 2023: A Year of Innovation in the Multifamily Market**  
Here is a roundup of our favorite multifamily innovations for 2023.

## CHAPTER 5 CONTINUING EDUCATION

---

- 67 Product Innovations Boost Design and Construction Success**  
This AIA-accredited course worth 1.0 AIA HSW covers emerging trends in exterior design and products/systems selection.

# MEET OUR CONTRIBUTORS AND SPONSORS

Welcome to *Building Design+Construction* and *Multifamily Pro+*'s first Multifamily Annual Report. This 76-page special report is our first-ever “state of the state” update on the \$110 billion multifamily housing construction sector. In the following pages, the editors highlight our top-10 trends in each multifamily subsector; present the findings of our exclusive Kitchen and Bath Research Survey and our fourth Multifamily Amenities Survey; provide a 2024 outlook for this crucial building sector; present a roundup of our favorite market innovations for 2023; and outline emerging trends in exterior design and products/systems selection in an AIA-accredited course. Enjoy!

David Barista, Editorial Director  
John Caulfield, Senior Editor

Robert Cassidy, Executive Editor  
Quinn Purcell, Managing Editor

The 2023 Multifamily Annual Report is made possible thanks to our six sponsor companies. Please check out their sponsor messages on the following pages:

ATLAS TUBE ..... INSIDE FRONT COVER  
 PROWOOD/UFP INDUSTRIES..... BACK COVER  
 SALTO SYSTEMS ..... 21  
 TAMLYN ..... 29  
 ULTRA ALUMINUM ..... 45  
 VITRO ARCHITECTURAL GLASS ..... INSIDE BACK COVER

SUPPORTED BY





# MEET THE EXPERTS

The BD+C and Multifamily Pro+ editors connected with more than five dozen multifamily market experts and organizations for this special report. Big thanks to the following people and firms.

Tallal Bhutta, Founder, CEO,  
BDB Construction

Peter Birkholz, Principal, Page & Turnbull

David Block, Director of Development,  
Evergreen Real Estate Group

Alexander Briseno, Principal,  
Studio Design Leader, HKS

Chris Bruen, Senior Director, Research,  
National Multifamily Housing Council

Douglas Carter, Principal-in-Charge,  
President, DCS Design

Ondrej Chybik, Co-founder, CHK

Brendan Connolly, Partner, Mithun

Ed Coyne, Senior Vice President,  
Bromley Companies

John B. Cruz, III, President, CEO,  
Cruz Companies

Jim Curtin, Principal,  
Solomon Cordwell Buenz

David Damon, Global Higher Ed Practice  
Leader, Perkins&Will

Kyle Darnell, Vice President,  
ARCO Construction Company

Tama Duffy Day, Global Leader,  
Senior Living, Principal, Gensler

Lee DeLong, CEO, Capital Group,  
Clark Construction

Mike DeRouin, President,  
Fitzgerald Associates Architects

Robert Dietz, Chief Economist,  
National Association of Home Builders

Brad Dillman, Chief Economist, RPM Living

Mitch Dolton, Chief Innovation Officer,  
Core Spaces

Eric Doner, Senior Associate, RATIO Design

Sean Falvey, Vice President,  
Regional Director, Sundt Construction

Kelly Farrell, Global Leader Residential  
Practice, Managing Director, Gensler

John Finn, Chief Operating Officer,  
W.E. O'Neil Construction

Alejandro Giraldo, Principal,  
Perkins Eastman

Tim Haley, Project Architect,  
Senior Associate, MBH Architects

Paul Hanson, President, Epcon Financing

Jeff Head, Vice President of Development,  
The Habitat Company

Mark Heckman, Vice President,  
Moseley Architects

Andy Heinen, Vice President, Kimley-Horn

Kimberly Hellekson, Managing Principal,  
FK Architecture

Brooks Howell, Global Residential Practice  
Leader, Gensler

Walter Hughes, Chief Innovation Officer,  
Humphreys & Partners Architects

Anne Johnson, Research Knowledge  
Manager-Higher Ed., Perkins&Will

Philip Johnson, Project Executive,  
Pence Contractors

Liza Kapisak, Interior Design Director,  
Partner, BKV Group

Dora Kay, Vice President,  
Moseley Architects

Chuck Kensky, Executive Vice President,  
Bala Consulting Engineers

John Kirk, Partner, Cooper Robertson

Michal Kristof, Co-founder, CHK

Nick Luettke, Associate Economist,  
Moody's Analytics

Kelly Mangold, Principal, RCLCO

Jesse McConnico, Research Manager,  
John Burns Real Estate Consulting

Meaghan McGee, Senior Associate,  
Kimley-Horn

Andy Mest, Managing Director,  
Modern Living Solutions

Mohamed Mohsen, Principal,  
Niles Bolton Associates

Jeff Mulcrone, Partner, Director of Design,  
BSB Design

Rob Muller, Senior Design Leader,  
Managing Partner, BKV

Paula Munger, Vice President of Research,  
National Apartment Association

Trish Nixon, President, LRS Architects

Hande Obuz, Principal, Senior Architect,  
Stantec

Kinjai Patel, Central Region Executive  
GM-Construction, Lendlease

Walter Ploskon, Principal, Managing  
Director, Niles Bolton Associates

Michael Pulaski, Sustainability Practice  
Lead, Thornton Tomasetti

Doug Ressler, Manager,  
Business Intelligence, Yardi Matrix

Ethan Rhile, Vice President and Structures  
Practice Lead, Thornton Tomasetti

Jennifer Sanin, Managing Design Principal,  
Ankrom Moisan

Tom Schultz, Associate,  
The Architectural Team

Ben Seager, Principal, KTGy

Scott Skidelsky, Southeast Region  
President, Balfour Beatty US

George Sorich, Vice President,  
Residential, Norr

Steve Spett, Co-founder,  
Resource Furniture

Sean M. Stadler, Managing Principal,  
WDG Architecture

Caitlin Sugrue Walter, Vice President of  
Research, National Multifamily Housing  
Council

Alexander Zilberman, Founder, Principal,  
AZA

2024

# MULTIFAMILY CONSTRUCTION FORECAST

Tracking the current and future states of the U.S. multifamily construction markets: apartments, senior living facilities, student housing.

BY NOVID PARSİ, CONTRIBUTING EDITOR

It's no secret that the U.S. desperately needs more multifamily housing. The nation will have to build 3.7 million new apartments by 2035 to keep up with demand, according to the National Multifamily Housing Council (NMHC). The multifamily construction industry has been racing to meet that need.

According to *The State of the Nation's Housing 2023* report by the Harvard Joint Center for Housing Studies (JCHS), nearly 1.7 million housing units of all types are under construction this year. And 960,000 of those units are in multifamily structures—an increase from 818,000 units in 2022 and the highest rate of under-construction multifamily units in almost half a century, JCHS reports. For context: Of the almost 144 million housing units of all types in the U.S., more than 59 million—or about 41% of all units—are attached housing, according to multifamily developer Cortland.

The roughly one million multifamily units now under construction represent an inventory expansion of about 5.4%, according to John Burns Real Estate Consulting. For perspective, under-construction multifamily units typically represent an inventory increase of only about 2.4%.

In 2022, the number of new multifamily starts reached 547,000 units—the highest level since 1986 and a 15.5% increase over the previous high of 474,000 units in 2021, according to JCHS.

While starts have been robust, so have completions. In 2022, “multifamily construction was extraordinarily strong,” with 342,000 multifamily rental units added, according to JCHS. Yardi Matrix forecasts 484,943 new units will be supplied in 2023. And Moody's Analytics expects that, for multifamily projects with at least 20 units, almost 300,000 units will come online this year—a 63% growth over last year.

“We are currently experiencing completion levels that haven't been seen since the late 1980s,” says Paula Munger, Vice President of Research with the National Apartment Association (NAA).

Developers are supplying the rental housing that people want. “High mortgage rates have pushed more households into the rental market, which has bolstered the multifamily apartment sector,” says Kelly Mangold, Principal with RCLCO. Although down from their 2021 peaks, occupancy rates remain at a solid 95%, according to Yardi Matrix. And although they're below the post-pandemic boom





PHOTO COURTESY NSPJ ARCHITECTS

**The \$60 million, 353-unit CORE Apartments complex is situated in Kansas City, Mo., within walking distance of the Berkeley Riverfront Park. Amenities include a rock climbing wall, co-lab workspace, maker space, club room, fitness center, bike rental, and bike service. Increasingly, developers are turning to the luxury rental market to ensure projects pencil out.**

and even pre-pandemic trends, rents have been growing within a normal seasonal pattern.

However, while multifamily starts and under-construction projects have been solid over the past six months, verified completions have been less than half of the expected number so far, according to Nick Luettkke, Associate Economist with Moody's Analytics. In part, that's because permitting and construction are taking longer as construction financing tightened, economic uncertainty increased, and rent growth moderated. According to Robert Dietz, Chief Economist with the National Association of Home Builders (NAHB), one reason for the larger number of multifamily units under construction is the lengthening construction times, with the start-to-completion timeline at 17 months in 2022.

**TARGETING THE HIGHER END**

The significant majority of multifamily projects are hitting the higher end of the market, despite their higher vacancy rates.

Among surveyed NAHB and NMHC members, the average total development cost for a typical multifamily project is \$53.6 million. And over two-fifths of that total cost can be attributed to comply-

ing with government regulations, everything from applying for zoning approval to meeting building codes, NMHC finds. As construction and operation costs have increased—in addition to the costs of regulations and fees—multifamily developers have responded by targeting a more upscale market.

“Market-rate multifamily projects have increasingly shifted to Class A properties over time, reflecting shifting consumer preferences and price margins for developers,” Luettkke says. NAA's Munger puts it this way: “The only way to make a

**Forecast Snapshot for Multifamily Rental Sectors**

	2023	2024	2025
Market-rate apartments	↑	↑	↓
Luxury apartments	↑	↑	—
Affordable apartments	↓	↓	↑
Senior living	↓	↑	↑
Student housing	↓	↑	↑

SOURCE: MULTIFAMILY PRO+, BASED ON FORECASTS FROM INDUSTRY ECONOMISTS

new project financially viable is to build at a higher price point.”

**MARKET-RATE MULTIFAMILY STILL STRONG**

Currently, there are more than 892,000 market-rate multifamily rental apartments under construction, in addition to over 352,000 affordable units, according to Yardi Matrix. Among planned and prospective market-rate apartments, there are more than 3.36 million units, in addition to about 1.02 million affordable units.

“The under-construction pipeline continues to expand, and 2023 construction starts to date have not exhibited any material signs of a slowdown,” says Doug Ressler, Manager, Business Intelligence with Yardi Matrix. “Construction starts have remained robust to start 2023.” These units will complete in 2025, Ressler adds.

**SENIOR LIVING HIT HARD BY PANDEMIC**

Compared to market-rate apartments, student housing, and for-sale condos, “senior living was the subsector hit the hardest by the pandemic,” Luettkke says. Senior living construction stagnated during the pandemic, and it’s now at a record low—with three straight quarters of fewer than 1,000 senior living units delivered nationwide, compared to pre-pandemic figures averaging in the 5,000 to 10,000 range, according to Moody’s Analytics.

Yet occupancy has been ticking upward, which likely will rise further with the growing demand from Baby Boomers in coming years. From a pandemic peak of 17%, the vacancy rate in senior housing has fallen to 12.9%, though that’s still higher than 10.1% in early 2020. “We’ve now observed 10 straight quarters of vacancy decline, a positive sign for senior housing,” Luettkke says.

**STUDENT HOUSING TO PICK UP**

As with senior living, student housing construction fell during the pandemic. “Student housing took a notable dip early in the pandemic when universities went online,” Luettkke says. Moody’s Analytics saw the lowest student-housing completion number in 2022, when fewer than 10,000 beds and 500 units were delivered nationwide.

Now, with university populations back on campus, “we expect student housing construction to pick back up again,” Luettkke says. Over 20,000 beds and around 1,330 units should be completed this year, near the pre-pandemic average, according to Moody’s Analytics. Currently, the total student housing inventory comprises 1,918 properties with over 950,000 bedrooms, according to Yardi Matrix.

“The off-campus dedicated student housing sector continues to perform well,” Ressler says.

**A REGIONAL LOOK: PRESENT TERM**

Multifamily apartment projects have been thriving in two geographic areas in particular: the suburbs and the Sun Belt.

In the post-Covid era, multifamily construction has shifted from more dense geographies to lower-density areas. The multifamily supply as a percentage of the overall inventory is greater in suburban markets (7.2%) than urban cores (6.5%), according to Cortland. From the fourth quarter of 2019 to the first quarter of 2023, the multifamily construction market share in large metro urban core areas fell from 41.7% to 37.5%, according to NAHB. For the same period, the multifamily market share in suburbs and exurbs increased from 32.5% to 35%.

Among the top 20 metros for multifamily construction this year, nine are in the Sun Belt, according to Moody’s Analytics. “Our models forecast the Sun Belt star metros will continue to perform well,” Luettkke says. That’s demonstrated by the top three cities for multifamily units delivered so far in 2023: Phoenix (6,239 units), Austin (4,540), and Nashville (3,334). They’re followed by Los Angeles, Chicago, and New York, which added just over 3,000 units each this year.

The Sun Belt story becomes clearer when considering new construction as a percentage of total inventory. This year, construction represents 1.82% growth of the multifamily inventory in Phoenix, 1.7% in Austin, and 2.2% in Nashville. By contrast, although their unit numbers might

**Multifamily New Supply Forecast Q3 vs. Q2**

Year	3Q 2023	2Q 2023	% Change
2023	484,943	453,730	6.9%
2024	506,574	475,703	6.5%
2025	424,899	412,047	3.1%
2026	401,065	422,340	-5.0%
2027	417,378	426,252	-2.1%
2028	426,722	436,225	-2.2%

SOURCE: YARDI MATRIX



seem high, the multifamily inventory growth is just 0.37% in Los Angeles, 0.60% in Chicago, and 0.63% in New York.

### THE FUTURE STATE OF MULTIFAMILY

Industry experts agree the hard-charging multifamily construction sector has been indicating a deceleration—and they point to rising interest rates.

Rising rates over the past year and a half have “changed the mortgage market for multifamily,” according to Yardi Matrix’s June 2023 Multifamily National Report. “Expensive debt has quashed transaction activity,” the report writes. Amid increasing interest rates and slowing rent growth, transaction volume in the apartment market fell for the fifth consecutive quarter, NMHC reported in July 2023.

NAA’s Munger places the recently rising interest rates within a larger historic context—noting that “the interest rates we’re seeing now are not a new phenomenon,” she says. “The era of ‘free money’ is behind us, and it’s really a matter of adjusting to the new rates.”

“In the rental market, slowing rent growth and rising vacancies, especially in high-cost market segments, will likely lead to a slowdown in new apartment construction,” according to the JCHS report. In addition to higher interest rates, JCHS cites tightening lending standards and rising operating costs as contributing to a slowdown.

“Borrowing costs are higher for multifamily developers and lending conditions have tightened, so fewer deals are getting done,” says Jesse McConnico, Research Manager with John Burns Real Estate Consulting. Luettker adds, “We’re presently at a moment when starts are slowing down and completions are lower than expected.”

Permits for multifamily projects with five or more units are down more than 16% on a year-to-year

## TOP 15 MARKETS: Forecast New Supply—Number of Units

Market	2023		2024	
	Supply	% of Stock	Supply	% of Stock
1. Austin	24,145	8.88%	24,714	8.35%
2. Phoenix	18,571	5.47%	19,169	5.36%
3. Denver	15,677	5.08%	16,421	5.07%
4. Charlotte	14,275	7.05%	14,716	6.79%
5. Miami	13,141	8.50%	12,381	7.38%
6. Dallas-North	12,977	3.24%	11,179	2.71%
7. Houston-West	12,612	2.53%	10,659	2.09%
8. Raleigh-Durham	12,116	6.99%	13,804	7.45%
9. Orlando	11,722	4.73%	11,672	4.49%
10. Atlanta-Suburbs	10,883	4.38%	10,100	3.90%
11. Tampa-St. Pete.	10,833	4.56%	11,401	4.59%
12. Brooklyn, N.Y.	9,825	6.44%	6,281	3.87%
13. Nashville	9,542	5.59%	10,942	6.08%
14. N.J.-Northern	9,345	3.68%	12,212	4.64%
15. Atlanta-Urban	8,982	3.49%	9,895	3.71%

SOURCE: YARDI MATRIX

basis, and the pace of permits has been slowing since February, according to NAHB. “Our forecast is for ongoing weakness, given the number of apartments under construction is near one million, the highest total since 1973,” Dietz says. With permitting activity beginning to slow, “we expect the influx of new supply to recede in 2025,” Munger adds.

Brad Dillman, Chief Economist with developer, property manager, and investment firm RPM Living, paints an even starker picture: “Many investors have completely paused funding additional development projects for the year,” Dillman says. “Higher borrowing costs reduce the attractiveness of a development.” There are still several investors willing to provide equity for projects, Dillman adds, but it will be harder for them to hit their target returns. Aside from rising interest costs, they also have to contend with increases in construction costs, land costs, government fees, and flat or declining rents, Dillman says.

“We’re already seeing a sharp pullback in the number of apartment units starting construction

due to higher costs of borrowing and a softening market,” says Chris Bruen, Senior Director, Research with NMHC. But the current pullback, with starts trending down, could bode well for developers who can get their projects started now and then capitalize on a stronger leasing environment later, according to McConnico.

Yardi Matrix forecasts 506,574 new units in 2024—followed by 424,899 units in 2025, 401,065 units in 2026, and 417,378 units in 2027. Yardi Matrix’s estimates assume a mild recession in late 2023 or early 2024. But if a deeper and longer recession takes hold, with debt and equity finance far less available, then the multifamily rental market could see “a deeper fall-off in new construction starts beginning in the second half of 2023 that remains through 2025,” Ressler says. In this scenario, new supply would fall to a forecasted low of 355,000 in 2026.

“If the economy avoids a recession, the labor market and wage growth remain strong, and inflation continues on its downward path, we will see

steady demand for apartments,” Munger says.

“There are still many young people living with family and they will form new households as the economy, and their own financial situations, strengthen.”

Much depends on the economy—but not all. Immigration levels also will affect the multifamily market. “The 2022 increase in immigration bodes well for the market, especially if it continues,” Munger says. “Immigrants tend to rent initially and sometimes for long periods of time.”

Without high immigration numbers, however, the recent flurry of construction activity could tip the scale from demand to supply, Dillman says. “From our perspective, there is too much housing under construction in the U.S., unless one assumes strong immigration figures over the years ahead,” Dillman says. “Strong immigration assumptions did prove correct for 2021 and 2022, but whether that continues going forward is uncertain.”

There will be more multifamily housing supply than demand in the near term, agrees Mangold. “Absorption is expected to be modest in the second half of 2023 as renters face economic headwinds.” But although RCLCO expects supply to outpace absorption by 1.5 to 2 times through this year, it also anticipates that demand will increase again in 2024—with the supply-absorption gap narrowing and then reaching equilibrium in late 2024 or early 2025.

**Economic headwinds likely will have less effect on senior living and student housing**, both of which indicate a turnaround from their pandemic-era lull. According to JCHS, all households headed by a person 65 and over increased 43% from 2009 to 2019, and their rentership rate edged up slightly. “We’ve been seeing more and more seniors opt to rent over the years,” McConnico says.

Recent data on student housing indicates very strong pre-leasing activity for the upcoming academic year, according to Munger. “Student housing isn’t as impacted by the economy, wages, and con-

## 2023 FORECAST: Completed Multifamily Units

Phoenix	13,907
Austin	12,690
Los Angeles	11,294
Dallas	10,925
New York	10,626
Northern New Jersey	10,492
Atlanta	8,629
Chicago	8,263

SOURCE: MOODY'S ANALYTICS



PHOTO BY NOELLE ON UNSPASH



sumer sentiment as market-rate apartment rates are,” she says. Ressler agrees: “The student housing sector is typically less impacted by recessions than other commercial real estate property types.”

### **A REGIONAL LOOK: NEAR TERM**

“In the Sun Belt and the West, demand has cooled to normal from red-hot as a wave of new supply comes online,” according to Yardi Matrix’s Multifamily National Report. A growing number of metro areas report negative growth year-over-year, Yardi Matrix reports. Nine of the top 30 metros were negative in June 2023, mostly in the Sun Belt and the West.

Nashville, Raleigh-Durham, and Austin have the largest multifamily pipelines under way as a percentage of inventory, so they likely will see the largest inventory expansions in 2024, according to John Burns Real Estate Consulting. As a result of the supply recently delivered, rents have declined year over year in all three markets.

While completion levels are high for now, permitting activity has begun to slow down. In response, Munger says, “rent growth has started to decelerate and has even turned negative in some markets that are experiencing high levels of construction.” These include Austin, Nashville, and Phoenix. “It’s important to note, though, that most of these markets still show positive absorption. So the demand is absolutely there—it’s just not enough to outpace new supply.”

“We definitely have a lot of supply under way, and some markets are going to pay for it,” McConnico says. “We are seeing occupancy moderate from all-time highs, and rents have fallen in some heavily supplied and maybe even oversupplied markets. You also have to look at the demand picture. Some areas really need it and have been able to handle it.”

While the Sun Belt has seen high population growth, it also has seen rising insurance costs stemming from increasing climate-related disasters. “Demographic and insurance trends are setting up a medium-term challenge for developers trying to meet rising demand in these metros despite significant insurance costs and availability,” Luettker says.

### **HIGH-END NOW, AFFORDABLE TOMORROW?**

Multifamily supply might be outpacing demand—but not when it comes to affordable housing. As Luettker says, “Demand for affordable housing remains well above available supply.” And as McConnico notes, “There is definitely a need for more

affordable units.”

“The underproduction of housing has translated to higher housing costs,” Bruen says. This has resulted in a loss of 4.7 million affordable apartments—with monthly rents less than \$1,000—between 2015 and 2020.

High mortgage rates and low resale inventory are keeping renters in place longer and driving multifamily demand for now, McConnico notes. McConnico adds that, while rents have increased, they still haven’t gone up as much as home prices and remain lower than home payments. An average monthly house payment is at least \$1,000 higher than an average rent payment nationally, according to a Marcus & Millichap analysis. “Renting remains the more affordable choice in many areas,” Munger says.

“We anticipate multifamily demand will continue to hold as single-family market stress incentivizes some households to pursue multifamily options,” Luettker says. Demand likely will remain high nationwide, which will buoy new construction, despite the financing challenges, he adds. “In the near future, the relationship between new constructions and affordability will remain a central topic.”

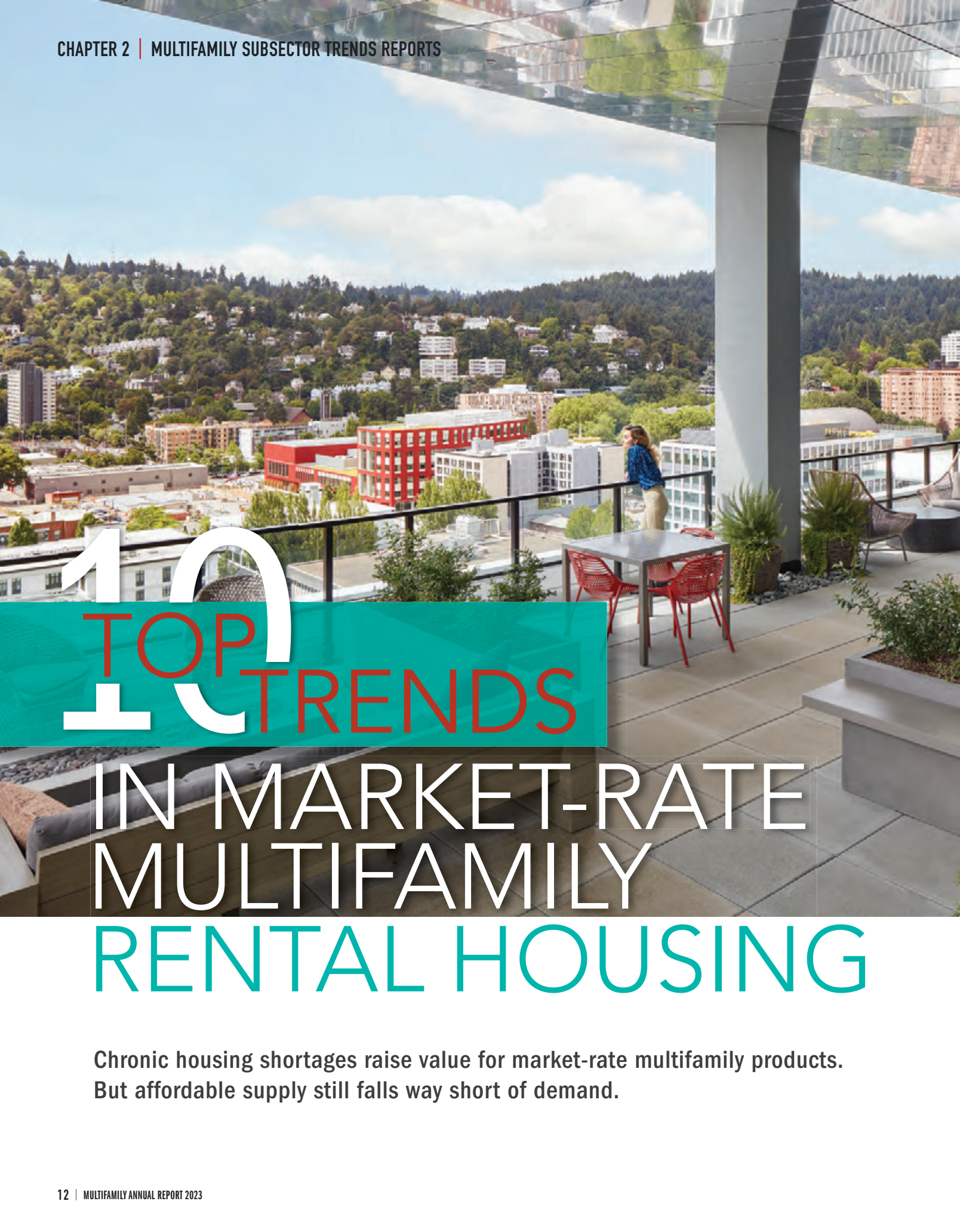
Yet the majority of new multifamily construction has focused on Class A projects—with Class B and C projects accounting for just 5% to 10% of total deliveries in recent years, according to Moody’s Analytics. “Even as the abundance of mostly high-end apartment units under construction reaches the market, it remains unclear how much relief this will provide for households with low and moderate incomes,” according to JCHS.

### **What do these high-rent, luxury properties mean for the future of affordable multifamily housing?**

According to Bruen, today’s luxe apartments could become tomorrow’s affordable units. “The most affordable market-rate housing units tend to be older, just as used cars are less expensive than new cars,” Bruen says. “So if we don’t build newer units today, we won’t have an adequate supply of older, more affordable units in the future.”

“The amount of new supply coming to market now is promising, and we have already seen it making a dent in affordability in some areas and some market segments,” Munger says. “But this is not an overnight process, and we have decades of underbuilding to make up for until supply and demand—at all price points—are truly in balance.”

Mangold adds, “Increasing interest rates and affordability concerns will prove to be ongoing challenges for both multifamily developers and renters.”+



# 10 TOP TRENDS

## IN MARKET-RATE MULTIFAMILY

# RENTAL HOUSING

Chronic housing shortages raise value for market-rate multifamily products. But affordable supply still falls way short of demand.





MORIS MORENO

**Pictured: The ALTA Art Tower in Portland, Ore., designed by Ankrom Moisan and developed with Wood Partners.**

## Top 10 Trends in Market-Rate Multifamily Housing

1. Apartments continue to get smaller
2. Remote work, a Covid remnant, is a design consideration
3. Codes shift to all-electric for new construction
4. Office-to-residential conversions remain exceptions
5. Multifamily plays catchup with modular and prefab
6. Amenities have gone to the dogs, literally
7. Mixed use broadens apartment buildings' appeal
8. Low and midrise prevail, but towers keep rising, too
9. Sustainability is now on owners' and tenants' radars
10. Production builders respond assertively to demand

**BY JOHN CAULFIELD, SENIOR EDITOR**

**D**emand for market-rate multifamily housing is “super strong,” says Meaghan McGee, PE, LEED AP, Senior Associate with the firm Kimley-Horn in Denver. Demographic and economic shifts, along with work and lifestyle changes, some of them agitated by the recent coronavirus pandemic, have made apartment living preferable for a wider range of buyers and renters. And construction activity is buzzing, with “a lot of Class A buildings coming online,” says Caitlin Sugrue Walter, PhD, Vice President of Research with the National Multifamily Housing Council (NMHC). The Sunbelt is the prime market.

But construction isn't coming anywhere near closing the gap separating supply and demand for affordable multifamily housing, Walter laments. “We've been underbuilding for so long.” McGee adds that tougher codes and regulations, higher impact fees, and energy and water concerns are among the factors that hold up permits.

Rising interest rates, coupled with supply chain and manpower shortages, have made construction more expensive. “There's only so much you can do to lower costs to what people can afford,” says Walter Hughes, Chief Innovation Officer for Humphreys & Partners Architects. In Florida, a multifamily hot spot, commercial-property insurance has doubled in



the past year, reports the *Wall Street Journal*, causing some developers there to hold off on projects. “Nothing is starting in a timely manner,” observes Scott Skidelsky, Balfour Beatty US’s Southeast Region President.

This good-news/bad news scenario is reflected in the following trends we’ve identified—based on interviews with 14 AEC firms and news releases from developers—that currently impact the market-rate multifamily sector, and provide clues about where it’s headed.



## THE INCREDIBLE SHRINKING APARTMENTS

**Last year, the U.S. housing market saw the sharpest drop in multifamily apartment size in a decade.** Citing a Yardi Matrix survey of 100 cities, Rent Café estimated the average size of new apartments, at 887 sf, was 30 sf smaller than in the previous year, and 54 sf smaller than in 2012.

Lee DeLong, CEO-Capital Group for Clark Construction in McLean, Va., observes that

shrinkage could be attributable to a change in “blending,” with greater emphasis on one-bedroom apartments to increase an apartment building’s density and, presumably, its return on investment.

Smaller apartments are also a response to this sector’s affordability dilemma that, in June, found the national median rent price at \$2,029 per month, 15.5% higher than the same month in 2021, according to the website Rent.com.

Apartment shrinkage has boosted demand for flexible furnishings. “When you’re marketing smaller spaces at a premium, the furnished option is a selling point,” says Steve Spett, Co-founder of Resource Furniture, the largest distributor of multifunctional furniture in North America. Notably, the smaller-apartment trend coincides with demand for “highly amenitized spaces” within apartment buildings, says Kinjai Patel, Lendlease’s Central Region Executive GM—Construction.

But the ongoing demographic migration to suburbs in the South and West is also influencing apartment size: All but one (Overland Park, Kan.) of Rent Café’s top 15 cities with the largest average new apartment sizes are in these regions.

## Despite businesses nudging workers back into offices,

a recent survey conducted by Pew Research Center found that 35% of Americans with

jobs that can be performed remotely (about

two-fifths of the total workforce) works from home full time, and that 41% is working a hybrid office/home work schedule. “The pandemic made people rethink how they use space,” says NMHC’s Walter.

Newer apartment buildings include among their amenities lounge-like common areas where people work both collaboratively and in private. That’s also meant giving tenants better access to daylighting, fresh air, and technology, says Hughes of Humphreys & Partners.

Even as apartments get smaller, developers are carving out work-at-home spaces “without lowering their densities or increasing cost too much,” says Tim Haley, MBH Architects’ Project Architect and Senior Associate. Creating these Private Idahos is now “a national trend,” adds Mike DeRouin, President of Chicago-based Fitzgerald Associates Architects, whom BD+C interviewed with Project Manager Ryan Tapak.

## DESIGNING FOR REMOTE WORK

## Last January, the nation’s first statewide building code to include highly efficient heat pumps

as baseline technology went into effect in Cali-

fornia. As a result, most new homes and buildings there will be equipped with heat pumps or must meet higher energy efficiency standards. The law’s requirements for electric appliances were expected to prompt developers to forego gas in new construc-

tion in that state. Next year, a similar law goes

into effect in New York, where the installation of fossil fuel equipment must

## ELECTRIFICATION CODES



With more people working remotely from their homes, apartment buildings often include common areas for both collaboration and privacy. One such work lounge, pictured above, can be found in the 24-story Artisan in Cleveland, the first completed component in that city's Circle Square master plan. "Connectivity is a unifying thread throughout this project and the greater master plan," says Robert Noll, project designer for Fitzgerald, which spearheaded the architecture and interior design.

cease in new buildings up to seven stories in 2026 and in new larger buildings by 2029.

While all-electric regs aren't at the groundswell stage yet nationwide, pockets of transformation are occurring. The engineering firm Thornton Tomasetti is voluntarily deploying heat pump technology in two multifamily projects in Portland, Maine. Heat pumps make all-electric options more feasible for taller buildings, explains Michael Pulaski, the firm's Sustainability Practice Lead, whom *BD+C* interviewed with Ethan Rhile, PE, Vice President and Structures Practice Lead.

Pulaski notes that 10 communities in Massachusetts, including Boston and Cambridge, need to comply with a fossil fuel ban in new buildings by early next year. Nearly 100 municipalities in 11 states require or encourage the switch to electric heating, cooling and cooking, according to an analysis by the Building Decarbonization Coalition, which estimates that one in five Americans is now covered by those policies.



COURTESY FITZGERALD



**Between 2012 and 2022, 15.6 million households were formed in the U.S.,** but only 11.9 million single- and multifamily homes were completed, according to Realtor.com. This chronic housing shortage is driving the adaptive reuse of other building types to residential. Dallas-based architecture firm Premier, in collaboration with Michael Graves Architecture & Design and Claremont Development, is converting St. Lucy's Church in Jersey City, N.J., into a 23-story residential tower with 444 luxury apartments. Fitzgerald has converted several hospitals to housing. Humphreys & Partners is working on three or four shopping mall-to-res conversions.

Offices represented more than one-third of all building conversions to housing last year. While those conversions were off by 15% to 3,390 apartments in 2022, 45,000 offices are in the process of being converted to apartments, with Los Angeles taking the lead, according to Rent Café.

But Hughes, Humphreys' CIO, says his firm struggles to get office-to-res conversions to pencil out. The design firm Ankrom Moisan recently looked at three office towers and a hotel in downtown Portland, Ore., and determined their conversion construction costs would be too high, says Jennifer Sanin, AIA, Managing Design Principal.

Office-to-res conversions can cost more than new construction, says NMHC's Walter. Office floor plates, at 80-90 feet deep or more, are often too large to al-

low sufficient sunlight in as apartments, and post-tension slab floors can't be cut, says MBH's Haley. Offices usually don't have operable windows that residential codes mandate; in fact, such conversions—which are typically of older buildings—can require significant upgrades. Façades, elevators, and bathrooms in office buildings can be unsuitable for apartment buildings.

"Redevelopment of existing buildings takes patience," says Kimley-Horn's McGee. Even then, it's nearly impossible to convert offices to affordable housing without tax breaks, she and others say.

In its analysis of 300 office buildings in 25 cities in North America last year, Gensler concluded that only 30% were suitable for conversion to residential. A sticking point, says Brooks Howell, Gensler's Global Residential Practice Leader in Houston: "Owners haven't gotten religion yet about what their buildings are actually worth."

One of the buildings evaluated was an office tower in Baton Rouge, La., whose sole tenant was

## OFFICE-TO-RES? WAIT A MINUTE!



The developer and GC Blackburn Communities built Loyola Junction in Austin using a design concept called e-STAK, devised by Humphreys & Partners, that allowed Blackburn to get the same density with one fewer floor than originally planned.

HUMPHREYS & PARTNERS ARCHITECTS



Chase Bank. Gensler and the GC Lemoine Companies converted floors eight through 21 to 168 apartments that are marketed as Residences at Rivermark. Howell says the building's pan-joint structure made the conversion easier.

Some cities with vacant office gluts are trying to make conversions more appealing. Calgary, Alberta, which wants to remove six million sf of office space from its downtown by 2031, incentivizes developers with \$75-per-sf grants. In June, San Francisco introduced an initiative that encourages conversions of offices to housing or other uses through regulatory modifications that accelerate the process. Indeed, there is a range of state legislation in California that may help facilitate conversions, with more being proposed.



GREYSTAR

The developer Greystar's newest brand, Ltd. by Greystar, prefabricates apartments in its Modern Living Solutions factory in Knox, Pa. Those apartments are targeting the "missing middle": people who couldn't otherwise afford to live close to where they work.

# 5 MODULAR AND PREFAB OPTIONS

**With few exceptions, market-rate multifamily developers haven't been bullish** on modular design and offsite construction. Clark Construction's DeLong isn't seeing much demand. "For multifamily, prefab isn't cheaper" than site built, says Balfour Beatty's Skidelsky.

The franchised home-builder Epcon Communities has investigated modular "many times," but has yet to find a workable solution. "Our [townhouse]

product is too deep and contains too many areas of open space to modularize effectively," explains Paul Hanson, President of Epcon Financing. Plus, Epcon's townhouses are nearly 100% on-slab construction, and modular providers require a crawl space, at a minimum, to set the building above.

While modular works best for reiterative design, in Chicago, "the sophisticated renter doesn't like cookie cutter," says Lendlease's Patel.

Patel is seeing some breakthroughs for affordable housing. That's the tenant the developer Greystar is targeting with its new Ltd. by Greystar product that's made at the company's Modern Living Solutions (MLS) factory in Knox, Pa. The factory's annual capacity of 1,200 apartments can serve a 500-mile market radius. Greystar has five Ltd. projects under

way in four cities with about 1,600 apartments expected to come online by the end of 2024, starting with the 378-unit Med Center in Houston.

Andy Mest, MLS's Managing Director, says Ltd. apartments are being marketed primarily to the "missing middle": teachers, cops, and others who can't afford to live close to where they work. He adds that vertical integration of manufacturing, developing, and building is the key to success. A typical building has 52 apartments ranging from 680 to 1,400 sf, with communal spaces for work-at-home tenants, a gym, and a play area for kids. Most will have pools.

**The Covid-19 pandemic drove growth in pet ownership, which reached 70% of U.S. households in 2022,** according to the American Pet Product Association. So it's not surprising that pet-related amenities, like washing stations and trails, are more in demand among apartment dwellers than ever.

One of Kimley-Horn's recent multifamily projects has a rooftop with a dog track where owners socialize.

Perennially in-demand amenities—pools, fitness centers, washers and dryers, bike storage—are now part of a longer list that leans toward health, wellness,

# 6 AMENITIES ABOUND

and socialization (pickle ball, anyone?). Ankrom Moisan's Sanin has seen hypo-allergenic salt rooms added to apartment buildings. Walter of NMHC points to podcasting rooms in common areas. Epcor's communities offer three clubhouse prototypes.

"You can't get enough square footage on the first floor to handle the package deliveries people now receive," says Balfour Beatty's Skidelsky. Apartment buildings in general must also present tenants with a sense of safety and security, says McGee. That includes giving them a measure of control over their apartments' environment, like temperature and sound.

**Lendlease's seven-acre Southbank master plan along a branch of the Chicago River now includes The Reed at Southbank, a 41-story residential tower that opened in June. The Perkins&Will-designed building offers 440 units, and a 12,000-sf amenity deck on its eighth floor with a pool and cabanas. The tower borders Southbank Park, a publicly accessible two-acre green space, and an adjacent riverwalk.**

COURTESY OF LENDLEASE



# 7 MIXED USE AND THE CONNECTION TO COMMUNITY

**Most multifamily buildings are not mixed use.** But AEC sources note that customers are seeking convenience and connection with their communities beyond ground-floor retail and bodegas.

Fitzgerald's DeRouin points to Artisan, a 24-story high rise with 298 apartments, which opened in June in Cleveland's University Circle neighborhood. The building's amenities include

rooms for yoga and sports simulation, a pool, and coworking space.

Artisan is the first completed component of the Circle Square's master plan that features more retail, a relocation of the Martin Luther King branch of the Cleveland Public Library, and connection to Cleveland Clinic, all within walking distance of the building.

Lendlease's 41-story The Reed at Southbank in Chicago, designed by Perkins&Will, with 224 apartments and 218 for-sale condos, includes a 12,000-sf outdoor deck with a pool and cabanas. The tower borders Southbank Park, a two-acre greenspace that's the heart of a seven-acre master plan, and an adjacent riverwalk programmed with a viewing platform, seating areas, and a natural stone amphitheater.

**Even as developers vie for "tallest building" status, low- and midrise apartment buildings still dominate** in most markets, and greater density is an abiding objective.

"We're constantly re-evaluating buildings and units for optimization," says Skidelsky of Balfour Beatty, whose projects are mostly 3-4-story

Type 5 wood framed buildings, or high rises like the two-

tower, 24-story, 399-unit Icon Marina Village in West Palm Beach, Fla., which opened in June. (He says Balfour Beatty tends to avoid Type 3 buildings because their concrete components require "mixing trades.")

For Humphreys & Partners, the prevailing multifamily building is two to three stories tall, wood-framed, 30 units to the acre, with surface parking. Hughes says his firm's products generally offer developers 10-15% more rentable space than competitors, and points to Northeast Austin, where Humphreys, in collaboration with GC Blackburn Communities, debuted its e-STAK townhouse-with-in-an-apartment concept at Loyola Junction, which squeezed 396 units into three floors.

Kimley-Horn works on "all kinds of multifamily," says McGee. She notes, though, that greenfield

# 8 MULTIFAMILY COMES IN ALL SIZES



projects are mostly garden-style apartment buildings that appeal to active-adult renters. As building codes allow the use of mass timber for taller structures, Thornton Tomasetti is seeing engineered lumber being specified more frequently. (Thornton Tomasetti was on the Building Team for Ascent, the 25-story, 493,000-sf mixed-use residential tower in Milwaukee, Wis., that's the tallest mass timber building in the world.)

While most of Lendlease's projects are new construction, a lot of its pipeline, says Patel, is for "repositioning." Lendlease is pursuing redevelopment projects like the LaSalle Street Reimagined initiative in Chicago, which is taking a portion of the street's five million sf of vacant historic buildings and recreating them for 1,600-plus units of mixed-use housing.

High rises and supertalls remain the glamor projects. Among the tallest buildings under construction in the U.S. is the 74-story, 352-apartment Waterline in Austin that, at 1,022 feet, will be the tallest building in Texas once it's completed in 2026. Waterline will include 703,000 sf of office space, 27,000 sf of ground-floor retail, and 35,000 sf of indoor/outdoor amenities. The \$426 million 100-story Waldorf Astoria Hotel and Residences in Miami lays claim to being the tallest building south

of Manhattan. When completed in 2027, it will be 1,049 feet, and offer 360 condos, including a five-floor 33,000-sf penthouse.

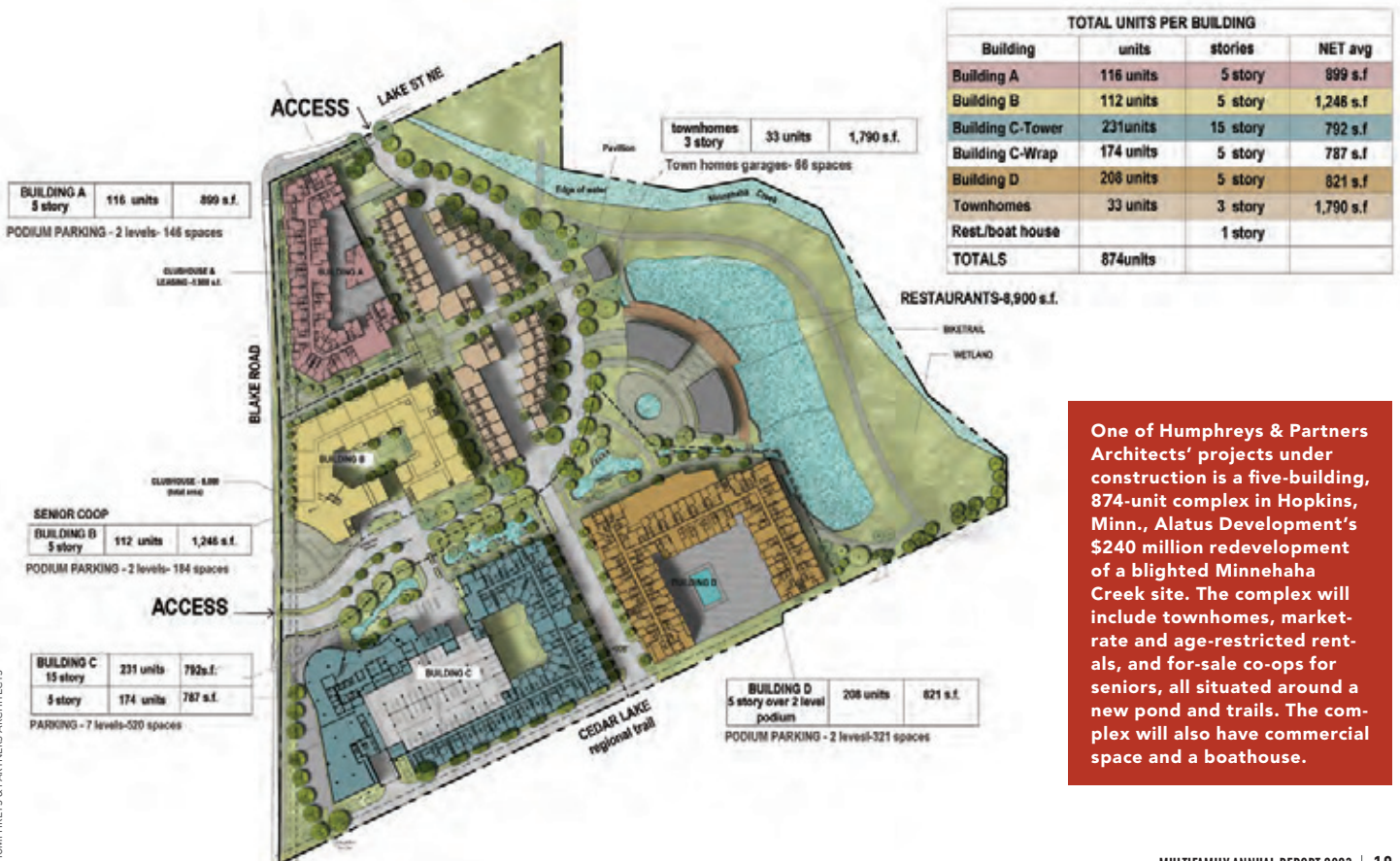
**Lendlease has set a goal for all its projects to be absolute zero carbon by 2040.**

Consequently, discussions around environmental, social, and governance (ESG) initiatives "are becoming top-of-mind conversations," says Patel. "They might not be first on the list, but they're on the list."

Tapak, Fitzgerald's manager on the Artisan project, notes that there are real estate tax benefits from making buildings sustainable. It's smart marketing, too, says MBH Architects' Haley, as more prospective tenants are curious about sustainability, which he attributes to increased media coverage.

Clark Construction's DeLong says that, beyond meeting code minimums for performance, his firm maximizes its buildings' façades and HVAC

# SUSTAINABILITY NOW TOP OF MIND



One of Humphreys & Partners Architects' projects under construction is a five-building, 874-unit complex in Hopkins, Minn., Alatus Development's \$240 million redevelopment of a blighted Minnehaha Creek site. The complex will include townhomes, market-rate and age-restricted rentals, and for-sale co-ops for seniors, all situated around a new pond and trails. The complex will also have commercial space and a boathouse.



systems for energy efficiency. And with more developers under the gun to lower their

apartment buildings' carbon footprints, they and their AEC teams are re-examining the construction materials they use and how a building interacts with its environment. Humphreys & Partners, for example, is working with Disney in Orlando on the design of a 1,400-unit multifamily project that will face a wetland, include educational trails, and might incorporate a solar component, says Hughes.

In June, the 16-story 249-apartment 42 Broad in Mount Vernon, N.Y., started leasing. This Perkins Eastman-designed building, developed by Alexander Development Group and The Bluestone Organization, claims to be the world's largest multifamily high rise to achieve Phius Passive House design certification. It is designed to use up to 80% less energy for heating and cooling than existing buildings through the installation of high-performance windows, extensive insulation, mechanical ventilation, and high-tech building systems that reduce the heating and cooling loads.

**The top 15 production home builders that market multifamily homes delivered more than 45,000 low-rise** (wood framed, four stories or less) multi-

family units in 2022, according to *Professional Builder* magazine, *BD+C*'s sister publication. That group of builders was led by Lennar, which develops,

builds, and manages multifamily properties under its Quatterra

The ALTA Art Tower in Portland, Ore., designed by Ankrom Moisan and developed with Wood Partners, is that market's first high rise to adopt Portland's inclusionary zone code, which addresses affordable housing needs. The 21-story, 314-unit building, which opened in March 2022, is adjacent to Portland's Art Repertory Theater, and includes a stage-like ground floor lobby for performances and events.



MORIS MORENO

# 10

## KEEP AN EYE ON PRODUCTION BUILDERS

Multifamily subsidiary. Among Quatterra's active projects in July 2023 was Towne Nashville, a 329-home building in Music City's Germantown neighborhood that started leasing that month; and The Dori, a 222-home community in Doral, Fla., that Quatterra topped off.

Balfour Beatty, says Skidelsky, has been working on several projects for the semicustom home builder Toll Brothers, including one that combines a tower of market-rate apartments with another tower for student housing.

For the past few years, Epcon Communities—which started as a multifamily developer and then switched mostly to single family—has been promoting a four-unit, two-story townhouse product with a master down and an option for a third bedroom and flex room.

While Epcon's primary customers are active adults, the townhouse product, whose homes sell for around \$450,000, has been attracting younger (late 40s) buyers, says Hanson, Epcon Franchising's President.

Last year, Epcon delivered 144 multifamily buildings, each with eight to 12 bedrooms. Among its recent projects is a 50-unit complex in Cary, N.C., that should be completed in 2024. Epcon, says Hanson, expects townhouses to account for 20% of its construction activity within the next two years.+

# WELCOME HOME.



Welcome to the future of multifamily living. SALTO Systems modern access control systems transform residential communities into smart living hubs where residents can access the property, parking, amenities and their home all from the convenience of their mobile devices.

Learn more at [salto.us](https://salto.us)

**SALTO**  
inspired **access**



# 10 TOP TRENDS

# IN STUDENT HOUSING

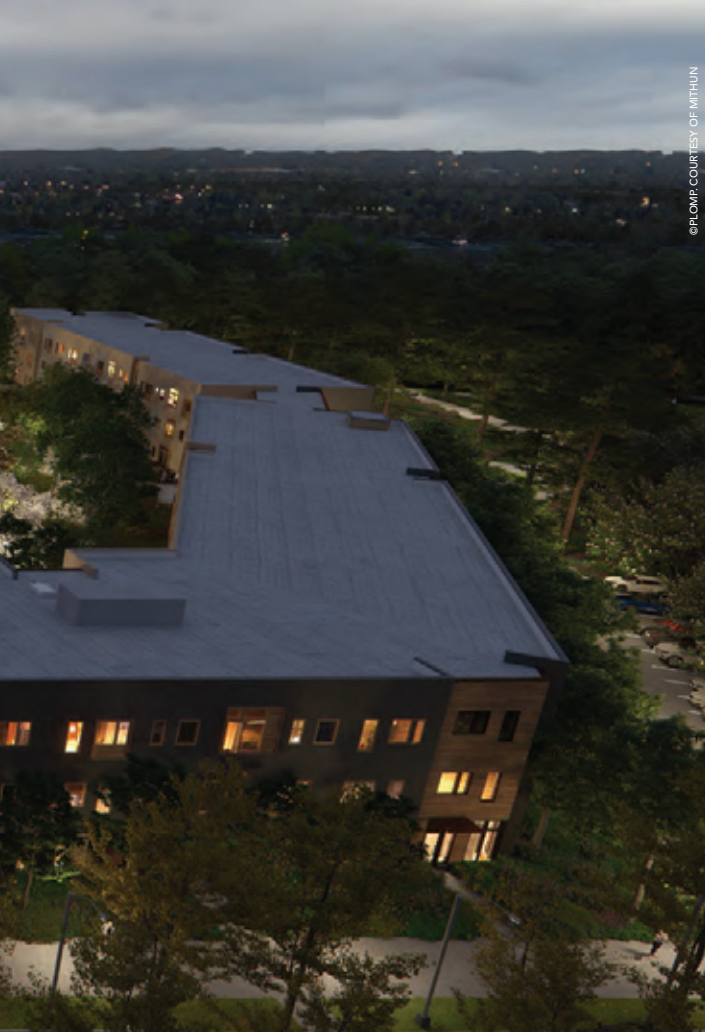
As enrollment increases, demand for student housing surges. But rising construction costs could dampen projects.

BY JOHN CAULFIELD, SENIOR EDITOR

In April, there were 70,000 student housing beds under construction in the U.S., according to Yardi Matrix's second-quarter National Student Housing Report. And nearly 70% of available beds were preleased for the fall 2023 academic year at the 200 universities Yardi tracks, a 7.8 percentage point increase over the same period a year earlier.

Demand for student housing designs "is the most ever" for Perkins&Will in terms of projects and bed counts, proclaims David Damon, the





© PLOMP, COURTESY OF MITHUN

## Top 10 Trends in Student Housing

1. Covid changes the game
2. Amenities favor function over flash
3. Affordable options harder to come by
4. Mixed use connects campus and community
5. Schools turning more to private financing
6. Design maximizes space
7. Technology enhances living experience
8. Fitness centers and outdoor spaces are must-haves
9. Sustainability enhances the asset
10. A cautiously promising future

Thornton Tomasetti's Sustainability Group performed LEED consulting and Energy Analytics for the Meadows Graduate Housing project in West Windsor, N.J. This Mithun-designed three-building complex will provide 379 units for Princeton University graduate students. Geothermal exchange will facilitate heating and cooling.

firm's Global Higher Ed Practice Leader. He says that P&W has recently worked on projects with 5,000 to 6,000 beds.

Brendan Connolly, a Partner with Mithun in Seattle, whom *BD+C* interviewed in July, says that during the preceding six to eight months, student housing opportunities "have been up, by significant margins."

Demand drivers start with enrollment. The National Center for Education Statistics estimates that undergraduate student enrollment will increase to 16.8 million by 2031, from 15.9 million in 2020. Graduate student enrollment is expected to increase to 3.4 million from 3.1 million over the same period. The U.S. is also experiencing a spurt in international student enrollment.

The National Multifamily Housing Council projects that demand for student Housing between 2020 and 2031 will increase annually by 1.1%, from 8.5 million beds to 9.2 million (an increase of 448,000 beds for undergrads and 112,000 beds for grad students).

"There has been a shift in perspective to what 'student housing' means," explains Mitch Dolton, Chief Innovation Officer for Core Spaces, the industry's second-ranking student housing developer. "The heightened interconnectedness of students through social media exposes a higher level of

design, amenities, and offerings in other markets. They see what student housing can be and want similar experiences."

The following trends take a closer look at the factors reshaping student housing, and where impediments might arise.

**While student life may have returned to normal, the residual impacts of the coronavirus remain palpable.** Mithun's Connolly speaks of a "post-Covid reckoning" that cast a harsh spotlight on aging infrastructure and campus services and identified needs for major renovations, greater diversity and attention to students' mental health.

That reckoning is also manifest in students' preferences for private spaces within residence halls, as well as in Covid-informed protocols that colleges across the country continued to encourage even as the virus subsided. Some AEC firms think that Covid contributed to residence halls becoming more inclusive. "They are less isolated

1  
COVID  
CHANGED  
THE GAME

Access to natural light and outdoor space is a seminal amenity for student housing from a health and wellness standpoint. The University of Illinois' Chicago campus demonstrates this trend in the Solomon Cordwell Buenz-designed classrooms and communal lounges within its Academic and Residential Complex.



DAVE BURK

from off-campus life and the larger community,” observes Damon of Perkins&Will, whom *BD+C* interviewed with Anne Johnson, the firm’s Research Knowledge Manager–Higher Ed.

Connolly notes, too, that many students who took “gap” years during the pandemic returned with different attitudes about student housing in terms of ventilation, health, and wellness, and so forth.

**The developer and property manager Bromley Companies has over 5 million sf of commercial real estate assets** that

include one student housing building: Bromley Hall, a 13-story, 200,000-sf dorm on the campus of the University of Illinois. Since 2006, this hall has been the firm’s

window into students’ amenities perceptions, supplemented by twice-a-year surveys of its tenants.

Ed Coyne, Bromley Companies’ Senior

Vice President, notes that where pools, spas, and hot tubs were in demand a few years ago, students now are more interested in “functional things,” like study and meeting rooms within communal spaces. Students also cook meals together in a communal kitchen. This summer, the developer renovated Bromley Hall again, updating its bathrooms, corridors, and lounges in public spaces.

Schools still showcase their housing to recruit students. But the nuclear arms race in amenities, while still prevalent on some campuses, is becoming a thing of the past, says Mohamed Mohsen, a Principal with Niles Bolton Associates, which as of this June had 25,000 student beds in 12 states under design or construction. Tanning beds and golf simulators are giving way to dedicated study rooms and co-working spaces. Developers differentiate their student housing with innovation labs, recording/arts studios, “or simply taking advantage of views and downtown skylines,” says Mohsen.

Core Spaces’ Dolton has espied a move away from segmented amenity spaces with singular uses toward what he calls “20-hour spaces” that can be adjusted for an array of activities.



## AMENITIES FOCUS ON STUDENT NEEDS





This isn't to imply that student housing is bare-bones. "We're not building Army barracks," quips Sean Falvey, Vice President and Regional Director for Sundt Construction in Sacramento, Calif. But students place more importance on amenities that provide comfort, safety, health, and wellness. "Students are more focused on the value proposition of student housing," says Jim Curtin, AIA, Principal with Solomon Cordwell Buenz (SCB). That translates to areas for small-group and individual study, flexible larger spaces for events, and living-learning centers.

Curtin adds that students want student housing that creates points of connection with the rest of the campus and neighborhood.

"Schools are rethinking student needs," states Damon of Perkins&Will. He points specifically to Ohio State University's Framework 3.0 master plan, whose student housing leans toward health and wellbeing, relationship to the community, general fitness, nutrition, as well as diversity, equity, and inclusion.

**Last spring, there was a spate of news reports about college students living out of their cars for weeks** while they searched frantically for off-campus housing that came close to what they could afford. While most of these stories had California datelines, they spoke to the lack of affordable housing that is now epidemic nationwide.

RealPage tracks 175 universities, and found that annual effective rent growth for on- and off-campus housing in March hit 9.7%. More than 40 of those

schools reported growth of 10-20%. RealPage suggested that these growth rates could be "normalizing."

Somewhere between 40-50% of college students live on-campus. Rising enrollment rates are placing more stress on colleges' housing capacities, and create longer waiting lists that precipitate new construction and renovation.

Some colleges provide financial aid for housing, such as the University of Texas in Austin, which announced in April a program that offers students whose families earn under \$125,000 per year eligibility to receive money to cover a portion of their on-campus rent for an academic year.

Some states are raising their antes for student housing. California Senate Bill 169 establishes a Higher Education Student Housing Grant program for the purpose of providing affordable, low-cost housing options. Enacted in 2021, the program received \$2 billion for three rounds of grants.

Developers continue to add off-campus housing. One of Core Spaces' current projects is Hub Fullerton, a mixed-use development located in Fullerton, Calif., that will open in 2025 near California State University-Fullerton, Hope International University, and Pacific Christian College. Designed

# 2 AFFORDABLE OPTIONS ARE SCARCE



Sustainability is an important factor in student housing design. The housing and dining hall at the University of Victoria is designed to meet Passive House standards. Its commercial kitchen is five times more efficient than a conventional facility.

COURTESY PERKINS&WILL

in partnership with DLR Group, the six-story building will feature 359 units and 1,047 beds, and 12,000 sf of ground-floor commercial space.

Adjacent to a market-rate 36-story tower called Momentum that Toll Brothers Apartment Living is building in Midtown Atlanta, the builder's Campus Living division has developed Kinetic, a 500,000-sf student housing building near Georgia Institute of Technology that, when it opens for the 2024-25 academic year, will include 239 residences with 752 beds. Its rents are expected to start at \$1,300 a month.



One of Niles Bolton Associates' recent student housing design projects is The Legacy, a 234,531-sf building for the developer/client Landmark Properties in Gainesville, Fla., that serves the University of Florida with 146 units with 498 beds, a parking deck with 307 spaces, and amenities that include a fitness room, clubhouse, and study and office space. This 2.6-acre site is an extension of the mixed-use development Standard at Gainesville, with the city's first "woonerf," a living street designed to engage pedestrians while moderating traffic.

NILES BOLTON ASSOCIATES

and cafes for students and visitors alike.

Mixed use is often required by zoning, says Mohsen of Niles Bolton, and community benefits are negotiated during early entitlement stages to include programming like public parks or green spaces. The most successful mixed-use student housing projects involve joint ventures "to bring the necessary expertise alongside operational knowledge," says Mohsen.

**In June, Temple University disclosed that it is exploring the development of a mixed-use residential and retail space** with approximately 850 beds. When completed in fall of 2026, this P3 project (with the

## MIXED USE CONNECTS CAMPUS AND COMMUNITY

developer Landmark Properties) will sit atop 21,000 sf of ground-floor retail.

With greater frequency, student housing projects include mixed-use components like a grocery, a pharmacy, even a medical clinic. Another Landmark proposal is The Mark, an eight-story, 396-unit residential complex with 19,000 sf of commercial and live-work units. Designed by local architect Behar Font & Partners, this project, if approved, would replace a 60,000-sf retail center across U.S. 1 from the University of Miami at Coral Gables, Fla.

Mithun's Connolly estimates that half of his firm's Student Life work involves district or precinct planning. He adds that student housing at the edges of campuses is often positioned as a gateway, and sometimes includes pubs, coffee shops,





The website **FinancesOnline.com** recently listed **10 student housing trends** that include phasing out college dorms in favor of diverse

## DESIGNING FOR COMFORT AND EFFICIENCY

housing options that emulate off-campus apartments. “There are no traditional

dorms being built; it’s all apartments with bedrooms and common areas,” confirms Michael Pulaski, Thornton Tomasetti’s Sustainability Practice Lead. Trends in student housing have shifted “decidedly” to more private quarters: suites with bathrooms and even small kitchenettes, says John Kirk, AIA, Partner with Cooper Robertson.

As far as design trends go, Mithun’s Connolly is seeing accommodations being made for single and graduate students, the latter accounting for 30% of his firm’s Student Life business. More broadly, he’s also seeing greater integration of living and learning. At UCLA, that includes Olympic and Centennial halls on the campus edge, with 1,800 beds and a three-story maker/learning common that attracts

students from other parts of the campus.

In June, Sundt broke ground on a housing complex for Cal Poly Humboldt near Sacramento. This \$200 million, 964-bed project, designed by SCB, represents the first major capital improvement in Cal Poly’s transition to being more of a technical school. “You want to get as many beds as possible for your dollar,” but balance that density with support spaces and amenities, says Falvey about student housing projects.

AEC firms agree that student housing must convey safety, comfort, and a sense of wellness. “Daylight is the best design tool we have,” says Curtin of SCB. He points specifically to the University of Illinois-Chicago’s Academic and Residential Complex, which features lecture halls whose walls are half glass.

With construction costs rising, current designs focus on efficiency and innovation, says Niles Bolton Associates’ Mohsen. Optimization of units and amenities is one strategy. And while prefab and modular solutions haven’t caught on widely for student housing, some firms like Niles Bolton are taking advantage of prefab manufacturing and panelized exterior skin to build faster.

Perkins&Will has specified prefabricated “wet pods” for kitchens and baths in new student housing for schools that include the University of California at San Diego, says Damon. “The direct costs are not as much as you might think.”



BRUCE DAMONTE



A three-story maker/learning space that’s part of Olympic and Centennial Halls attracts students from other parts of UCLA’s campus. The halls, which opened in early 2022, include a bridge that reconciles a 70-foot grade drop between the buildings.

# C

## SCHOOLS TURN TO PRIVATE CONSTRUCTION FINANCING

**In July, UC Riverside was awarded \$126 million in state funding** for a 1,568-bed student residence complex to be built in partnership with the Riverside Community College District. The two-building, 425,000-sf complex, whose construction is expected to begin this fall, will require another \$220 million in borrowed funds.

As college enrollment increases, institutions have turned their attention to expanding their student housing capacity via renovations and expansions of existing buildings and new construction on and off campus. But with borrowing more expensive, budget-constrained colleges and universities are relying on capital funding from developers like Landmark Properties and Core Spaces, owners like American Campus Communities and The Scion Group, or investors.

Half of Mithun's student housing projects are

design-build delivery agreements, says Connolly, who is also seeing more institutions entering into public-private partnerships, which have been growing in popularity for more than five years. Damon of Perkins&Will has also seen a financing transition to design-builds and P3s.

While these options help reduce an institution's risk and debt, they have some downsides, says

Kirk of Cooper Robertson. If they're not co-owners, the schools relinquish control over what gets built and collecting revenue. Kirk adds that, unless contractually prohibited, developer/owners can convert student housing to market-rate housing that may not be optimally suited for student life.

Mohsen of Niles Bolton Associates suspects that investors will be selective until the impact of interest rate hikes is fully absorbed. Developers will need to devise creative ways to secure funding, and designers like his firm will be tasked to manage tight construction budgets, "which permeates the entire process through design and delivery," he says. Niles Bolton was recently awarded a P3 residence hall development at the University of Tennessee that will contain over 2,600 beds on three separate sites.

Opening in the fall of 2025 is Hub Fullerton, a mixed-use development with nearly 1,050 beds that will serve students at the University of California-Fullerton, Hope International University, and Pacific Christian College. Core Spaces and DLR Group have been working jointly on this project.

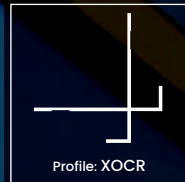
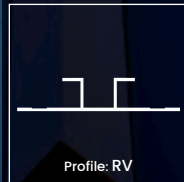
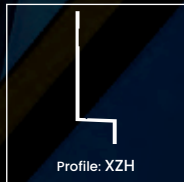


DLR GROUP



# XtremeTrim<sup>®</sup>

Tamlyn's XtremeTrim<sup>®</sup> Delivers Architectural Aesthetics and Sustainability with Extruded Aluminum Trim.



# 7

## TECH IS ESSENTIAL TO STUDENT LIVING

**Athens, Ga.-based Student Housing Technologies accentuates this point** when it lists the areas of student housing its services touch: wired and wireless Internet infrastructure, closed-circuit TV for security, access control, common-area audio systems, and cable TV systems.

Trends in smart tech, according to the long-term accommodations booking platform for students

amberstudent.com, include smart locks for secu-

urity, video intercoms, WiFi, smart thermostats, and smart lighting, all manageable from the convenience of a tenant's cellphone.

"Students absolutely must be able to get online at any time, from any device, and schools must provide technology-enabled spaces for residences," asserts FinancesOnline about tech trends. "At the very minimum, student housing management should ensure seamless Internet connection, plenty of bandwidth, and service interruptions."

Tech comes even more into play as schools mesh learning and living within their residence halls. "Especially now that many universities have policies allowing students to attend virtual lectures and certain other kinds of would-be class time," says Kirk of Cooper Robertson.

**Thornton Tomasetti and OPAL Architecture are on the building team for a 50-bed residence hall** on the campus of the College of the Atlantic in Bar Harbor, Maine. This three-story, 12,000-sf mass

timber-framed building, which is near completion, is designed to achieve net-zero energy usage. Thornton Tomasetti is also on the team (with Mithun and CM Hunter Roberts) for the American Campus Communities-developed Meadows Graduate Housing project serving Princeton University, scheduled for completion next year, with three buildings and 379 units that are Passive House-designed and will use district geothermal-exchange for heating and

# 8

## SUSTAINABILITY CAN BE A DIFFERENTIATOR

cooling.

Princeton is among the institutions that have set goals to reduce their carbon footprints, sometimes to meet more stringent municipal or state energy codes. Sustainability is a priority in designing and building student housing, say AEC firms. More students are also looking for sustainable housing when they're picking schools.

Perkins&Will designed a 330,000-sf mixed-use student housing and dining building for the University of Victoria on Vancouver Island, British Columbia, with 782 beds and a 600-seat dining area. Scheduled for completion this year, the building is designed to meet Passive House standards and exceed the province's Step 5 Energy Code. The facility's commercial kitchen, which will serve about 8,700 meals per day, will be five to six times more energy efficient than a conventional kitchen, and reduce the building's greenhouse gas emissions by 80%.

# "MUST HAVES" DEPEND ON WHO'S TALKING

**Ask developers what their priorities are for student housing projects,** and that conversation, say AEC firms, is likely to begin with density. Connolly of Mithun says the "critical minimum" of beds per building is now more than 400. His firm is currently working on student housing projects with 700 to 2,000 beds.

Kirk of Cooper Robertson, on the other hand, notes that because demand fluctuates with enrollment, which can be unpredictable, the sweet spot for student housing, in his estimation, is more like 250 to 350 beds.

The push for greater density has been a boon to Resource Furniture, the largest distributor of multifunctional furniture in North America. It recently supplied furniture for Framework, a residence hall on the campus of the University of California at San Diego with 87 units, some as small as 317 sf. Steve Spett, Resource Furniture's Co-founder, says



COURTESY OF SUNDT CONSTRUCTION



In June, Sundt Construction broke ground on a 964-bed student housing building for Cal Poly Humboldt in Sacramento. Designed by Solomon Cordwell Buenz, this building is the school's answer to declining enrollment. Abetted by a \$500 million state grant, Cal Poly has transitioned to become more technically focused in its curriculum and student body.



the multifunctional furniture includes the Oslo (a queen-size wall bed), the Dynamic (a height-adjustable table), and the Plurimo (expandable tables).

There's consensus around providing students with as much access as possible to outdoor spaces where they can congregate and recreate. When SCB renovated the 84,000-sf Kelly Hall at Drexel University in Philadelphia, it dug out a dark, dank basement to open the space to natural light and connect it to an existing amenities floor.

Fitness centers—especially those with wellness patinas—have retained their popularity among students, say several AEC firms. And food has become a “social link” in these dwelling environments, says Connolly. The demand for amenities also shifts with the times. “We’re seeing reduced parking ratios, as reliance on ride share and the use of bikes and scooters increase,” says Mohsen.

**Even the most optimistic projections have demand for student housing increasing** in the low single digits through 2031. “Higher education is rapidly approaching a cliff, where student enrollment is going to drop precipitously,” predicts Kirk of Cooper Robertson.

But there is also a ton of existing residence halls that hasn't been upgraded in decades. If demand for renos and new construction exceeds expectations, can schools and their developer-partners keep up? The main impediment is rising costs: for financing projects, for materials, for labor. Perkins&Will's Damon says he was recently on a call with the University of California about a

student housing project that is projected to cost an “astonomical” \$800 per sf.

Niles Bolton Associates, says Mohsen, is already seeing delays and complications in obtaining approvals due to understaffed and backlogged planning departments. Develop-

ers like Core Spaces, says its Chief Innovation Officer Dolton, must also defend against “misconceptions” about student housing that can lead to NIMBYism which slows a project's progress.

AEC firms have their eyes peeled for possible disruptions. Sundt's Falvey says his firm's higher ed practice is “currently riding a wave of public funding,” so it's monitoring the legislative currents, and watching markets where housing costs are rising for affordable student housing opportunities.

Ethan Rhile, PE, Vice President with Thornton Tomasetti, is keeping an eye on the economy and interest rates as barometers for student housing construction demand, especially beyond metro areas. He recently spoke with a developer about a project in Sanford, Maine, an hour from Portland.+

# 10

## THE FUTURE MIGHT ENCOUNTER SOME HEADWINDS

# 10





COURTESY ARCO CONSTRUCTION

# 10 TOP TRENDS IN SENIOR LIVING

The 65-and-over population is growing faster than any other age group. Architects, engineers, and contractors are coming up with creative solutions to better serve this burgeoning cohort.



Utah's Ovation Sienna Hills, built by ARCO Construction, offers four in-house restaurants and a range of continuing care options, such as independent living, assisted living, and memory care.

## Top 10 Trends in Senior Living Facilities

1. Foster connections with the community
2. Offer a wide range of living options
3. Eliminate generational divides
4. Offer robust fitness options
5. Provide resort-like amenities
6. Prioritize health and wellness
7. Avoid institutional-looking designs
8. Adopt tech to keep seniors connected
9. Mitigate financing struggles with front-end planning and efficient design and construction
10. Explore adaptive reuse opportunities that could lower development and construction costs

BY NOVID PARSİ, CONTRIBUTING EDITOR

**T**oday, one in six people in the U.S. is 65 or older—an age group that has grown almost five times faster than the total population over the past century. Baby boomers, who began turning 65 in 2011, all will be at least that age by 2030. And despite recent declines in life expectancy, Americans for decades have been living increasingly longer.

The housing needs of this diverse and burgeoning population came into clear view during the pandemic. About half of senior housing properties experienced Covid deaths in 2020. Occupancy rates at senior living facilities have yet to reach pre-pandemic levels.

“The pandemic highlighted how our global health-care, financial, and housing infrastructure is failing to serve a rapidly growing older population,” says Tama Duffy Day, FACHE, FASID, FIIDA, LEED BD+C, Global Leader of Gensler’s senior living practice. “As we look to the future, we need to build communities and neighborhoods that use momentous and creative solutions to empower people to thrive throughout their entire lifespan.”

Architecture, engineering, and construction firms shared their own creative solutions for senior living facilities that enable older people to thrive. Here are the top 10 trends in senior living facilities:

**Senior living facilities can no longer simply be places where Americans go after retirement to live in isolation.** These facilities must be places where seniors not only can socialize with each other but also can interact with their surrounding communities. “Facility providers will be under increasing pressure to supply accommodations for older adults that are more accessible to food

amenities, transit, green spaces, learning centers, entertainment, and health services,” Day says.

Many facilities are fostering connections with the neighborhoods around them. A mixed-used senior building could include a ground-floor coffee shop or other retail open to the general public. An intergenerational senior facility could have a child daycare center staffed with seniors. Or the facility might be embedded within a larger development that offers restaurants and other retail. “We’re seeing more mixed-use developments that include senior and independent living,” says Alejandro Giraldo, Assoc. AIA, NCARB, LEED AP, Principal, Perkins Eastman.

One senior living development, by Moseley Architects, is located in a suburban shopping center, providing residents with direct access to dining and retail. “A newer trend within our industry is to enable connections to the greater community,” says Mark Heckman, Vice President, Moseley Architects.

Such connections also provide a benefit to facility owners, Day notes: “The wider the network of services in the neighborhood, the less providers need to offer in the building complex.”

1  
COMMUNITY  
CONNECTIONS

# 2 AGING IN ONE PLACE

**Nationwide, there are now more than 1,900 continuing care retirement communities (CCRCs), also called life-plan communities.** These long-term facilities offer multiple types of living options—such as independent living, skilled nursing care, assisted living, memory care, and short-term rehabilitation—to allow older people to move through the stages of aging, all within the same development. Such facilities are becoming increasingly popular, according to industry experts.

“We are witnessing the integration of independent living, assisted living, and memory care units within the same development,” says John Finn, Chief Operating Officer, W.E. O’Neil Construction.

**Within the larger trend of cultivating connections between senior living facilities and their communities, an offshoot trend has emerged:**

university-based communities. There are now more than 100 CCRCs operating on or near college and university campuses in 30 states. Recent projects include The Spires at Berry College in Georgia; Legacy Pointe at the University of Central Florida; and Broadview Senior Living at Purchase College in New York.

At these developments, seniors, many of whom are alumni, can take classes, teach, and mentor students. And with dwindling student populations, colleges and universities can gain revenue by leasing or owning the senior living buildings.

Developer McNair Living’s recently launched Varcity brand plans to build and operate on-campus senior living developments that eliminate generational separation while also changing campus life. McNair has projects breaking ground on six college campuses, with another half dozen planned by 2026. For one project, McNair Living and Gensler are bringing a mix of independent

# 3 UNIVERSITY-BASED COMMUNITIES

For The Variel in Woodland Hills, Calif., general contractor W.E. O’Neil used prefabricated wall panels to expedite construction. The 413,111-sf senior living facility features eight stories of Type I-A construction over one level of subterranean parking.



COURTESY W.E. O'NEIL

living cottages, apartments, and assisted living and memory care units to the edge of Purdue University in West Lafayette, Ind.

“University-based retirement communities attract and support faculty and alumni and act as a bridge to the surrounding community,” Giraldo says.

**For many, growing older doesn’t mean growing feeble—so senior living facilities shouldn’t just treat residents as patients.**

Facilities are serving the active adult demographic by providing gyms, swimming pools, walking and biking paths, and other fitness options. “These residents are ready to downsize but do not need to move into a licensed or life-plan community,” says Dora Kay, AIA, LEED AP, Vice President, Moseley Architects.

“Active adult communities are bridging the gap for homebuyers who want more community engagement, less property maintenance, and a more active atmosphere with similarly aged residents,” Kay adds. For instance, Moseley is designing a senior living community situated in a mountain location with trails.

# 4 ACTIVE ADULT





## ‘The pandemic highlighted how our global healthcare, financial, and housing infrastructure is failing to serve a rapidly growing older population.’

—TAMA DUFFY DAY, FACHE, FASID, FIIDA, LEED BD+C,  
GLOBAL LEADER, SENIOR LIVING PRACTICE, GENSLER

centers, outdoor fitness activities, day spas, and medical clinics.

For its renovation of Medford Leas in New Jersey, Bala Consulting Engineers transformed the building’s library, café, and fitness center into exercise spaces and a swimming pool along with locker rooms, patios, lounge, bistro, and display cooking venue.

“The biggest game-changer is designing senior living facilities that have the amenities of a high-end resort,” says Andy Heinen, Vice President, Kimley-Horn.

Finn agrees: “There is a growing emphasis on luxury in senior living, with an increased focus on amenity spaces.” For The Variel in California, W.E. O’Neil included a variety of activity-oriented amenities such as an indoor swimming pool, spa, physical therapy room, library, art studio, and lounge and massage rooms.

# 5 HIGH-END AMENITIES

“Active adult projects are experiencing a surge in development, predominantly led by for-profit developers seeking market diversification,” Giraldo says.

**As the active adult trend indicates, senior living facilities are finding they need to up their game** when it comes to the amenities they offer. Increasingly, they’re offering more luxe amenities. These can include casual and formal dining, indoor fitness

**For Longleaf at Liberty Park in Vestavia Hills, Ala., the sophisticated design by Niles Bolton Associates sheds any institutional connotations. The team took design cues from the Victorian architecture of the nearby Mountain Brook community. The wide array of amenities includes a sports lounge, salon and spa, gourmet dining venues, senior-centric fitness center, art studio, theater, and library.**



COURTESY NILES BOLTON ASSOCIATES

Developers are placing more emphasis on the facility's frontage, "so they can increase the property's exterior appeal and give residents a more peaceful home," says Andy Heinen, VP, Kimley-Horn. Wisteria at Warner Center, Los Angeles, designed by KTGy, is a prime example.



COURTESY KTGy

other spaces help residents feel less isolated.

More pleasing designs are also being facilitated by a shift in some municipalities' parking mandates. The traditional requirement of two parking spaces

per unit puts a burden on senior living facilities to have more parking than they actually need—which is only about 1.1 to 1.6 parking spaces per unit, according to Heinen.

More municipalities are realizing this and decreasing their parking requirements, he adds. "With lower parking mandates, the campus hardscape decreases and the inviting landscaping increases."

**Today's seniors want to stay connected to their communities not just physically but digitally, too.** As baby boomers move into senior living, they're bringing all their devices with them. They're also bringing an expectation that their new housing facilities will support their tech needs.

In response, senior care organizations are upgrading their network infrastructure and broadband—and even hiring tech concierges to answer residents' tech questions.

"Demand has increased for technology design services to meet the needs of connected residents," says Chuck Kensky, PE, LEED AP BD+C, Certified Energy Auditor, Executive Vice President, Bala Consulting Engineers.

Bala's technology group focuses on connecting residents throughout the facility by utilizing the latest tech in wayfinding, AV systems, message boards, and activity rooms.

# 6

## HEALTH AND WELLNESS

**It's not just more dining options that seniors want—it's more healthy dining.**

Facilities are prioritizing more nutritious food options among many other health and wellness features and amenities. These can include healthy indoor air quality, robust fitness options, outdoor gardens, and walking and biking paths.

Outdoor spaces, such as healing gardens or memory gardens for assisted living and memory care facilities, can relieve stress by connecting residents with nature while also providing spaces for both solitude and togetherness.

"Improving connection to the outside for activity and wellness will open more doors to these facilities," says Walter Ploskon, AIA, Principal and Managing Director, Niles Bolton Associates.

"The desire for health and wellness features within the design of our communities isn't necessarily a new trend but it is maturing, and it's now an integral part of every senior living building or community we design," Heckman says.

# 7

## INVITING DESIGN

**Facilities are looking less like institutions, and more like communities—inside and out.**

Developers are placing more emphasis on the facility's frontage, "so they can increase the property's exterior appeal and give residents a more peaceful home," Heinen says.

"We believe in connecting common areas and resident areas to create more of a village feel. We want residents to walk out of their units and be part of a community," Ploskon says, adding that common areas with sightlines that reveal connections to

# 8

## MODERN TECH AND CONNECTIVITY



# 9 FINANCIAL CHALLENGES

**Industry experts agree: These are tough financial times for senior living developments—with high construction costs, high interest rates, and lending uncertainty.**

“Beyond the costs for sites in desirable locations and the current financing environment, many developers are becoming increasingly frustrated with the time and costs associated with getting a senior living project approved by local jurisdictions, which in many cases now stretch to three or more years,” Heckman says.

Heckman points to a related burden: “Proposed senior living projects seem to garner a higher level of scrutiny than a typical multifamily proposal,” he says. This may be because many municipalities consider senior living as institutional facilities rather than what they really are: “another form of residential use that should be part of any healthy community,” Heckman says.

In response to these challenges, facility owners and developers are working hard to secure approvals and financing during the early planning stages. “Our customers are spending more time on the front end of projects getting sites entitled and approved with finance partners,” says Kyle Darnell, Vice President, ARCO Construction Company.

With greater financial stressors, developers are leaning into more efficient design and construction, including modular builds. For The Variel, W.E.

O’Neil expedited construction by using prefabricated wall panels. ARCO achieves greater efficiency with repeatable building and operational layouts, Darnell says. “This allows AHJ [authorities having jurisdiction] approvals for state licensure to be a much smoother process.”

KTGY finds that fewer but more flexible common spaces provide both financial and residential advantages. “Not only does this save on construction costs, but it also puts more people into these spaces, so the community feels vibrant and active,” says Ben Seager, AIA, LEED AP, Principal, KTGY.

**Faced with high costs of land and construction and high interest rates**

amid ongoing inflationary pressures, facility owners and developers are embracing the trend of adaptive reuse.

Empty or underused office buildings, for instance, can offer potential opportunities for senior living conversion.

In Chicago, Town Hall Apartments, a senior housing facility designed by Gensler, includes the adaptive reuse of a decommissioned police station.

“With the current economic conditions, we’re seeing an increase in creative solutions through adaptive reuse of existing buildings,” Giraldo

says. Adaptive reuse projects can lower development and construction costs while at the same time providing carbon savings compared to building entirely new communities, Giraldo adds. +

# 10 ADAPTIVE REUSE



BRANDON BARRE COURTESY PERKINS EASTMAN

**Outdoor spaces, such as healing gardens, patios, and walking paths, can relieve stress by connecting residents with nature while also providing spaces for both solitude and togetherness. Pictured: Maravilla at The Domain wellness community for 55+ residents in Austin, Texas, designed by Perkins Eastman.**



# 10 TOP TRENDS

## IN AFFORDABLE HOUSING

Among affordable housing developers today, there's one commonality tying projects together: uncertainty. AEC firms share their latest insights and philosophies on the future of affordable housing.

BY QUINN PURCELL, MANAGING EDITOR

**A**s of May 2023, the average rent in the U.S. reached \$1,995—double the amount it was 10 years ago. With the cost of living rising every year, there's never been a greater need for affordable housing development. This is, however, easier said than done.

Affordable housing has historically had challenges ranging from financing to public perception. Still recovering from Coronavirus-era housing industry difficulties and a decline in federal funding incentives, project leaders are finding ways to do more with less.





The Architectural Team's Flat 9 at Whittier in Roxbury, Mass., breaks down isolating super-block layouts by incorporating bisecting streets through the developments that connect them to their greater communities.

ED WONSEK

## Top 10 Trends in Affordable Housing

1. Passive House-influenced design
2. Increase in market-rate design and amenities
3. Incorporating Trauma-Informed Design for interiors
4. Adding office/private spaces
5. Flexible, not focused amenities
6. Providing services to residents and community
7. Lengthy project times
8. Combining incentives/credits
9. Integrating and engaging with the local community
10. Mixed-use developing

# 1 PASSIVE HOUSE- INFLUENCED DESIGN

“The nation as a whole is in desperate need of affordable housing in every jurisdiction,” says Douglas Carter, AIA, Principal-in-Charge and President, DCS Design. “The demand is insatiable and the challenge for 2024 will be both financing and inflation.”

Among affordable housing developers today, there’s one commonality tying projects together: uncertainty. Architecture, engineering, and construction firms share their latest insights and philosophies on the future of affordable housing. Here are the top 10 trends in the affordable housing sector:

**Influenced by an industry-wide increase in sustainability concerns, Passive House principles have made its way into affordable housing.** The tenets of Passive House design include airtight insulation, energy recovery ventilation, high-performance windows and doors, and thermal bridge-free construction.

Studies have shown that Passive House residents are more comfortable living in the space when compared to traditional buildings. This can be attributed to the consistent air temperatures, humidity levels, and acoustic comfort that Passive House design provides.

In today’s affordable housing landscape, request for proposals (RFPs) are identifying a desire for net zero operational, Passive House, and WELL building

standards—more than just green design. Affordable housing projects are now incorporating more passive solar designs, highly efficient HVAC systems, and heavily insulated walls to achieve these standards.

The GBBN Architects-designed development Fifth & Dinwiddie West in Pittsburgh, Pa., is slated to be a 190,000-sf mixed-income community with Passive House principles. Due to its passive design, the building team anticipates Fifth & Dinwiddie will yield a 70% reduction in energy use.

The overall goal of utilizing Passive House design is to create a holistic system that helps reduce operational costs, create a healthier environment for residents, and meet new government mandates—especially when combined with existing programs like the Low-Income Housing Tax Credit (LIHTC).

For example, The Architectural Team, a Boston-based architecture firm, has benefited from local incentives like Boston’s Building Emissions Reduction and Disclosure Ordinance (BERDO) that limits large buildings’ greenhouse gas emissions. The Anne M. Lynch Homes at Old Colony in South Boston contains 116 LEED Platinum-certified affordable units, a 10,000-sf LEED Gold-certified Tierney Learning Center, and 55 Passive House-certified units for seniors and people with disabilities.



**Across the board, we're seeing an increase in amenities that were once considered market-rate.** Rooftop spaces, outdoor recreation, and courtyards are increasingly common (especially since the Covid-19 pandemic brought more people to the outdoors).

## INCREASE IN MARKET-RATE DESIGN AND AMENITIES



Kimberly Hellekson, AIA, NCARB, Managing Principal with FK Architecture, points to modular construction as a solution for cutting costs where needed. Due to its scalable and repeatable nature, modular construction enables the firm to lower construction costs while maintaining market-rate amenities.



Atlantis Apartments in Denver offers residents a rooftop patio to foster a connection to the outdoors and city.

For architecture and interior design firm Centra-Ruddy, more clients are asking for expressive and sophisticated façade detailing and materiality, flexible unit floor plans, and features such as smart lighting and touchless controls. The same goes for outdoor amenities on rooftops and in thoughtfully designed terraces and central courtyards.

Affordable housing is also seeing more high-end façade finishes that offer a substantial look and feel, and that fit in more contextually with their surrounding communities. John B. Cruz, III, President and CEO, Cruz Companies, has found that residents appreciate living in buildings that feel sophisticated and well-designed.

“Many people feel the brightly colored façade panels that have been in vogue are too similar to the cheap, expedient aluminum siding of years past,” says Cruz. The firm instead opts for brick and other upscale materials, such as composite metal panel rainscreens with a sandstone coloring.

**Affordable housing often serves those in under-represented groups, such as the impoverished, disabled, or traumatized.** With thoughtful design, tenants are able to call their place of residence a sanctuary; for some, this can even make a difference in recovering from trauma.

Trish Nixon, AIA, NCARB, LEED AP, President of LRS Architects, believes that Trauma-Informed Design (TiD) continues to be a significant driver for interior design. TiD creates an environment of safety and security for residents, and is “paramount for those recovering from trauma,” according to Nixon.

Research compiled in *Designing for Healing, Dignity & Joy* breaks down TiD into three core values: comfort, choice, and community.

Some examples of TiD include creating wider hallways but smaller apartments, or opting for flexible shared spaces rather than individual apartment balconies. It's also been shown that biophilic design—a piece of the Trauma-Informed Design puzzle—aids in improving mental and physical well-being. Reduced stress, better sleep, and lower blood pressure are all shown to be positive outcomes of biophilia.

The key takeaway from the research (which was led by Shopworks Architecture, Group14 Engineering, and the University of

Denver) is that amenity areas need to feel safe for residents. Locating amenity areas near staff offices can help build connections among residents, and between residents and staff. The research also found that laundry

## INCORPORATING TRAUMA-INFORMED DESIGN FOR INTERIORS





BKV Group's Artspace Silver Spring (Md.) includes a communal building and artist studios as part of the affordable housing development for local artists.

spaces and trash collection areas are shown to be among the most triggering areas for residents who have experienced homelessness.

The Elisabetta, designed by Shopworks Architecture in Denver, rethinks the laundry room as a spa-like gathering space, where residents gather to “talk, listen, laugh, or just relax as they do laundry,” according to the research report. In the end, Trauma-Informed Design shifts the focus from housing to healing.

## 4 ADDING OFFICE/ PRIVATE SPACES

**Whether in-unit or in shared spaces, private work areas are becoming more common as work-from-home (WFH) increases in popularity.**

In some cases, developers are achieving this through novel partnerships or

shared ownership structures, according to GBBN.

Standard Communities, a national affordable housing developer, dedicates amenity space for private work rooms. Alternatively, firms like Baker Barrios Architects are integrating office space inside residential units to support working from home. Baker Barrios has also found that, despite the increase in in-unit office space, unit sizes overall are getting smaller to boost affordability.

One thing is clear: Private work rooms should be thoughtfully designed with ample lighting, soothing views, and flexibility in mind.

## 5 FLEXIBLE, NOT FOCUSED AMENITIES

**Where market-rate housing tends to incorporate focused amenities, such as gaming rooms, pools, and lounges, affordable properties are opting for flexibility.** BKV Group's Interior Design Director and Partner, Liza Kapisak, CID, LEED AP, sees more club rooms and common areas being designed to serve multiple purposes.

From celebrations to community meetings to after-school programming, community amenity spaces with moveable furniture allow for expanded accommodation. A lot of thought is being given to how residents will take advantage of community-based amenities like libraries, parks, recreation spaces, and transit, according to GBBN.

In that same vein, amenity spaces are getting larger in affordable communities. The trend here has been to increase social spaces for residents at the small cost of individual unit size. Though with

Shared amenities at Fifth & Dinwiddie West include spaces to support remote workers.





Robles Park in Tampa, Fla., will be a 1,600-unit affordable housing project set on 35 acres of land.

BAKER BARRIOS ARCHITECTS

dents access to employment assistance, financial management, and literacy services. California-based Blach Construction has seen a trend in developments offering continuing education or counseling centers, along with welcoming community spaces and outdoor patios/BBQs.

Apartment sizes are even shrinking in order to accommodate

room for generous communal areas. According to Ondrej Chybik and Michal Kristof, Co-founders of architecture firm CHK, this affords residents the opportunity to host gatherings and engage in social interaction with fellow occupants.

Baker Barrios Architects designed Robles Park, a new project built within the established neighborhood of Tampa Heights in Tampa, Fla. Made with community in mind, it features new streets and infrastructure, parks and recreation, and a memorial walk that celebrates the neighborhood's history.

clever design choices like moveable walls, as CHK suggests, apartment size need not be a constraint.

The flexibility of amenity spaces supports another growing trend in the affordable housing landscape: the onsite provision of social services. For example, The Architectural Team's Flat 9 at Whittier includes programs from career coaching to lease renewal support. Incorporating space for these services within affordable housing communities is very important to developers.

## 6 PROVIDING SERVICES TO RESIDENTS AND COMMUNITY MEMBERS

**With affordable housing development, resident and community wellness is key.**

There's been an uptick in linking housing to healthcare as of late; research shows that supportive housing can even affect healthcare costs, access, and outcomes for its residents.

But supportive housing goes beyond health and wellness. Some developments have begun to offer residents education and career development opportunities, economic vitality programs, and on-site emergency services.

Another strain on some families living in affordable housing communities is the need for childcare. As its expenses can be overwhelming, childcare could benefit from a partnership with affordable housing, bringing relief for families, increasing the workforce, and contributing to wealth building, according to Eric Doner, AIA, LEED GA, Senior Associate with RATIO Design.

FK Architecture's Lafayette Gardens gives resi-

**A number of factors have contributed**

**to the holdup of completing affordable housing projects.**

One big obstacle is the funding approval process. There continues to be uncertainty about when funding will become available, given that approval processes are taking multiple cycles.

Jeff Head, Vice President of Development with The Habitat Company, finds that the lack of funding spans across the affordable housing spectrum, from development and preservation to operations.

Projects are also being delayed by lengthy lead times for equipment and material procurement. Planning as far in advance as possible will help developers avoid massive delays. For Pence Contractors, procurement has been especially difficult for door frames, switchgear, and other mechanical systems. In one case, Pence's electrical subcontractor was able to build custom switchgear, which

## 7 LENGTHY PROJECT TIMES



helped avoid delays that would have otherwise affected other parts of the project.

There is also competition for suitable, affordable land, especially in urban areas. Many projects are on hold due to this, as well as rising interest rates, policy changes, and longer zoning times.

## COMBINING INCENTIVES/CREDITS

**In an effort to keep affordable housing affordable, projects are utilizing credits from a variety of federal, state, and local funding sources.**

Tom Schultz, AIA NCARB CPHC, Associate at The Architectural Team, finds that funds for rehabilitated buildings and adaptive reuse affordable housing projects can be layered into other available opportunities, such as LIHTCs and a more recent wave of sustainability-related grants.

Historic tax credits (HTCs) favor these adaptive reuse projects, and even energy companies are providing incentives for sustainable affordable housing. Different federal and state tax programs have also sprung up for resilient design, such as the IBHS Fortified Resiliency Program.

In California, Page & Turnbull has seen state

money for conversions of hotels to affordable housing as a relatively quick way to increase the number of affordable units. These incentives can help to offset some of the construction costs and assist with financing options.

The affordable housing sector, overall, has seen multiple rounds of funding for projects. According to Schultz, these rounds of funding are highly competitive and involve multiple steps, requiring a substantial investment in time and consistent follow-through.

## INTEGRATING AND ENGAGING WITH THE LOCAL COMMUNITY

**Affordable housing developers have found that community engagement is especially important for getting projects off the ground.**

With a slew of projects being brought to the table, and limited funding available, those that represent the area's community and history are more likely to be prioritized.

For example, the GBBN-designed Willkommen on Vine project matches the architecture of the surrounding area in Cincinnati's historic Over-the-Rhine district. Adaptive reuse projects have also become more common as a means to help a community retain its character, cut down on construction costs, and offer a more sustainable solution. BKV Group has converted many building types into multifamily housing, from office properties, warehouses,



Page & Turnbull's largest affordable housing project is a conversion of Sacramento's Capitol Park Hotel, built in 1911-1912, into a 136-unit multifamily complex.

breweries, and even a flour mill.

Another movement in design is heightening community connectivity through intersecting streets and walkways, according to The Architectural Team. This invites easy interactions among a complex's residents and neighborhood members for a united urban fabric.

Other factors like proximity to transportation hubs and a move toward higher density housing in urban communities help meet the needs of residents as well.

According to Philip Johnson, Project Executive with Pence Contractors, it's also becoming more common to conduct listening tours that engage the community to figure out what will make a project successful for those it serves. Communicating with the community—who often feel concerned that new projects will impact property values and the area

as a whole—is also key.

“Community opposition can make it difficult to secure permits and approvals, even when they are desperately needed,” say CHK Co-founders Chybik and Kristof. “The community should be updated and

educated about the benefits of each project, in the best cases engaged in the whole process.”

**Mixed-use areas offer a community more than just housing.**

The benefits that mixed-use projects add to areas is a chance to bring commercial space into neighborhoods that have been underserved for decades, according to Cruz Companies. Not only this, but it aids in increasing public perception of affordable housing—a perception that has been increasing over the past few years nonetheless.

David Block, Director of Development, Evergreen Real Estate Group, has seen an increased emphasis in mixed-use development from public agencies, cities, and state governments. The thought here is that developments should be providing amenities for the community.

“Agencies are realizing if we’re going to be spending this much money, they want their constituents to see the cost benefits with mixed-use,” said Block.

Mixed-use developments can be tricky to fund, however, because they require combining financing from a variety of sources that may conflict with one-another. Peter Birkholz, Principal, Page & Turnbull, also sees cities trying to reactivate streets by encouraging pop-up shops in unused retail spaces.+

Spurlock Sampson Apartments is nearing completion in Chicago, transforming a 60s-era development into a vibrant mixed-income community.



A modern take on its neighborhood's historic orioles, GBBN Architects' Willkommen on Vine's undulating brick wall floats above a glass storefront, providing residents with privacy and sunlight.

RYAN KURTZ

# 10 MIXED-USE DEVELOPING



RATIO DESIGN



# air force

**louvered aluminum privacy panels to protect and contain**  
Ultra® aluminum privacy screening features privacy with strength and durability that you just can't get from typical vinyl or wood railing systems.

Ultra® Privacy Panels by Ultra Aluminum™



**ULTRA**<sup>®</sup>  
FENCING • RAILING

**ULIRACK**

**ULTRAMAX**  
ALUMINUM RAILING SYSTEM

**Defender**

Ultra *Signature*  
Collection

**ULTRA**  
PRIVACY

*Estate  
Collection*

ULTRUM™ ALUMINUM ALLOY | EXCLUSIVE POWERCOAT™ FINISH

**ULTRAFENCE.COM** | 800.656.4420

Ultra and the picket caps logo is a registered trademark of Ultra Aluminum Manufacturing Inc.

ANASTASIA CASEY, IDENTITE COLLECTIVE



PIONEER INDUSTRIES

# 106 KITCHEN + BATH AMENITIES

Our inaugural K+B survey dives deep into the 106 amenities and finishes multifamily developers and their project teams are using.

BY ROBERT CASSIDY, EXECUTIVE EDITOR

**K**itchen and bath amenities are crucial to the success of multifamily housing projects.

In mid-2022, the editors sent a 111-question survey to developers, property owners, and AEC professionals in the U.S. and Canada to measure the extent to which they had used more than a hundred amenities in the last 12-24 months.



**Opposite far left: Verona 36-inch Designer Electric Range in matte black.**  
**Left top: Hatano Studio remodeled this Seattle kitchen using REHAU Rauvisio terra Whiskey Oak Shaker-style cabinet doors and PentalQuartz Arabescato quartz countertops.**  
**Left bottom: Olympia L-6000-MB Lifestyle single-handle lavatory faucet in matte black.**

Respondents represented a cross-section of the multifamily sector: architects, 45%; developers/property owners and managers, 25%; contractors, 16%; interior designers, 9%; product manufacturers, 3%; engineers, 2%.

Respondents' firms developed, designed, and built apartments (91%), senior living (54%); townhomes (51%); condominiums (39%); and student housing (33%).

Products in each category were ranked based on the sum of "Used extensively" and "Used selectively." The margin of error was 5-6%.

## WIDE USE OF K+B PRODUCTS

The study showed that all 106 K+B products or finishes were used by at least some respondents. The study also showed that, while most multifamily project teams have their menus of favorite K+B amenities, nearly all said they were going to try some K+B products that they had never used before in future projects.

## WHAT'S COOKING IN THE KITCHEN?

Most multifamily developers will tell you that, after location, the most important factor in getting the rental or ownership contract signed is the kitchen.

Our survey confirmed many of the most common assumptions about what works in multifamily kitchens; for example, that dishwashers, Energy Star appliances, and installed microwave ovens were used overwhelmingly by respondents.

But we also discovered some interesting surprises:

- Smaller "studio appliances" may be gaining traction, perhaps due to some downsizing in apartment floor area.
  - Electric induction cooking systems, which fit in with the movement in some cities toward all-electric buildings in multifamily housing, had a higher than expected level of support.
- Other key findings for kitchen amenities:
- No-frills kitchen islands, and islands with either a dishwasher or sink, rule the culinary area; adding a heating element to the kitchen island was much less popular among respondents.
  - Stainless steel was the runaway leader in the race for kitchen sinks, with porcelain trailing by many lengths and other materials far back in the field.
  - Single-basin and undermount sinks (most likely in combination) had the lion's share of specifiers.

- A high percentage of respondents said they used single-handle pull-downs kitchen faucets; three-fourths reported using high-arc swivel spout fixtures.

- Nearly eight in 10 respondents favored Shaker-front cabinets. Solid wood, Melamine, and Thermofoil cabinets each had support from nearly two-thirds of respondents.
- Upgraded cabinets and premium hardware were the choice for most users.
- Exhaust hoods and in-sink garbage disposal systems had strong backing.
- Breakfast bars were de rigueur for nearly two-thirds of respondents.
- Despite all the Covid-related talk about the need for more frequent air exchange, only about two-fifths of respondents had installed air-filtration systems.

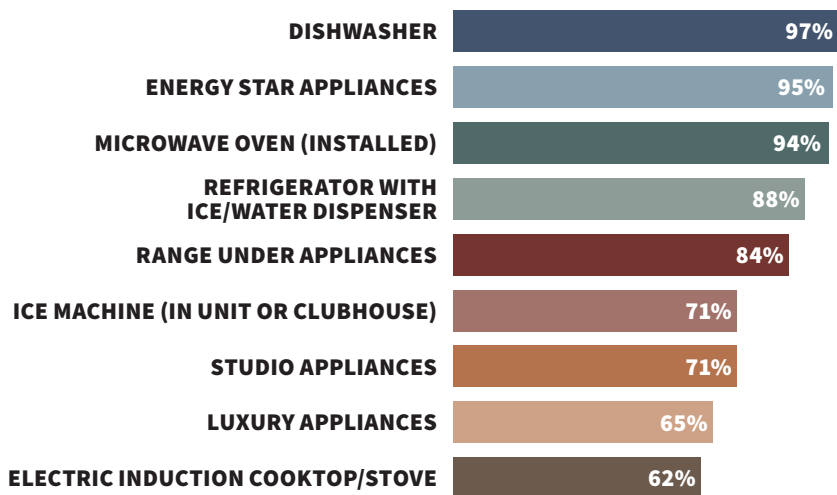
## EVERGREENS IN THE BATHROOM

When it comes to countertops (which can be used in kitchen or bath), it's quartz, quartz, and more quartz! Nearly four of five respondents used it. Quartzite was being installed by nearly half of all respondents.

- Brushed nickel, polished chrome, and stainless steel dominated faucet finishes.
  - Matte black is the new black: nearly three-fourths of respondents said they used it or intend to use it.
  - As for K+B flooring, easy-to-apply luxury vinyl plank or tile was the clear winner. Most respondents also used engineered hardwood flooring.
- Among amenities exclusive to the bathroom, vanity sinks and low-flow toilets were used by nearly nine of 10 respondents, as were glass shower doors.
- Low-flow faucets and low-flow showerheads were used by the vast majority of respondents for their ability to conserve water.
  - Standalone showers also showed strong adoption.
  - Four of five respondents specified handheld showerheads; nearly that many used fixed showerheads.
  - High-pressure, rain/waterfall, and massage showerheads showed significant usage.

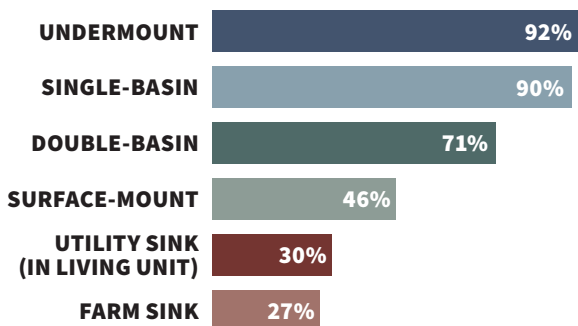
The takeaway from our Inaugural Kitchen and Bath Amenities Survey: Multifamily project teams have a ton of excellent products to work with. Which ones they choose to use and how they implement them will affect the market success of the finished product and the ongoing satisfaction of their occupiers.

## TOP KITCHEN APPLIANCES

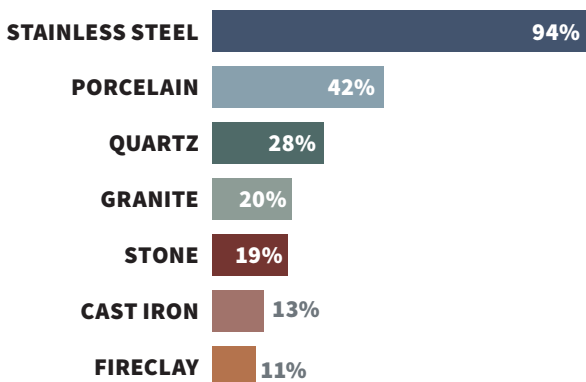


NOTE: Charts in each category are listed by the combined score for "USED EXTENSIVELY" + "USED SELECTIVELY."

## TOP KITCHEN SINKS



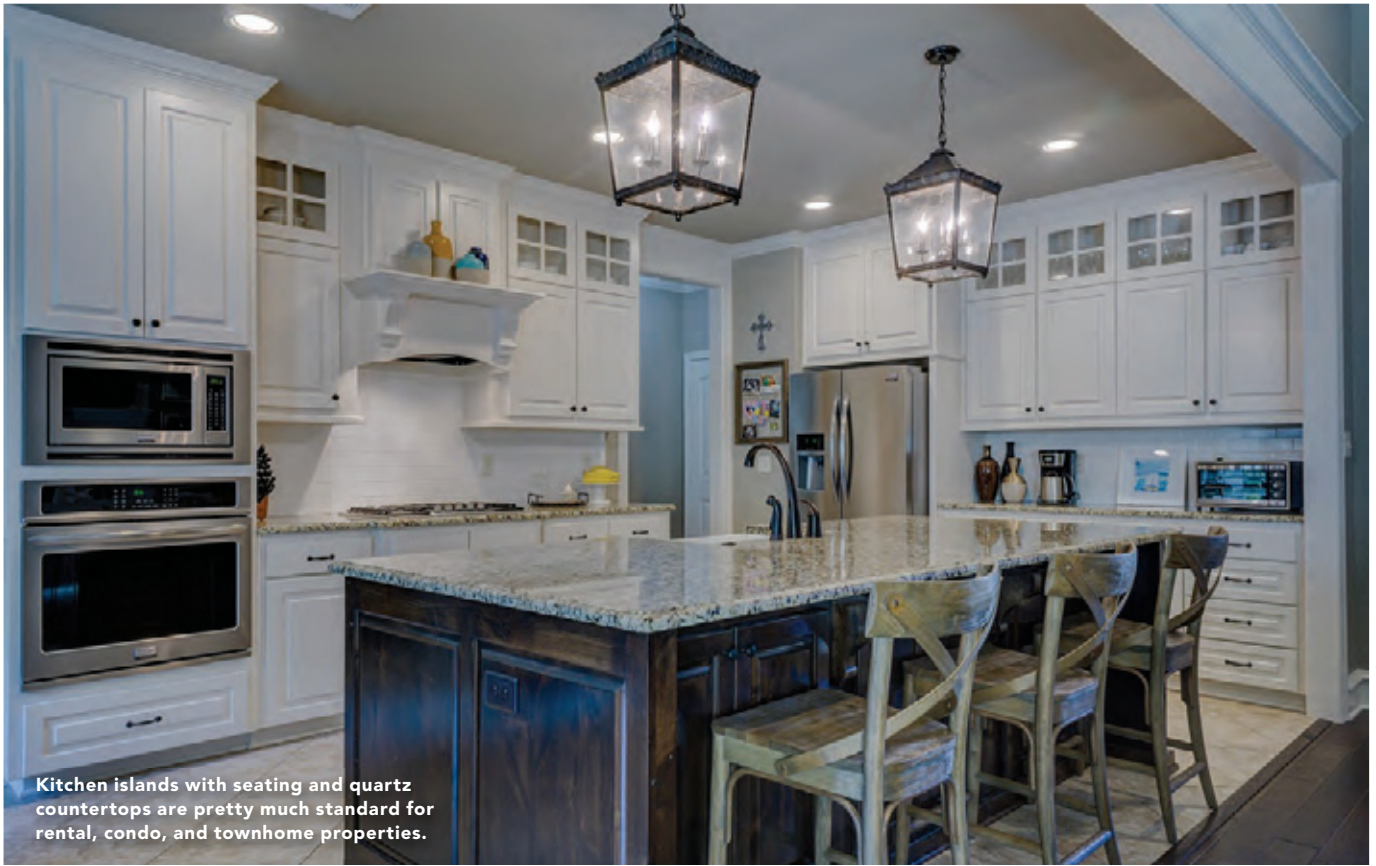
## TOP KITCHEN SINK MATERIALS



## RESPONDENTS RECOMMENDED THESE 13 K+B PRODUCTS

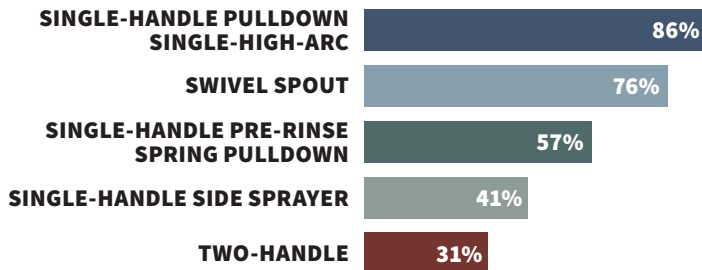
- 'Authentic materials' for countertops, cabinets, flooring, and walls
- Aquawall-brand tile bath surrounds
- Blomberg-brand dryers (obviate the need for dryer exhaust in living units)
- Built-in microwave at counter height within pantry cabinet (for ADA compliance)
- Energy Star appliances
- Full-height pantry cabinet surrounds around refrigerator
- High-quality appliances and countertops
- LiveWell-brand Grabcessories grab bars and ADA-compliant accessories
- Pantry cabinets instead of medicine cabinets in bathrooms
- Portable/mobile kitchen islands
- Senior-friendly toilet fixtures with reminder lights
- Spray-on bed liner in the bottom of the kitchen sink cabinet
- WaterSense low-flow fixtures



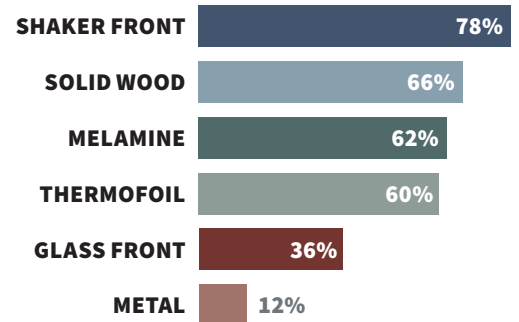


Kitchen islands with seating and quartz countertops are pretty much standard for rental, condo, and townhome properties.

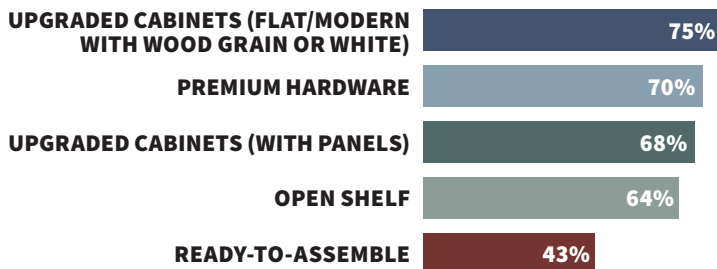
## TOP KITCHEN FAUCET STYLES



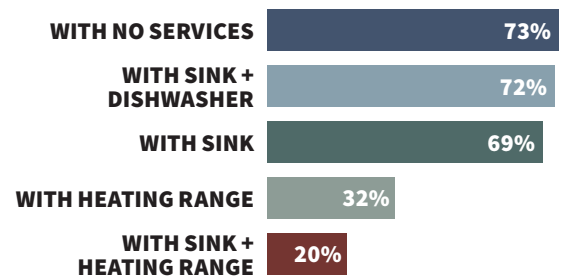
## TOP KITCHEN CABINET STYLES



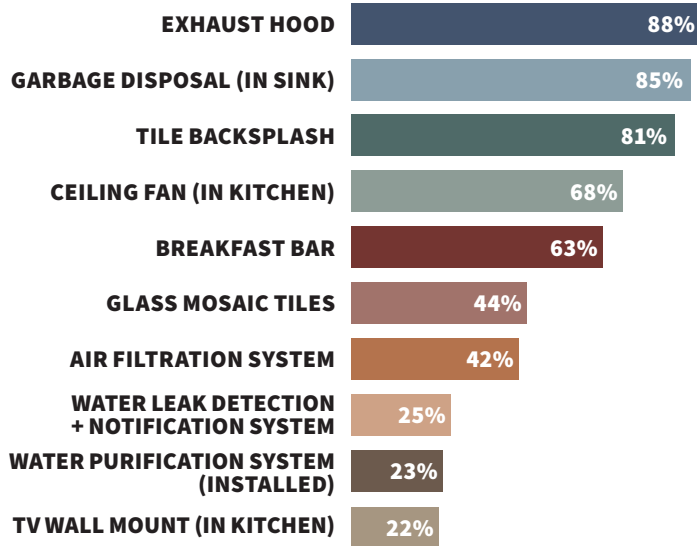
## TOP KITCHEN CABINET SYSTEMS



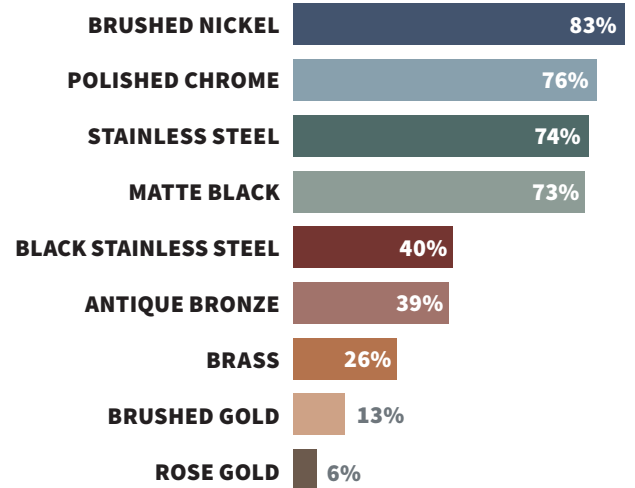
## TOP KITCHEN ISLANDS



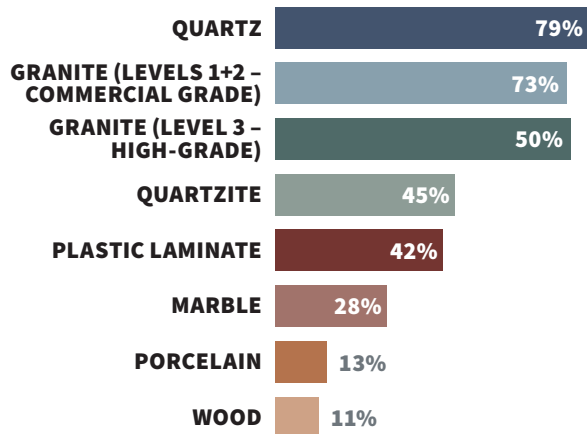
## TOP 10 MISCELLANEOUS KITCHEN AMENITIES



## TOP KITCHEN+BATH FAUCET FINISHES



## TOP KITCHEN+BATH COUNTERTOPS

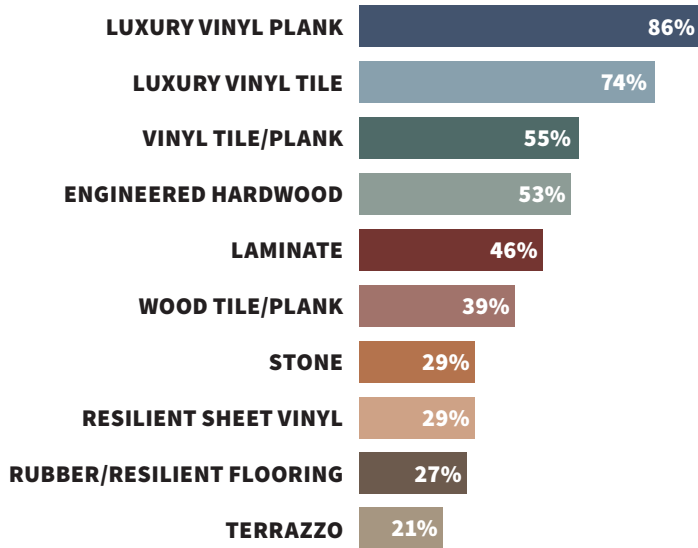


## RESPONDENTS' 38 'SINGLE MOST IMPORTANT' K+B AMENITIES

- ADA-compliant fixtures
- Countertop space
- Dedicated kitchen cabinet for trash/recycling baskets
- Dual vanities
- Durable, maintenance-free materials
- Energy Star appliances
- Fixture selection
- Fixtures that meet sustainability requirements
- Four-foot-wide vanity
- Four-piece tub/shower surround instead of alcove one-piece
- Frameless shower doors
- Front-control ranges
- Full splash in kitchen with undermount cabinet lighting
- Gas cooking units
- Glass shower doors in bathrooms
- Good quality cabinetry with lots of options
- Grabcessories-brand grab bars
- Granite countertops
- High-grade kitchen faucets ("most easily noticed, most used")

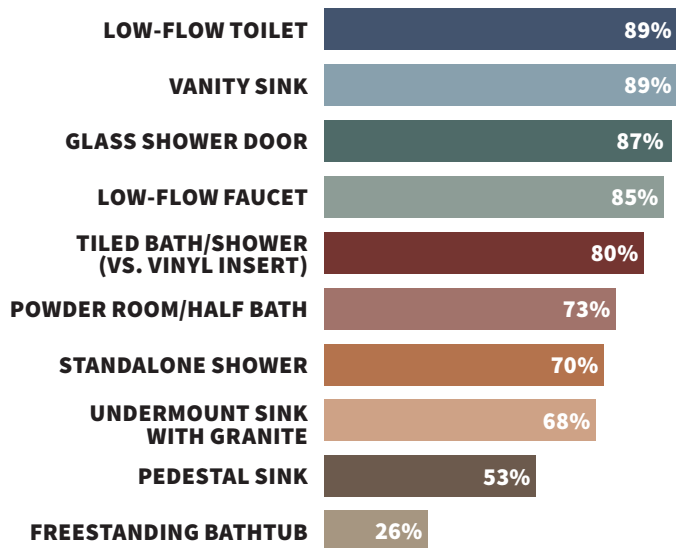


# TOP 10 KITCHEN+BATH FLOORING

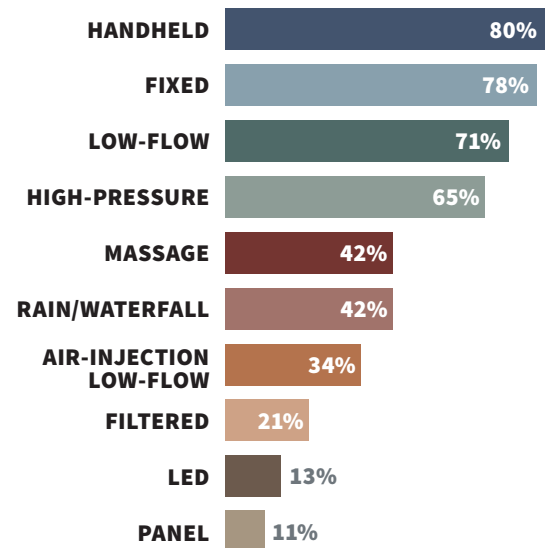


Pfister Ashfield brushed nickel faucet.

# TOP 10 BATHROOM AMENITIES



# TOP 10 SHOWERHEADS



High-quality finishes  
 Kitchen sinks with ADA-compliant garbage disposal and faucet controls  
 Large kitchen sink  
 Lava-brand faucets

Lighted mirrors  
 Oversized shower stall with frameless glass enclosure  
 Pantry/linen storage  
 Quartz countertops  
 Quiet dishwashers

Reliable microwave units  
 Shelving in kitchen islands  
 Solid surface countertops  
 Stainless steel appliances  
 Storage space in kitchens  
 Taller cabinets

Task lighting  
 Upgraded countertops  
 Upgraded finishes (tile, stainless steel appliances)  
 USB plugs

# WHEN IT COMES TO MULTIFAMILY AMENITIES,



What's an apartment community without a fire pit and pool? At 200 West Ocean, Long Beach, Calif., a \$44 million adaptive reuse converted an underperforming Class B office building into 106 studios, one- and two-bedroom apartments, double-height lofts, and townhomes. Studio One Eleven (architect) led the team for developer Greystar: Labib Funk and Associates (SE), KPFF (CE), Donald Dickerson Associates (MEP), and Mark Tessier Landscape Architects (landscape design).

Our fourth Amenities Survey reveals that multifamily teams are going beyond the usual offerings. How about a salt room?

BY ROBERT CASSIDY, EXECUTIVE EDITOR

Every other year since 2017, the editors have surveyed multifamily developers, architects, designers, contractors, and others in the \$110 billion multifamily sector to determine which amenities they had used in the last 12-18 months.

Our exclusive 2023 Multifamily Amenities Survey follows on similar studies conducted in 2017, 2019, and 2021. For a PDF with all the data from these studies, visit: [BDCnetwork.com/Amenities2023](https://BDCnetwork.com/Amenities2023) (short registration required).

## RESPONDENTS COVER THE WATERFRONT IN MULTIFAMILY HOUSING

Architects represented 35% of respondents; construction professionals, 30%; developers/property owners, 15%; interior designers, 10%; consultants, 4%; engineers, 2%; landscape architects, 2%; others, 3%.

Their respective firms produce one or more multifamily housing typologies in a typical year:

- Apartments/condos: 26% produce less than 250 units/year; 13% produce 250-499 units/year; 55% produce 500 or more units/year.



# INNOVATION IS THE KEY

- Senior living: 21% produce less than 250 units/year; 9% produce 250-499 units/year; 13% produce 500 or more units/year.
- Student housing: 15% produce less than 250 units/year; 6% produce 250-499 units/year; 14% produce 500 or more units/year.

## WHERE MULTIFAMILY FIRMS ARE INNOVATING

We asked respondents to let us know what innovations or fresh concepts they had tried in recent projects. But before we get started on these innovations, a word of caution from a consultant to multifamily developers and AEC teams: “Floor plan designs and unit features are more important than amenities in the leasing decision! Great amenities will not overcome a poor to average unit design.”

Well, we’ve been warned. On to the amenities innovations.

EV charging stations, solar power, smart appliances, and maker spaces were the choices of a number of respondents. One developer reported, “We are moving toward all-electric buildings throughout our 14-state portfolio.” A consultant said, “I have more clients interested in modular construction.”

Active leisure amenities advanced. One respondent was installing rock walls in its communities. Another had opened its fitness centers for 24/7 access. Yet another added exercise stations to their walking trail.

Several said dedicated pickleball courts were becoming de rigeur in their communities. (To build them right, see “Pickleball, anyone?” at: [BDCnetwork.com/pickleball-anyone](https://www.bdcnetwork.com/pickleball-anyone).) One developer had provided “private fitness pods” for smaller groups. Another had put in “beer walls”; that’s “active leisure,” isn’t it?

“Larger, nicer co-working spaces” garnered support from one respondent. But another said their firm was nixing communal co-working spaces in favor of designing work-from-home spaces right into the apartments.

One respondent said their firm was designing co-working spaces that included “hot desks,” small day offices, multiple conferences rooms, a wetbar, and phone booths for private calls. This developer predicted that “this feature will soon approach the preference rating for fitness centers” among work-from-home residents and self-employed individuals.

Residents with accessibility concerns benefited from one developer: “We’ve been meeting with disabled residents to learn more about their daily needs,” said this respondent, who was going “above and beyond code” with accessible design.

One respondent had implemented automated parking, another “intelligent” parking. Yet another was offering individual detached garages to tenants.

“Interactive smart kiosks” were on one respondent’s innovations list. Yet another was using an online property maintenance platform.

Entertainment venues were a hit with some. One team installed a roof deck with gazebo. Another was putting in private dining areas.

Amenities for the arts also got some love. One respondent had built a green room for residents to record video shorts. Another put a “book share box” near the mailboxes. Music rooms were the choice of some project teams.

The use of sustainable materials (though not enumerated) scored with one respondent. Another said, “Mass timber is making a play in the market.” “Environmental cleaning” (not defined) was the



Niles Bolton Associates (architect, interior designer, landscape architect) made sure to provide plenty of recreation options for up to 10,440 college interns at Walt Disney World’s massive Flamingo Village Crossings: 2,614 units, 3.8 million sf of programmed space, and two 25,000-sf community centers, all on 154 acres in Winter Garden, Fla. Also on the project for American Campus Communities (owner, manager, developer): Veitas and Veitas Engineers (SE), Kelly, Collins & Gentry (CE), Jordan & Skala Engineers (MEP), and FaverGray (GC).

choice of one firm. Yet another had installed a system to recycle rainwater to be used in the cooling tower for ventilation purposes.

Creature comforts were important to some respondents. One firm added drinking water fountains to its senior living homes. An apartment designer broadened their balconies to six feet in width instead of four feet. A developer in Honolulu offered “multiple furniture options” in its downtown high-rise. To “stay competitive with adjacent properties,” one developer upgraded unit finishes and lighting.

“Grab-and-go convenience stores” within the amenity space—not vending machines!—were being put in place by one firm.

In terms of security innovations, respondents reported installing electronic unit deadbolts. Another was providing “extra security” (not described) for an assisted living facility. Yet another had installed a key-less entry system in such a community. One developer was installing ring cam security cameras in every unit.

#### A FEW WORDS TO THE WISE

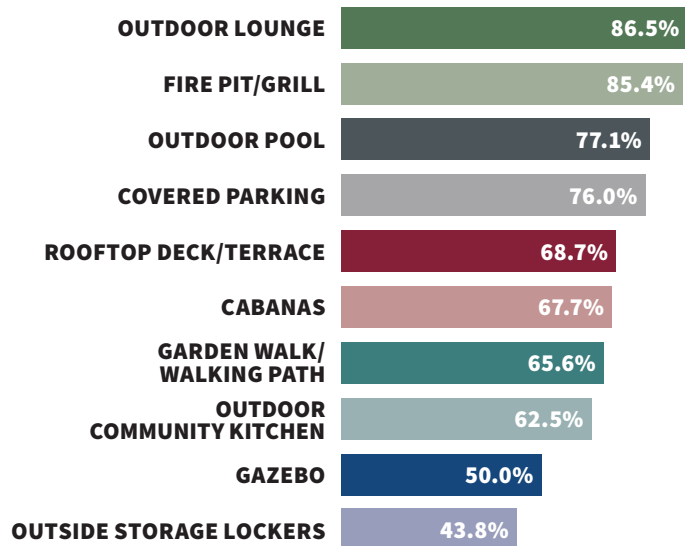
One consultant who advocated for creating “a community feel”—rather than “just a place to live”—recommended that multifamily developers and AEC teams move television screens, games, and billiards under the club room porch—outside, but protected from the weather. “Many clubhouses close around 6:00 p.m. when most renters are returning from work, so this can serve as an outdoor gathering area.”

Let’s end with a tip from one of our respondents: “Design the structure to be as efficient as possible first, then make the unit and amenity layouts fit around it.”

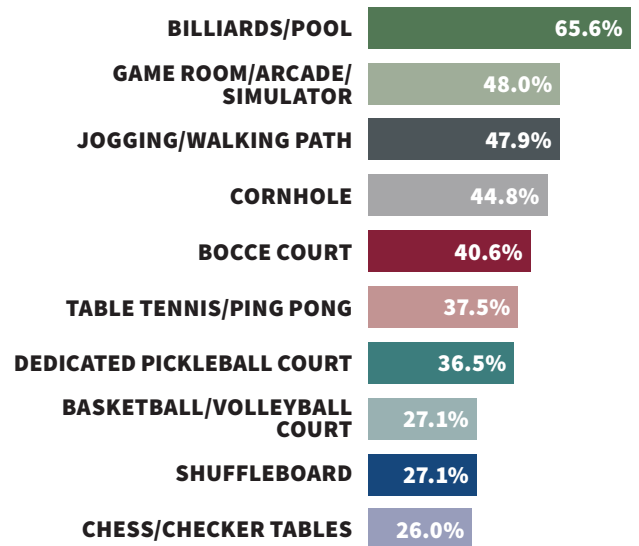
**For a FREE copy of the full report, with comparative data from the 2017, 2019, and 2021 surveys, go to: [BDCnetwork.com/AmenitiesSurvey2023](https://BDCnetwork.com/AmenitiesSurvey2023). Short registration required.**



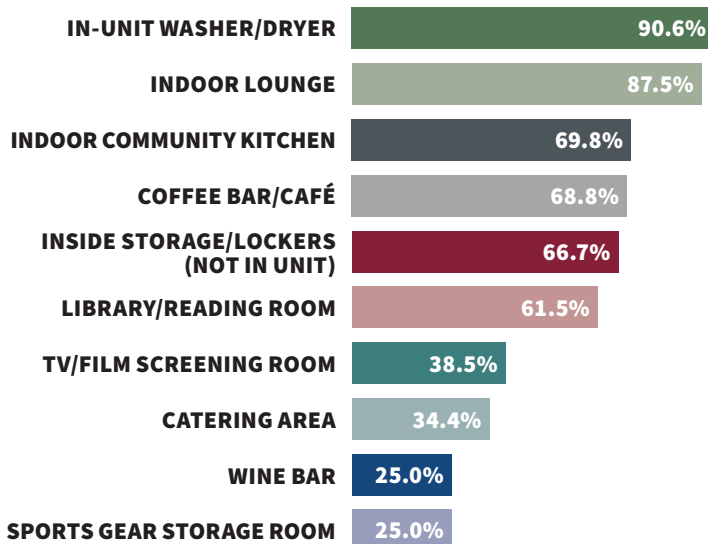
## TOP 10 OUTDOOR AMENITIES



## TOP 10 RECREATION AMENITIES



## TOP 10 INDOOR AMENITIES

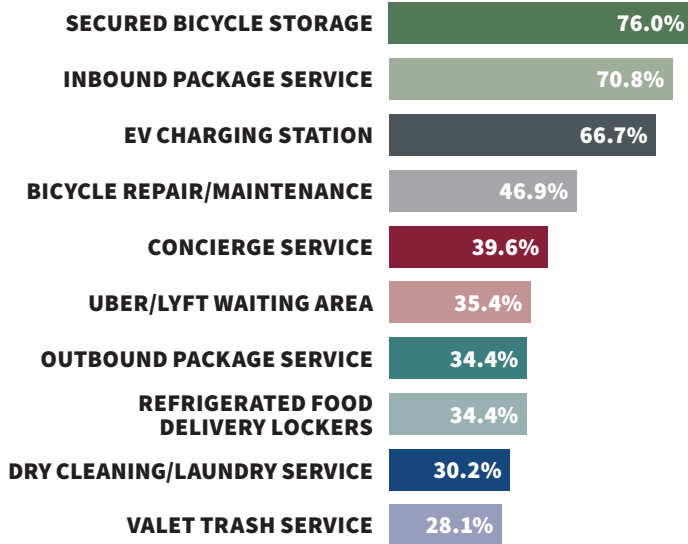


## FIRST-TIME AMENITIES

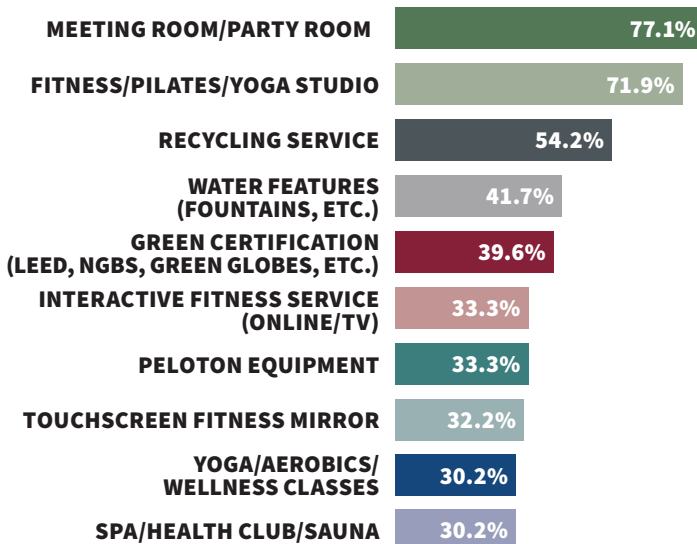
Respondents reported using these amenities for the first time in recent projects:

- Art studio
- Climbing walls
- Food delivery storage
- Furnished units with Murphy beds
- Golf driving range
- Golf simulator
- Meditation room
- New shelving units
- On-demand fitness
- Organics composting
- Outdoor moving screen
- Paid Wi-Fi art and cooking classes
- Pet relief area
- Rentable party spaces
- Salt rooms

## TOP 10 CONVENIENCE SERVICES

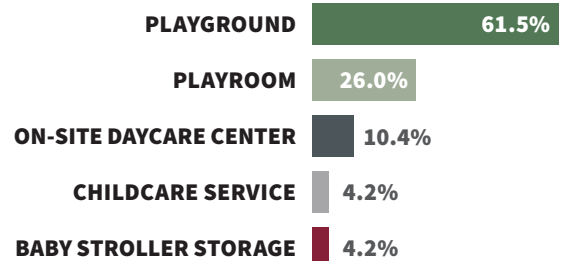


## TOP 10 QUALITY OF LIFE AMENITIES

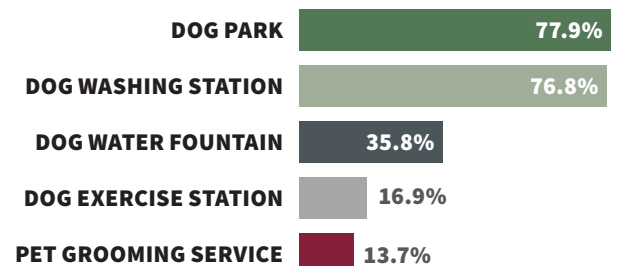


The fitness center—an amenities “must-have”—at Expo at Forest Park, Tegethoff Development’s \$90 million, 287-unit transit-oriented development overlooking Forest Park, site of the 1904 World’s Fair, in St. Louis.

## TOP 5 CHILDREN’S SERVICES



## TOP 5 SERVICES FOR PETS



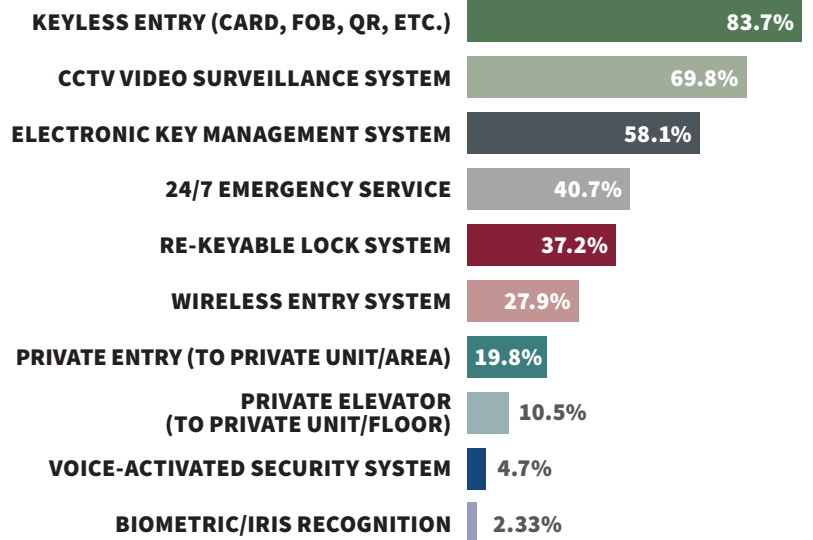




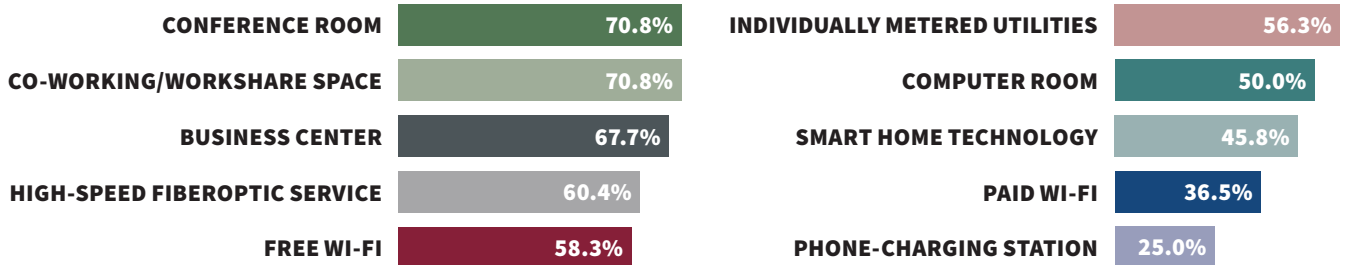
SAM FENTRESS

The project team: Trivers (lead architect), HOK (associate architect), RD Jones (interior designer), Bob D. Campbell & Co. (SE), CDI, Inc. (CE), G&W Engineering (MEP design-assist), and Brinkmann Constructors.

## TOP 10 SECURITY SERVICES



## TOP 10 BUSINESS + TECHNOLOGY SERVICES



JUNE TEMPLETON



Painting classes and cooking demos are part of the program at the Woodlands at Furman, Greenville, S.C., where Dallas architecture firm three designed a 41-unit independent living addition. The bar/dining/salon and multipurpose spaces were renovated; a wellness village was added in the center of the community.



# INNOVATION ROUNDUP

2023: A Year of Innovation in the Multifamily Market

We asked leading multifamily sector firms to report their single-biggest innovation from the past 12-18 months. Here is a roundup of our favorite multifamily innovations for 2023.

COMPILED BY DAVID BARISTA, EDITORIAL DIRECTOR

## THE NEW MUST-HAVE AMENITY: CO-WORKING + CHILD CARE

*Submitting firm: IMC Architecture*

Following the pandemic and rapidly increasing number of professionals working in the work-from-home and hybrid environments, IMC Architecture and its multifamily development clients have begun incorporating vastly expanded tenant amenities in urban properties where both large interior spaces and well designed outdoor facilities are at a premium. As a result, the developers have experienced a significant increase in interest from both renters and condominium buyers at new properties that offer these amenities in New York City and its densely developed satellite towns such as New Rochelle, N.Y. →





The amenities include large shared terraces, rooftop recreation areas, landscaped yards, and private balconies, as well as expansive indoor lounges, shared work/office sections, and child play and care facilities. Creation of these spaces in urban environments, where development site sizes, building massing, and interior spaces are very limited and regulated by strict zoning rules, calls for a careful balancing of the income-generating residential square footage with shared public spaces.

Among the most interesting design solutions by IMC are public tenant areas that combine lounges with outdoor access and shared work-from-home offices with adjacent child play and care facilities with see-through glazed walls, allowing parents working from home to observe their children at all times. Many residents have praised this feature and an increasing number of developers in New York City have been incorporating similar solutions into their new multifamily projects. We expect owners of existing properties to follow suit soon to remain competitive.

## HYTUCK: A HIGH-DENSITY SOLUTION

Submitting firm: AO

As a solution to California's housing crisis, AO has developed HYTUCK, a hybrid building solution designed to maximize density for multifamily apartments. Employing a highly disciplined approach, HYTUCK is designed to yield up to 50 units per acre (du/ac) utilizing non-structured parking with conventional Type V, wood-framed construction. The solution utilizes smart parking methods in order to maximize unit count, making previously cost-prohibitive projects viable for developers.

HYTUCK building design solutions are flexible and adaptable for various development scenarios. However, developers must consider a number of factors such as the target market, area rents, goals of the project, site constraints, as well as city and com-

munity requirements in order to understand the feasibility of a HYTUCK solution.

Generally, HYTUCK buildings achieve maximum density through the combination of non-structured and tandem

parking, allowing for two-, three-, and four-story on-grade building configurations that are more efficient than traditional Type V construction. HYTUCK is generally more cost-effective and provides for less complex construction with efficient structural



stacking and a disciplined approach, making it most appropriate in urban-transitional locations.

Today, AO is working on a dozen HYTUCK sites throughout the West resulting in tangible benefits and projects that pencil for developers. Moreover, several of the sites were already entitled as conventional construction and clients have started over, understanding the long-term value that HYTUCK could deliver. AO continues to explore and improve the HYTUCK product with the goal of making projects more viable and housing more attainable.



**TO MEET DEMAND FOR HOUSING IN A DIFFICULT FINANCING MARKET, APARTMENT DEVELOPERS FIND NON-BANK LENDERS TO COVER CONSTRUCTION LOANS.**

*Submitting firm: Multifamily Pro+ Editors*



As banks tighten and scale back their lending for multifamily projects, developers are forced to look elsewhere for construction funding. FHA loans and financing from debt funds are two options for multifamily developers, according Bendix Anderson of Wealth-Management.com. “Developers who can afford to wait to close their financing are finding relatively large construction loans with relatively low, fixed interest rates from the programs of the Federal Housing Administration (FHA),” wrote Anderson, in a July 25 post on the topic. He added: “Private debt funds and commercial mortgage REITs are also providing senior construction loans with generous amounts of leverage—though the interest rates they offer are relatively high, even compared to current bank financing.” Read the full report at: [BDCnetwork.com/WealthReport](https://BDCnetwork.com/WealthReport)

**MEGA-BUILDER EMBRACES CLIMATE CHANGE SOLUTIONS**

*Submitting firm: Multifamily Pro+ Editors*

The nation’s largest homebuilder, D.R. Horton, is collaborating with the startup Plantd to install 250,000 alternative structural panels in over 1,000 homes. What makes the panels alternative? They’re made from grass—fast-growing, carbon-capturing perennial grass that Plantd touts as a solution to climate change.

As a manufacturer of structural carbon-negative building materials, Plantd provides a seamless switch for homebuilders currently using Oriented Strand Board (OSB). The company’s collaboration with D.R. Horton signifies a major shift in today’s sustainability-driven homebuilding landscape.

D.R. Horton’s purchase of 250,000 Plantd panels will be used for wall sheathing and roof decking. The partners will first erect a model home—breaking ground in mid-July—in Durham, N.C., before full-scale production and delivery is expected to begin in 2024.

Plantd’s structural panels are composed of just two ingredients: the perennial grass and a small amount of resin (with the formaldehyde reacted out before it reaches Plantd’s factory). This creates a low-VOC product with less chemical additives



compared to other products, according to the company.

The resulting panel is manufactured to the exact dimensions of traditional OSB, while being sustainable, stronger, and more moisture-resistant as well. Plantd estimates that its panels installed in every D.R. Horton home will sequester five tons of carbon dioxide removed from the atmosphere.

“This relationship enhances our capabilities to offer new buyers homes that are affordable, durable, and sustainable,” said Mike Murray, Co-COO of D.R. Horton.







## IS IT POSSIBLE TO BUILD WEALTH THROUGH RENTING?

Submitting firm:  
BD+C Editors

Can lower-income renters build long-term wealth through their housing?

It's a grand idea. But is it realistic?

Absolutely, according to the building team behind the renovation of two multifamily developments outside Denver in Arvada, Colo.: Sheridan Ridge Townhomes and Willow Green Townhomes.

These projects are the nation's first investments of the Renter Wealth Creation Fund, a program that financially rewards tenants who make on-time rent payments and/or stay long-term. The program offers monthly cash back for all on-time renters. Residents who make on-time rent payments will be offered a percentage of cash back each month, which could increase over time based on property performance, plus additional rewards if the cash back is saved through the end of the month.

Long-term residents in good standing also have the opportunity to share in appreciation of the property should the owner recapitalize or sell the development—and without the risk of financial loss seen with homeownership. How much cash are we talking about? Upwards of five figures for long-term renters, according to Enterprise Community Partners, a national nonprofit focused on housing for the unfortunate. The organization is partnering with affordable housing developer Archway Communities on the projects.

As part of the deal, the two properties will also see \$1.7 million in renovations while preserving rent and income restrictions in one of the country's most expensive markets.

Sheridan Ridge Townhomes and Willow Green Townhomes, constructed in 2003 and 2005, respectively, include 125 apartments spread across 13 residential buildings in both communities. Sheridan Ridge offers one-, two-, three-, and four-bedroom layouts that will be affordable to residents earning between 30-100% of the area median income (AMI), along with market-rate homes. Willow Green offers two- and three-bedroom layouts affordable to residents earning between 30-60% AMI.

In addition to repairing floors, roofs, and windows, the communities plan to install upgraded security measures, better drainage systems, and other improvements. Both properties are transit-accessible, serviced by the Regional Transportation District, the Denver area's mass transit system, with bus stops offering residents easy access to other parts of the Denver metro area. Archway Communities is the developer and property manager of Sheridan Ridge and Willow Green and will manage resident services at both properties.

## MEET THE TESLA OF APARTMENT CONSTRUCTION

Submitting firm: BD+C Editors

Cloud Apartments—a technology company creating a new brand of modern, modular apartments—unveiled its first prototype, the "Cloud S" late last year. The Cloud S (for "studio") is a 450-sf modern apartment with a twist: It's built like a product. Through modular construction, founder and CEO Curtis Wong wants to mass-produce and sell these standardized apartment units "like a Tesla."

The balance Wong must strike is developing something that can be mass-produced, upscaled, and affordable to build and buy. What does it take to make a modern apartment? Smart tech!

For Cloud Apartments, these modular, modern units come equipped with smart controls—lighting, entertainment, heating/cooling—sleek design finishes, and most importantly, built-in affordability. Wong is aware, though, that the term "smart home" has had negative connotations in the industry in the past. Why? The Cloud developer chalks it up to bad user experience design—issues that largely come from using wireless (rather than wired) technology to try and power a smart home.

Cloud Apartments circumvents these issues through a centralized touch-screen panel. The smart panel, along with many of the smart devices in the unit, are fully wired. This means that Cloud S nixes the occasional bugs of wireless connectivity, leaving the essential user experience in-tact.

What all can be controlled in this smart and modern apartment? Currently, the resident can expect to control window blinds, lighting, music through the integrated built-in-the-ceiling sound-system, projections on the →



wall, the bed, entertainment system, and even a Roomba.

The beauty in Cloud's design is an elevated home for renters, sold like a product, and is affordable from being mass-produced. In fact, Wong anticipates they could produce up to 10,000 units (or more) per year.

"No one else is truly standardizing like us," says Wong. "You buy a 'Cloud S'—it's a product that is always the same wherever you rent."

The 450-square-foot unit is sound-proofed, handicap-accessible, and fully up to California code, according to Wong. But the Cloud S is just the start. The company is planning on developing a Cloud 1 and Cloud 2 (one- and two-bedroom, respectively) to join the line-up.

More at: [BDCnetwork.com/CloudApartments](http://BDCnetwork.com/CloudApartments)

### STYROFOAM'S PROMISE FOR HURRICANE-PROOF BUILDINGS

Submitting firm: *BD+C Editors*

Styrofoam. Often used to hold gas station soda and break room coffee, it's sometimes seen as a product of the past. But as it turns out, there may be bigger opportunities for the polystyrene foam to benefit our daily lives—and it comes in the form of building homes.

Vero Building Systems, a building materials manufacturing company, has begun production of its light-weight structural concrete insulated panels (SCIP). The SCIP system

is composed of three main materials: steel, concrete, and expanded polystyrene (or, styrofoam). While this building system has its origins in 1980's Italy, Vero was founded to bring the innovative construction method to the U.S.

The panel involves a styrofoam center that provides insulation and sound-proofing properties, and a steel wire frame that connects slabs of concrete on each end of the panel. This not only makes the final product fireproof, but hurricane-proof as well, according to Kent Hendricks, chief revenue officer, Vero Building Systems.

Though the ease of crumpling an empty styrofoam cup may induce skepticism in the product, wedging expanded polystyrene in between concrete actually aids in improving one of concrete's biggest weaknesses: flexibility.

When a structure like a house undergoes massive amounts of stress, such as a Category 5 Hurricane, it needs to withstand the force with a bit of flexibility. The styrofoam center allows the concrete to sway enough to withstand external pressure, rather than crack underneath it. In fact, the company has completed rigorous testing to ensure the product's capabilities are met for many natural disasters.

This is where the heart of the company lies. After co-founder Annette Rubin experienced her first Northwest Florida hurricane in 2018, she realized her community's inadequate housing needed to change.

"Our communities in Northwest Florida don't have housing that are capable of withstanding a hurricane like that," said Rubin, citing her area's building code of up to Category 3 resistance. "The people that live in affordable housing are the ones that can't evacuate, or can't afford to evacuate."

Vero Building Systems was cre-

ated out of Rubin's desire, as a mother, to protect her family from other disasters like Hurricane Michael. But it doesn't end there.

Rubin found that communities across the country could benefit from a resilient building system like Vero's. This includes fire-proof structures in California, winter storm-withstanding homes in the Northeast, and even bullet-proof walls for school buildings. There are plenty of commercial applications for the system, but Vero has half of its focus on residential buildings at the moment.

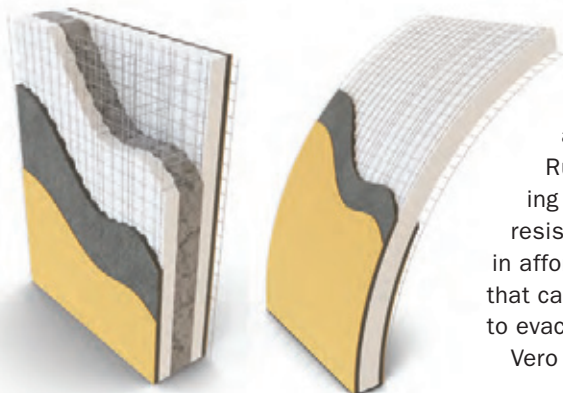
The company's novel place in the market comes from its lineup of 13 prefabricated components—made to be customized for any project. According to Vero, an entire home can be built with its products, as they manufacture wall and floor panels, stair systems, and roofing.

Vero touts its factory's capability of producing 17,600 square feet of panels per day. This offers a low cost material for resilient homes, built quicker on site, while saving up to 30% on construction costs, according to the company.

But with this comes the biggest hurdle in introducing alternative building methods: training. How will construction crews and builders know how to use the system and deliver projects on time? According to Rubin, Vero has built support and training into its business model, offering assistance throughout the installation process. The company also ensures that the system is flexible enough to work with traditional building methods.

With the continuing supply chain challenges plaguing the building industry, alternative building methods may become more common in the coming years. Modular systems, 3D-printing machines, and even styrofoam panels could be the answer.

"This is how people have been building in Europe for hundreds of years," says Hendricks in an interview with NBC at the 2023 International Builders' Show. "Concrete lasts."





## SLEEK AND GREEN, THESE SOLAR PANELS ARE CUSTOMIZABLE

Submitting firm: BD+C Editors

One barrier to the use of solar panels is that they don't look very pleasing. What if you could make them look like whatever you want?

Mitrex, a Toronto-based developer of solar products, has created solar panels that allow for full design customization.

Fueled by the desire to "simplify the integration of solar technology into everything around us," Mitrex's plans include road-, vehicle-, and aircraft-integrated photovoltaics. But first, Mitrex has engineered building-integrated photovoltaics (BIPV) that allow for some unique versatility.

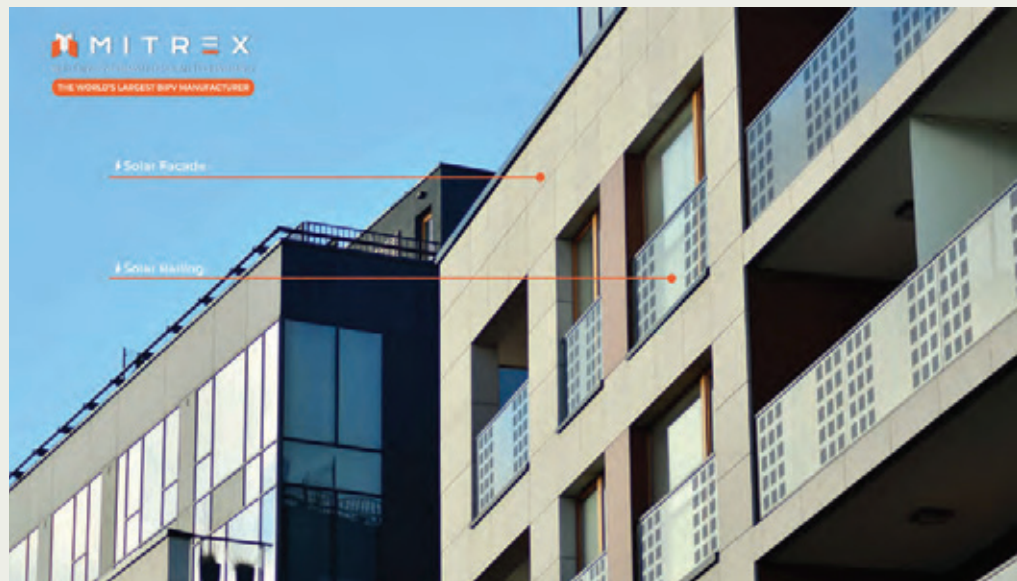
The solar cells by Mitrex come in three levels of opacity: transparent, semi-transparent, or fully opaque. For the transparent options, Mitrex uses thin-film technology to maximize light transmittance and power output.

When it comes to its fully-customizable opaque panel, the design is embedded in the tempered glass.

According to Mitrex, architects and designers can send them a sample of the pattern they wish to have, and Mitrex will "faithfully recreate it" onto the opaque facing. Additionally, its BIPV technology uses UV-stable colors, ensuring that patterns and colors won't fade.

Mitrex touts its ability to recreate all marble, wood, and limestone patterns, as well as solid colors to "all the patterns in the world."

If you thought that was neat, Mitrex also engineers solar railings that can also range from transparent to opaque—all generating energy. And with wiring that is



invisibly incorporated into the post, aesthetics don't have to be compromised even with fully-transparent glass.

The Mitrex team also offers an optional BIPV monitoring system, allowing you to track energy production and alerting you of any faults.

As for product testing, Mitrex says that it took a decade of testing, researching, gaining approvals, and receiving certifications to be satisfied with the product. Due to the multipurpose aspect of its systems, Mitrex aimed to meet requirements for quality, strength, fire, windstorm, air leakage, salt spray, and more.

Mitrex's goal is to supply products that are reliable and quick to build, aesthetically pleasing, and cost-effective—though the company does admit that it's an investment upfront for sure.

By its estimates, one opaque two-square-meter panel would save anywhere from \$1,600 to \$3,000 in 30 years. For its transparent panels, that range goes from \$1,300 in a place like Los Angeles to \$2,500 in areas like Dubai. And again, that's from a single panel.

## ATLANTIS APARTMENTS: ELEVATING ACCESSIBLE DESIGN IN MULTIFAMILY HOUSING

Submitting firm: RATIO Design



Our society is becoming increasingly sensitive to the need for equity, accessibility, and inclusion. It is important that everyone has the right to access, use, and live in the built environment with dignity and self-determination. Architects and design professionals must analyze the unconscious biases we bring to our work while engaging with communities with empathy and connection. How we shape the built environment can have a large impact.

RATIO's Atlantis Apartments project brings together a number of innovations and universal design solutions to address these challenges. →

These include:

1. Reduce and eliminate vestibules while maintaining energy efficiency. This helps reduce hard-to-navigate barriers for people with low mobility and lowers trauma associated with a history of navigating such spaces.
2. Providing an open courtyard entry space allowing for connection with nature and alignment with the bus stop – the primary means of transportation for residents. The courtyard also provides space for a memorial celebrating the history of the organization's leaders.
3. Large overhead glass garage doors connect common spaces to the central entry courtyard while reducing barriers for people during large events in the space.
4. Specialized entry system that interfaces with resident smartphone Bluetooth for those with extreme mobility limitations.
5. Connecting residents with Atlantis Community Inc. which provides services to the community through advocacy, information and referral, peer support, independent living skills and transition.
6. Color and material selection to aid those with low visual acuity.
7. Accessible bathrooms in every unit.
8. Wheelchair wash and repair facilities.
9. Trauma-informed design for public spaces to aid in healing and growth through increased corridor widths and natural lighting.
10. Kitchens at exterior walls to provide better lighting where it is most needed at work surfaces.
11. Raised accessible planting beds in the community garden.

**TIGHT SITE?  
NO PROBLEM!**

*Submitting firm:  
Goettsch Partners*

The new Alcove apartment tower in Nashville, Tenn, sits atop a narrow parcel, just 65 feet wide. This dimension did not easily allow for a typical outdoor balcony for each unit. Combined with an irregular site, these site challenges opened the opportunity to create atypical floor plates within eight stacked and shifted cubes. While the bold form of the tower appears to have a dynamic layout, a consistent floor plate runs throughout the entirety of the building, with only slight movements that address the contour of the site.

The unique stacked arrangement and subtle shifts open inner sections of the building, carving out four 75-foot-tall signature “alcove” terrace spaces—spaces for which the building is named—and creating distinctive moments on the exterior. The warm-toned communal terraces—two located on the east side of the building and two on the west—each serve seven floors.

Comfortably furnished, they provide areas for residents to work, socialize and enjoy outdoor space. In addition, the building’s elevators open onto each floor with direct connections to the terraces, greeting residents with natural light and dramatic views of Nashville, an unusual condition compared to the typical dim, artificially lit corridors with no sense of outdoor orientation.

With evolving priorities for mul-

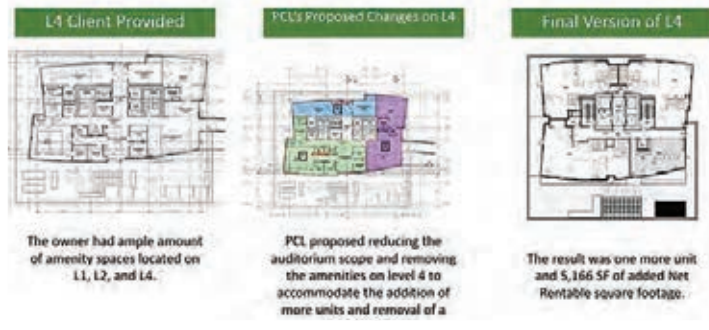
tifamily housing placing greater focus on healthy bodies, minds and communities, the architecture and verticality of Alcove are fueled by these new priorities, creating an entirely new residential experience for Nashville. The 34th-floor rooftop amenities even feature a clear-bottom pool that dramatically overhangs the 27th-floor terrace created by the alcove on the west side of the building.

Ultimately, the alcove solution to a tight site provides communal outdoor space, draws natural light into interior corridors, and combined with a cantilevered, clear-bottom pool at the top, offers a dramatic architectural statement that caters to today’s multifamily desires.



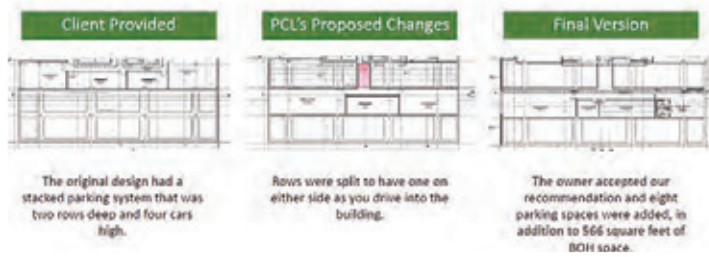


### Detailed Results: Replace Auditorium on Level 4 with Units



### Reduce Parking Aisle & Add Spaces

Comparing SD to DD – A Functional Analysis



## FUNCTIONAL ANALYSIS DASHBOARD

Submitting firm: PCL Construction

With an intimate knowledge of multifamily needs, PCL Construction created an in-house functional analysis dashboard to facilitate preconstruction planning. This tool provides a different way to look at value engineering through the lens of the contractor—crafting pro forma reports to maximize the overall return for the client.

For example, this dashboard can allow PCL to analyze the percentage saved in square footage utilization by relocating a mechanical system within a building, ultimately saving the client money.

For some clients, this tool looks at proforma through a different lens. On one of PCL's multifamily projects in Seattle, the project team used this dashboard to calculate revenue per parking stall and presented the cost benefit to building another parking floor outside of the original project scope.

For this client who had budget constraints, this dashboard presented the long-term revenue generation and return on investment which ultimately exceeded the cost of building another floor.

## 'DEEP SOIL MIXING' SAVES SIX WEEKS ON SENIOR LIVING PROJECT

Submitting firm: W.E. O'Neil

When national property development firm Oppidan was selected to develop a design-build senior living community—The Hacienda at Mission San Luis Rey—on eight acres of National Historic Landmark property in Oceanside, Calif., they knew it would be a challenge. But when the soils engineer identified liquefaction at the site, the project's future looked uncertain. A deep foundation was needed.

One option, hauling out thousands of yards of dirt and bringing in structural fill, would be a colossal earthmoving process.

W.E. O'Neil analyzed options from a cost and time perspective, working closely with soils and structural engineers.

The solution was innovative: deep soil mixing piers. Concrete would be mixed with existing soil to form hundreds of bearing piers deep below ground: an efficient, effective way to install the deep foundation system.



Next, W.E. O'Neil evaluated subcontractors and coordinated the installation of approximately 900 piers, 60-70 feet below ground.

It was a mammoth undertaking, but a critical one. If the project didn't hit bearing capacities, it would have had to go deeper with the soil mixing piles, a significant cost increase.

The deep soil mixing piers achieved the required depth and bearing capacity to support the building. And installation was completed in four months, well

within projections and providing an extremely strong base for building. The superstructure was started right on schedule, largely due to upfront coordination.

Shannon Rusk, Oppidan Senior VP of Development, appreciated our innovative ideas for site stabilization. "Some other general contractors just bid what they see. W.E. O'Neil took it a step further and said, 'We've built a lot of these projects. We understand this environment. We think we've got a better solution.'"



## UNIVERSITIES ADD STORM-SAFE SPACES IN STUDENT HOUSING BUILDINGS FOR TORNADO PROTECTION

Submitted by: KWK Architects

More universities are incorporating reinforced rooms in student housing hall designs to provide an extra layer of protection for students. Storm shelters have been included in recent KWK Architects-designed university projects in the Great Plains where there is a high incidence of tornadoes.

These storm shelters are typically small, above- or below-ground structures made of concrete, masonry, or steel that are proven to withstand extreme winds as powerful as those produced by EF-4 or EF-5 tornadoes. Tornado-safe rooms were added to recent residence hall projects at:

- Headington and Dunham Residential Colleges at the University of Oklahoma
- University Commons residential complex at Missouri S&T
- Victor E. Village at Fort Hays State University in Kansas

A reinforced room should be designed to stand up to high winds on its own, independent of the building structure surrounding it, said Javier Esteban, Principal at St. Louis-based KWK. “It is critically important to maintain the structure of the reinforced area so that should a building collapse occur, it does not affect the integrity of the reinforced space, and its occupants remain safe,” Esteban said.

Reinforced room designs often incorporate emergency lighting, electrical outlets, fire extinguishers, first aid kits, heating and air conditioning, and an AED defibrillator. When not in use, residence hall storm shelters can serve as lounge and study areas for students.

The Federal Alliance for Safe

Homes (FLASH) has outlined the different types of tornado-safe room options available, and the materials used to build them:

**1. Cast-in-Place Concrete** – these rooms are assembled on-site using removable forms, rebar, and concrete to create the walls and ceilings. The forms can be fitted with liners to create concrete exterior surfaces that look like siding, brick, or stone.

**2. Insulating Concrete Forms (ICFs)** – These rooms are created using foam blocks that contain steel reinforcement, fitted together and filled with concrete. The foam is a permanent part of the room and provides insulation to the building. Interior and exterior finish options include drywall, sheetrock, or siding.

**3. Concrete Masonry** – These safe rooms are constructed of individual blocks, set in place with rebar and fully grouted. Two rows of steel at the top of the wall hold the assembly together. A variety of texture and finish options are available.

**4. Precast Concrete** – This room is formed off-site and delivered to a building for installation. It can be located virtually anywhere in a new building and is anchored using steel angles and bolts. Precast concrete can be finished in a variety of colors and textures using form liners.

**5. Prefabricated Above-Ground Steel** – These prefabricated safe rooms typically cost less than site-built safe rooms. Considerations must be made to ensure that this room is placed on a safe and sturdy foundation.+

## ‘DECOMMODIFIED’ HOUSING

Panelists participating in a recent webinar hosted by the Urban Institute discussed various actions that could help alleviate the nation’s affordable housing crisis.

Some panelists advocated for more investment in public housing, social housing, and shared equity models such as community land trusts, where residents collectively own property through an independent body.

Such models are examples of “decommodified housing” — a term panelists used to describe housing that supports collective well-being and economic mobility over its role as an individual financial asset. One panelist noted that the collective ownership of land is not foreign, as a condominium is a well-known type of collective ownership with individuals owning units within a property that is jointly owned.

The challenge to spurring more innovative options for home ownership is getting the public and banks to believe that decommodified housing is worthy of investment, a panelist said. Goals should include moving people from public housing into affordable rental properties and eventually into home ownership. More alternative ownership models would make the latter more achievable.

## REMOTE WORK LEADS TO THE RISE IN NONTRADITIONAL MULTIFAMILY AMENITIES

A recent National Apartment Association article on rethinking traditional amenities presented several emerging, nontraditional spaces and amenities that are designed for remote working professionals, including:

- Maker spaces
- Music rooms
- Enhanced dog spaces, including boarding kennels, indoor play areas, and check-up rooms for visiting vets
- Podcast rooms and studio spaces
- Upgraded entertainment spaces like indoor and outdoor golf areas/simulators, rooftop running tracks, karaoke rooms, tasting rooms, and multi-sport simulators, beyond golf

## NEW FANNIE MAE PROGRAM AIMS TO SUPPORT WORKFORCE HOUSING FINANCING

Fannie Mae’s new Sponsor-Dedicated Workforce (SDW) product is designed to spur growth in affordable housing, especially for workforce-income renters. SDW offers pricing and underwriting benefits for borrowers who agree to preserve or create a minimum of 20% of units in a multifamily property at levels affordable to residents earning between 80% area median income (AMI) or, in certain cost-burdened designated metro areas, up to 100-120% AMI. Fannie Mae says the program will incentivize borrowers to elect rent restrictions on eligible properties for the life of the loan, helping support workforce-income renters.





# FOR THE MULTIFAMILY SECTOR, PRODUCT INNOVATIONS BOOST DESIGN AND CONSTRUCTION SUCCESS



COURTESY, BKV

The four-story, 296,460-sf Waterford Bay development in St. Paul, Minn., designed by BKV Group, is a partial-wrap residential concept with a parking structure at its center and dwelling units surrounding it on three sides. The design evolved in response to site constraints, presenting a lower three-story façade toward the river while rising to a four-story expression along the Mississippi River inlet.

BY C.C. SULLIVAN, CONTRIBUTING EDITOR

## LEARNING OBJECTIVES

After reading this article, you should be able to:

- + **DESCRIBE** the use of novel structural and envelope systems for large-scale multifamily building projects
- + **DISCUSS** recent directions in fenestration systems, including window walls, thermally broken frames, and composite window types
- + **LIST** the key challenges in the selection, construction, and operation of various window and window-wall systems
- + **EXPLAIN** the benefits of prefabrication, constructability reviews, and design-assist delivery with key specialty contractors for multifamily projects

**I**t seems fitting that wider adoption of thin-shell concrete, a technology popular worldwide but somehow unfavored in the U.S., has resulted from the exigencies of the multifamily construction boom.

“The load-bearing, tunnel-form systems with modular aluminum formwork, one of the most common techniques across the globe, is now being used more commonly in the U.S. multifamily sector,” says Gensler’s Brooks Howell, AIA, a Principal and leader of varied residential works. “It’s a game changer for housing in many markets if you can find a qualified formwork subcontractor, so it’s clear why the rest of the world sees it as a solution.”

The big reasons are speed and cost, says Howell, who has served as a special advisor on development and permitting for two city of Houston mayors. “A post-tensioned concrete tower is double the cost as compared to thin shells, per rentable square foot,”



he says. “It simplifies high-rise construction with a dramatic reduction in cost.” Yet identifying that reliable specialty provider is critical, as is engaging an experienced structural engineer. The calculation of structural loads is relatively complex for these structures, according to the American Concrete Institute, which has published code requirements for concrete thin shells. Because of their surfacelike geometry, for example, determining precise buckling loads is tricky.

New projects like Ten Oaks, a 12-story thin-shell concrete design by Gensler, located about 30 miles from Houston on a site adjacent to a four-story stick-framed project, offers the developer-owner Resia several benefits. “Our design provides for lots of repetition,” says Howell, “with only three unit types and one window type, one kitchen, and one bathroom vanity, for example. All this simplifies millwork and other building products as well as shipping and installation.”

Another fast-turn technique shaping the multifamily market is adaptive reuse, says Tallal Bhutta, Founder and CEO of general contractor and design-build firm BDB Construction. New projects delivered by BDB include the recent conversions of two high-rise hotels in Midtown Manhattan in record time: a former Hilton Doubletree, now an apartment building, and the iconic Marriott East Hotel, just converted into student housing. “These conversions took only seven months from the closing of building sale to the owners obtaining temporary certificates of occupancy, or TCOs, which allow the start of physical occupancy,” says Bhutta.

For conversion projects like these and for office-to-residential adaptations, adding daylight and air

are key challenges. “Fenestration replacement often includes newer requirements for operable access to fresh air ventilation, while upgrading the energy-savings performance attributes well beyond the original installations,” says LEED-accredited architect Sean M. Stadler, FAIA, Managing Principal of WDG Architecture.

Stadler adds that composite windows are becoming popular also: “These windows provide superior structural quality for mid- to high-rise concrete multifamily projects with much better thermal properties while being lower in cost than quality aluminum windows,” he says. Many of these products offer tilt-turn window operability, which can make a terrace door serve additionally as a ventilation opening.

### WINDOWS TO THE WORLD

A new generation of fenestration techniques combines energy efficiency and long-term performance with the market-pleasing trend toward more indoor-outdoor experiences. For wood framed or wood-podium projects, Stadler adds, the market continues to have a preference for vinyl window systems because their cost advantage makes it difficult for products like composite windows to compete. “The thermal performance of vinyl windows is far greater than that of aluminum windows, but they can restrain design opportunities because, for example, there can still be limited color options,” he says.

In fact, thermally broken aluminum windows and doors are critical to boost their performance in multifamily projects, among others. While they may add to first costs, these high-performance products incorporate a reinforced polyamide bar between the inner and exterior aluminum profiles of the window units, creating an insulated barrier within the window frame, according to the U.S. Department of Energy. Studies show that thermal breaks improve sound isolation up to 80% and slow the conduction of heat and cold by a thousand times as compared to standard aluminum without breaks.

Planning ahead is essential for these favored products and systems, as many are long-lead-time items. According to architecture firm Cooper Carry, the best strategy for fenestration is bringing in the “glazing installer earlier as a design-assist trade.” For the firm’s project in Atlanta, the project team specified glass imported from Colombia, a

**Ten Oaks, a 12-story multifamily development near Houston designed by Gensler, is among a growing number of multifamily projects to use thin-shell concrete construction. Why? Speed and cost, according to Gensler’s Brooks Howell, AIA.**



COURTESY GENSLER





The 196-unit Lakehouse development in Denver, designed by Stantec and Munoz + Albin, is the first project in Colorado, and one of the first residential projects in the world, to achieve WELL Certification at the Gold level under the WELL Building Standard. Amenities include an organic urban farm, 70-foot lakefront lap pool, fitness lab, and creative workshops.

jurisdiction requiring unusually extensive research into specifications and performance. Leveraging an existing relationship and combined pricing with a project in Nashville, Cooper Carry achieved an increase in glazing at budget, thanks to the economies of scale. “Early project meetings with the glass installer and a façades and waterproofing consultant reviewed limitations and details, along with pricing, in order to manage escalation,” according to the firm’s architects.

Echoing those ideas, Norr’s George Sorich, the firm’s Vice President, Residential, says fenestration specs and installation methods are improving in part due to these improved delivery methods. “One process change is encouraging our general contractor partners to keep most of the enclosure work completed by one subcontractor,” he explains. “Also, we expect to see more and more vertical photovoltaic panels utilized as part of the exterior envelope enclosures as we move closer and closer to net zero,” citing new products and studies confirming their efficacy.

To simplify and speed façade construction, Gensler’s Howell cites the significant benefits of working with window wall systems, which can be installed between slabs from the inside of the structure, obviating the need for scaffolding or lift equipment. WDG’s Stadler concurs, pointing to modular window-wall systems that also incorporate opaque wall elements, which he believes increase quality control due to their fabrication in shop environments, reducing trade coordination in the field as well as incidental material waste.

These pre-assembled exterior wall assemblies, many adopted in Canada, are mainly seen to speed field installation with shop-level quality control. “These assemblies may include an exterior wall weather barrier, exterior finishes, and sometimes windows,” says Stadler. “Some are panelized sys-

tems with cold-formed metal framing structure with metal façades, lightweight precast, or EIFS, exterior insulation and finish systems.”

Similar strategies have led to a critical eye for other exterior metal-and-glass systems, adds Norr’s Sorich. “In multifamily projects we see today, it’s increasingly rare to see the use of traditional curtain walls, due to cost. But many hybrid systems—which are still essentially window walls—will have metal panels or spandrel glass glazed into the system for fire rating or interior layout reasons,” says Sorich, whose firm is active on multifamily projects in Nashville, Philadelphia, Calgary, Cleveland, and Chicago.

#### **ACCELERATING DELIVERY**

Slashing project schedules is a recurring theme in practically every market. “A faster building enclosure means faster fit-out and faster occupancy,” says Alexander Briseno, AIA, NCARB, LEED AP, a Principal and Studio Design Leader for the commercial and mixed-use sectors at HKS. “With multifamily products, speed to market is one factor that ties into a client’s proforma; this translates into an expedited income stream for the client.” It’s also a driver of high-rise design solutions employing more prefabrication, he adds: “This system of construction can scale depending on local market conditions, but to not implement it at all does a disservice to our clients.”

Experienced building teams say that the more penetrations a building has, the more opportunities arise for moisture infiltration. This explains why prefabricated façades have so many proponents. The stick-built enclosure systems popular in metro areas such as Atlanta, for example, tend to be more susceptible to moisture infiltration than those in Washington, D.C., say, where unitized systems are the norm. HKS adds that prefabricated façades can be fully enclosed and tested in a factory and have only four lines of potential infiltration around a 10-foot, 8-inch x 28-foot

panel, which spans about 300 sf of enclosure area. “In contrast, a stick-built system relies on the accuracy and quality control of every brick anchor and mullion jamb,” according to the firm.

Examples of prefabrication range from basics such as unitized window walls and façade panelization to modularized façades with pre-glazing—and extend to true modular construction. “While the lower end of these systems doesn’t require additional planning, pre-glazed and module systems necessarily affect façade design,” says Briseno. “Prefabrication systems must be paired with rigorous planning grids and expertly located material transitions.” According to the façade engineering firm Simpson, Gumpertz & Heger, structures with less repetition, unique wall conditions or geometries, smaller surface areas, or large open sites may not benefit from prefabricated panelized systems, and instead “may be more suitable for field-fabricated (i.e., stick-built) methods.”

“Technologies can certainly absorb more dramatic design configurations, but at a cost that generally pencils with only the most luxurious product types,” says Briseno, who has served in AIA and the Urban Land Institute, as well as on architectural review boards, nonprofit groups, and academic positions. “While I appreciate the process and beauty of a gridded façade system, the speed, efficiency, and simplicity are what appeal to many of our clients.”

“Time is everything,” adds BDB’s Bhutta. “On the construction site, the building team’s goal is exceeding the owner’s expectations related to schedule—and budget, of course. For the best possible results, it’s essential to involve the contractor in the design/schematic phase to avoid delays later on, and provide for constructability review and budgeting involving the full building team.”

In addition, says Bhutta, whose projects are concentrated in the Northeast, project managers and tradespeople should be trained to predict unforeseen conditions and to reduce uncertainty using field experience and relevant knowledge. All of this allows for more consistent schedule acceleration and “critical path innovations,” which describes the creative application of expertise for better phasing, sequencing and resolution.

### TRANSPARENT AND OPAQUE

For both fenestration and opaque wall systems, variety is the spice of life, say designers from coast to coast. “Patterns are more varied and the cost of vinyl colors has decreased, so we’re finding more readily available colors lets us explore



GENEVIEVE GARRUPPO, COURTESY ASTON MARTIN

**Project teams are seeing larger individual glass panels and IGUs used in ways to enhance drama and building performance. One example is Aston Martin’s new Q New York, at the base of 450 Park Avenue in New York City. The window installation measures 11x22 feet.**

different styles,” says Jeff Mulcrone, AIA, LEED AP, a Partner and Director of Design with BSB Design. He notes that many teams aim high during conceptual design so that premium-level fenestration and façade system specs will remain robust even after value engineering.

“This is common in mixed use, especially,” says Mulcrone. “We use a premium commercial product on the storefronts and club spaces but shift to more typical vinyl windows for residential levels above.” To improve the appearance of these solutions, his team relies on clever design strategies to blur the distinction between floors—and quality levels.

Gensler’s Howell agrees that vinyl windows are often the first choice, and he cautions building teams to ensure the window assembly’s design pressure is adequate to resist moisture penetration, especially where severe weather is likely. Typical window details include a weep at the window sill, for example, a location where water intrusion is possible during storms with stronger winds if design pressures are underestimated. “Take care not to use inferior windows,” he says. “People are rethinking that now. We’re seeing issues on built projects in Kansas, for example, where seasonal 80-mph winds are routinely causing moisture problems.”

Solutions for detailing wall openings include nail-fin windows installed over peel-and-stick flashing behind the wall, as well as sub-sill systems with appropriate seals that can achieve superior weathering performance. While these proprietary



manufacturer designs may be slightly more complicated to install in some U.S. regions—and slightly pricier—subsills allow for excellent drainage and, when fully sealed with purpose made end-caps or aluminum angle end-stops, make water ingress much less likely. Subsills can also serve as a base for the framing and can make installation easier where the structure may be uneven or out of tolerance, according to one supplier.

The jury is still out on how much transparency is ideal with modern façades. While some experts say they favor less glass to control heat gain, others say they use more glass, or higher window-wall ratios (WWRs), to boost natural lighting and indoor-outdoor connectivity.

“Façades are embracing more glass and less stucco,” says Hande Obuz, Principal and Senior Architect based in Stantec’s Miami office. Aside from glass curtain walls, she says, “We are using 2.5-inch-thick limestone cladding on a twin 29-story luxury condo tower, with a smattering of composite aluminum panels and column-beam covers of glass fiber-reinforced concrete,” or GFRC.

Obuz adds that specifications for fenestration and installation methods are improving recently, mostly because designers are required by code to specify product-approved hurricane-resistant tested assemblies. “These must meet the structural engineer’s established cladding design pressures and glass that provide minimum SHGC—solar heat-gain coefficient—and U-value established by overall building energy calculations,” she explains, noting that the U-values provide a measure of the insulating characteristics of façade assembly or insulating glass unit (IGU)—essentially, how much heat flow or heat loss occurs through the enclosure due to the differ-

ence between indoor and outdoor temperatures. “If drawings and specs for windows and doors need to be corrected during the construction administration phase, it typically entails added cost, possibly time delays, and even design changes.”

In some cases, project teams are seeing larger individual glass panels and IGUs used in ways to enhance drama and building performance, says Alexander Zilberman, AIA, NCARB, Founder and Principal of AZA, a firm specializing in high-end multifamily and luxury retail. “This is especially true for storefronts and primary façades in mixed-use residential buildings,” he explains. “For Aston Martin’s new Q New York, at the base of 450 Park Avenue in New York City, we worked to create a unique window installation of epic proportion, dubbed the Champagne Frame, which was a retrofit IGU measuring 22x11 feet—a size we learned is one of the largest glass openings installed in that city.” Inside, passersby see the Aston Martin display vehicle models set amid walnut floors, millwork, and a bespoke chandelier of 3,000 hand-blown, mirror-coated glass globes.

At every price level, however, other building teams are instead seeking budget choices with better pricing. BSB Design’s Mulcrone explains that color costs are still prohibitive for many brands, and that many design teams are hoping that color will expand to make the market more competitive. “We’d also love to see some innovation in window mounting flanges that would allow us to create some depth with window design,” he adds. “Adjusting the flange even an inch or two so the window is no longer flush with the façade would create a recessed look that really enhances the elevation’s appearance and function.”



**Strata Wynwood, an eight-story, mixed-use structure, added 257 studio and one- to three-bedroom rentals (509 to 1,288 sf), 2,500 sf of artist studios, and three floors of office space to Miami’s Wynwood Arts District. Stantec (architect, SE, landscape architect) helmed the project team of Unison Group (interiors), Feller Engineering (MEP/FP), and KAST Construction (GC).**



### ANOTHER LOOK AT EIFS

On the topic of opaque façades, building teams also see different tendencies. For example while Obuz and others see less stucco being used, for example, in Miami and other southeastern U.S. markets, Gensler's Howell sees a revival of wet-applied exteriors. "Exterior insulation and finish systems, EIFS products, seem to be making a comeback in a number of markets," he says. "With the drainage cavity behind the façade's finish, these systems allow water that gets behind EIFS or stucco to escape rather than build up."

For Cooper Carry's multifamily studio, EIFS has been employed for a number of projects, including The Foundry. "We used a precast skin solution and it cut two or three months off the install time," according to the firm. "Anything prefabricated—for example, wall panels that are factory made with cold-formed steel and a panelized or EIFS finish—seems to pay off well in terms of installation and construction schedules."

For their variety of finish and material options, WDG's Stadler likes open-joint rainscreen façade panels. "These are relatively lightweight and require less maintenance," he explains. "These panel materials range from high-density fiber cement and high-pressure, exterior grade laminates to synthetic stone and large-format porcelain."

Building teams should focus on trying to maintain a simple, straightforward drainage plane that allows gravity to draw moisture out of the wall, says Rob Muller, Senior Design Leader and Managing Partner with the firm BKV. "Using ventilated rainscreen technology, we establish a straight wall with a fluid-applied air and water barrier and then use varying material depths and sub-girt systems to create an enclosure with a flat drainage plane and a façade with depth and texture."

Variety is essential in cladding choices, adds BKV's Muller, noting that his architect teams are employing "a broad range in color, texture, and cost: masonry, corrugated metal, composite metal, fiber cement, stone, simulated stone," he says. "There's a strong trend for durable materials with the look of natural wood," which is seen in their project Waterford Bay in St. Paul, Minn.

"Façades and cladding in general are a balance between three key factors," says Muller: "Creating a high-quality interior environment with abundant

natural light, responding to expectations and zoning requirements of city planning officials—typically looking for higher-quality materials and a breakdown of the building massing—and finding economical materials and methods to allow projects to pencil." He adds that the architect's task is to find creative ways to integrate these disparate goals into a unified façade composition, pointing to the firm's design for The Fynn in Chicago as an example.

### INFILL, LOW-RISE, AND INDOOR-OUTDOOR

To maximize project value and take advantage of current market conditions, say multifamily experts, more teams are building on hemmed in lots or varying project heights and areas.

"Urban infill projects can relate contextually to their surroundings, such as with a podium of brick or masonry and a hybrid window-wall system and slab covers above," says Norr's Sorich, who recently wrote a white paper on densification and urban regeneration. "These are easier to build on upper stories, requiring only one subcontractor, working from the interior."

Low-rise is also trending, says HKS's Briseno. "Low-rise projects are currently the only product that is easily penciling for many of our clients' proformas due to volatility in costs and financing," he explains. "Since much of our work is based on very large urban-scaled master plans, we've been utilizing creative phasing plans to implement placemaking elements and low-rise product in the initial offering, focusing on speed to market and placemaking, a marketing strategy that will help entice retail and tenant interest in later phases. We

"Façades are embracing more glass and less stucco," says Hande Obuz, Principal and Senior Architect based in Stantec's Miami office. The studio's glass-centric multifamily work includes the 25-story La Clara luxury waterfront condominium development in West Palm Beach, Fla., pictured at right.



COURTESY STANTEC



then position high-rise and commercial projects in a later phase, when either construction prices cool, or lease rates increase.”

Briseno and others also note that the balance of amenities and unit size has been shifting. While average unit sizes have been decreasing over the past several years while amenity space allocation increased, the trend has reversed due to volatility in the construction and financing industries, placing heavier constraints on budgets. According to HKS, this could risk the marketability of projects in the future unless a creative phasing strategy is employed.”

While amenity space shrinks, projects offering indoor-outdoor connectivity are on the rise, say many building teams. “We’re taking advantage of courtyard spaces to create a great exterior environment and a great view for inward-facing units,” says BKV’s Muller. “Introducing nooks throughout the building to use as work areas outside of the unit.”

Kelly Farrell, who Co-leads the global practice for Gensler, explains that connecting with the outdoors is a basic human need, and successful building teams are making the most of this natural amenity. “The design should give residents a place for their whole selves to retreat, not just outdoor spaces for entertaining,” she says, pointing to restorative gardens and other designed spaces where people can linger—longer—outside. “What really works best is creating a variety of spaces, not just a big pool and deck, but a varied outdoor program with places to sit down and read a book, small entertaining spaces, and parklike areas for families and other people.”

These outdoor spaces need to function 24 hours of the day, adds Gensler’s Farrell, and offer ways to connect to the comfort of other people or to just spend some time alone. “We need to enjoy these spaces and not feel crowded,” she says, adding that the health benefits are significant: “Fresh air does amazing things for our minds and bodies, and outdoor time and daylight are natural ways to help us get more sleep, which lowers our cortisol levels and allow us to relax.”

According to Cooper Carry, these benefits are leading more multifamily developers to go beyond a traditional fitness center. Instead they are leaning toward including planned spaces for yoga studios



**While amenity spaces are shrinking in new developments, projects offering indoor-outdoor connectivity are on the rise, say many teams. “We’re taking advantage of courtyard spaces to create a great exterior environment and a great view for inward-facing units,” says BKV’s Rob Muller.**

or flex rooms with indoor and outdoor connection, spa-like areas with wet and dry saunas, greenhouse spaces, community gardens, and teaching kitchens connected to outdoor dining areas, says the firm. Others are planning rooftop spaces with views, and unique amenities like bowling alleys as well as a plethora of electric vehicle chargers. “Co-working areas are large spaces, separate from the clubroom, with multiple different types of working stations from lounge seating areas to soundproof podcast and phone rooms to full size, technologically equipped conference rooms,” say the architects.

For exterior spaces on roof areas, frequent renovations are typical. Says WDG’s Stadler: “Rooftop amenities are also being upgraded in aging buildings, to include more refined finishes such as porcelain paver systems, premium oversized parasols, cabanas, outdoor kitchens, firepits, infinity-edge swimming pool water features, and enhanced speaker and lighting systems.”

Teams should program and design indoor-outdoor amenities with care, cautions Stantec’s Obuz. “Developers ask for the outdoor spaces as a selling point, but they are not appropriate for all climates. For example, in Miami, summers are long and uncomfortably hot and humid outside, says Obuz. “Multiple tenants entering and exiting the outdoor space can overwhelm the air-conditioning equipment, waste a lot of electricity, cause condensation on the diffuser grilles, and take hours to cool the space back to comfort level.

“Not to mention allowing mosquitos, flies, and cockroaches to enter,” adds Obuz. +

#### + EDITOR’S NOTE

This completes the reading for this course. To earn 1.0 AIA CES HSW learning units, study the full article carefully and take the exam posted at: [BDCnetwork.com/MultifamilyInnovationsCEU](https://BDCnetwork.com/MultifamilyInnovationsCEU)



## AIA CES Exam

**“For the Multifamily Sector, Product Innovations Boost Design and Construction Success”**

**DIRECTIONS** To earn one American Institute of Architects Continuing Education System Learning Unit of Health, Safety, Welfare credit (1 LU HSW), read “For the Multifamily Sector, Product Innovations Boost Design and Construction Success.” Then review the exam below and enter your answers at: [BDCnetwork.com/MultifamilyInnovationsCEU](http://BDCnetwork.com/MultifamilyInnovationsCEU).

## LEARNING OBJECTIVES

Based on the information presented in this article, readers should be able to:

- + **DESCRIBE** the use of novel structural and envelope systems for large-scale multifamily building projects
- + **DISCUSS** recent directions in fenestration systems, including window walls, thermally broken frames, and composite window types
- + **LIST** the key challenges in the selection, construction, and operation of various window and window-wall systems
- + **EXPLAIN** the benefits of prefabrication, constructability reviews, and design-assist delivery with key specialty contractors for multifamily projects

1. One of the benefits for thin shell structures for multifamily buildings as compared to post-tensioned concrete structures is:
  - A. It is simpler to calculate structural loads
  - B. It adds complexity to high-rise construction
  - C. It costs less
  - D. None of the above
2. A temporary certificate of occupancy, or TCO, allows the building team to:
  - A. Begin the building’s physical occupancy
  - B. Begin façade installation
  - C. Begin an office-to-residential conversion
  - D. All of the above
3. Thermally broken aluminum windows and doors can boost the performance of multifamily projects, because they:
  - A. Can improve sound isolation and slow the conduction of heat or cold
  - B. Create an insulated barrier within the window frame
  - C. Incorporate a reinforced polyamide bar in the frame
  - D. All of the above
4. In part due to the push for net zero, multifamily projects are now seeing more building envelopes with:
  - A. Window wall systems
  - B. Vertical photovoltaic panels
  - C. Office-to-residential conversions
  - D. None of the above
5. Modular window-wall systems can incorporate opaque wall elements, which some building teams say will increase quality control due to:
  - A. Increases in material waste
  - B. Fabrication in shop setting
  - C. Expanded building team with more trades involved
  - D. All of the above
6. Hybrid window-wall systems are being used for multifamily projects due to such beneficial features as incorporating:
  - A. Traditional curtain walls
  - B. Tunnel-form systems with modular aluminum formwork
  - C. Integrated metal panels and spandrel glass
  - D. All of the above
7. Façade panelization, using modularized façades with pre-glazing, may not be an effective system choice for building designs with:
  - A. Less repetition and unique wall conditions or geometries
  - B. Larger surface areas
  - C. Full modular construction systems
  - D. None of the above
8. If design pressures are underestimated in window selection and specification, where can moisture ingress be possible during severe weather?
  - A. Window-wall interface
  - B. Weep at the window sill
  - C. Divided lites
  - D. None of the above
9. Indoor-outdoor amenities are popular in many markets but not in all climate zones that can be very hot and humid, due to:
  - A. Condensation on diffuser grilles
  - B. Tenants entering and exiting the amenity space
  - C. Electricity and energy savings
  - D. All of the above
10. Sub-sill systems for windows can achieve superior weathering performance and good drainage if they incorporate:
  - A. Appropriate seals
  - B. Purpose-made end-caps
  - C. Aluminum angle end-stops
  - D. All of the above



# There's Always Another Level



Give your building a performance and aesthetic advantage. The Solarban® family of solar control, low-e coatings delivers myriad choices for solar control and aesthetics.

There's a Solarban® glass for every project. [Learn more at vitroglazings.com/solarban](http://vitroglazings.com/solarban)





# STOP, DROP AND SPEC SAFER LUMBER.

We have relentless standards, just like you do. ProWood® FR wood undergoes rigorous testing to ensure it meets ASTM standards and UL FR-S requirements, guaranteeing structural durability and exceptional quality. Rest assured in the reliability of our fire-resistant products, supported by our 50-year limited warranty.



**pro'wood<sup>FR</sup>**  
FIRE RETARDANT

PLYWOOD | LUMBER | WALL ASSEMBLIES | BACKER BLOCK

LEARN MORE:

[PROWOODLUMBER.COM/FR](http://PROWOODLUMBER.COM/FR)  
customerservice@prowoodlumber.com

