

THOUGHT LEADERSHIP SERIES

THE IMPACT OF HEALTH AND WELLNESS ON OFFICE AND MULTIFAMILY DESIGN IN THE POST-COVID ERA

JULY 2020

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THIS STUDY WAS DEVELOPED BY NKF IN PARTNERSHIP WITH HARTMAN DESIGN GROUP.



HOW SPACE DESIGN IMPACTS HEALTH AND WELLNESS

A focus on space design is an important element of every successful real estate project. The art of architecture and design has a significant impact on the physical and mental wellbeing of a project's occupants. In recent years, design for multifamily and office buildings in the U.S. has focused around the live/work/play trend—the concept that building occupants want spaces that allow them to seamlessly transition between their work, home and social lives. Thus, design has focused on the features that occupants need to work, play, socialize and recharge in a healthy environment. While millennials were the initial driver of the live/work/play trend, it caught on among other generations and remained an important focus for the design of most new projects as the COVID-19 pandemic arrived.

The rise of technology has meant those in the workforce are spending more hours working and many are constantly connected. Developers and designers of U.S. office and multifamily properties have sought to make time more productive and work more enjoyable by creating well-designed office and multifamily amenity spaces that allow occupants to work away from their desks; such flexibility is likely to become paramount as spaces are redesigned for a post-COVID era.

While many of the design trends that were prevalent before the pandemic will continue, new trends that focus on mitigating the spread of disease will become standard. In the following sections, we examine design trends for U.S. office and multifamily properties both pre- and post-pandemic, and what developers, owners, and occupants of these buildings can expect going forward.



Venue Museum District luxury apartment building in Houston, TX.
Photo courtesy of NKF.

OFFICE AND MULTIFAMILY DESIGN TRENDS OF THE PAST AND FUTURE

Now that space design will be reshaped as a result of the coronavirus pandemic, some design trends that were prevalent over the past decade may continue, while others will need to be reconsidered. Following is a brief summary of five of these trends, and an assessment of whether the trend will continue or need to evolve significantly for the post-pandemic environment.

1. BIOPHILIC DESIGN AND A FOCUS ON LIGHT AND AIR IS LIKELY TO CONTINUE

Biophilic design is the principle that incorporating elements of nature into space design benefits health and wellness. It focuses on blurring the boundaries between indoors and outdoors. Elements of biophilic design include an abundance of

light and air, proximity to water, overlooking natural landscapes, incorporation of vegetation, and use of natural materials and textures. Natural light and airflow are among the most important tenets of biophilic design. Studies have shown that ample access to natural light and sufficient ventilation can increase occupants' comfort and improve mood and productivity. A 2018 Cornell University study found that workers in office environments with optimized natural light reported a 51% drop in the incidence of eyestrain, a 63% drop in the incidence of headaches and a 56% reduction in drowsiness—all obstacles that can detract from productivity.

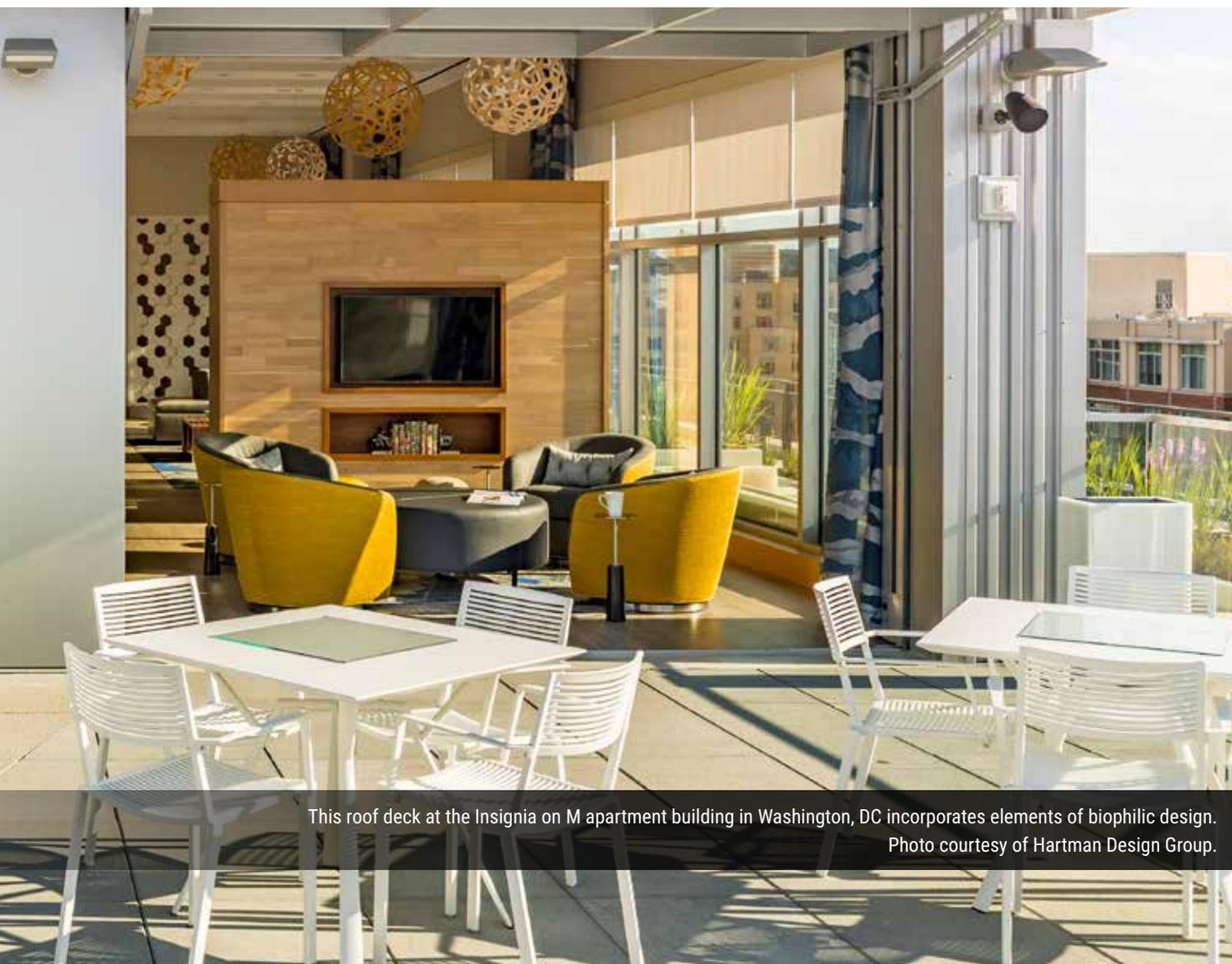
Biophilic design is a trend that will likely continue in the post-pandemic era as occupants place a greater emphasis on remaining healthy, both mentally and physically. However, upgrading buildings to increase natural light and improve air



circulation can be a costly endeavor, depending on the property's original design. Changes that can be made immediately include adding air purifiers and ensuring HVAC filters are changed regularly. Building owners also can install sensors that monitor temperature, humidity and air quality. According to Kevin Van Den Wymelenberg, co-director of the Biology and the Built Environment Center at the University of Oregon, studies have shown that viruses are less likely to survive at a humidity level of around 50-60% as compared to lower or higher humidity levels. However, these studies were based on other known viruses such as influenza, and the impact of humidity levels on the novel coronavirus is not yet known.

For new construction projects, it is likely developers will place a renewed focus on health and wellness within their buildings. The WELL Building Standard™, developed by the International

WELL Building Institute, is a global rating system focused on the ways that buildings, and everything in them, can improve occupants' comfort and generally enhance health and wellness. WELL Building design principles comprise a methodology for creating healthy spaces that focuses on 11 key concepts: air, water, nourishment, light, movement, thermal comfort, sound, materials, mind, community and innovation. While the concept was launched in 2014, it gained popularity recently, and is likely to become a greater focus as owners and developers seek to satisfy occupants' desire for improved wellness in their office and multifamily buildings in a post-pandemic world. In fact, the WELL Building Institute recently launched a new WELL Health-Safety Rating which analyzes the degree to which a property protects its occupants from transmission of the novel coronavirus.



This roof deck at the Insignia on M apartment building in Washington, DC incorporates elements of biophilic design. Photo courtesy of Hartman Design Group.

2. SOCIALLY-ACTIVE SPACES MUST NOW CONSIDER SOCIAL DISTANCING

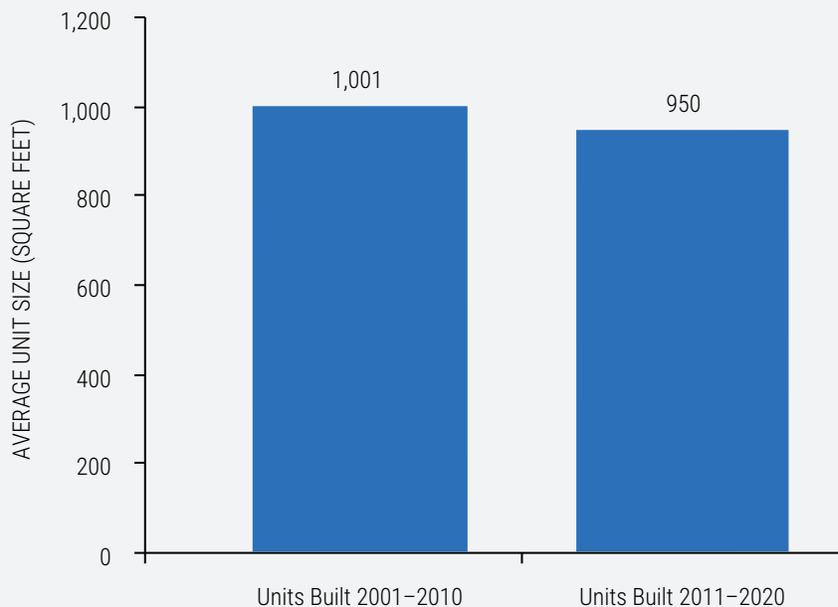
An overarching trend over the past several years has been an increased emphasis on common areas and socially-active spaces. Multi-use lounge areas with a focus on communal experiences and human engagement have become a prevalent amenity in both multifamily and office projects.

A recent trend for multifamily has been a space trade-off of smaller units for larger common spaces. As illustrated in the adjacent chart, the average unit size for multifamily units built since 2011 declined to 950 square feet from 1,001 square feet for units built during the prior decade. While this decline is partially explained by an increase in the development of urban dwellings with different floor plan types, it may also be related to more space being dedicated to common areas. With many more residents now working from home and an

increased concern about the spread of disease in common areas, it is likely this trend will moderate. A survey conducted by the National Multifamily Housing Council (NMHC) and Kingsley Associates in mid-2019 found that 42% of multifamily residents engage in remote work some of the time. While the survey has yet to be repeated post-pandemic, it is clear that the number of remote workers has increased significantly with the virus-induced shutdown of so many office properties. Some of the newest multifamily designs are incorporating office nooks so that residents have a place to work inside their own unit, sometimes including a built-in green-screen backdrop for video conferencing. However, it is too early to tell if residents will be willing or able to pay for larger units given the economic downturn caused by the pandemic.

Now that the desire of occupants to be socially active has given way to the need for social distancing, office and multifamily design will need to evolve accordingly. Owners and developers may need to consider implementing some of the following changes:

NEW MULTIFAMILY UNITS HAVE BEEN GETTING SMALLER AVERAGE UNIT SIZE BY YEAR BUILT U.S. MULTIFAMILY MARKET



The average unit size for multifamily units built since 2011 declined to 950 square feet from 1,001 square feet for units built during the prior decade. While this decline is partially explained by an increase in the development of urban dwellings with different floor plan types, it may also be related to more space being dedicated to common areas.

Source: RealPage, NKF Research; July 2020

- Touchless movement throughout the building including entry systems, passage doors, elevator controls, and suite or unit doors.
- Implementing a method to control the number of people in common areas or elevators, either via security personnel, signage or automated systems.
- Setting circulation paths in and out of the building. Signage may be required to remind occupants of new distancing standards.
- Creating less-dense spaces with wider circulation paths. Immediate changes for common areas include reducing the density of furniture layouts to promote distanced circulation patterns, with more small groupings of furniture and individual seating options.
- A renewed focus on cleaning protocols and incorporating surfaces that can be disinfected. Antimicrobial door hardware

used in hospitals may find its way into commercial office and multifamily buildings. The Centers for Disease Control has offered detailed guidelines for cleaning and sanitizing facilities in a way that is effective in eliminating the virus. The requirements are lengthy and will likely involve greater time and expense than cleaning protocols that were previously in place. Owners may wish to budget for the increase in operating costs the more stringent cleaning requirements will entail.

A challenge for asset owners will be how to implement the necessary changes to design while not overinvesting. Taking precautions in anticipation of the next pandemic is wise, but ensuring a property remains appealing and marketable is essential as well. In addition, asset owners may wish to consult an attorney to discuss the legal ramifications of protecting occupants from disease.



Signage at the Bloc office building in Los Angeles, CA



Elevator signage at the Watt Plaza office building in Los Angeles, CA



Lobby signage at the 50 South Sixth office building in Minneapolis, MN

Photos courtesy of NKF.

3. DESIGN OF COWORKING SPACES CONTINUES TO EVOLVE

Coworking operators occupied 72.6 million square feet of office space in major U.S. markets at the end of 2019 per NKF Research, up from 25.5 million square feet at the end of 2016. With the explosive growth of coworking over the past few years, more commercial real estate investors and owners incorporated flexible workspaces into their own office and multifamily portfolios.

Many office asset owners introduced coworking and flexible office space platforms either by creating their own programs or by partnering with a third-party coworking provider. Just as traditional coworking providers are revamping their suites for a post-pandemic era, these in-house coworking-style spaces within office properties likely will need to be reconfigured to allow

occupants to socially distance. The measures described in the previous section including changing circulation patterns and incorporating touchless access may also be necessary for these spaces.

Coworking spaces in multifamily properties have become a critical amenity. With an uptick in telecommuting and with units trending smaller over the past several years, providing a place to work within the building's amenity package was a necessary investment. Many successful multifamily projects included well-designed coworking spaces with communal tables and individual work spaces or pods—all within a social setting to create a sense of community and resident engagement.

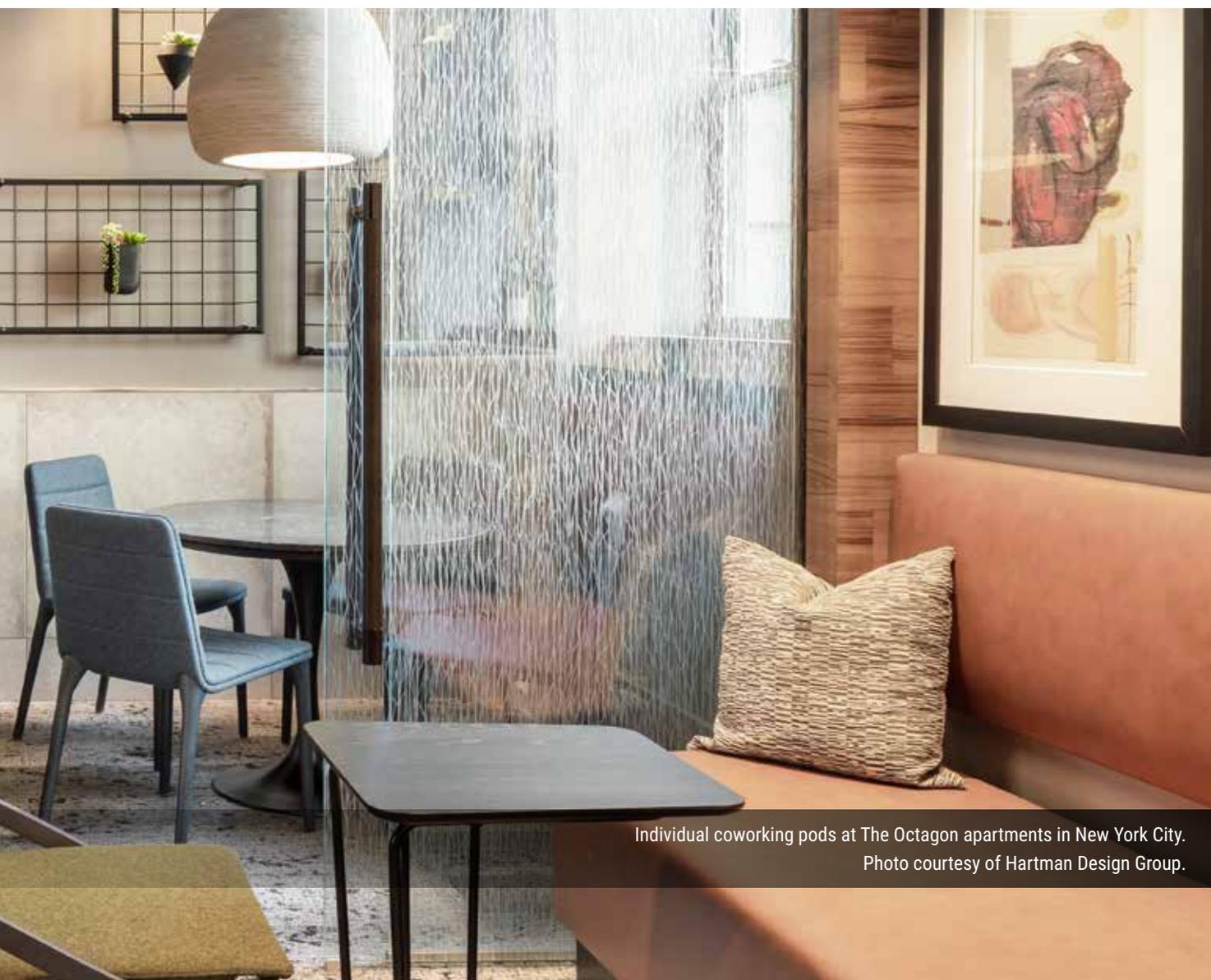
With a significant uptick in the number of residents working remotely, the coronavirus pandemic has brought an even greater focus to spaces that support coworking within multifamily



properties. Now, an additional element of the need to mitigate the spread of disease must be incorporated. Residents may be wary of communal tables as they seek to practice social distancing. The next phase in multifamily coworking space design may reduce the number of communal tables but likely not eliminate them entirely. In addition to the concern of overcorrecting, there is still a need for residents to come together and family or roommate groups who already live together may still seek to gather in such spaces. Diner-style booths and pods that can easily be sanitized between uses likely will become more common.



250 Montgomery Street office building in San Francisco, CA.
Photo courtesy of NKF.



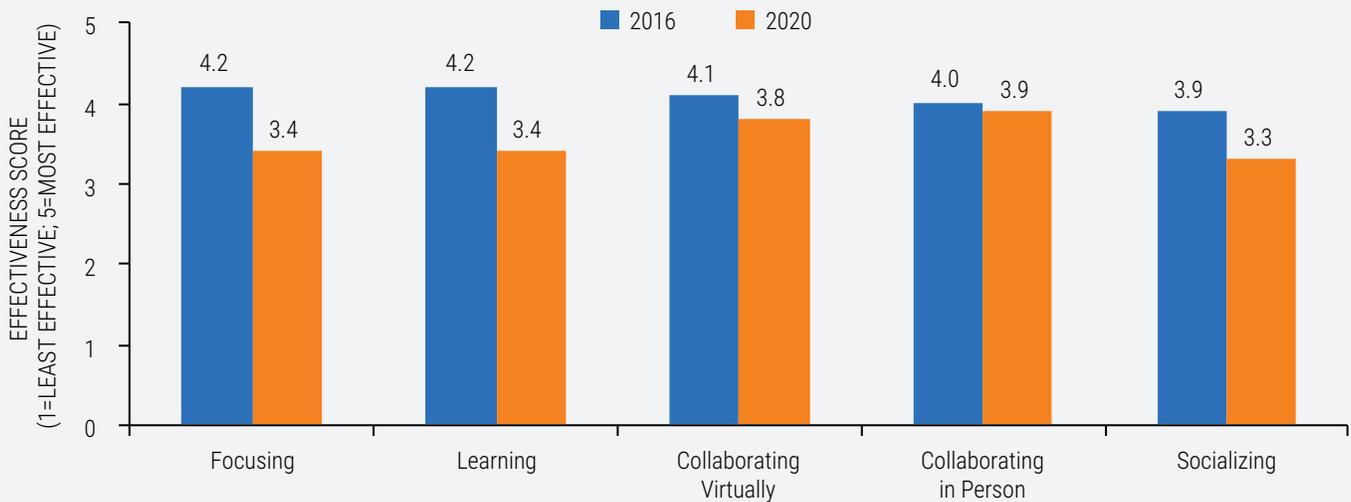
Individual coworking pods at The Octagon apartments in New York City.
Photo courtesy of Hartman Design Group.

4. OPEN OFFICE FLOOR PLANS WILL CONTINUE TO LOSE FAVOR

Over the past few decades, the trend of open floor plans in office spaces has become ubiquitous. According to Gensler's 2020 U.S. Workplace Survey, 64% of U.S. offices have some form of open floor plan ranging from somewhat to totally open. While the primary goal of the trend was to increase collaboration, numerous anecdotes and studies have found the opposite. A 2018 Harvard Business School study found that an open-plan layout *reduced* face-to-face interactions by about 70%, while electronic communication increased to compensate. In more recent years, Activity-Based Workspace (ABW) has started to replace the trend of full open plans, where spaces are grouped to serve four major functions: solo work, collaboration, learning, and socialization.

In addition to open floor plans, the benching concept—where workers are grouped around a table without defined workstations—has become commonplace. The model often includes additional teaming and social areas for staff gathering and collaboration. Another concept that has gained ground is hoteling, where workers do not have an assigned workspace but may be assigned a locker to keep personal belongings at the office. All of these concepts reduced the square footage required per employee and allowed companies to densify their spaces and cut real estate costs. However, a commonality among these concepts was that they were not very popular with the employees working in these spaces. As illustrated in the adjacent chart, Gensler's survey found that between 2016 and 2020, employee ratings of their workplace effectiveness declined across all five work modes included in the survey, with the most significant declines in focusing and learning. With frequent complaints about

THE WORKPLACE IS BECOMING LESS EFFECTIVE
SURVEY RATINGS: EFFECTIVENESS OF WORKPLACE IN SUPPORTING EACH WORK MODE
 UNITED STATES | 2016 VS. 2020*



*Survey conducted prior to coronavirus pandemic

Source: Gensler U.S. Workplace Survey 2020, NKF Research; July 2020

visual and aural distraction, workplaces began to reconsider these concepts as talent attraction and retention became a top priority toward the end of the last economic cycle, including early 2020.

The coronavirus pandemic will likely expedite the pendulum swing away from completely open office and benching concepts. Some companies that had implemented open plan or benching concepts are already retrofitting their offices. Manufacturers of glass and plexiglass panels have seen a swift uptick in sales as companies seek to separate what were previously communal working/benching tables.

In general, the changes made to offices to make the workplace safe post-pandemic may for many firms mean fewer people in the office at one time as some employees telework for part of the workweek. While some firms will reduce their space needs as more employees telework, others may increase their

space footprint to reduce density in their layouts. Still others may retain space to accommodate social distancing rather than placing that space on the sublease market. This tension between more space for those in the office, but perhaps fewer people in the office, will determine the scale of office space demand over the next few years.

In addition, as companies initiate a return to office space, employees may be discouraged or prohibited from bringing personal items to the workplace to reduce the circulation of germs between households and offices. Hoteling is also likely to lose favor as employees seek more control over cleanliness of their workspaces. Unless strict cleaning protocols are adhered to, having a different person at a desk each day is more likely to increase the spread of disease.



Benching layouts are likely to lose favor in a post-COVID environment.
Photo courtesy of Adobe Stock.

5. MULTIFAMILY AMENITIES WILL BE RECONSIDERED IN A POST-COVID ERA

Initially, communal spaces, fitness centers, rooftop terraces, coworking spaces, and pet spas were added to multifamily projects as distinguishing amenities. As these amenities gained popularity, they started to become standard, with properties competing to provide the most innovative and appealing amenity packages. Post-pandemic, many of these amenities will need to be revamped. While there is some concern about overcorrecting, multifamily developers and design professionals are vetting what is next. The following are some of the possible changes that may come out of this pandemic:

FITNESS CENTERS

Some multifamily properties are retrofitting fitness centers to create workout pods. Each pod has a cardio machine, weights and

other workout equipment to provide users a full workout without moving from station to station, thus reducing contact with others. Another change is moving fitness activities to a virtual platform so residents can participate from their apartment units rather than in a group. There is a need to avoid an overcorrection in case tenants do not find value in these new formats, so changes may be limited to those that do not require physical alterations to the building whenever possible. Owners may also wish to consider the increased expense of hiring or expanding hours for third-party cleaning services to continually clean fitness spaces throughout the day. While increased cleaning costs will impact expenses, reopening of fitness amenities may allow owners and operators to continue to charge and collect amenity fees in jurisdictions that permit such fees.

OUTDOOR AMENITIES

Since disease spreads more easily indoors, outdoor amenities likely will become even more important. Rather than retrofitting



fitness centers, outdoor fitness areas may gain popularity, though weather will be a factor. Some coworking spaces may also migrate to outdoor areas. One project currently being designed by Hartman Design Group in Alexandria, VA is adding individual coworking pod pavilions to the outdoor amenity space. As residents increasingly seek outdoor amenities, expanded patio and outdoor areas and even unit balconies will be important selling points.

PACKAGE ROOMS

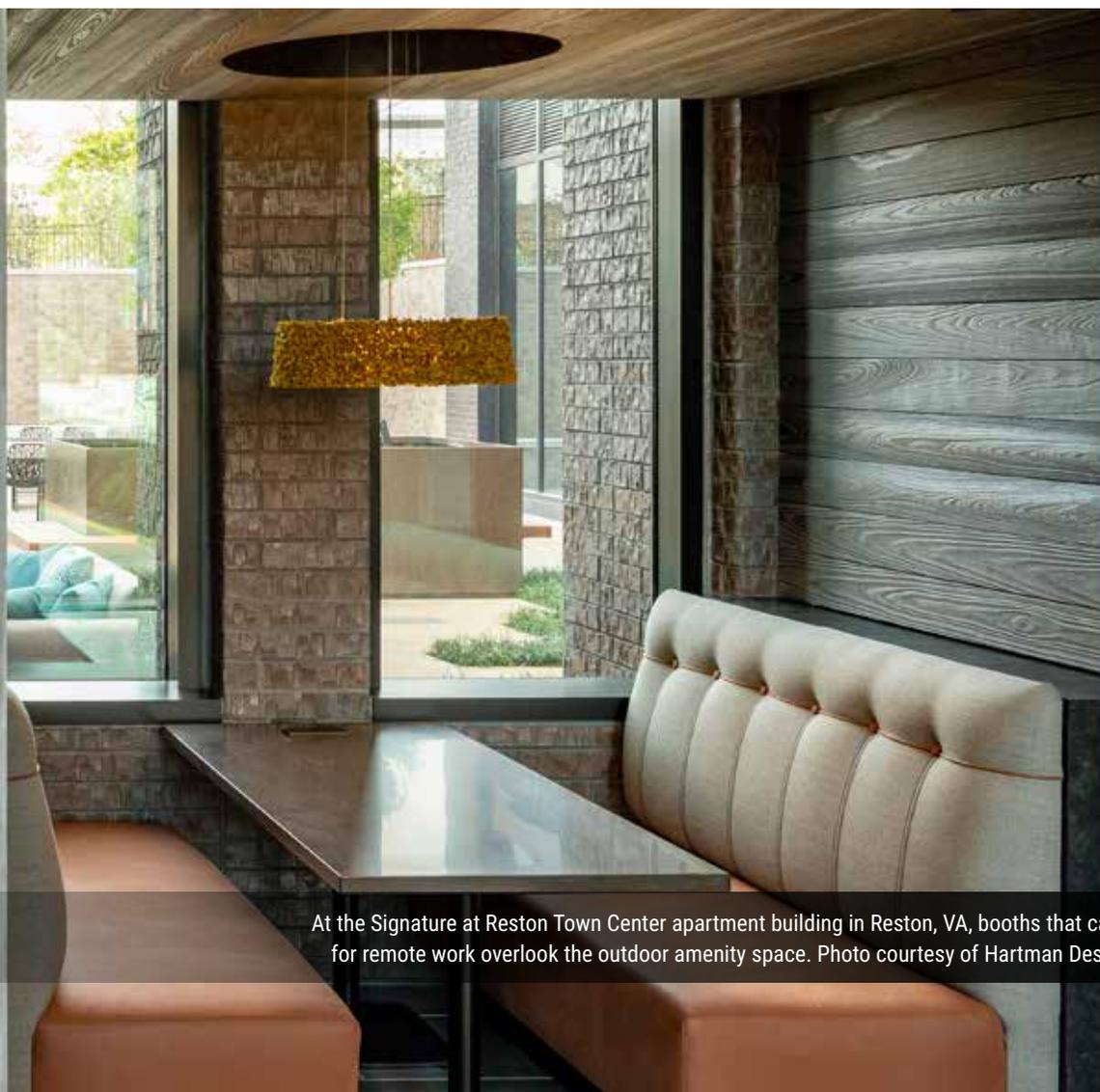
Pre-pandemic, multifamily property designers recommended the size of package rooms be three times the number of units (so a 300-unit building would have a 900-square-foot package room). With residents making more purchases online due to the pandemic, package capacity will need to increase even further. There may also be a greater need for refrigerated storage as residents have groceries delivered.

PET AMENITIES

Pet adoption saw a swift uptick in the early months of the pandemic, as people spending many more hours at home sought the comfort of an animal companion. Residents having more pets means amenities such as pet walks, pet spas, and dog walking services will be even more important than in the past.

POOLS

While pools have been a defining amenity for many multifamily projects, the pandemic creates a challenge as adhering to social distancing standards in a pool may be difficult, especially for young children. As a complicating factor, a shortage of life guards is forcing some pools to remain closed. The Centers for Disease Control recently released [guidelines](#) multifamily owners can follow for the safe reopening of pools.

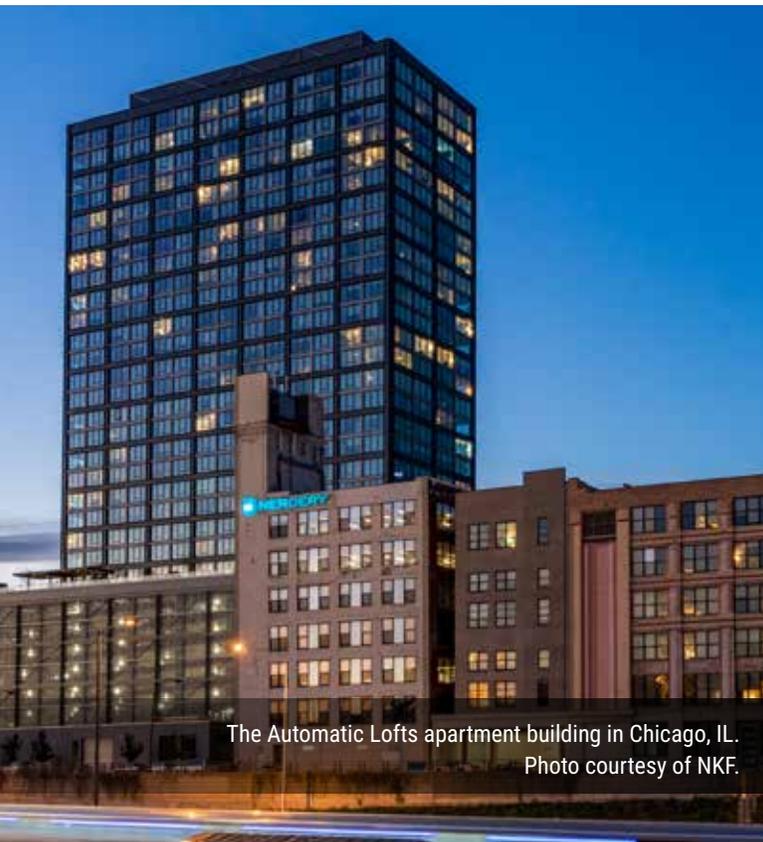


At the Signature at Reston Town Center apartment building in Reston, VA, booths that can be used for remote work overlook the outdoor amenity space. Photo courtesy of Hartman Design Group.

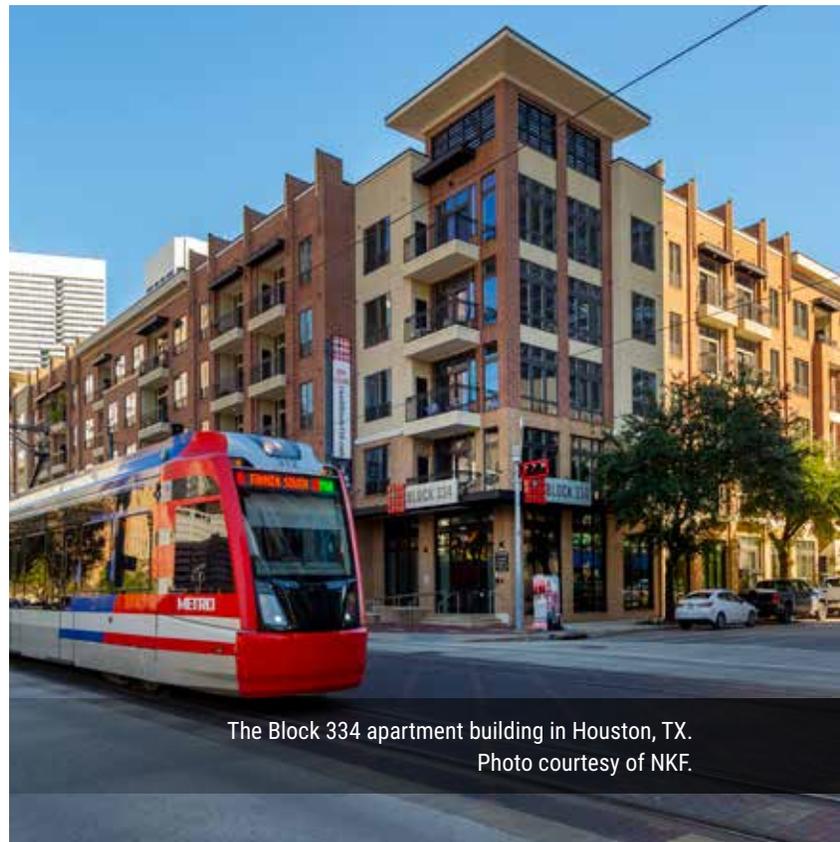
ACTION STEPS FOR OWNERS, INVESTORS AND TENANTS

In light of the changing environment, owners, investors, and tenants may wish to consider the following action steps:

- Increased natural light and ventilation has been shown to improve the productivity and wellbeing of building occupants. New office and multifamily projects may wish to incorporate biophilic design principles for the long-term benefit of occupants. Because retrofitting existing product to incorporate these principles can involve a significant investment, owners need to consider the return on investment for the specific property. There is no one-size-fits-all solution.
- Owners and operators of office and multifamily projects will need to implement changes to the common areas of their properties to help mitigate the spread of disease. Near-term changes may include incorporating touchless technology for entry and elevators, changing furniture layouts to reduce density, and adding signage to remind occupants of social distancing measures.
- Office and multifamily projects that are still in the design phase may want to incorporate more individual coworking pods rather than communal tables, but preferences may shift as the pandemic wanes. One potential option is to build flexibility into the design, such as individual booths or pods that can be combined to suit a larger group.
- Office tenants who plan an eventual return to their office space will likely need to consider changes to their office practices and layouts to mitigate the spread of disease. Newmark Knight Frank's Global Corporate Services group created an [Office Re-Boarding Roadmap](#) to help tenants navigate these challenges.
- Multifamily owners and operators will need to rethink amenities including fitness centers and package rooms in the post-pandemic era. Outdoor spaces and pet-focused amenities will become even more important.



The Automatic Lofts apartment building in Chicago, IL.
Photo courtesy of NKF.



The Block 334 apartment building in Houston, TX.
Photo courtesy of NKF.

For more of Newmark Knight Frank’s coverage of the coronavirus pandemic and implications for commercial real estate, please see the COVID-19 Perspectives page at ngkf.com/covid-19/.

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SOURCES:

- *BISNOW*
- CENTERS FOR DISEASE CONTROL AND PREVENTION
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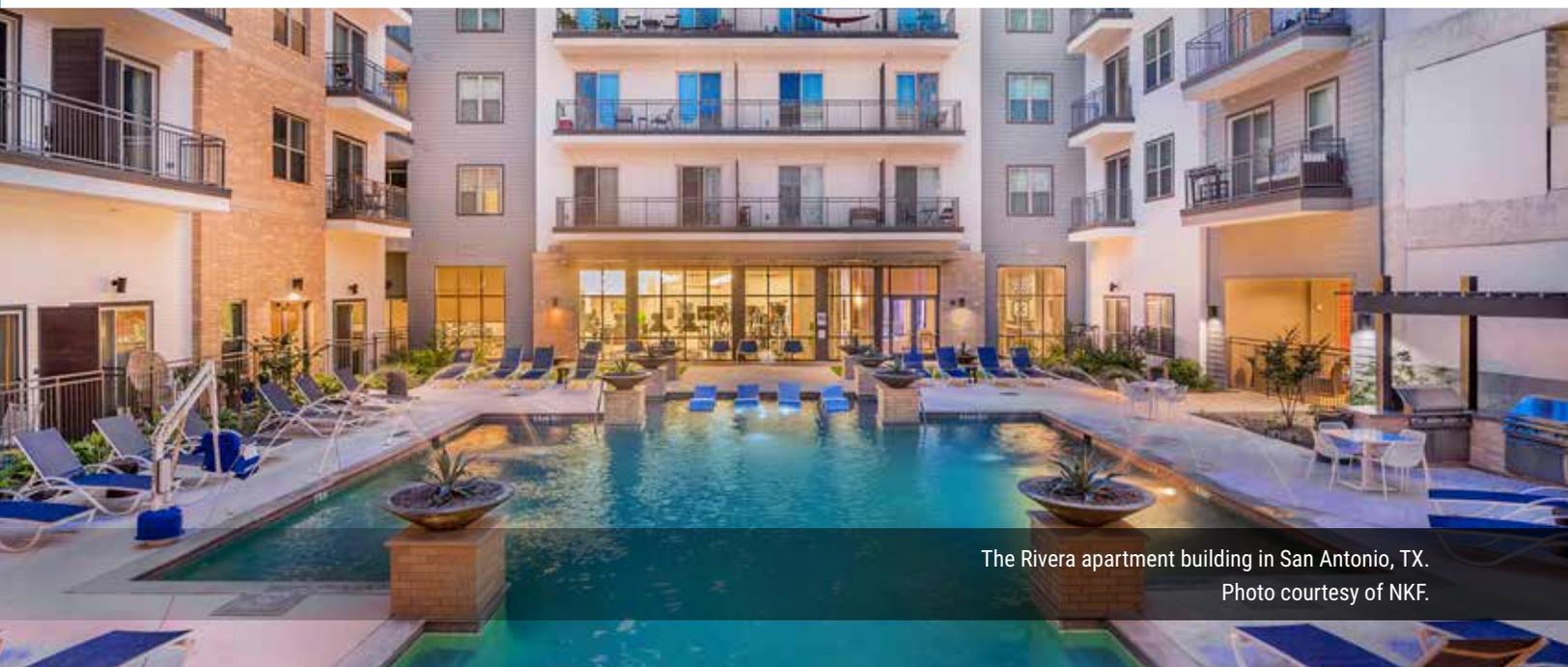
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The Rivera apartment building in San Antonio, TX.
Photo courtesy of NKF.

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