



2022 Future Scan Report

Council for Interior Design Accreditation

FUTURE



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Introduction

Birth Pangs of the 21st Century

Two decades into the 21st century, a menagerie of trends is emerging that may well redefine our world and culture in many generations to come. Although uncertainty is the pervading zeitgeist at present, what is becoming clearer is that the allegiances and institutions that have dominated much of the globe since the end of the Second World War are fragmenting and reforming into a new world order that has yet to fully materialize.

At a geopolitical level, chief among these changes is the waning influence of the United States and, to some extent, Western Europe. China, in addition to seeking to reclaim territories lost during the colonial period, is expanding its presence into areas the West has neglected, such as the South Pacific, Latin America and Africa. Russia's invasion of Ukraine has revealed its empire-building intentions. Around the world, democracies are being replaced by autocracies and authoritarian states. Currently, it appears more and more likely that the East/West paradigm we have become accustomed to will splinter into multiple blocs, each with mutual economic and ideological self-interests decidedly, if not diametrically, opposed to those of the others.

Such a development would upset global supply chains and the global economy even more than at present. Trade relations would be undermined, if not altogether broken. Developed, service- and tech-oriented economies would need to re-establish manufacturing capabilities at home, at the same time that their access to raw materials, energy sources and cheap labor would be substantially diminished.

Yet, major threats to our survival and well-being will demand global cooperation and collaboration at some level. The most urgent of those at present is the need to reverse increased global warming and its impact on weather patterns throughout the world, from melting polar ice caps to sustained areas of drought and extreme temperatures. Access to potable water is already becoming an issue in some parts of the world. Pollutants from industrial activity are contaminating the air, sources of fresh water, land needed to grow food and build housing, and the oceans. This is occurring even in countries that have little industrial activity. Failure to find and execute global solutions to these threats would lead to massive economic collapse in some areas and huge waves of migration, not to mention untold suffering and loss of life.

However they develop and to whatever extent emerging technologies help to mitigate some of the more dire consequences, these trends will have a profound impact on the built environment, both in terms of how built spaces will need to adapt to changing conditions and the cost and means of constructing and designing them.

This report lays out major trends and

developments that are, or very likely will, effect the architecture and design industry and professions, particularly in the United States and Canada in the remainder of the current decade. It does so bearing in mind the larger global context and the high degree of uncertainty and instability that overshadows any attempt to forecast the future, near or far.

1

Global and Regional Trends

Economy

Two-and-a-half years into a global pandemic and more than seven months into the Russian invasion of Ukraine, the world is reeling from the shockwaves created by critical food shortages, runaway inflation, soaring energy prices, continued supply chain disruptions, and heightening geopolitical and intrapolitical polarization. When and how these threats to world stability will end is, at present, unknowable. Meanwhile, their impacts are being felt in the built environment sector.

At a macro level, the following are trends in key areas that globally and within the United States and Canada are having or will have a substantial impact on the built environment sector.

- **Major economies around the world, including the U.S. and Canada, are experiencing slower growth, potentially slipping into recession.**
- **Supply chain issues have abated in some industries but not in others and will continue to impact production and growth into 2023.**
- **Tightening fiscal policies are pulling down home prices and slowing down home sales, but many homes and rental properties are not affordable for large numbers of U.S. and Canadian Residents.**

Outlook for 2022 - 2024

At the time of writing, the most recent global economic outlook prepared by the OECD projects annual global GDP growth at 3 percent in 2022 and 2023—well below the 4.5 percent growth rate forecast in its December 2021 outlook report—in large part due to the impact of the war in Ukraine. High levels of inflation are expected to continue for this year and throughout most of 2023, with some easing possible in the second half of the year.¹

More recently, the OECD reported its August 2022 Composite Leading Indicators continue to point to a deteriorating outlook in most major economies. The indicators anticipate a loss of growth momentum for most major economies, including for Canada, the United Kingdom and the United States, as well as in the euro area as a whole including France, Germany and Italy. China's economy, hit by droughts and continued COVID lockdowns, also is showing signs of weakening.²

Similarly, the World Bank's Global Economics Prospects report for June 2022 projects annual global growth in 2022 at 2.9 percent—compared to the 4.1 percent forecast in January—and is expected to hover around that level throughout 2023-2024. States the report, the global economy "is entering what could become a protracted period of feeble growth and elevated inflation. . . This raises the risk of stagflation, with potentially harmful consequences for middle- and low-income economies alike."³

The Federal Reserve's aggressive efforts to

reduce the level of inflation in the United States could slow the rate of GDP to nearly zero in the second half of 2023, according to a recent Bank of America forecast, which foresees only a modest rebound in 2024. The bank's analysts estimate a 40 percent chance that the economy will go into a recession sometime next year.⁴ The Conference Board anticipates year-over-year annual real GDP growth in 2022 to come in at 2.0 percent and in 2023 at 0.6 percent.⁵ Effects of the Fed's interest rate hikes are already being reflected in a slowdown in home sales and consumer spending, reports Fannie Mae, as well as in employment growth and stock valuations.⁶

Canada has fared better than many other countries this year, experiencing 3.1 percent growth in the first quarter. Toronto Dominion Bank forecasts annual average real GDP growth of 3.7 percent in 2022, slowing to 1.7 percent in 2023. Employment growth is expected to slow somewhat, and inflation is expected to remain above 2 percent through 2023. Hence, the Bank of Canada is set to continue to raise interest rates later this year.⁷

Supply Chain

The long-awaited easing of supply chain disruptions has as yet not materialized. Economists and industry experts now believe those will continue into 2023. The initial causes—pandemic shutdowns and increased demand for durable goods—have largely abated, but other challenges remain, including manufacturing backlogs, potentially high inventory levels as inflation and rising interest

rates curtail spending, shortage of qualified workers in manufacturing and shipping, shortage of raw materials, and slower rates of hiring due to concerns about an impending recession. Severe climate events also are impacting manufacturing and shipping in key parts of the world, such as southeast Asia.⁸

Housing

Millennial new household formations and changes in lifestyle, work type, and location resulting from the pandemic helped push U.S. home sales to record levels in 2021. Now, as mortgage rates increase along with home prices, sales are beginning to ease off. Home sales in the U.S. fell for the sixth month in a row in July, down more than 20 percent from the previous year, and home sales are expected to remain soft for the foreseeable future.⁹ Fannie Mae's Economic and Strategic Research Group expect total homes sales to fall 13.5 percent year-over-year in 2022 and remain lower in 2023.¹⁰ Over the long term, states the Joint Center for Housing Studies (JCHS) of Harvard University, housing demand is set to decline dramatically as population growth slows.¹¹ Meanwhile, a shortage of housing units, especially affordable single-family homes and rental units, means many Americans—particularly low- and moderate-income renters, younger first-time homebuyers, and people of color—cannot find and/or afford suitable housing.¹² A recent report from real estate data firm ATTOM finds that in the second half of 2022 the median home price was unaffordable for median wage earners in 97 percent of the counties in the U.S.¹³

Home sales and prices also reached record highs in Canada in 2021 and are expected to ease only slightly during 2022 as demand remains high. Increasing mortgage rates and inflationary pressures are expected to cool demand somewhat in 2023-2024, except for in major metro areas, such as Toronto, Vancouver and Montreal. Higher prices will help boost new home construction but will negatively impact affordability for first-time buyers and renters.¹⁴

Implications for Interior Designers

From past experience, we can expect that a recession or the likelihood of a recession will have an almost immediate negative impact on the interior design industry. The deeper and more widespread the recession, the more afflicting that impact will be. Following the Great Recession in 2008, the number of employed interior designers fell from over 53,000 to 46,000 during a 12-month period and to 40,000 the following year. The number of designers identifying as self-employed dropped from nearly 19,000 to 17,000 in the same 24-month period, altogether, a reduction of 21 percent in the number of practicing designers. It took nearly five years for the industry to begin to recover. During that time, many design firms drastically cut personnel, merged or went out of business entirely.¹⁵

Over the past two years, fueled by the red-hot housing market, residential interior designers have experienced a huge surge in demand. But with many of those projects now complete, home sales slowing, prices for materials and products rising, supply shortages and delays continuing, and stock valuations unsteady, demand likely will ease. Likewise, a recession, with its accompanying reductions in employment, revenues and productivity, would almost surely result in cutbacks for commercial design services in office, hospitality and retail. Already some companies are reducing their square-footage, opting for three-year leases instead of the more traditional 10-year or more lease, and office vacancy rates are 18 percent, close to the 1991 record of 19.7 percent.¹⁶

Global Threats

- **Global trade, communication and exchange are under threat, potentially disrupting economies and destabilizing governments.**
- **Public health crises are likely to become more common and affect more people worldwide.**
- **Climate change, if inadequately addressed, could result in even more severe and more frequent natural disasters in the years to come.**
- **Increased aggression and violence, shortages of food and water, natural and man-made disasters, and a lack of affordable housing are uprooting and dislocating millions of people each year, creating strains on economies and relations among countries.**

Globalization

Trade wars, political differences, mistrust, conflict, authoritarianism, climate change, and the pandemic all have taken their toll on globalization. Nonetheless, the general consensus among experts is that global flows of trade, information and people will continue, although along somewhat different lines than during the earlier part of the century. We are entering a period of re-globalization that will be characterized by sustained tensions between co-dependance and animosity. Despite the fragmenting of alliances into ideological blocs and the instability created by rising militarism, trade will continue to link countries together, as will telecommunications, travel and cultural exchanges.¹⁷

Coronavirus Pandemic

Earlier this year, before the arrival of the Omicron variant, health officials were predicting that the pandemic would downgrade to endemic by the end of 2022. At present, all that can be said is that, albeit more contagious, Omicron is more manageable than previous forms of the virus, resulting in less severe infections and far fewer deaths. In a media briefing held during the G-7 Summit Meeting in June, World Health Organization Director General Tedros Adhanom Ghebreyesus said, "This pandemic is changing but it's not over. We have made progress but it's not over." He pointed to the rise in cases in 110 countries, largely due to the highly contagious BA.4 and BA.5 Omicron variants, with global cases up 20 percent and deaths also on the rise in

some regions. He called for more testing and vaccinations worldwide to bring the acute phase of the pandemic to an end.¹⁸ With vaccination rates still low in many poorer nations and the likelihood that new variants of the virus will emerge in the coming months, no one is predicting when that might happen.

Climate Change

Upon the release of the United Nation's Intergovernmental Panel on Climate Change (IPCC) most recent assessment report in April, UN General Secretary António Guterres remarked, "We are on a fast track to climate disaster: major cities under water, unprecedented heatwaves, terrifying storms, widespread water shortages. The extinction of a million species of plants and animals. This is not fiction or exaggeration. It is what science tells us will result from our current energy policies." The report points to improvements and advances in slowing green house gas emissions, but states that current efforts are inadequate to reach the target of limiting warming to around 1.5°C (2.7°F) by 2050. The report also states that currently there are technologies, practices and policies that could be more effective if applied on a wider scale and with more urgency.¹⁹

Housing Shortage

As in the U.S., many countries are experiencing housing shortages, especially for affordable housing to buy or rent. Shortages of land, lending, labor and materials are some of the

factors fueling the housing crisis. In addition, data from the International Monetary Fund show in many countries the cost of housing has grown faster than incomes. The high cost of housing is reducing income security and quality of life, and increasing rates of homelessness. UN-Habitat estimates the world needs to build 96,000 new affordable homes every day to house the estimated 3 billion people who will need access to adequate housing by 2030.²⁰

Conflict and Danger

By some counts, there are as many as 40 active conflicts happening around the world at the moment and many more incidences of terror attacks and incursions. A recent report released by the the office of the United Nations High Commissioner for Refugees (UNHCR) found that, at the end of 2021, the total number of people worldwide who were forced to flee their homes due to conflicts, violence, fear of persecution, and human rights violations was 89.3 million. The war in Ukraine and other ongoing conflicts in 2022 has pushed that number to more than 100 million.²¹

The IPCC report cited above also warns of the increasing danger due to climate change. More people are going to die each year from heat waves, diseases, extreme weather, air pollution, and starvation because of global warming, the report says. Currently, at least 3.3 billion people's daily lives "are highly vulnerable to climate change," and those individuals are fifteen times more likely to die from extreme weather.²² As conditions worsen,

so does the likelihood of more violence and conflict.

Water Crisis

Access to potable water has reached crisis levels in many parts of the world due to climate change, pollution, urbanization, poor sanitation, and contamination from agriculture, manufacturing and mining. More than half the world's population—2.3 billion people—live in water-stressed countries. Some 1.42 billion live in areas of high or extremely high water vulnerability, and 785 million people lack access to basic water services, including 884 million who lack access to safe drinking water. The Global Water Institute estimates that 700 million people could be displaced by intense water scarcity by 2030.²³

Emerging Threats

The world was caught off guard by the COVID-19 pandemic. That has experts in a wide range of fields, policymakers and futurists asking what might come next. Bill Gates has identified climate change and bioterrorism as the next big threats.²⁴ Impending health threats could come from any number of virus mutations (e.g., the recent outbreak of monkey pox), as well as microbial resistance to drug treatments, refusal to vaccinate or lack of vaccines (e.g., the resurgence of measles, polio and tuberculosis), and population migration. One modeling projection indicates another and more deadly global pandemic could occur any time within the next 20 to 25 years.²⁵

Implications for Interior Designers

Each and all of these threats have the potential to exacerbate disruptions in trade, business and economic stability that would impact the interior design industry. Some present challenges for designers to develop solutions for more sustainable, resilient and climate responsive built environments.

The most immediate impact is access to products and materials, as many are sourced in part or whole from abroad, followed by shipping delays and soaring costs for shipping and storage. The top three concerns cited in the American Society of Interior Designers (ASID) most recent COVID-19 Pulse Survey, from March 2022, were product availability (65%), procurement/delivery process and timelines (60%), and their impact on project timelines (36%).²⁶ Although some supply chain bottlenecks have eased up, shipping containers, which are essential to transporting furniture and related goods, remain in short supply and at record high prices.²⁷ The truckers blockade in Canada last winter and the two-month lockdown in Shanghai in spring, along with the war in Ukraine, are reminders of the fragility of global supply chains and how integrated they are into all forms of commerce. Depending on how the pandemic develops, supply chain problems could continue well into 2023.

Both sustainable and green design have become standard practice for many interior designers. Nonetheless, designers are recognizing that they can do more to help reduce and combat the effects of climate change. For instance, In September 2021, ASID released a position statement on climate, health and equity in which it asserted, “The design profession must evolve to better address the pressing environmental, human health, and social challenges facing the world.” The section on climate states,

Climate change is the biggest single threat to health and economic prosperity on the planet. Interior Design has a role in reversing the negative impacts of climate change by focusing on eliminating emissions, designing for adaptability and resilience, and reducing resource consumption while supporting a circular economy.²³⁸

Designers are working with clients and manufacturers to further these goals (see the section on Sustainability and Green Design, further on)

2

Social and Demographic Trends

2.1

Diversity & Inequality Reshaping Society

Population Shifts

- **Migrations have increased, driven by poverty, repression, violence and climate change.**
- **More people moved from mega metro areas to smaller cities, suburbs and rural communities during the first year of the pandemic.**
- **U.S. and Canada populations becoming older and more diverse.**
- **Fewer U.S. and Canadian residents consider themselves middle class.**
- **Multigenerational household are on the rise as housing and other living expenses outpace earnings.**
- **Younger generations are embracing gender diversity.**

Migration Increasing Worldwide

The numbers and proportion of international migrants as a share of the total global population has nearly doubled in the past 30 years, but only incrementally, reports the UN's International Organization for Migration. Nevertheless, the vast majority of people live in the country in which they were born. In 2020, there were an estimated 281 million migrants living outside their country of birth, or about 3.6 percent of the global population. Migration decreased during 2020 because

of the COVID-19 epidemic. The majority of migrants leave their home country in order to find work or to get a better job. About one third are persons displaced seeking political asylum or because of conflict, violence, and/or natural disasters at home. Europe and North America are the top destinations for migrants, and Asia, Africa and Central America are the top sources of migrants.²⁹

Urban Migration

Although 2021 media reports of huge numbers of Americans leaving metropolitan areas and moving to suburban and rural areas, this statistic appears to have been exaggerated. The latest population estimates from the U.S. Census Bureau show growth slowed in the nation's biggest cities and some states experienced an uptick in population due to migration to the South and West in the first year after the pandemic. Cities such as San Francisco, New York, Boston, and Washington, D.C. were among those experiencing notable declines from July 1, 2018 to July 1, 2021, while Phoenix, San Antonio, Fort Worth, and Meridian, Idaho experienced sizable increases.³⁰

According to annual population estimates, from July 1, 2019 to July 1, 2021, Toronto, Montreal and Vancouver each posted a record loss of population due to residents moving because of the pandemic, primarily to neighboring suburban areas, which recorded higher gains.³¹

Older and More Diverse US

For the past two decades, the U.S. population has been becoming increasingly older and more diverse, a trend that continued in 2021, according to the latest population estimates from the U.S. Census Bureau. Since 2000, the national median age has increased by 3.4 years, to 38.8 years. Median age for most states also increased from 2020 to 2021, indicating their populations are getting older overall. With birth rates trending downwards and the aging of the Baby Boom and Generation X cohorts, the median age will likely continue to rise in the coming years. Nationally, all race and Hispanic origin groups experienced population increases from 2020 to 2021, apart from the White population, which declined slightly by 0.03 percent. Hispanic race and origin groups experienced the largest growth in terms of numbers.³² The slowdown in immigration in recent years also is contributing to the overall aging of the population.

The Canadian Institute for Health Information projects that between 2017 and 2037 Canada's senior population (age 65 and older) will grow by 68 percent. The number of seniors age 75 and older is expected to more than double in the same period.³³

Shrinking US Middle Class

The share of adults who live in middle-class households fell from 61 percent in 1971 to 50 percent in 2021, according to Pew Research Center analysis of government data. The shrinking of the middle class has been

accompanied by an increase in the share of adults in the upper-income tier—from 14 percent in 1971 to 21 percent in 2021—as well as an increase in the share who are in the lower-income tier, from 25 percent to 29 percent.³⁴ People of color are more likely to have fallen out of the middle-class and less likely to have moved up from middle-class.³⁵ One consequence of this shift, as reported by *The New York Times*, is that a smaller share of families are living in middle-class neighborhoods. A combination of factors are pushing residents into neighborhoods that are either much richer or much poorer than the regional norm. Nationally, only half of American families living in metropolitan areas can say that their neighborhood income level is middle-income (within 25 percent of the regional median). A generation ago, 62 percent of families lived in these middle-income neighborhoods.³⁶

While nothing like the pace in the United States, the middle class in Canada has been on the decline in recent years. No official definition of what constitutes middle class has been established by Statistics Canada, and income ranges vary considerably depending on where one lives. A 2018 survey found that people considering themselves as “middle class” had fallen from 70 percent of respondents in 2002, to under 50 percent. The survey report also points out that rapidly growing income inequality, stagnating incomes, downward intergenerational mobility, and jobs that are unsatisfying and poorly paid all factor into what may be perceived as a growing malaise and worry about the future, and that rising inequality is associated with

declining intergenerational mobility.³⁷

More Multigenerational Households

According to a Pew Research Center analysis of census data from 1971-2021, the number of people living in multigenerational family households in the U.S. quadrupled during that time period, reaching 59.7 million in March 2021. The share more than doubled as well, to 18 percent of the U.S. population. Financial issues, caregiving needs and cultural traditions (particularly among Asian, Hispanic and Black) are the main reasons.³⁸ A separate Pew study found that about a quarter of U.S. adults (23 percent) are now part of the so-called “sandwich generation,” those who have a parent age 65 or older and are either raising at least one child younger than 18 or providing financial support to an adult child. More than half are in their 40s, compared to 36 percent in their 50s and 27 percent in their 30s. About one in five of these adults live in multigenerational households.³⁹

Spurred by rising housing costs as well as by an aging population, multigenerational households are now the fastest growing household category in Canada. According to Statistics Canada, the trend of multiple households in a single dwelling in Canada grew by over 37 percent between 2001 and 2016, and has continued to grow since. Currently, slightly less than three percent of all households are multigenerational households. According to website O.Canada, realtors expect to see larger increases in the number of multigenerational or multiple household

homes nationally when the 2021 Census figures are released in July 2022.⁴⁰

Gender Diversity

A growing number of individuals, especially teenagers and young adults, are identifying as something other than traditional categories of male or female gender. In a Pulse Survey of adults 18 and older conducted by the U.S. Census Bureau in July 2021, 50.5 percent self-identified as female, 47.2 percent as male, and 0.6 percent as transgender.⁴¹ By comparison, a new report drawing on Center for Disease Control health surveys from 2017 to 2020 estimates 1.4 percent of 13- to 17-year-olds and 1.3 percent of 18- to 24-year-olds were transgender, compared with about 0.5 percent of all adults.⁴²

Canada, which claims to be the first country to include questions about gender diversity in its 2021 census questionnaire, reports that of persons 15 and older counted in the census 0.33 percent self-identified as transgender or non-binary. However, the proportions of transgender and non-binary people were three to seven times higher for Generation Z and millennials than for Generation X, baby boomers and the Interwar and Greatest Generations.⁴³

Implications for Interior Designers

The aging of the population is, and will continue, to impact the interior design industry on a number of fronts. Although design for aging has been a developing trend for more than two decades, as the Baby Boom generation approaches its eighth decade, both private and public built environments will need to be adapted or upgraded to meet the needs of tens of millions of seniors in the U.S., Canada and other developed countries. In anticipation of this shifting demand, JCHS has launched a new initiative, the Housing an Aging Society Program, to help develop research-based solutions to support older adults, who will make up about one third of all U.S. households by 2038.⁴⁴ Fast Company recently reported on new developments in senior living design to accommodate the needs of seniors who will live to 100 and beyond.⁴⁵

The State of the Nation's Housing 2022 report from JCHS shows late wave boomers and seniors accounted for the largest portion of household growth between 2016 and 2021, by nearly 13 million.⁴⁶ Around 80 percent of all U.S. seniors own their own home, and some 90 percent of Canadian seniors are homeowners. With home values rising in recent years, some boomers and seniors have been modifying and upgrading their homes to allow them to age in place, and many more will need to do so in the years ahead. Senior living practice will need to expand as the sector rebounds. A report on investment opportunities in senior living in Canada prepared by Cushman & Wakefield states,

Over the next 20 years, the age-75 segment is expected to grow by almost 4.0% per year and will account for 13.5% of the population by 2040. We expect demand from the 80+ cohort to pick up materially starting in 2020.

To maintain the current level of senior housing inventory per capita, total supply will need to more than double over the next 20 years.⁴⁷

By one estimate, demand for senior housing in the U.S. will increase substantially after 2025, as baby boomers pass the age of 80. The demand is anticipated to rise to 96,000 units per year from 2030 to 2035.⁴⁸

Toward the other end of the generational spectrum, millennials are maturing and buying homes, while GenZ is entering early adulthood, poised to become the next wave of homebuyers before the end of the decade. Values-driven and alarmed by the effects of climate change, they will make sustainable, resilient and socially responsible design a priority.

The trend toward more multigenerational households is already affecting homeowner choices. Findings from the AIA's Q2 2022 Home Design Trends Survey show a notable increase in requests for accessory dwellings, finished basements and attics, and micro housing. In addition, accessibility and overall designs for aging in place continue to remain a focus of a home's layout and are growing in popularity. Likewise, the Q1 2022 survey shows design for aging solutions such as accessible showers, walk-in showers without tubs, and universal design features increasing in popularity.⁴⁹

Millennials and GenZ are the most diverse generations in the history of the country, and they are consumers of popular media that celebrates and emulates non-white and gender diverse cultures, including fashion and design trends. The interior design industry, which is predominantly white, will need to diversify in order to remain relevant to these future potential clients.

2.2

Diversity, Equity & Inclusion

- **Pledges to address racial injustice and inequality in reaction to the Black Lives Matter movement have, so far, produced at best mixed results.**
- **Companies and institutions have increased their efforts to reach out to and include neurodiverse individuals.**
- **Availability of affordable housing is woefully short of meeting demand, with the impact greatest on low-income households, persons of color, and single women with children.**
- **As the elderly population grows, the need for more affordable assisted living options for low-income and middle-income individuals will increase.**
- **Access to a quality education, at all levels, continues to elude large numbers of people of color and low-income individuals.**
- **Millions of U.S. and Canadian households regularly experience food insecurity and hunger, especially racial and ethnic minority households and single women with children.**

Corporate Response to Social Justice and Equity Movements

Following the murder of George Floyd and the spread of the Black Lives Matter movement in May 2020, hundreds of corporations, including some of the largest, posted statements of condolence and/or support for Black Lives Matter. A number also pledged to increase the diversity of their executive leadership and corporate boards. One year later, out of some \$50 billion companies had pledged to promote racial equity, only \$250 million had been spent.⁵⁰ However, some have performed better on increasing diversity among their leadership. According to ISS Corporate Solutions, which advises companies on corporate governance, as of the end of 2021 the number of directors from underrepresented racial and ethnic groups had jumped by 25 percent and women comprised 30 percent of directors among Russell 3000 Index companies. Black directors, in particular, saw a 200 percent increase at S&P 500 companies.⁵¹ (It is perhaps indicative of the durability of such pledges that two years after Floyd's death there were no major media stories on how corporations were performing on following through on their commitments.)

Efforts to promote anti-bias instruction in schools have met with mixed success. A 2022 report from the RAND Corporation on anti-bias education in U.S. K-12 schools states,

In the wake of the protests against and attention to racial injustice sparked by the murders of George Floyd and others, there has been a renewed call for the education system to address

systemic racism and racial inequities. At the same time, many states have started passing or considering laws limiting discussions of racism, sexism, and bias within their classrooms.⁵²

Long before Black Lives Matter, colleges and universities had adopted social justice initiatives and programs.⁵³ A quick internet search turned up scores of links to programs at individual institutions and education-focused nonprofits.

Neurodiversity

In recent years the term “neurodiversity” as a concept and label used to refer to any of several dozen “atypical” neuro-cognitive processes has gained wide acceptance. Statistics are sketchy, but by some estimates 15 to 20 percent of the U.S. population is neurodivergent. Canada’s population statistics do not break out neurodivergent individuals from others in its Persons With Disabilities (PWD) category. One study found some 600,000 Canadian job seekers self-identified as neurodivergent.

While efforts continue to raise awareness of and increase inclusion of neurodiverse individuals in all aspects of society, much attention has been focused on the workplace and education. A number of recent articles have advocated for increasing hiring of neurodiverse individuals and creating neurodiverse inclusive corporate cultures.⁵⁴ Likewise, there have been calls to make schools and institutions of higher learning more inclusive and supportive of neurodivergent students.⁵⁵

Affordable Housing

A shortage of available and affordable housing is reaching a crisis point in the U.S. JCHS, in The State of the Nation’s Housing 2022, reports that the shortfall in market-rate housing both for sale and for rent amounts to some 3.8 million units, which is driving up the cost of owning or renting a home. A third of households spent more than 30 percent of their income on housing in 2020, including 14 percent that spent more than half. Low-income households and people of color are the most cost-burdened when it comes to housing, with Black households disproportionately disadvantaged, followed by Asian and Hispanic households. According to the National Low Income Housing Coalition, there is a shortage of more than 7 million affordable homes for the nation’s 10.8 million plus extremely low-income families.⁵⁶

Drawing on 2016 census data, the Canada Mortgage and Housing Corporation (CMHC) states that in 2016 that 18 percent of the Indigenous population had a need for core housing (for low-income households), compared to 12 percent of the non-Indigenous population.⁵⁷ CMHC is working with stakeholders of interest to develop a National Housing Strategy with the aspiration that by 2030 “everyone in Canada has a home that they can afford and that meets their needs.”

Assisted Living

As with housing in general, there are two main categories of assisted living, that which caters to those who can pay and that which is targeted to low-income seniors. The senior living market in general fared poorly during the first two years of the pandemic, with nursing homes in particular experiencing high rates of infections and deaths, but occupancy has been trending upward since the fourth quarter of 2021.⁵⁸ With baby boomers progressing relentlessly from senior status toward elderly status—the first wave will begin to turn 80 in 2026, boosting the 80+ population to close to 30 million—the longer term outlook for the industry in the U.S. is for accelerated growth. A recent projection prepared by accounting firm Pointe Moran states, “If historical senior housing utilization rates continue over the next 20 years, projected units will increase 1 million at a 4.7 percent annual growth rate, effectively doubling senior housing demand from 2020 to 2040.”⁵⁹

Most of those units will be built and designed to appeal to more affluent seniors. While low-income seniors will have fewer choices, it is middle-income seniors who will have the most difficulty finding affordable housing and care. Notes an industry expert, “Historically, senior housing operators and investors focused on the upper end of the income distribution. For lower-income seniors, state and local programs such as Medicaid provide for some housing and care-related services. The industry largely has not focused on the middle-market cohort, however.”⁶⁰ A 2019 study projects that by 2029 there will be 14.4 million middle-income

seniors age 75 or older, about half of whom will not be able to pay assisted living rent or most medical expenses, even accounting for the growth in the equity of their homes.⁶¹

In Canada, the availability and cost of assisted living as well as assistance for low-income seniors vary considerably by province. The Canadian Institute for Health Information states that in 2021 there were 2,076 facilities nationally, 46 percent of which were government-owned.⁶² Findings from the 2016 census related by Statistics Canada show around 14 percent of seniors living in core housing, about a quarter of whom live in conditions rated below standard. It also mentions a shortage of affordable rental units, compounded by limited interest by private-sector builders and declining government funding for social housing.⁶³

An alternative for middle-income seniors that has been growing in popularity are group homes and other types of residential living arrangements. Although usually not government-subsidized, these residences often cost about a third less than comparable assisted living facilities. In the U.S., group home definitions, licensure, costs, services, availability, and even names vary from state to state, which makes it difficult to obtain accurate and current statistics. A 2020 study drawing on multiple data sources covering the period from 2002 to 2015 found that the number of U.S. seniors living in community-based residential care increased over time—from 782,000 in 2002 (2.3 percent) to over 2 million by 2015 (4.8 percent), while the number living in nursing homes decreased—from 1,445,000 (4.2 percent)

to 1,086,000 (2.6 percent).⁶⁴ Data compiled from the Canadian 2016 census shows nearly one-third (32 percent) of people aged 85 and older lived in collective dwellings like retirement homes that year.⁶⁵

Education Equity

The concept of equity in education has broadened in recent years from a focus on the financing and cost of education and their impact on equal accessibility to the aspirational vision, in the definition proposed by the National Equity Project, that each child receives what they need to develop to their full academic and social potential. Still, data collected by the Opportunity Insights project at Harvard University show students of color, low-income students and those with disabilities continue to be disadvantaged with regards to access and quality of education, from pre-schools to institutions of higher learning.⁶⁶ Increasingly, top colleges and universities are receiving fewer middle-class applicants because of the high cost without any guarantee of a degree improving future earnings.⁶⁷ Research conducted by the Center for Education Policy Analysis at Stanford University found white-black and white-Hispanic achievement gaps have, in general, narrowed substantially since the 1970s in all grades and in both math and reading, but progress has been slow and uneven.⁶⁸ Last year, the U.S. Department of Education announced the launch of several programs and initiatives to advance equity in education.⁶⁹

A paper commissioned by the Canada

International Council examined the educational opportunities of the top and bottom 10 percent within the early childhood, primary, secondary and postsecondary sectors. It concludes, “Despite Canada’s efforts to promote equal access to education, the experiences and outcomes of students differ greatly depending on their family incomes.”⁷⁰ A fact brief prepared by the Canadian Education Association states, “Canadian provinces have developed equity policies and systems for meeting various learner needs that include linguistic, remedial, psychosocial and other forms of support. . . . However, inequities persist for certain learners (Indigenous, refugees, the poor, visible minorities, etc.) and there are significant disparities between groups in Canada.”⁷¹ In April 2021, the Canadian government announced a three-year project with the Rideau Hall Foundation that will fund community-based organizations to improve educational outcomes for youth through innovative approaches.⁷²

Food Insecurity

Hunger and famine are, lamentably, a daily reality for hundreds of millions of people throughout the world.⁷³ In the U.S., some 13.7 million households (about 35 million individuals), or 10.5 percent of all U.S. households, experienced food insecurity at some point during 2019, according to data from the U.S. Department of Agriculture, and during the pandemic that number doubled. Households with children are 1.5 times more likely to experience food insecurity. According to USDA data, 19.1 percent of Black households

and 15.6 percent of Hispanic households experienced food insecurity in 2019, compared to 7.9 percent of White Americans.⁷⁴

By contrast, the Public Health Agency of Canada reports 7 percent of adult Canadians live in households with food insecurity. Food insecurity is three times higher among Indigenous households than among non-Indigenous households.⁷⁵

A major contributor to food insecurity in the U.S. are food deserts, geographic areas where residents have few to no convenient options for securing affordable and healthy foods. Food deserts largely occur in areas with small populations and/or where residents who have lower levels of education, lower incomes, and higher rates of unemployment. According to data gathered by the Annie E. Casey Foundation, some 19 million people—6.2 percent of the nation's population—lived in a food desert area in 2017. A study that compared U.S. census tracts of similar poverty levels found that, in urban areas, Black communities had the fewest supermarkets, white communities had the most, and multiracial communities fell in the middle of the supermarket count spectrum.⁷⁶ (Several mapping studies have been done of food deserts in large metro areas or provinces in Canada, but no national statistics could be found.)

Implications for Interior Designers

Lack of diversity in the built environment industry, and in particular in the A&D sector, has long been an issue. In a 2021 survey of 80 organizations in the U.S. built environment industry conducted for the National Institute of Building Sciences, 65 percent of the respondents were men and 28 percent were women. Nearly three-fourths (74%) of survey respondents identified as White. Four percent of respondents identified as Hispanic or Latina/Latino/Latinx, 3 percent identified as Black or African American, and 3 percent identified as East Asian. The remainder identified as some other racial or ethnic group. Women in the built environment tend to be younger and to have lower income compared to men. White men tend to be older and more likely to be an owner or executive than non-Whites.⁷⁷

Among practicing architects in the U.S., women comprise only 23 percent, and Blacks less than 3 percent, followed by Hispanic or Latino at 10 percent and Asian at 14 percent⁷⁸ Less than 1 percent of architects are black women. Among practicing interior designers, on the other hand, 84 percent are women, while nearly 7 percent are Black, followed by around 8 percent Hispanic or Latino and 11 percent Asian⁷⁹

Demographic data on architects in Canada nationwide could not be found. A member survey conducted by the Ontario Association of Architects found 54 percent were male and 44 percent identified as female. The majority were White (64%), followed by East or Southeast Asian (12%), Middle Eastern (9%), South Asian (5%), Black (4%) and Latino/Latina/Latinx (3%). Less than 1 percent identified as Indigenous.⁸⁰ Data on interior designers in Canada could not be found.

Both the industry, including design media, and professional organizations have taken steps to raise awareness of the issue and promote ways of increasing diversity and equity. A number of individual firms have adopted statements on diversity, equity and inclusion. In June 2021, in an initiative undertaken by Herman Miller, 20 firms spanning all sectors of design launched the Diversity in Design Collaborative to address disparities in representation, equity, and inclusion among Black creatives.⁸¹ The AIA has established an Equity and the Future of Architecture Committee, which has produced a series of guides for increasing more equitable practice relating to how firms operate and how projects are conducted. Similarly, ASID has created a Diversity, Inclusion and Equity Task Force and, through the ASID Foundation, issued an RFP calling for applied research projects demonstrating how diversity, equity and inclusivity can be supported through interior design. The Society for the Study of Architecture in Canada formed a Diversity, Equity, Inclusion, and Sustainability (DEIS) Committee and published a statement on racial justice.

It is a long held principle and practice that interior design of any kind must take into account the diverse needs of occupants. Universal design and design for aging are but two examples. Across the industry, designers are employing their knowledge and skills to provide more responsive and supportive interior environments for populations that historically have been marginalized.

Recent trade articles have reported on practices and projects to make workplace and educational environments better suited for neurodivergent occupants.⁸² Some architects and designers are exploring innovative ways of designing low-income affordable housing and assisted living facilities.⁸³

Architects and designers also are articulating how they can effect social justice through their practice. The AIA's "Justice in the Built Environment" statement proclaims, "In the creation of the built environment, justice can take the form of just processes (ones that involve people who have experienced harm) and just outcomes (spaces that are safe, welcoming, and worthy of the beings who inhabit them)."⁸⁴

"As designers, we need to be agents of change," says Antje Steinmuller, chair of the undergraduate program in architecture at the California College of the Arts. "Architects and interior designers can play a part in shaping both the spaces and the policies of the built environment. We can leverage our skills toward environmental, political, and social justice." An article on the CCA website discusses some of the ways architects and designers are addressing social equity through their work:

Today, many architects are exploring how architectural design can respond to the major challenges of our times, including social and economic inequality. They recognize that inequities based on wealth, race, gender, and physical ability are reinforced by patterns of land use and ownership, the organization of our cities and suburbs, and the design of our dwellings and their interiors.

Examples of projects that improve social equity through architectural design include cohousing with shared common spaces, schools in low-income neighborhoods that incorporate healthcare services, barrier-free facilities for veterans with disabilities, neighborhoods where vacant ground-floor retail spaces are repurposed for community services, and solar energy cooperatives.⁸⁵

In one of her podcasts, commercial interior designer Elizabeth Lockwood addressed the topic of how designers can contribute to increasing social justice and equity. Observing that traditionally interior design has largely catered to the privileged, she states, "We need to dig deeper to understand how to create accessible spaces for all, including accessibility to affordable medical services and education. If we as a society are to change or to grow as a nation and as a global world, we as designers need to encourage and foster pro bono work by creating small local actions within our own community." She also calls for more diverse design teams and suggests that designers should adopt the role of listeners and facilitators, rather than experts.⁸⁶

3

Health & Well-Being

Wellness After COVID

- **Health and wellness industries are poised to rebound strongly as the pandemic transitions into endemic.**
- **Mental health is the number one concern for employers and human resource professionals looking to protect and retain employees.**
- **The pandemic has made having a healthy home that supports wellness a priority for many homeowners**

COVID Boomerang

The onset of the COVID-19 pandemic in 2020 was a watershed for health and wellness, impacting not only the healthcare industry but also spas, gyms, yoga studios, resorts, massage and physical therapy services, mental health services, and manufacturers of health and wellness products and comestibles. The Global Wellness Institute (GWI) estimates that the global wellness economy grew from \$4.3 trillion in 2017 to \$4.9 trillion in 2019, or by 6.6 percent annually, a growth rate significantly higher than global economic growth (4.0%). In 2020, the wellness economy fell by 11.0 percent, to \$4.4 trillion (while global GDP declined by 2.8%).⁸⁷ At the same time, the pandemic made people hyper-conscious about the importance of their health, mental health, wellness and well-being. Consequently, GWI believes the wellness economy will grow at an extremely robust 60 percent from 2020-2025, with most segments projected to exceed GDP growth across those years. Another result from the pandemic, says GWI,

with painful lessons from the pandemic about the terrible costs of underinvesting in public health, government spending on public health is forecast to grow 5 percent annually through 2025—to reach \$478 billion.

Wellness at Work

Even before the pandemic, employees reported issues related to wellness and well-being in the workplace. Many employers responded by substantially increasing health and wellness benefits. Whether working from home or working part- or full-time in the workplace, workers experienced additional struggles that affected their health and well-being, such as increased work demands, adjusting to new technologies, disengagement and loss of connection with colleagues, and home-life struggles. Nearly 9 in 10 respondents to a fall 2020 Harvard Business Review survey of 1,500 people in 46 countries said that their workplace well-being had declined since the start of the pandemic, and 85 percent said their general well-being had declined.⁸⁸ The Future Workplace 2021 HR Sentiment Survey found that 68 percent of senior human resource leaders rated employee well-being and mental health as a top priority.⁸⁹

Employee mental health is the top well-being issue in Canada, according to 72 per cent of employers responding to a 2021 survey.⁹⁰ The Canadian non-profit Business Group on Health identified six health and wellness trends that will underscore a “collective urgency” for employers and their workforces in 2022. They are: virtual health care that integrates with

in-person offerings; the continued expansion of mental-health and well-being services; ongoing attention to health equity, quality and value; a reimagining of workforce well-being to support emerging needs; and a heightened focus on health policy.⁹¹

Healthy Housing

Another consequence of the pandemic is that many people realized that their homes lacked adequate systems and spaces to protect their health. A 2021 Harvard JCHS-Farnsworth Group healthy homes survey found that from 2014 to 2021 health concerns have been steadily increasing for both homeowners and renters. In 2021, 43 percent of homeowners and 43 percent of renter households were worried about their home negatively affecting their or another occupant's health, safety and wellbeing. Health symptoms or diagnosis among household members and risk of COVID-19 exposure were the leading causes of concern. Indoor air quality was a primary concern. Home owners also were concerned about accessibility issues and damage from natural disasters. A third or more of homeowners were planning multiple healthy home upgrades, a number to improve indoor air quality.⁹²

Implications for Interior Designers

For the past ten years or more, occupant-centered design and its emphasis on the health and well-being of occupants has grown in acceptance and become more commonly integrated into design and construction projects across the industry spectrum. During the early phase of the pandemic, the fear of contagion from surfaces, crowding, or recirculated air heightened awareness of the extent to which our health, safety and well-being are linked to the interior environments in which we dwell. Subsequently, there has been much discussion within and outside the industry about how design and construction of the built environment will need to change in the future.⁹³

Some immediate interior design solutions were implemented to improve the safety of existing buildings, especially healthcare facilities, workplaces, lodgings and restaurants, and schools. These included changes in surface materials, wayfinding, and floor plans; increased access to nature and the outdoors; plus the addition of touchless and sanitizing technologies. A lot of attention has been given to improving indoor air quality, HVAC systems, ventilation, and air filtration systems.⁹⁴

Another frequently discussed topic is the role of the architect and designer in helping to ensure buildings take into account the health, safety and well-being of occupants. This often takes the form of serving as a facilitator and collaborator to bridge the needs and priorities of clients and occupants. A new course offered to architecture students at the Stuart Weitzman School of Design at the University of Pennsylvania was developed to introduce concepts and practices around health and wellness that can be applied to other types of buildings beyond health care facilities, with a focus on multidisciplinary teams and designing with people in mind.⁹⁵ An ASID Insight Brief on interior design for health and well-being quotes Whitney Austin Gray, of the International Well Building Institute, “Designers are positioned to be public health advocates to help our clients understand how to trust our buildings once again.”

Looking past COVID, demand will increase for interior design for wellness and well-being. Noting that even during the first year of the pandemic wellness real estate continued to grow by over 22 percent year-over-year, the Global Wellness Institute predicts a continued growth trajectory for wellness real estate in coming years, as healthy building features increasingly shift from being a luxury, or “nice to have,” toward becoming an expectation or even a minimum standard, especially in the commercial/office real estate space. Whether for the workplace, healthcare, hospitality, education, senior living, or residential, the focus will be on helping occupants to improve and maintain wellness and well-being.⁹⁶ Tools such as the WELL Building Standard and pre-pandemic practices such as biophilic design, as well as the use of new materials, surfaces and finishes, will be essential elements of practice.

4

Mental Health

Mental Health Concerns Rank Highest

- **More people are experiencing anxiety and depression than in any other recent decade.**
- **Suicide rates in general declined during the first two years of the pandemic, but rates among teens and young adults are on the rise.**
- **Finding ways to improve mental resilience will be crucial as the world faces mounting challenges as a result of the pandemic and political upheaval.**
- **Violent crime has increased in some large cities, but, despite headlines of mass shootings and random assaults, is not up substantially overall.**

Stress & Anxiety

Data from 30 countries collected by the OECD show that between March 2020 and May 2021 symptoms of anxiety and depression spiked across the OECD in 2020, and, as of mid-2021, had not begun to recover on average. Over one-quarter of respondents in 15 OECD countries were at risk of anxiety (25.0%) and depression (26.58%) in 2020; both rates increased slightly, but significantly, in the first half of 2021. At the same time, the pandemic disrupted access to mental health services.⁹⁷

The U.S. National Institute of Health estimates that nearly one in five adults (about 53 million in 2020) live with mental illness. Only about 5.6 percent of those have been diagnosed with a

serious mental illness.⁹⁸ During the pandemic, more Americans experienced increased stress, anxiety and depression. More than half (53%) of adult Americans taking part in a Kaiser Family Foundation tracking poll conducted in July 2020 claimed that their mental health had been negatively affected in 2020 by COVID-19.⁹⁹

The latest Stress in America survey, conducted in 2021, from the American Psychological Association relates that one in three Americans (32%) said sometimes they are so stressed about the coronavirus pandemic that they struggle to make even basic decisions. Millennials and parents with children in the home were more likely to express these feelings, and many respondents said they did not know how to manage their stress. The overall stress level, 5.0 out of 10.0, had not changed from the previous year. Nonetheless, most (70%) were confident everything will work out once the pandemic ends.¹⁰⁰

A 2020 survey from Mental Health Research Canada (MHRC) has found that 22 per cent of Canadians were experiencing high anxiety levels amid the pandemic, and 13 percent said their depression level is high. The percentage of those reporting high anxiety is four times greater than what Canadians said they were experiencing prior to COVID-19, and depression has doubled.¹⁰¹ An Angus Reid Institute study indicated that in 2019, 67 percent of Canadians said that their mental health was good or very good, while in 2020 only 53 percent said the same. Isolation, decreased social interactions, as well as worry about financial security and health, are among the main factors

contributing to this trend.¹⁰²

As noted above, mental health has become the number one health and well-being issue in the workplace. A flash survey of 560 employers across the country conducted in May 2022 by the law firm Fisher Phillips revealed that 43 percent of employers have seen an increase in mental health reasonable accommodation requests since the pandemic started. The three biggest concerns mentioned by employers in the survey were burnout (51%), higher levels of turnover (46%), and increased absenteeism (34%). Rates were especially high in healthcare, education and retail.¹⁰³

Suicide

The OECD report on COVID-19 and well-being (cited above) states data on suicide rates throughout 2020 and 2021 do not suggest any significant change from previous years for the 30 countries it tracks. Nonetheless, the report cautions as the pandemic and its economic effects wear on, it will be important to monitor suicide risk. For example, survey data from Belgium, France and the United Kingdom show that suicidal thoughts have increased among younger people, even if rates of actual suicides have not yet done so.

The U.S. has been experiencing an increasing suicide rate with every year since 2007, with a record 35 percent increase between 1999 and 2018, and a slight decline in 2019. Contrary to expectations, because of lockdowns and other stressors, from early data the U.S.

National Center for Health Statistics found that the suicide rate in the U.S. decreased by 5.6 percent in 2020. However, suicide rates among teens and young adults increased, as did rates among Black Americans in some states, although the reasons why have not been determined by data.¹⁰⁴

Similarly, in Canada, a study published in the Journal of the Royal Society of Medicine reports that despite isolating lockdowns and a sharp rise in unemployment, suicides fell by 32 per cent in the first year of the pandemic compared with the year before it, the lowest suicide mortality rate in Canada in more than a decade. The authors credited government-funded financial benefits and an increase in mental-health support, along with strong social cohesion, with creating a sense of security in the country.¹⁰⁵

College students and young adults are at high risk of suicide and self-injury. In a 2019 study published in Depression and Anxiety of more than 67,000 college students from more than 100 institutions, one in five students had had thoughts of suicide, with 9 percent making an attempt and nearly 20 percent reporting self-injury. One in four students reported being diagnosed with a mental illness. Suicide rates are a slightly higher among girls than boys. Students are under tremendous pressure as well as adjusting to living away from family and friends and other accustomed support systems. Many colleges have expanded their mental health counseling services and suicide and depression awareness programs to help students better cope with their stress and depression.¹⁰⁶

Another population experiencing high levels of stress are transgender and nonbinary teens. A new study in the Canadian Medical Association Journal led by researchers from the University of Ottawa indicates more than half of transgender teens said they had seriously considered suicide in the 12 months preceding the survey. In total, 14 per cent of adolescents reported having suicidal thoughts over the previous year, while 6.8 percent said they had attempted to take their own lives. Transgender youth were five times more likely to have thought about suicide and 7.6 times more likely to have attempted suicide compared with youth who are cisgender.¹⁰⁷

Mental Resilience

The next decade will be exemplified by organizations trying to stem the mental illness tide and changes to the infrastructure of healthcare. That was the consensus among seven experts asked to predict resilience trends for 2022. Workforce resilience is correlated with workforce engagement, attraction, and retention. Organizations will need to implement a measurable evidence-based resilience strategy to attract and retain the best talent.¹⁰⁸

A Met Life study on mental health and worker resilience concludes employers will need to make mental health a priority in the workplace and take tangible actions to drive positive holistic well-being. The study found more resilient workers were more productive and engaged. Furthermore, they can adapt

amid uncertainty and change and have mental fortitude, remain positive in even the toughest times, and can bounce back more easily from adversity.¹⁰⁹

Various studies have indicated ways that people can learn to be more resilient. These include building a strong social network, staying optimistic, adopting practices to interrupt the stress cycle such as mindfulness meditation and breathing exercises, and accepting that sometimes circumstances are challenging but that they can be endured and eventually overcome.¹¹⁰ Drawing on experience also helps. AARP states that during the COVID-19 pandemic, surveys found, those ages 65 and older reported less anxiety and depression than those ages 18 to 24.¹¹¹

Violence

One response to the recent rebound in violent crime has been to call for more mental health assistance and treatment. According to the Mental Illness Policy Organization, all studies of mental illness and violence done to date suggest that individuals with severe psychiatric disorders who are taking their medication are not more dangerous than the general population. However, severely mentally ill individuals who are not taking their medication do pose a greater threat to the general population. Males who are substance abusers are most likely to become violent.¹¹²

Overall, violent crime was up by about three percent in 2020 over the previous year, but this should be seen in the context of the longer

term downward trend from a peak in the early 1990s. Some cities, such as Chicago and New York are experiencing a surge in violent crime, especially murders. An increase in gun sales during the pandemic may be contributing to a rise in gun violence.¹¹³ Center for Disease Control data from 2020 shows homicides were up 35 percent that year.

According to Statistics Canada, from 2009 to 2019 criminal use of firearms increased 81 per cent. 2019 saw a nine percent increase over the previous year. In 2020, there were 8,344 victims of violent crimes that involved guns, according to the Canadian Centre for Justice and Community Safety Statistics. Though the absolute number of homicides by firearm reached its highest level of the past five years in 2020 at 277, the proportion of homicides by firearm actually decreased. However, the vast majority of violent crimes involve non-fatal shootings.¹¹⁴ Economic and social disparities, rather than mental illness, are believed to be the main causes for increased violence, especially in big cities.¹¹⁵

Implications for Interior Designers

One of the areas where interior designers can have the greatest impact on occupants is in enhancing and supporting well-being. Evidence-based research and practice have shown that interior elements such as lighting and daylighting, color, space layout, shapes, ambient environment control, furnishings, privacy spaces, integration of technology, and access to nature all affect occupants' sense of comfort, safety and well-being. By employing practices such as biophilic design, green design, universal design, and prospect-refuge theory, designers can help ensure that interiors are not only physically safe and accessible, but also more conducive to promoting mental wellness.¹¹⁶

As mentioned above, the Global Wellness Institute foresees increased demand for wellness real estate in the coming years, including resorts and spas, generating opportunities for designers. In addition, the GWI report on the mental wellness economy states, "Practitioners and consumers have been leading the way, with the private sector creating new solutions, services, and products to help people build resilience and improve their mental wellness in their daily activities at homes, schools, and workplaces; in hospitality settings; and in the overall built environment."¹¹⁷

Occupant-centered design also has called attention to the role designers have in improving mental health facilities. A study of psychiatric crisis care spaces by A&D firm HKS, for instance, examined "the multitude of factors influencing the need for psychiatric crisis services and opportunities for how design can respond and support human-centered care." The authors observe, "As the rise in mental health service needs increases, so should our efforts in designing environments that support both [mental or behavioral health] patients and care providers." Among other findings, a review of the literature on patient experiences revealed the trauma reported from the "cold" & "clinical" environments when visiting an emergency department in emotional distress.¹¹⁸ A New York Times article reporting on new research and practices spurring the development of psychiatric facilities that feel more residential and welcoming quotes Mardelle McCuskey Shepley, the chair of the department of design and environmental analysis in Cornell's College of Human Ecology: "We've been talking about this for a really long time. It's only now that it's gaining momentum."¹¹⁹

Mental wellness is an issue for architecture and design students and young professionals. In an article for ArchitectureAU, masters in architecture student Catriona Li Bisset writes about her difficulty with extreme distress brought on by an intense workload, rigid course structure, and the pressure to achieve "starchitecture" status, which were compounded by the shaming she received from fellow students and teachers who viewed her as weak.¹²⁰ In 2021, employees at the A&D firm SHoP Architects announced they were taking steps to unionize, claiming they are overworked and underpaid.¹²¹ With A&D firms struggling to attract and retain talented employees, creating more supportive and less stressful work conditions and environments will be essential.

5

Workforce

High Demand, Demands High

- **US employment growth remains strong overall, while employment in Canada has declined slightly in recent months.**
- **The “Great Resignation” was mostly a “Great Switch” as workers left lower-paying or less desirable jobs in the hope of getting a better one.**
- **Employee satisfaction and engagement have both declined since the onset of the pandemic, prompted by changes in working conditions and workload.**
- **Despite resistance from some employers, remote work as a norm is here to stay.**
- **Increased use of automation, including artificial intelligence, may potentially displace tens of millions of workers, including some professionals, who will need to be trained and transitioned into other jobs and/or occupations.**

Employment

The July 2022 employment report from the U.S. Bureau of Labor Statistics showed surprising and broad-based job growth, reaching an all-time historic high. Payroll rose by 528,000 for the month. Notable job gains occurred in professional and business services, leisure and hospitality, and health care. The unemployment rate edged down a tenth of point to 3.5 percent. However, there are some signs hiring may be beginning to slow down in some sectors as employers worry about the

economy going into recession later this year or early next year. People in highly specialized, well-paid jobs still have a lot of options, but increasingly, those looking for a less-specialized, lower-wage job could encounter fewer openings.¹²²

TD Economics reports employment in Canada fell for the second month in row, by 30,600 (-0.2%) in July. The unemployment rate remained the same, matching an historic low of 4.9 percent, as fewer people searched for work. Losses were spread relatively evenly between part-time and full-time workers, but were concentrated in the services sector, including retail, healthcare and education. Self-employment rose following a decline in June, while the number of employees in both the public and the private sectors fell. Employment grew in manufacturing and construction.¹²³

One factor contributing to the shortage of workers in the U.S. is the decline in immigration in recent years. According to economists at the University of California, Davis, there would be roughly two million more working-age adults now living in the United States if pre-2020 levels of immigration had continued. The Trump administrations strict limits on the entry of H-1B visa holders has meant that the shortfall is leaving both high-skilled and low-wage jobs unfilled.¹²⁴ According to an analysis by the National Foundation for American Policy (NFAP), “Increasing legal immigration by 28 percent a year would increase the average annual labor force growth in the United States by 23 percent over current U.S. projections, which would help economic growth and address a slower-growing U.S. workforce.”¹²⁵

Canada, on the other hand, readily welcomed immigrants during the pandemic. In 2021, it recorded more than 405,000 new permanent residents—the most immigrants in a single year in its history. Earlier this year, the Minister of Immigration, Refugees and Citizenship, noting that immigration already counts for nearly 100 percent of labor force growth in the country, announced a three-year plan to continue welcoming immigrants at a rate of around one percent of the total population each year. These workers will be needed, he said, to help offset the five million Canadians set to retire by the end of the decade.¹²⁶

Great Resignation

Along with the “great migration” out of urban areas, the pandemic triggered the “great resignation,” in which the tight labor market in the U.S. motivated workers to seek better employment opportunities in record numbers. During the second half of 2021, for instance, some four million workers in the U.S. resigned each month.¹²⁷

In Canada, there has been no “great resignation,” up to now. The portion of workers leaving the labor force has held relatively steady at around one percent. However, there is concern that, with job vacancies up 80 percent from 2019, more workers could decide to switch jobs. A January, 2022, survey from the Bank of Canada found that 19.3 percent of workers had planned to quit their current job sometime this year.¹²⁸

A survey of more than 52,000 individuals

worldwide conducted in March 2022 by PwC showed 1 in 5 employees were likely to switch to a new employer.¹²⁹

Looking beyond the current trend, the U.S. is facing a longer-term issue of lower labor force participation and a shortage of needed talent to fill the jobs of the future. An op-ed in Bloomberg earlier this year points out the Great Resignation simply hastened a demographic squeeze that was the inevitable consequence of the retirement of the baby boomers and the decline in the birthrate accompanied by lower rates of immigration. Furthermore, contends the author, “The institutions, practices and mind-set that enabled the U.S. to create a workforce capable of powering the world’s biggest and most dynamic economy are threatened by decay, disarray and disruption.” This could put the U.S. at a disadvantage going forward as it seeks to compete with China and other up-and-coming nations.¹³⁰

Employee Satisfaction

A key driver of the job resignation trend is job dissatisfaction. Salaries, which until recently had been stagnating in terms of real dollars, are a major factor, but so are long work hours, work overload, work/life balance, lack of purpose and fulfillment, and a disconnect with the organization’s values.¹³¹ The general consensus is that resignation rates will remain high, unless the economy goes into recession and employment opportunities dry up.

Employee engagement has suffered as a consequence. The Gallup organization reports

after trending up in recent years, employee engagement in the U.S. saw its first annual decline in a decade—dropping from 36 percent engaged employees in 2020 to 34 percent in 2021, including an eight-point decline in the percentage of employees who are extremely satisfied with their organization as a place to work.¹³²

Workplace Equity

The majority of pandemic-related U.S. job losses in the first year of the pandemic were experienced by women, according to a 2021 report from the National Women’s Law Center. From February 2020 through December 2020, the report notes, women in the United States lost more than 5.4 million net jobs. Rates were highest among Blacks, Latinas, mothers, and low-income women and those with a high school degree or less. The biggest losses were in leisure and hospitality, government and retail.¹³³ More women have been re-entering the workforce this year, but many are as yet unable due to lack of childcare, school closures, and poor access to transportation.¹³⁴

Canada has had the highest level of female labor force participation in the world for decades. Nonetheless, during the first year of the pandemic more than 20,000 women left the workforce. The main reasons were lack of childcare or need to home school and returning to school to pick new careers and skills. Hospitality, retail and the arts sector lost the most female employees.¹³⁵

Remote Work

Recent studies show that the proportion of employees working remotely has declined from about two-thirds at the peak of the pandemic in 2020 to about one-third in 2021 and 2022, but is expected to stabilize at around that level going forward. About 29 percent of remote-capable workers were working remotely in June, down from 39 percent in February. Three out of five remote work days is common for many hybrid workers. The highest rates of remote work appear among technology, communications, professional services, and finance and insurance workers, with white-collar workers, particularly managers, more likely to work from home. Rates are highest in metro areas with high concentrations of technology and research companies, such as New York, Washington, D.C., northern Virginia, and San Francisco, as well as Los Alamos County, New Mexico and Forsyth County, Georgia.¹³⁶

Surveys show remote workers say they are more productive and experience better physical and mental health.¹³⁷ A June 2022 tracking survey conducted by Morning Consult found about 6 in 10 employed adults say they're more likely to apply for a job with a remote work option.¹³⁸ Close to three-quarters of Canadians say they've seen improvements to work-life balance by breaking up their time between the home and office, a hybrid work study from Cisco said. And the benefits from this new-found flexibility have stretched across all aspects of people's lives.¹³⁹

Research from Microsoft that surveyed 31,102

workers around the world between January and February 2022 showed 50 percent of corporate leaders already were requiring or planned to require workers to return to the workplace for five days a week. Yet, 52 percent of workers in the same study said that they are thinking of switching to a full-time remote or hybrid job in 2022, setting up a potential tug-of-war between employers and employees.¹⁴⁰

Automation & Job Displacement

Data gathered by the website FinancesOnline finds 43 percent of employers are set on cutting down on their workforce to make way for technological innovations. Consequently, as many as 85 million jobs could be displaced by automation by 2025, and 39 million workers could lose their jobs. These are not just low-level, repetitive labor jobs. By one estimate, some 2000 work activities across 800 professions could be automated.¹⁴¹

A recent study co-authored by an MIT economist suggests automation has a bigger impact on the labor market and income inequality than previous research would indicate. It identifies the year 1987 as a key inflection point in this process. Within industries adopting automation, the study shows, the average “displacement” (or job loss) from 1947-1987 was 17 percent of jobs, while the average “reinstatement” (new opportunities) was 19 percent. But from 1987-2016, displacement was 16 percent, while reinstatement was just 10 percent.¹⁴²

A blog on Brookings’ website summarizing

insights from the book *Shifting Paradigms: Growth, Finance, Jobs, and Inequality in the Digital Economy* by Henry J. Holzer asserts,

The “new automation” of the next few decades—with much more advanced robotics and artificial intelligence (AI) will widen the range of tasks and jobs that machines can perform, and have the potential to cause much more worker displacement and inequality than older generations of automation. This can potentially affect college graduates and professionals much more than in the past. Indeed, the new automation will eliminate millions of jobs for vehicle drivers and retail workers, as well as those for health care workers, lawyers, accountants, finance specialists, and many other professionals.

The author advocates for the adoption of new and better policies in education and training, “good job” creation by employers, and wage supplements for workers in order to help them better adapt to the coming changes and prepare to transition to new jobs.¹⁴³

A 2020 study produced by the Institute for Research on Public Policy in Montreal contends more than 10 percent of Canadian workers face a high risk of seeing their jobs transformed through automation—high risk being defined as a probability of 70 percent and higher. The study found workers with less education and lower incomes were more likely to be at high risk than those with degrees and high incomes.¹⁴⁴

Implications for Interior Designers

The most recent data from the U.S. Bureau of Labor Statistics shows the number of employed interior designers decreased slightly, 2.4 percent, from 2019 to 2020, after a substantial increase of nearly 6 percent from 2018 to 2019. Hiring in nearly all sectors of the industry declined in that period, although wages overall increased.¹⁴⁵ Architects and interior designers were among employees who left their jobs in order to obtain a better position, better compensation and/or overall better quality of life. And like many other professionals, they are migrating toward urban areas, which offer more amenities and are home to some of the larger A&D firms. In the past several years, designers in large numbers have been relocating to California, Texas, New York, Colorado, and Massachusetts. Within those states, by far the greatest number of employed designers work in the major metro areas of San Francisco and Los Angeles, Houston and Dallas, New York City, Denver, and Boston.¹⁴⁶

The shift to remote work has created several new opportunities for interior designers that likely will continue for some time. In the initial stages of the pandemic, designers were in demand to implement changes to make workplaces safer and sanitized and to accommodate social distancing. Now designers are engaged in redesigning workspaces for organizations that have downsized their facilities and to create spaces that will entice employees back to the office. Gensler's U.S. Workplace Survey Winter 2021 found that while nearly two-thirds of employees worked in an open plan office prior to the pandemic, only about half would consider returning to such an environment now. The desire for privacy in the office has become a growing expectation during the period of remote work. Moreover, states the report,

employees clearly expect changes to the work environment as they return to the office – over one-third of surveyed office workers feel their company's workplace is not prepared for hybrid work. When asked what would make them more comfortable returning, three-fourths of employees ranked access to private spaces in the office as a priority – a factor outranked only by enhanced air filtration and cleaning protocols.¹⁴⁷

Residential designers have been in high demand to upgrade and improve home environments for remote workers, including the design of home offices. Houzz reports that, in 2021, 18 percent of homeowners participating in its Houzz & Home Survey either remodeled a home office or added a home office. Spending on home offices increased an average of \$1,200 per project over 2019.¹⁴⁸

Another opportunity for designers has been the repurposing of now-empty office spaces that are being converted into residential living spaces or multi-use spaces. Of the more than 20,000 apartment conversions estimated to have been completed in 2021, a record 41 percent were in former office buildings, almost double the number converted in 2019 and 2020 combined, reports RentCafe. Former offices comprised one-quarter of future projects in which more than 52,700 units are expected to become available in 2022.¹⁴⁹

6

Technology

Machines and the Metaverse

- **In the near future, artificial intelligence (AI) and machine learning will be integrated into most industries and professions. New tools and applications will be offered to businesses and consumers, enhancing some functions while eroding even further privacy and the integrity of information / communication.**
- **Robots and robotics are becoming more ubiquitous in more sectors, including services and the home.**
- **The metaverse likely will be the next major development in how we communicate and interact using digital media, but at present it is still very much at the experimental stage.**
- **The proliferation of misinformation and disinformation through social media, the internet and other communications channels is likely to increase in coming years, with little success of trying to contain them through regulation or legislation.**

Artificial Intelligence

In 2019, the OECD adopted a set of AI principles, noting that it is already deployed in many sectors ranging from production, finance and transport to healthcare and security. Explaining why it saw a need to develop a set of principles shared by all OECD countries, the document states that while AI has the potential to improve the welfare and well-being of people, it raises challenges for

our societies and economies. However, of a panel of experts queried by the Pew Research Center on the topic, more than two-thirds (68%) expressed doubt that ethical principles focused primarily on the public good would be employed in most AI systems by 2030, noting that the main developers and deployers of AI are focused on profit-seeking and social control, and there is no consensus about what ethical AI would look like.¹⁵⁰

Innovations in and applications of artificial intelligence (AI) are advancing rapidly. In addition, we are seeing the convergence of AI, biotechnology, nanotechnology, and other fields. A Pew research survey of Americans' attitudes towards the future of AI focused on six of "a burgeoning array of AI applications" current or emerging technologies likely to have significant impact on society: the use of facial recognition technology by police, the use of algorithms by social media companies to find false information on their sites and the development of driverless passenger vehicles, computer chip implants in the brain to advance people's cognitive skills, gene editing to greatly reduce a baby's risk of developing serious diseases or health conditions, and robotic exoskeletons with a built-in AI system to greatly increase strength for lifting in manual labor jobs.⁵¹

A scenario developed by consultancy McKinsey envisions by 2025:

Vast networks of connected devices gather and transmit data and insights, often in real time. How data is generated, processed, analyzed, and

visualized for end users is dramatically transformed by new and more ubiquitous technologies, such as kappa or lambda architectures for real-time analysis, leading to faster and more powerful insights. Even the most sophisticated advanced analytics are reasonably available to all organizations as the cost of cloud computing continues to decline and more powerful “in-memory” data tools come online. Altogether, this enables many more advanced use cases for delivering insights to customers, employees, and partners.¹⁵²

In the augmented workforce of the near-now, smart tools and services will soon be available that can assist us in doing our tasks more efficiently, and more people will find that they are a part of their everyday working life in just about every profession, that includes performing some creative tasks.¹⁵³

Robotics

Once the stuff of science fiction, robots are becoming more common in many industries. 2021 may turn out to be the tipping point when robots started popping up everywhere, from factories to warehouses to roads to operating rooms to self-driving vehicles.¹⁵⁴ Some are also being marketed for use in the home as helpmates, monitors or companions.¹⁵⁵ The Washington Post recently reported on the use of robots in the hospitality industry to help fill the gap created by the loss of employees during the pandemic.¹⁵⁶ Robots

are increasingly being used in construction to perform onerous or hazardous tasks and as drones to inspect and monitor construction sites. A modular construction company in Idaho has implemented an automated robotics system that it envisions one day can be used to create multifamily housing.¹⁵⁷

Metaverse

Notwithstanding being absconded by Facebook CEO Mark Zuckerberg as the new name for his re-branded enterprise, the metaverse is actually a term used to describe a single, persistent digital environment where people may collaborate and interact in various ways. It's a virtual world similar to the internet, but with an emphasis on creating realistic experiences that the users themselves often create. Still very much in its infancy, at present, say some industry insiders, metaverse is essentially a marketing term used by companies building anything related to virtual and augmented reality or immersive digital environments rather than an existing seamless virtual world. But that is the goal, and some experts believe it is not all that far away.

One version of the metaverse in development involves the use of “mixed reality glasses,” which serve as a controller allowing you to move from one compartment of the metaverse to another. So, for example, instead of the flat desktop paradigm we use on our personal computers,

your office desk can become a special metaverse zone. It can pull up a virtual

computer for you. It could be set to hide private files, and appear differently to a colleague who comes by. Meanwhile, a teleworking colleague who wants to hop into your presentation doesn't need to be there to take part. They could join your desk via their iPhone (or perhaps even a VR headset), and your meeting becomes centered on a real gathering place rather than an app like Zoom.¹⁵⁸

In another version, you exist as an avatar, as in a video role-playing game, that can move from space to space, perform various tasks, and interact with other avatars. The avatar is customizable with an array of personalized fashions and accessories.¹⁵⁹

Other applications are possible. A contributor to industry website HospitalityNet posits, “We see it as a way to augment experiences in the real world and to enhance brand advocacy. Moreover, the examples we present are ones that have applicability in the near future and not some distant decade where you’ve already retired.” He proposes the metaverse could be used to “twin” employees who then could perform certain virtual tasks while engaged in other real-world tasks, or creating virtual experiences as an extra attraction for guests.¹⁶⁰

Along similar lines, Millennium Hotels opened the first virtual hotel in the metaverse in May 2022, thus bringing the future of avatar travel to life. Created on a platform called Decentraland, the virtual hotel, located near Genesis Plaza in the virtual world, sits on prime virtual property at the heart of Decentraland,

near social spaces like a virtual bar and café where avatars can meet friends for a drink, take in some digital art or follow a link to a live Discord room. The company has already begun construction of a second virtual hotel in The Sandbox platform as part of a “green metropolis” called MetaGreen. Eventually, inhabitants of the metaverse will be able to shop as well as socialize and engage in virtual experiences.¹⁶¹

Misinformation/Information Ethics

A literature review of research on social media concludes the spread of misinformation in social media has become a severe threat to public interests. Because of their use of algorithms to rapidly spread information and images, spreaders of misinformation can quickly fill information gaps in times of uncertainty, giving them power to influence the decisions of its audience. The study also mentions several strategies to help control the spread of misinformation but notes that they have limited success depending on the nature of the misinformation and its sources.¹⁶²

Misinformation, disinformation, malinformation, and deep fakes have become critical problems not only for celebrities, influencers, governments and politicians, but also for a wide range of businesses and institutions. Adding to the problem is the growth of disinformation-as-a-service, which for several hundred up to several thousand dollars will run misinformation campaigns for clients, ranging from distributing fake news stories to creating and maintaining authentic-looking

social media accounts and web sites.¹⁶³

Another victim of the spread of misinformation is the scientific community. Although a large majority of Americans express some level of confidence in science and medical institutions, confidence has declined since the beginning of the pandemic. Moreover, distrust in science and the medical profession have become deeply polarized politically as a result of misinformation, confusion and distrust fomented around topics such as the pandemic and climate change, with Democrats twice as likely to say they have confidence in them than Republicans. And scientists and medical scientists are not the only ones to experience a decline in public confidence. So have the U.S. military, K-12 public school principals and police officers.¹⁶⁴

When asked what they foresee as the evolution of misinformation going forward, several communications and information systems experts said that absent regulation, misinformation will get worse; divisions and cynicism will grow; and propaganda will be propagated under the guise of being news, fact or truth.¹⁶⁵

Various strategies have been suggested to try to combat misinformation in its various forms. These include building trust in institutions and legitimate media sources, fact checking, and responding quickly with corrective messaging.¹⁶⁶ Another the development has been the field of information ethics. These can apply to communications platforms and entities, such as social media and news outlets, but also to corporations, organizations,

institutions and governments in terms of how they collect, use and disseminate internally collected data on employees, suppliers and customers. A report prepared by consultancy Deloitte states,

The power of digital technologies to enable new sources of revenue can be significant. Due to a proliferation of digital technologies and the particular ethical challenges they present, organizations are increasingly expected to consider ethical obligations, social responsibilities, and organizational values as guides to which digital opportunities to pursue and how to pursue them.¹⁶⁷

Organizations, including institutions of higher education, are advised and encouraged to include information ethics guidelines and practices into their strategies and policies and to train employees and students to adhere to these policies in their work.¹⁶⁸

Implications for Interior Designers

Architects and interior designers were among employees who left their jobs in order to obtain a better position, better compensation and/or overall better quality of life. And like many other professionals, they are migrating toward urban areas, which offer more amenities and are home to some of the larger A&D firms. In the past several years, designers in large numbers have been relocating to California, Texas, New York, Colorado, and Massachusetts. Within those states, by far the greatest number of employed designers work in the major metro areas of San Francisco and Los Angeles, Houston and Dallas, New York City, Denver, and Boston.¹⁶⁹

The shift to remote work has created several new opportunities for interior designers that likely will continue for some time. In the initial stages of the pandemic, designers were in demand to implement changes to make workplaces safer and sanitized and to accommodate social distancing. Now designers are engaged in redesigning workspaces for organizations that have downsized their facilities and to create spaces that will entice employees back to the office. Gensler's U.S. Workplace Survey Winter 2021 found that while nearly two-thirds of employees worked in an open plan office The application of artificial intelligence (AI) to the built environment has been growing in the past several years as firms and businesses across the industry have been increasing their use of data analysis of various kinds and some AI research has focused on the technology's ability to become creative.

An article about the possible applications of AI to architecture explains,

AI is the perfect tool for this field. There's always an element of artistry when it comes to design for buildings and outdoor spaces, but there are a ton of calculations to consider too.

If you can break it down into numbers, computers can help. The geometry and efficient use of the space, building material amounts, wind patterns, load bearing weights, and even foot traffic are all areas ripe for AI.

Of course, computers are already doing some of this in rudimentary ways as part of design programs. However, the promise of AI is that the computer will figure things out on its own to come up with solutions to design problems, often with limited human intervention.¹⁷⁰

An undated article (possibly 2018?) on the AIA website observes, "Construction and software companies are incorporating AI more quickly than firms, which could leave architects out of key decisions in how the technology will influence practice. . . . It would behoove architects to

imagine that it's going to enter our field, and we have the opportunity now to do something about it, to look at ways it can actually improve what we're doing and make us more profitable as practitioners as opposed to being victim to somebody else taking it and running with it."¹⁷¹

One future scenario envisions how AI systems could be used to apply evidence-based data and information from neuroscience to help in the design of interior environments that support cognitive development when combined with designer creativity, intuition and empathy. The hope is that a branch of neuroscience will emerge that is dedicated to understanding how humans interact with space and place.¹⁷²

Conversations about the use of AI in interior design practice have focused largely on its integration into various design tools and apps in order to reduce manual work, create multiple variants at the same time, create a personalized experience and data-driven design direction. Some of these tools employ machine learning to save time on executing repetitive tasks. AI applications can also be used in modeling and imaging, creating various alternatives or prototypes based on previous designer and/or client preferences. On the flip side, some of these tools are being promoted to consumers and businesses as substitutes for working with a designer.¹⁷³

Up to now, efforts to create virtual worlds, such as Second Life and those envisioned for the metaverse, have relied primarily on graphic and video designers to create the look and feel of those spaces. Some companies are experimenting with creating their own internal "metaverse" that can be used in hybrid work situations to help remote workers feel more connected to the workplace. But they are not employing designers to develop those environments.¹⁷⁴ As to how virtual environments might compare to real ones in terms of how they affect users/occupants, a study reported in the *Journal of Interior Design* investigated how participant perceptions of a single interior environment varied among a real-world space and two surrogate VR spaces. It found there was no significant difference between the rendered-VR simulation and real-world space for brightness, glare, and spaciousness; however, performance on the visual acuity task was significantly lower in both VR simulations.¹⁷⁵

As robots of various kinds become more ubiquitous in interior spaces outside industrial use, designers will need to understand how they function and respond to the environment in order to create pathways and wayfinding devices to allow them to move safely and efficiently through the interiors in which they were designed to function.

As more and more design firms utilize data collected from occupants, clients, building sites, research, and other sources, they will need to implement policies and procedures for the use, storage and sharing of that data. This will include becoming familiar with potential legal liabilities that could arise concerning privacy or perceived communication of misinformation or disinformation. Another area where issues of misinformation could arise is design media. One opinion writer has pointed out,

In what remains of traditional architectural journalism, there is virtually no diversity of thought presented, together, on one platform, no real dialogue, only “good” architecture and little representation of “wrong” architecture. ... there is a seeming aesthetic apartheid, where each venue offers a point—but rarely, if ever, a counterpoint. This mirrors the separation of the rest of the media into oil and water, “news” and “fake news.”¹⁷⁶

One can imagine similar concerns being raised about the information firms publish about their projects or information designers include in their blogs or social media posts. The A&D professional organizations would benefit the industry by educating practitioners about these issues and how to protect themselves.



Built Environment Trends

Designing for Tomorrow

- **Nonresidential construction rebounding as residential construction stumbles.**
- **Demand for remodeling services to remain strong in 2022 then taper off in 2023.**
- **Hybrid environments combining elements of residential and commercial design will become more standard.**
- **The pandemic and concern about climate change have elevated sustainable and green design to project essentials.**
- **Commercial designers are working with clients on ways to decarbonize workplace and other environments.**
- **Designers can contribute to future proofing buildings to increase their longevity and usefulness by designing more flexible and adaptable interiors.**
- **Coming soon is the next generation of smart technologies for the home that will be more interconnected and integrated into a single control system.**
- **Wider adoption of digital technologies in the construction industry makes it possible to network multiple devices to improve communication, management and safety.**
- **Integrated knowledge bases of research findings, case studies and best practices could help reduce upfront programming and design time for specific project types.**

Construction

Trends & Forecasts

The most recent AIA Consensus Construction Forecast from July 2022 projects construction spending on buildings to increase just over 9 percent this year and another 6 percent in 2023. Despite weaker economic indicators, the forecast anticipates business will significantly improve across all sectors in 2023:

... challenges to the economy and the construction industry notwithstanding, the outlook for the nonresidential building market appears promising for this year and next. . . new project work coming into architecture firms, as well as inquiries for future projects, have been very strong, indicating design revenue at architecture firms will continue to grow.¹⁷⁷

It should be noted that this forecast was done before inflation soared, Russia invaded Ukraine, and the likelihood of a recession in 2023 increased.

Dodge Data & Analytics reports nonresidential building starts (in dollars) rose an astonishing 79 percent in July 2022, largely due to mega projects in the manufacturing and institutional sectors. Although multifamily was up 26 percent, overall residential construction fell by 8 percent month-over-month as a result of a decline in single family home construction.¹⁷⁸

The construction industry added 32,000 net jobs in July, up 4.2 percent year-over-year. Hiring was especially strong in nonresidential construction.¹⁷⁹ The National Association of

Home Builders, on the other hand, reported builder confidence fell for the eighth month in a row in August. Its index dropped to 49, the first time since May 2002 it has been below 50. Reported buyer traffic reached its lowest point since April 2014.¹⁸⁰

Statistics Canada reported investment in residential construction declined for the first time in nine months in June, as gains in the non-residential sector helped push overall construction investment up 0.3 per cent. Residential construction investment fell 0.4 per cent, while the non-residential sector rebounded, up 2.4 percent. Investment in single family homes investment in single-family homes continued to show strength, rising 0.7 per cent, outpacing multifamily investment.¹⁸¹

Remodeling Sector Crosswinds

Rising mortgage rates and declining home prices and sales may help to boost the home remodeling sector for the near term, including demand for interior design and kitchen and bath services. Current homeowners with low-rate mortgages are reluctant to sell or move. Until home appreciations begins to decline, homeowners may choose to use the equity in their home to “trade up in place” by investing in home improvements. At the same time, rising prices, concern about inflation and a possible recession, and fewer home sales are causing other homeowners to hold off on further spending.¹⁸² The result is a mixed market of countervailing forces, which is raising red flags for remodelers.

Zonda forecasts its Residential Remodeling Index will grow 10.7 percent for all of 2022 before leveling off into “much more moderate” growth rates of 1.4 percent in 2023, 0.8 percent in 2024, and 0.4 percent in 2025.¹⁸³ Similarly, the most recent JCHS Leading Indicator of Remodeling Activity projects year-over-year gains in remodeling expenditures to owner-occupied homes will decelerate from 17.4 percent in 2022 to 10.1 percent by the second quarter of 2023.¹⁸⁴

Remodeler confidence dropped by 10 points in the second quarter of 2022, compared to the same time last year, according to the National Association of Home Builders. Remodelers were seeing signs of a slowdown, with some customers canceling projects or reluctant to move forward with projects already underway.¹⁸⁵ Interior designers responding to the Q3 2022 Houzz Renovation Barometer were somewhat less optimistic than in the previous quarter, reporting declines in both expected new projects and inquiries.¹⁸⁶

The August 2022 Home Improvement Monthly Tracker, conducted by the Farnsworth Group, shows 38 percent of contractors saying they are experiencing project delays, with product availability and supply chain delays the primary cause for most. Going forward, 60 percent say rising cost of materials is their biggest challenge. On the homeowner side, 28 percent said they were delaying projects, primarily due to rising costs of materials.¹⁸⁷

Advancing Interior Design Legislation

In the past couple of years, the interior design profession has succeeded in advancing state legislation to recognize the crucial role interior designers play in protecting occupant health, safety, and welfare. Laws passed in Wisconsin in March and Illinois in June this year expanded the scope of interior design with permitting privileges for qualified interior designers to stamp and seal plans. In 2021, advocates for the profession achieved legislative victories in North Carolina and Oklahoma and improved distinct professional recognition in states including Utah and Virginia.¹⁸⁸

In December 2021, the AIA released a review of its policy statements in which, under the section on Public Policy Regulation of Architecture, Practice and Title Regulations in the Built Environment, it adopted new language, stating

In the public interest, AIA holds that architects licensed through rigorous examination, possess the necessary education, training, and experience to lead the design process to protect the health, safety, and welfare of the public in the built environment. While other regulated or licensed professionals may participate or be responsible for specialized and focused components, architects are uniquely qualified to take responsible control for the coordinated integration of building systems through a comprehensive understanding of design, construction, and the coordination of project teams

*from project inception to completion.
[underline added]*

The board voted to revise AIA's position statement on Practice and Title Regulations in the Public Environment by elimination AIA's outright opposition to interior design licensure. An AIA Interior Design Task Force was created to internally review AIA's stance, ultimately concluding that a revised position allows AIA and its members to be more flexible and to negotiate and discuss options and remedies with legislators, regulators, and partner groups that best suit their respective state since each state is different.

ASID and IIDA applauded what they view as a step towards greater understanding and recognition of interior design professionals' education, experience, and testing, and the role of NCIDQ-certified interior designers in protecting the health, safety, and welfare of the public in the built environment. Now that state components are no longer barred from working with interior designers, they are hopeful this will lead to further collaboration with the architecture community and pave the way for further advances in interior design legislation that protects the public.

Hybrid Environments

Before the pandemic broke the office-centric dam holding back the tide of remote workers and turned "hybrid work" into a household phrase, the built environment industry was already engaged in the creation of hybrid spaces. Strategies and solutions for creating

new hybrid work environments have dominated the design media over the past year-and-a-half, but the other types of hybrid spaces are still trending.

With fewer workers in the office on any given day, companies are looking to downsize their floor space and/or reconfigure their current design to make better use of the space they have. Some are moving away from large open-space plans to having more private spaces and more areas for collaboration and free-form gathering when workers are on site. Movable wall panels and easy-to-rearrange furnishings to support more flexible and adaptable spaces also are in demand.¹⁸⁹ A focus of this year's NeoCon expo was how to equip the modern workplace for hybrid teams and untethered workers. One reporter observed, "Given the proliferation of easily customizable furnishings in bold colors and lush materials, one trend was clear: manufacturers are betting on choice and design to do what free food, amenities and mandates have not done—draw workers back to the workplace."¹⁹⁰

Designing for hybrid workspaces is taking a cue from one of the pre-pandemic hybrid trends, "resimercial," the application of residential design practices and solutions to the commercial spaces. Two designers with HOK have suggested that one way to attract workers back to the office, at least occasionally, is by using the technique of stylization, that is, employing combination of home-like artifacts, like artwork and plants, that make spaces feel like home.¹⁹¹ But resimercial has more benefits as well. Architect Donald M. Rattner proposes resimercial design could prove a

lasting and effective strategy for realizing work environments that are happier, healthier and more creatively nurturing than those of the past, boosting innovation and productivity.¹⁹²

Resimercial cuts both ways. As noted earlier, the shift to remote working stoked demand for better home office environments. For some, that meant making their home workspace more like office workspace. Consequently, there has been increased demand for commercial-quality furnishings and materials to be used in the home, such as upholstery, floor coverings and lighting as well as seating and desks.¹⁹³

A related hybrid trend has been hotels converting vacant guest rooms into remote working spaces and meeting spaces into conference rooms.¹⁹⁴ Whether that trend continues as travel resumes and more offices reopen remains to be seen.

Already trending before the pandemic, drawing on hospitality practices and designs to create a more warm and supportive environment in healthcare facilities has gained wide acceptance. Patients and their families are made more comfortable, and the more positive environment can help promote healing and recovery. One recent project has extended the concept into building a medical facility adjacent to a hotel, thereby melding state-of-the-art medical technology with spaces that contribute to patient healing and visitor comfort.¹⁹⁵

Sustainability/Green Design

COVID Boost

While much attention was paid to health and safety in built environments as a consequence of COVID-19's high risk of contagion, the pandemic, along with worsening signs of climate change, increased interest in more sustainable environments. Reporting on the results of a facilities management survey from the second quarter of 2021, Kath Fontana, president of the Royal Institution of Chartered Surveyors, observed,

Although the pandemic has been the driving force behind many changes within the built environment, 2020 and 2021 also saw a shift towards more sustainable building design and operation. For many companies, it has presented an opportunity to examine office requirements and think about the needs of their future workforce.¹⁹⁶

An article on Eco-Business from 2020 explains how, because they place a strong emphasis on indoor air quality and well ventilated indoor spaces, installing green building technologies in shopping centers, offices, factories and other shared spaces can help to limit the spread of the coronavirus within them and stand them in good stead against future disease outbreaks. In short, green buildings are healthier buildings.¹⁹⁷

Along similar lines, an article in Metropolis discussed how engineers and A&D firms are exploring more effective HVAC and air filtration systems and technologies to prepare for a hotter future and the next pandemic.¹⁹⁸

Future Proofing

A growing response to climate change and other environmental impacts is "future-proofing" the built environment. The website BuildingFutures.org describes "future proofing" as:

constructing low-energy, sustainable buildings that are able to adapt to technological, social, environmental, regulatory and economic changes throughout their lifetime. In essence, we are designing buildings that will have a longer lifecycle than current constructions. Theoretically, buildings will remain relevant and fit-for-purpose for much longer than they are currently. A future-proof building can respond to challenges and changing uses. It will not need disruptive or costly refurbishments in its lifetime.

In order to anticipate unknown developments in the future, these buildings need to be designed for easy adaptation and flexibility.¹⁹⁹ Future-proofing building and design methods also are being applied to healthcare and wellness in anticipation of future changes in the delivery of care as well as future public health emergencies.²⁰⁰

Another model being explored in the Netherlands, called circular construction, is based on the concept of moving from a "take-make-waste" economy to one in which we will use materials in a never-ending cycle and fully exhaust the usability of existing assets such as buildings and machinery.²⁰¹

Design Technology

Sustainable Interiors

Once a niche specialty, green and sustainable design have become standard practices for most design firms. Heightened attention to climate change and occupant wellness have pushed them to the foreground in the past couple of years. Across the industry, from residential to hospitality to healthcare to the workplace, not just design media but industry media have touted the benefits of green interiors and the use of sustainable products and materials in interior design, as well as practices such as biophilic design.²⁰²

Some recent research studies have indicated that experts might have seriously underestimated the carbon footprint of interiors. More attention is now being paid to how designers can educate and work with clients on how to decarbonize interior environments.²⁰³

Much attention has been paid to new types of materials architects and builders can employ to make buildings more sustainable. Another area where designers can contribute to more sustainable environments and practices is through educating themselves about the supply chains as well as the composition of the products and materials they specify for the interiors of those buildings.²⁰⁴

Smart Homes

“We are on the cusp of a next generation of smart homes that will revolutionize the way we live,” declares a recent John Burns homeowner study. If a client is building or remodeling a luxury home, such technology is expected now. States Tricia Zach, research director, National Kitchen and Bath Association, Technology is more intuitive to younger designers. “Other designers lack the knowledge” and, she confides, there’s an element of intimidation. That’s going to be challenging to technophobes’ business prospects. “Tech isn’t going away,” she cautions. “It is a disservice to clients to not being knowledgeable in this area.”²⁰⁵

Adding smart technologies such as thermostats, lighting systems, door locks, faucets, and appliances has been a growing trend in residential design for several years. As more of these devices proliferate, finding ways to integrate them seamlessly into the environment will be a challenge. One possible solution, now in development are smart surfaces. Occupants may be able to use a wall or countertop as a touch-activated controller. Combining learning machines with automated technologies would allow certain features to be customized for each occupant, such as water temperature for faucets and showers or lighting settings and ambient temperature in particular rooms.

Connected Construction

The introduction of digital technologies into the construction industry has led to improvements in scheduling, safety, project monitoring, onsite communication, and more. Now those technologies are being linked up through a network of construction equipment, vehicles, devices, people, and locations that are all communicating with each other via wireless or digital technology under a single firm or organization. Known as connected construction, the approach promises to lead to improved communication and transparency, minimized risk, and more accurate timelines.²⁰⁷

Centralized Design Knowledge

What if, instead of reinventing the wheel or spending hours pouring over research and case studies that others have scoured before you, you could access a portal that would give you access to shared knowledge and best practices? That's the concept behind Flexspace, a repository of best practices that brings together educators, designers, experts and decision-makers to help create innovative learning spaces around the globe. Recently, the portal added the FLEXspace/Learning spaces Integrated Planning Pathway, a step-by-step process to address the complexities of designing and building learning spaces. The purpose is not to replace the input and expertise of designers and other professionals involved in a project but to create a shared understanding of the scope and aims of a project that can be used with clients, professionals and stakeholders to build consensus.²⁰⁸

Implications for Interior Designers

Current construction forecasts indicate that the sectors in which large number of interior designers practice, such as residential and commercial, will weaken in the next year or two. Demand for remodeling services also likely will drop. If the economy goes into recession, the combination will make business conditions difficult for many firms.

As mentioned above, the emphasis on occupant-centered design, as well as concerns about the impact of climate change, have helped to bring greater recognition to the contribution of interior designers to health, safety and welfare. That recognition, along with recent revision in AIA's policy statement document, should help continue the momentum of advancing interior design legislation in more states.

The impact of COVID-19 and climate change on the built environment has created new business opportunities for designers. However, the effects of those crises on the economy threaten to curtail some portion of new projects in the year ahead.

In the future, as the lines blur between work and home, residential and commercial, designers will need to develop cross-disciplinary skills and knowledge to create spaces that are neither residential nor commercial but a blend of both. At the same time, they will need to incorporate sustainable and green practices and principles into their designs. Indications are that product designers and manufacturers will develop the products and materials needed to do that.

New technologies will continue to drive innovation in the industry and create new paradigms for how designers work, both on their own projects and as a part of a team of professionals and stakeholders. Fostering a greater sense of community and knowledge-sharing can help designers keep pace with the speed of innovation and the introduction of new technologies currently in development.

Conclusion

One does not need a crystal ball to foresee that the current challenges besetting the built environment industry and society at large will worsen in the months, perhaps years, ahead before they get better. This scan did not address the political sphere, appropriately so. Yet it appears almost certain that political divisiveness, controversy and misinformation in the run up to the U.S. general election in 2024 will heighten social tensions and distract from addressing more pressing problems for the nation as a whole. If conflict increases between China and Western nations, that could put a further strain on national and global economies. Apart from such big picture scenarios, and even allowing for the possibility that conditions might improve sooner rather than later, there remains the issue of where interior design is headed. From a global perspective, the biggest challenge for the interior design industry, as for the built environment industry at large, is that the greatest opportunities are not where there is the greatest need. Much of the world is in dire need of decent, affordable housing. Aging societies will need more age-appropriate living spaces and public facilities. Buildings of all sorts will need updating to guard against and sustain increased climate-induced disasters. Yet, it is those who are less or least affected by these needs who will have the means to engage designers, architects, builders and others for other types of projects or only those that are likely to be most profitable.

Further developments in technologies, construction, materials and manufacturing may go some way toward offering solutions that will better meet the needs of the underserved. But it is at least worth exploring the question of whether there might be a better model for how the various parties and stakeholders involved can serve a larger constituency and produce quality built environments that are accessible to more people.

That might begin with how future designers and architects are educated and trained in the future. The professional organizations could also play a pivotal role by highlighting these issues, hosting and facilitating discussions among the various parties, and promoting dialogue by inviting professionals and academics to submit alternative models and scenarios for consideration.

Today, more than at any previous time, interior design is being more widely recognized for the ways in which it can improve function, quality of life, and the health, safety and welfare of occupants. Perhaps in the not too distant future, it may become recognized for how it can help address basic human needs, as well.

In regard to practice, aesthetics will remain a priority for most clients, but health, wellness, sustainability, inclusivity, accessibility and adaptability also will be priorities on many projects, commercial and residential. Designers

will be expected to integrate an increasing number of digitally connected devices into their designs, including possibly surfaces of various types. Advances in AI, machine learning and robotics will lead to design and construction programs that will perform some tasks designers currently complete themselves, altering somewhat the role and contribution of designers in the future.

If advocates continue to succeed in getting legislatures to pass interior design legislation, that may motivate more designers to become certified and licensed. The other big challenges for the profession will be finding ways to increase the diversity of practitioners and of firm leaders, and the eventual retirement of Baby Boom design principals, senior executives and firm owners, who make up a large part of the current number of practicing designers. The professional organizations, which they helped to create and grow, will need to find ways to engage younger and more diverse designers if they are going to survive.

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