THE
FUTURE
OF ARCHITECTURE & DESIGN

How Empathy and Big Data Will Drive Change

History has taught us that pandemics bring lasting changes to our cities – many for the better. Privacy and empathy — two themes emerging from the current crisis – offer hope and caution.

BY SAMANTHA SANNELLA & IAN CHODIKOFF

The rise of contact-tracing apps to track individuals exposed to COVID-19 is being lauded as a way to help contain the spread of the virus and offer all of us a sense of confidence as we emerge from self-isolation and begin to restore our everyday lives. For now, as we focus on physical, mental and economic recovery — and with fear in the picture until reliable treatments or a vaccine come to the rescue, we may choose to ignore the flashing warning lights about the dangers of big data. But with the push for hyper vigilance, technology will become a pervasive feature in architecture and design, delivering both awe-inspiring innovation and real threats to our personal privacy and freedoms.

On a basic human level, this crisis has expanded our definition of what it means to be an essential worker — and given us a newfound appreciation of the roles people play to maintain a civil and safe society. Maintenance people, cleaners, healthcare workers, waste collectors, delivery people, assembly-line workers, foodservice staff and others have emerged from the shadows to become celebrated heroes. Artists, too, have gained new value as 'points of light' for isolated people who have grown weary of Netflix shows and Zoom gatherings.

This brings us to two themes emerging from this crisis that will play significant roles in reshaping our future communities: **privacy** and **empathy.** The balance between the two will play out as we move forward — and with civil rights groups keeping a hawk eye on every move, as they did with Toronto's ill-fated Sidewalk Labs' neighbourhood.

As restrictions are cautiously lifted around the world, we are getting a sense of the magnitude of change caused by the pandemic to the way we live, work and shop — and we know there will be permanent shifts. The opportunities and perils presented by technology are about to be tested, as is the depth of our collective appreciation for people across all walks of life, including the elderly and most vulnerable.

Architects and design professionals are keenly focused on incorporating such themes into re-imagined workplaces, buildings and urban design. The following offers early thoughts and observations.

Collectively, there has been a growing sense of empathy for those who have sat on the margins of society — and this will shape the design of our future communities

TECH TO THE RESCUE

Large gatherings of any kind may be unimaginable for the foreseeable future, but virtual events will increasingly be the norm. Virtual reality 3D meeting rooms aren't far off and improving the VR telepresence through gamification will soon become a reality. Retail will continue its enormous transformation, innovating to stay afloat and shifting how products are marketed and delivered. Here, robotics and drones will become the next new normal — with more local distribution centres to speed up delivery times.

In urban planning, big data can be used to determine preferred trade areas, traffic and pedestrian movement and future development locations. For architects, applying big data principles are not as obvious, even though data-driven design makes buildings less expensive and more efficient.

Before the pandemic struck, high construction costs and other constraints meant that developers struggled to prioritize data-integrated solutions, typically only using SMART building technology to improve their HVAC systems.

Cushman & Wakefield is currently exploring new ways to improve its own office productivity assessments through data-gathering techniques, and is carefully weighing privacy concerns.

Years ago, Zaha Hadid Architects, a London-based global firm, embarked on revolutionizing office design utilizing big data by incorporating motion sensors in the workplace to understand connectivity. As sensor technology migrated from specialized equipment into ordinary smartphones, it became more widely used. Analysts can now use cell phone pings to track movements in office spaces via live dashboards. Cushman & Wakefield is currently exploring new ways to improve its own office productivity assessments through data-gathering techniques, and is carefully weighing privacy concerns.

A MORE EMPATHETIC APPROACH

Altering our everyday lives to mitigate the spread of this pernicious virus has revealed much about ourselves and our ability to relate to one another. Collectively, there has been a growing sense of empathy for those who have up until now sat on the margins of society — and this will also inform the design of our future communities. Sadly, it has taken the near-complete lockdown of our cities for people to become aware that every person equally deserves to be protected. The virus, after all, knows no boundaries.

Architects, real estate developers, business owners and others who influence how buildings are designed, constructed and occupied need to be mindful that properties are maintained, serviced, cleaned and otherwise managed by a wide community of individuals. Therefore, empathy must be a prime consideration in future design innovation now and once this pandemic subsides.

In healthcare design, the functions and processes supporting hospital logistics can be greatly improved with data-driven technologies such as the Internet of Things (IoT) or people/object movement apps. These technologies decrease wait-room times and patient-transfer times, ultimately saving hospitals money while providing a better patient experience. Indeed, new breakthroughs may lead to more comprehensive people-first designs that yield a greater understanding into how a building serves its user – from patient and maintenance worker to doctor or volunteer. Hence, a more empathetic approach to design.

USER-CENTRED DESIGN: HOW EMPATHY AND PRIVACY FIT IN

EMPATHY

Understand context of use → **Specific user requirements** → **Design solutions** → **Evaluate against requirements**

PRIVACY
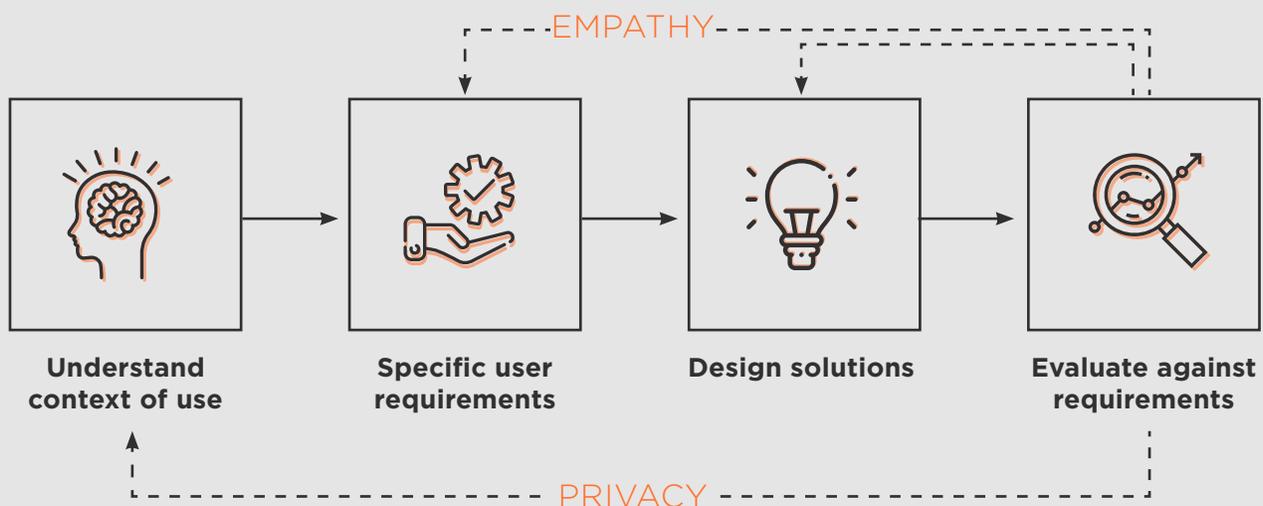
THE ADVENT OF CURATED VILLAGES

Will the human need to socialize with like-minded individuals in protected surroundings spur the creation of curated villages? Imagine real estate developments centred on a common theme such as farming or the performing arts that might attract residents who are committed to building a healthier community through selective data sharing with each another. This type of communal living may be a viable response to creating visionary communities, or simply driven by the fear of a future virus spreading in urban centres. Existing examples include Serenbe outside of Atlanta, Georgia, or Hendrick Farm near Ottawa.

It is conceivable that these communities may add a health-tracing app to protect their residents who seek to enjoy an idyllic worry-free lifestyle in the remote countryside, perhaps looking to history as an aspiration towards self-sufficiency. Such promises risk becoming too elitist, exclusionary, or naïve. Nevertheless, these are mere extensions of lifestyle and adult communities already operating, largely in more affluent suburban areas around the world.

SIDEWALK ROLLS UP ITS SIDEWALK

The economic fallout from COVID-19 was blamed for the surprise end of Sidewalk Labs' controversial plan to build a high-tech district on Toronto's waterfront by Alphabet, the sister company of Google. However, the 12-acre project, billed as the "world's first neighbourhood built from the internet-up'" was mired in controversy from the start, evoking fears of Big Brother ruling over personal lives and using data for commercial interests.

Everything from pedestrian traffic and energy use to the fill height of a trash bin and much more was to be counted, geo-tagged and put to use by a wifi-connected digital layer undergirding the neighbourhood's physical elements. Data would be gathered and information analyzed. Outspoken critics saw the project as a Trojan horse of smart city marketing – a private company that offered better urban governance but was really out to sell software and monetize citizen data.

There were of course passionate arguments on both sides. Regardless of the reason behind Alphabet's retreat, the bottom line is that resistance to big data incursions on privacy is intense – and juggling the pros and cons will greatly influence the design of future smart buildings and communities.
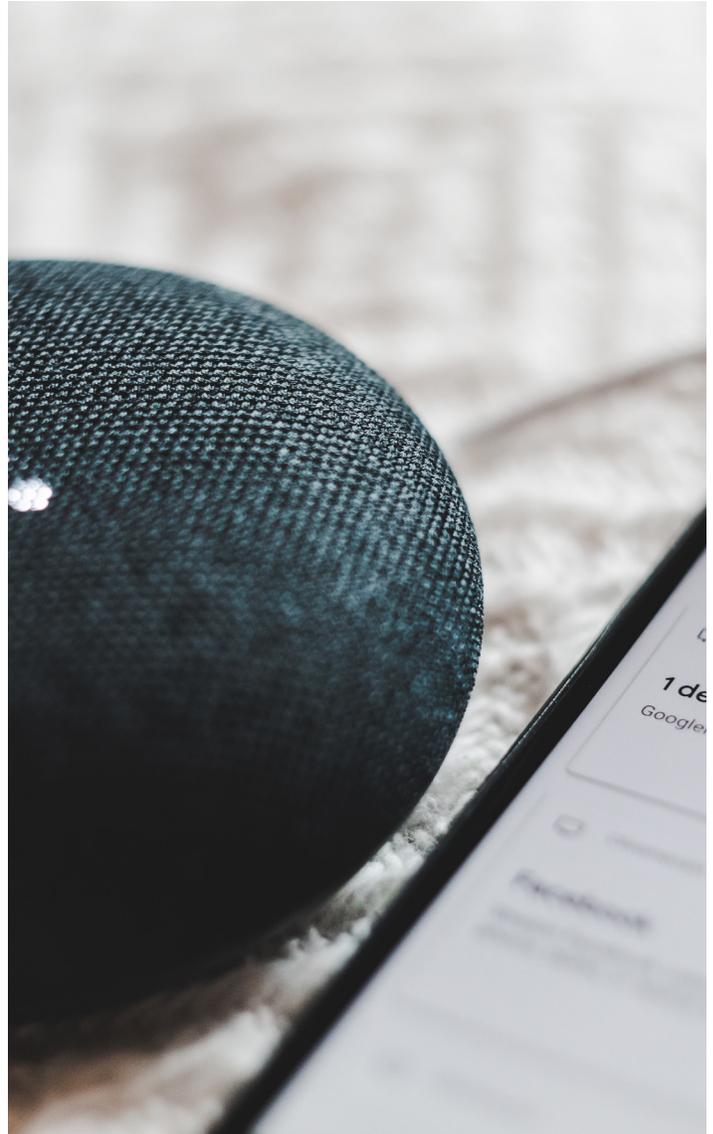
SMART RESIDENCES
Taking Direction From Your Toilet

For single-family and multi-residential developments, the use of biometrics may be the next big design and marketing trend. Already in use in many office buildings and on electronic devices, fingerprint identification and face scans can be used to customize the home to individual residents.

Imagine walking into a room and having the lighting automatically shift to a rosier shade that compliments your natural skin tone. Moreover, fixtures can capture data usage or personal health information and provide feedback onto a personalized dashboard. Not drinking enough water? Soon, your toilet may be able to let you know. The technology already exists for these innovations, so this is not a big leap for the industry. Soon, expect 'digital infrastructure architects' to be a necessary part of the design team.

BACK TO THE BURBS?

Will office tower design change significantly or will the urban landscape shift to fuel the rise of the suburbs again? It is likely so. Navigating the elevator systems in tall office towers may prove nerve-wracking and tedious. Moreover, the psychological impact of COVID-19 on our collective conscience may trigger a backlash against urban density. Organizations may seek to simplify their employees' lives by offering satellite locations with easier parking at low-rise structures.

HISTORY IS THE BEST TEACHER

The history of pandemics has shaped cities for centuries. From the Great Plague in England, which ended in 1666, to the 1918 Spanish flu pandemic cities have responded with wider boulevards, larger green spaces and aqueducts. Frederick Law Olmsted, whose own child died of cholera, saw parks as the 'urban lung' of the city and designed hundreds of iconic parks in cities around the world including Central Park in New York.

Paris was shaped by its own cholera outbreak and responded by building fountains, parks and boulevards in addition to a robust sewage system. How the future of urban design will look is intrinsically linked to understanding how COVID-19 is spread and its long-term repercussions. Nevertheless, there is one fact that we can count on: this will not be the last virus to affect our society. Planning for the health, safety and welfare of the population through empathy and big data while respecting our privacy will become a more important part of our work for years to come.
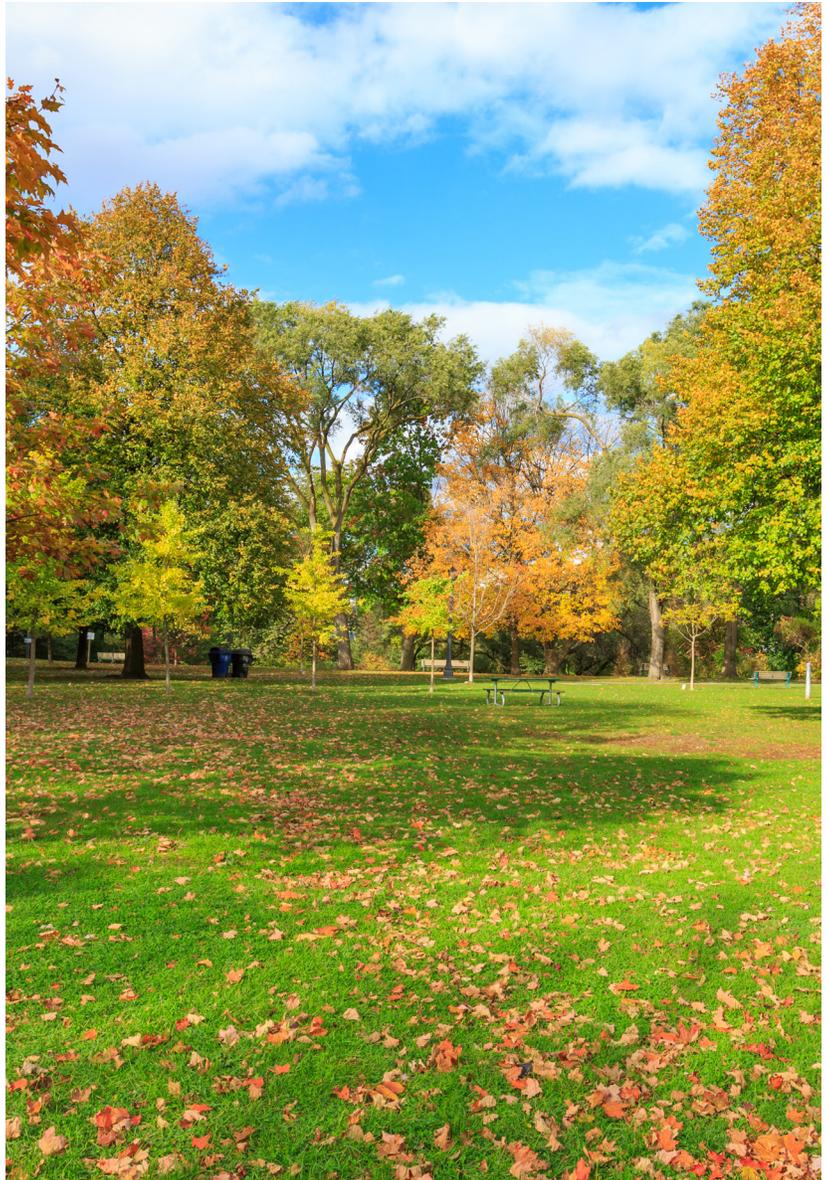
Samantha Sannella, BFA ID, M ARCH, Managing Director of Strategic Consulting in Canada for Cushman & Wakefield, specializes in design management, workplace strategy, occupancy planning, project management and future-focused building solutions.

Ian Chodikoff, OAA, FRAIC, is a Toronto-based architect and urban planner with an established reputation for leading city-building collaborations with municipalities, real estate developers and cultural organizations.

For more information, contact:
Samantha Sannella
Direct: +1 416 359 2582
samantha.sannella@cushwake.com

CUSHMAN & WAKEFIELD

Cushman & Wakefield ULC, Brokerage
161 Bay Street, Suite 1500
Toronto, Ontario, M5J 2S1
cushmanwakefield.com