Special Issue: The Post-Crisis City

In Numbers: The Post-Crisis Tall Building
New Solutions for the New Normal
New Protocols for High-Rise Fire Safety
The Tall Building Strategically Reconsidered
HVAC Strategies for Viral Control
The Pandemic-Resilient Office Tower
"We are now discovering that our hyper-optimized towers are unable to adapt to the spatial needs for occupancy during a health crisis."

Kaplan & Davis, page 32
Americas

Even amidst a global pandemic, tall building projects around the world are progressing. In Toronto, work has officially begun on the 313-meter-high SkyTower. The tallest of the multi-tower development Pinnacle One Yonge, the supertall is slated for completion in 2024.

In Kelowna, soaring demand for housing has resulted in over 10,000 interested in the 104-meter Bertram at Bernard Block condo tower. The proposed 34-story high-rise would add a highly-anticipated 257 residential units to the market by 2023 if approved.

In the United States’ cultural capital, New York City, construction has topped out on Morris Adjmi Architects’ Front & York, a 1.1-million-square-foot (102,193-square-meter) residential project at 85 Jay Street in Brooklyn. The 21-story structure spans a full block and will yield 728 apartments with prices starting around US$950,000. Meanwhile, installation of the brick masonry curtain wall and grid of industrial-style windows is progressing on the podium. White-colored panels vertically divide the fenestration, breaking up the monotony of the envelope and offering a contrast with the dark-colored bricks. In the New York City borough of Queens, another façade is nearing completion, with the curtain wall installation of Queens Plaza Park, also known as Sven, nearing its parapet. The 230-meter residential skyscraper features concave voids in its green glass exterior, broken up visually by thin white horizontal bands. Part of the massive Hudson Yards megadevelopment, 30 Hudson Yards’ towering sky deck, Edge, has officially reopened to the public after closure due to COVID-19. The outdoor observation deck has implemented measures to decrease the risk of spreading the virus, working closely with local hospitals and conducting temperature scans, and implementing no-contact ticket procedures.

The Chicago developer building the 101-story Vista Tower on the Chicago River, Magellan Development Group, has agreed to buy out its majority partner, Wanda Group, for US$270 million. At 363 meters, the residential/hotel tower is architecturally topped out, and is slated for opening in 2021. Also in downtown Chicago, The Post Office retrofit has unveiled a freshly-opened rooftop park, called The Meadows, which stretches for three city blocks and is home to some 35,000 plants.

Elsewhere in the Midwest, prominent mass timber project Ascent has begun foundation work in Milwaukee. The timber composite/concrete tower is planned to rise to 25 stories upon completion and will deliver 259 residential units to Milwaukee residents. The building will be constructed using cross-laminated timber (CLT) and will feature exposed timber on the interior, which has been linked to some positive psychological benefits, such as decreased stress.

In Edina, Minnesota, outside Minneapolis, a 23-story residential tower with 254 units has been proposed. The 7001 South France Avenue Residential Building would be part of a development including a 10-story office and retail building; a seven-story apartment building with 100 units; and a 6,000-square-foot (557-square-meter) U.S. Bank building and drive-through.

In Raleigh, North Carolina, the Raleigh City Council has approved a rezoning request for the 506 Capital Boulevard downtown tower, increasing its allowable story count from 12 to 40 stories. It will now also be able to provide up to 1,466 residential units throughout its 1.7 million square feet (158,000 square meters) of building area. Over in Nashville, a mixed-use community development continues to rise, with the 21-story Broadway Office Tower having just architecturally topped out. Part of the Broadway complex, the office tower will be accompanied by a 34-story residential and hotel tower that is scheduled for completion sometime in 2021.

In Houston, an investment management firm has been hired to handle leasing for another prominent tower in the Texas Medical Center
Towards Post-Crisis Tall Buildings and Cities

Abstract
The COVID-19 pandemic has caused a massive and sudden rethink of how tall office buildings, and cities as a whole, should operate. With national and local government responses varying widely across the globe, and much about the virus still unknown, it is impossible to generate a single safe operational model for the immediate near term. However, the aggregate knowledge of the building industry can be activated by creating an indicative, general assessment of how today’s tall buildings and their cities could be modified. This report collates the advice of the Council on Tall Buildings and Urban Habitat’s Expert Peer Review Committee and its database of the global tall building industry, as well as the consultancies and professional organizations in the wider CTBUH orbit, forming a hypothetical model of the potential changes coming to the existing stock of tall office buildings and the cities where they are located, and speculates on the urban implications of extrapolating these changes.

Keywords: COVID-19, HVAC, Pandemics, MEP, Tall Buildings, Vertical Transportation

Introduction
At the dawn of a new decade, cities around the world are in a state of crisis greater than has been seen in living peacetime memory. In early 2020, the world experienced a pandemic of the coronavirus (COVID-19) on a larger scale than any seen since the influenza pandemic of 1918, radically altering, practically overnight, most of the precepts that make high density and urban life desirable, and pushing the global economy into a recession. In an effort to stem the spread of this deadly virus, much of the global population was placed under movement restrictions of some kind, shuttering mass gatherings and altering vehicular and pedestrian density in major cities around the world. The entire social proposition of cities seems to have been upended and left in a state of suspended animation, including the very premise of commercial real estate (CRE), given the broadly successful transition to home working for many. Until a widely available vaccine is developed, there is no way of predicting with any certainty when or whether urban life can return to “normal,” or what the “new normal” will look like. Meanwhile, the crises already afflicting cities: including overpopulation, inequality, and climate change, have not abated. And yet, this is also a time of great opportunity, when bold moves can be made to reconfigure urban life in numerous aspects and unearth new potential.

This is the theme of the 2020 CTBUH Conference, “The Post-Crisis City: Rethinking Sustainable Vertical Urbanism,” live-streaming from Singapore, London, and Chicago, across 21 hours on 17 November 2020. It also underscores the research in this special report, and informs the Tall Building in Numbers data study, “The Post-Crisis Tall Building,” on page 22. In both this paper and the data study, the authors use a “generic” example tall building with many common attributes, as a means of modeling key alterations to building operations and systems due to public health guidelines.

Current Macro-Trends
Since the beginning of the outbreak in early 2020, the media reported increasingly dire stories of infection rates, deaths, lockdowns and political squabbling over how to handle the crisis. For certain business segments dependent on large groups of people spending time together, especially retail, hospitality, entertainment, and transportation,
The Tall Building Strategically Reconsidered—Seattle 2030: The Post-Crisis Tower

Abstract
The current perception of a post-COVID world is highly divisive and despairing. The “death of the tall building” is touted by prognosticators as a fait accompli. The concept of the city as a microcosm of commerce, urban living, culture, and civic uses has been put into severe doubt and paranoia. Density, mass transit and assembly uses are suddenly deemed as anathema to “normal” lifestyles, and the flight to the suburbs is touted as the new mantra.

This paper is an exploration of what a post-crisis vertical vision would reflect in urban America, responding to changing norms of the workplace, urban living, leisure, and transit. Its prototype is a hybrid 400-meter mass timber structure ensconced within a steel exoskeletal frame. With 90 percent of the tower comprised of mass timber, the 88-story structure would sequester carbon, reduce emissions, enhance structural performance and set new paradigms of the tall building as a modular, living-breathing machine, responding to the “new normal” of the contemporary urban condition.

Keywords: Biophilia, Carbon Footprint, COVID-19, High-Rise Office

Preface
In 1985, the venerable architecture critic Ada Louise Huxtable propounded the poetry and politics of the tall building in the book The Tall Building Artistically Reconsidered, itself a treatise on Louis Sullivan’s 1896 essay “The Tall Office Building Artistically Considered.” Yet today, the tall building sees no such odes to its form and existence; instead, it faces volleys of criticism from both public opinion, as well as from interest groups from across the environmental, political, social, and cultural spectra.

Meanwhile, “2020,” a number that has always been the symbol of perfect vision, is now forever tainted by disease and death. Invariably, when the current crisis recedes, however, life as we knew it will revert, continue, and thrive with some “new normal” changes and detours. The current paranoia, denigrating density and encouraging flight to the suburbs by industry stalwarts and political leadership, is unfortunate, and tends to exacerbate an already tenuous situation.

The Post-Crisis era will force us to reconsider myriad issues we took for granted, even as late as January 2020. Wariness and denouncements expounded by pundits and prognosticators has cast doubt on several major institutions of society, delivering summary negative judgements on cities, density (often conflated with crowding), mass transit, workplaces, spectator sports, entertainment, elevators, tall buildings, and urban living. The residential and commercial real estate industries will undoubtedly be hit hard and contract substantially in the short term, but even as the “mitigation” phase and corrective actions are currently under way,

“Any perceived structural limitations of a mass-timber supertall structure are alleviated by adopting a hybrid system of steel exoskeletal frames and concrete cores, with 90 percent of the tower’s composition remaining timber.”
About the Council

The Council on Tall Buildings and Urban Habitat (CTBUH) is the world’s leading non-profit organization for all those interested in the future of cities. It explores how increased urban density and vertical growth can support more sustainable and healthy cities, especially in the face of mass urbanization and the increasing effects of climate change worldwide.

Founded in the USA in 1969, the CTBUH member network embraces more than a million professionals working in all building industry sectors in almost all countries of the world. With offices in Chicago, Shanghai, and Venice, the Council runs hundreds of multidisciplinary programs across the world each year, through its regional chapters and expert committees; its annual conferences and global awards program; through funded research projects and academic collaborations; and via its extensive online resources and physical outputs. The Council is perhaps best-known to the public as the arbiter of tall building height and the global authority that bestows titles such as “The World’s Tallest Building.”

Operating on a global scale, the CTBUH serves as a platform for both cutting-edge information-share and business networking for all companies and professionals focused on the inception, design, construction, and operation of cities, and the buildings they comprise.