Special Conference Issue: Humanizing High Density

Case Study: Pan-Pacific Orchard, Singapore

Livability in Cities and Tall Buildings

Public Housing: Singapore and New York City

Text-to-AI: Fantasy on Demand

In Numbers: Singapore’s Green Growth
"The really interesting bits of Paris are the bits where Hausmann didn’t get involved."
Americas

A developer in the city of Esquimalt, British Columbia, Canada, is submitting an application for a 26-story condominium tower on the site of the former Carlton Club nightclub at 900 Carlton Terrace—along with an adjacent eight-story rental building—expected to offer one- to three-bedroom suites, including 176 units and 96 rental units, respectively. Public amenities such as affordable housing, a 371-square-meter dog park, two on-site plazas, an improved bus shelter, and street and boulevard improvements would be included.

Development in Toronto continues to move forward with a groundbreaking ceremony held in the downtown area on 3 June for the 73-story Forma East Tower of the Forma development at 260 King Street West. The design was originally proposed as a condominium high-rise in 2012 and had a revised design in early 2021. The two-tower scheme will have a total of 2,087 residential units. The West Tower is planned to be 84 stories and has yet to break ground. The East Tower is set for completion in 2028.

And, along Yonge Street, a proposal to replace a 1950s adult entertainment establishment with several developments including a 64-story, 219-meter condominium tower at 707 Yonge Street would redefine the area’s skyline.

Excavation and pilings are in progress at 570 Washington Street, in New York City. It is the site of a two-tower residential project, 29- and 36-story towers that will respectively reach 400 feet (121 meters) and 450 feet (137 meters) in height and the development will altogether cost around US$1.25 billion. Renderings show a sculptural design carved out by terraces and setbacks.

A 16-story office tower in Hudson Square has topped out at 555 Greenwich. It will combine with the 1931-built 345 Hudson to form a building taking up a full block. The new building will feature geothermal energy, radiant heating and cooling, and extensive electrification to greatly reduce or eliminate on-site use of fossil fuels. A dedicated outside air system (DOAS) provides 100 percent outside air to tenants. Retail will be on the ground floor with office space above, supported by 33,000 square feet (3,065 square meters) of outdoor space. A residential complex at 1515 Surf Avenue in Coney Island, also using geothermal ground-source heat pumps, has topped out. The project was partially funded through New York’s Community Heat Pump Pilot Program.

It is not all about what is “new” as historic buildings in New York City have gained more attention recently. Multiple celebrities rallied with City Council member Gale Brewer and community activists for the preservation of the West Park Presbyterian Church at 165 W. 86th Street at the corner of Amsterdam Avenue in mid-June. The landmarked 123-year building is in danger of being demolished and sold to a developer and replaced by luxury condos. In recent years, the building had turned into a non-profit community performing arts center. The iconic Flatiron Building has sold at public auction to Jeff Gural. A court-ordered partition sale settled a dispute between Gural and Nathan Silverstein, who owned 25 percent of the building. The US$161 million transaction was Gural’s second attempt to acquire the building. Significant renovations are anticipated for the future.
Nature-Positive Vertical Urbanism

Abstract
Located on Singapore’s famed Orchard Road, Pan Pacific Orchard (see Figure 1) encapsulates WOHA's pursuit of nature-positive vertical urbanism by rethinking the tropical urban hotel. It shows the breaking down and humanizing of megastructures into vertically stacked landscapes and social spaces. It makes the case for buildings as active participants of the city, serving the common good and increasing the amount of nature and biodiversity. It demonstrates a high-density, high-amenity built environment that is more liveable, sustainable and desirable. Pan Pacific Orchard Hotel makes a compelling case to pivot towards a “new normal,” where urbanism values coexist with nature.

Keywords: Breezeway Atria, Green Plot Ratio, Skygardens, Skyterraces

The Future of Us
There is profound inertia in the 20th-century city we have inherited. Our built environment has largely been created from a postwar worldview, concepts and forms and driven by tabula rasa, where urbanism is developed from a clean slate, with city planning extended and components replicated horizontally.

Today, 55 percent of the world’s population lives in urban areas, a proportion that is expected to increase to 68 percent by 2050. Urban migration and densification are consequences that both existing and developing cities must tackle. By expanding sideways, consuming the suburban and natural habitats, and creating tabula rasa, the horizontal city both exacerbates and perpetuates the problems arising from inequality, inaccessibility, and inadequacy.

The COVID-19 pandemic shows how valuable access to nature is. The extreme weather patterns we now experience show how we are part of a larger ecosystem within the natural world. The search for sustenance requires a rethink of city planning and urban design to create a sustainable and liveable city for people, and to take stewardship and restore nature to heal the man-made crisis. These are issues of global currency and urgency. Our future is not determined. Its outcome depends on our actions.

A City in Nature, and for the Future
The United Nations (2018) has projected that the world will have 43 megacities with more than 10 million inhabitants, most of them in developing regions, by 2030. Urbanization, combined with the overall growth of the world’s population, will add another 2.5 billion people to urban areas by 2050, with close to 90 percent of this increase taking place in Asia and Africa. With more than 3.3 billion people living in the tropics, representing about 40 percent of the world’s population, the tropical belt is a hotspot for development and densification. Many of the cities within the tropics are manifestations of 20th-century urban planning, with buildings in the International Style. Such hermetically sealed megaliths, often seen as a symbol of economic advancement, have not always been integrated into the local climate and culture.

In this light, Singapore offers a petri-dish of urbanism in the tropics. Located one degree north of the equator, Singapore is characterized by a hot and humid climate. As an island city-state with 728.6 square kilometers and a population of 5.6 million Singapore is one of the densest cities in the world (World Bank 2022). In 2020, Singapore introduced the “City in Nature” vision, which aims to ensure a green, livable and sustainable home for Singaporeans. This
includes strategies to expand the Nature Park Network, intensify nature in gardens and parks, restore nature into the urban landscape, and strengthen connectivity between Singapore’s green spaces. These initiatives have transformed Singapore into one of the greenest cities in the world. With limited land, Singapore can only urbanize and densify upwards, while seeking a coexistence with nature.

“Of the 23 species of fauna observed at the building thus far, 13 have not been previously recorded in citizen-science datasets within 500 meters of the site.”
Green + Growth: Singapore from Above

Over the past two centuries, Singapore’s land area has expanded by 25 percent, reaching 738 square kilometers in 2022. Land reclamation has its limits and, to accommodate its growing population, Singapore is looking at other viable options such as developing reserve land, intensifying land usage in new developments, and rezoning. This data study examines Singapore’s building stock, preservation of vegetated land, and land reclamation program at a high level. The interactive version of this study can be viewed by scanning the code to the right or visiting skyscrapercenter.com/singapore2023.

Since its independence in 1965, Singapore has become an urbanized city-state that has challenged its geographic deficits in areas like natural resources and land through strong and strategic city planning. Today, Singapore is known as one of the greenest cities in the world and is often referred to as the “Garden City,” an alias that the city-state’s first Prime Minister Lee Kuan Yew used in 1967 when laying out plans to transform Singapore by supporting green initiatives. In addition to its green reputation, Singapore has achieved high standards of living through its built environment. Known for its successful public housing policies, over 80 percent of the population resides in public housing and 95 percent of public-housing residents own their homes. The success of public housing speaks to a harmonious relationship that has been fostered between Singapore’s public and private sectors, which allows its land use to preserve nearly 50 percent of its natural state.

**Better, Cheaper, Faster, Taller**

Millions of Singaporeans are housed in developments built by the Housing Development Board (HDB). Shown at left, the rate of HDB’s construction has now surpassed that of Singapore’s buildings over 150 meters. If Singapore's residential buildings were all two or fewer floors, the land area dedicated to housing would have to increase by 6.8 times.

**Neighborhoods in the Sky**

Data from the HDB show just how critical verticality is to housing Singaporeans so densely. Although one- to two-story buildings comprise nearly two-thirds of Singapore’s building stock, they barely provide 15 percent of the country’s total gross floor area (GFA).

If Singapore’s residential buildings were all two or fewer floors, the land area dedicated to housing would have to increase by 6.8 times. Despite making up just 0.8% of Singapore’s building stock, buildings of 21 or more floors provide 12.9% of the country’s gross floor area.

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Leaving a (Green) Mark
Singapore’s Building and Construction Authority (BCA) awards the most sustainable of the country’s projects with “Green Mark” credentials. There are 2,105 such buildings in Singapore, 15 of which are 150 meters or taller. Green Mark buildings are shown below in light green.

Making Room for Coexistence
Despite the necessary growth of buildable land, Singapore’s land mass still remains 49.5 percent covered in vegetation, shown below. Land use planners estimate an additional 5,600 hectares5 of land will need to be reclaimed by 2030.

45% of Singapore’s 150 m+ buildings sit on reclaimed land.
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, 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.

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