Special Edition: Skybridges

Case Study: Raffles City Chongqing

Skybridges: State of the Art

In Numbers: Skybridges of Significance

Environmental Guidelines for the City of London

Social-Distancing Skyscrapers?
For a tall timber building, the design needs to be from first principles, which consider all fire risks and hazards, including the fact that the structure is now combustible.
Americas

A dual-tower development has been proposed next to a commuter rail station in Toronto. Consisting of two mixed-use residential and office towers at 44 stories and 29 stories respectively, and a new Mimico GO Station, the project would be connected by a multi-level podium. Meanwhile, construction is progressing on the massive Emerald City complex in Toronto’s North York borough, with its final three towers—the 33-story The Peak; the 23-story The Point; and the 15-story Lumina ascending to different milestones. When completed, the development will have delivered nine residential towers to the community.

In downtown Brooklyn, New York City, the residential tower One Boerum Place has structurally topped out. The slim, reinforced-concrete superstructure recently reached its 21-story parapet, and work subsequently shifted to the installation of its brick masonry façade. Over in Brooklyn’s Prospect Heights, the reinforced concrete superstructure of 18 Sixth Avenue, a 51-story residential skyscraper, has begun its ascent.

Chicago firm bKL Architecture responded to the nationwide slowing of work due to COVID-19 by shifting the use of its 3D printers to make face shields for healthcare workers, an essential resource that was, and continues to be, in short supply. The first batch was delivered to healthcare workers on 28 March, and deliveries are now being made to 12 states.

Also, in Chicago, financing was secured for the under-construction 60-story Salesforce Tower. The tower is the final piece to the Wolf Point Complex, which includes the completed Wolf Point East and West towers. Further North, in Evanston, the city’s first office high-rise in decades has been green-lit to rise at 605 Davis Street. The 18-story building could be delivered as early as 2022.

In San Francisco, most construction sites were ordered to cease work temporarily due to the pandemic. This happened in conjunction with similar orders extended throughout the United States. Still, plans for a 29-story apartment tower to rise in downtown Oakland are inching forward. The 102-meter residential high-rise at 1431 Franklin Street will sit atop a parking podium and provide 314 units.

In Los Angeles’ Skid Row, a mass-timber high-rise is being planned, which could be the city’s first. The Alvidrez will contain 150 supportive housing units in a modern-style building with offset windows and a white façade.

In Atlanta, a residential tower with generously-spaced condominium units held its groundbreaking. Graydon Buckhead, a 22-story building with 47 units, will offer two- and three-bedroom units, as well as a single, four-bedroom penthouse. In a rare case of a project accelerating during the pandemic, an under-construction hospital tower rushed to meet an earlier deadline in order to accommodate a surge of patients. The 16-story Marcus Tower at Piedmont Atlanta Hospital was scheduled to open in late summer 2020, but instead reached completion nearly five months early.

In Fort Worth, a nearly-century-old office tower is being redeveloped into a luxury
Case Study: Raffles City Chongqing, Chongqing

The Three-Dimensional Urbanism of Raffles City Chongqing

Abstract
Resembling a fleet of sailing ships on the river, Raffles City Chongqing (RCCQ) symbolizes both the city’s noble trading past and its future as one of China’s largest economic centers. Located at the confluence of the Jialing and Yangtze Rivers, RCCQ is a vibrant mixed-use development situated at the apex of the city’s peninsula. Occupying 9.2 hectares of land, the project includes eight “super structures,” a retail podium with a multi-modal transit hub, and an entirely reconceived transportation system. Bridging across four of the development’s towers is a nearly 300-meter-long enclosed skybridge, with more than 15,000 square meters of amenities.

Keywords: Mixed-Use, Skybridge, Urban Design

Introduction
While centuries old, Chongqing is experiencing unprecedented growth and regeneration that demands thoughtful solutions to increased density and mega-scale projects. It is a city unmatched in scale and population, but inherently humane. The undulating topography of the region creates intimate pockets of public space at many different elevations, overlooking one another and the city beyond. This three-dimensional urbanism is the defining characteristic of Chongqing, and has been embraced and perpetuated by the Raffles City Chongqing (RCCQ) mixed-use development. RCCQ is both intimately connected to the urban fabric of the city and an outlier—presenting a new kind of urbanism capable of dealing with increased density in a humane and considered manner.

Diverse program elements are distributed across RCCQ’s eight towers, designed to maximize access to daylight and provide unblocked views. Soaring above the park and retail galleria, the positioning of the towers follows the parcels established by the layout of the retail gallerias, thereby creating a series of “urban windows” that preserve vistas from the city through the project, to the rivers and the mountain ranges beyond.

Connection to the City
With no option of expanding the width or capacity of existing roads, or ability to add new roads to reach the project, integrating RCCQ into an already dense urban peninsula required a new, innovative traffic solution (see figures 1 and 2). Maximizing the use of

Figure 1. The context for the Raffles City project is Chaotianmen Square, the converging point of the Jialing and Yangtze rivers. It was critical for the project to provide multi-layered, multi-modal transportation connections. © Safdie Architects
Better Public Spaces: Developing Environmental Guidelines for the City of London

Abstract

The City of London is expected to see a significant growth in the number of tall buildings in the next decade, with several tall buildings nearing completion and many more in the planning and construction pipeline. These buildings inevitably have some impact on their environment, which can be challenging to resolve, particularly in the context of the narrow medieval streets criss-crossing the City. To address this challenge, the City planning team decided to embrace advanced modeling tools to carry out detailed evaluations of wind microclimate, overshadowing, air quality and thermal comfort conditions across the entire City. This paper provides a summary of the approach and outcomes of these environmental studies, which have culminated in the development of UK’s first guideline on wind microclimate studies, and a new thermal comfort guideline to be published in Summer 2020.

Keywords: Microclimate, Pedestrian Safety, Public Space, Thermal Comfort

Introduction

Growing urban populations require additional infrastructure, which, in already densely populated areas, frequently means taller buildings. In London alone, more than 200 tall building projects have been built or initiated construction in the past 10 years (CTBUH Skyscraper Center 2020). Although the benefits of such structures are many, they can have detrimental environmental impacts on their surroundings, such as altering wind patterns in the area, reflecting or limiting sunlight, and other undesirable changes to the environment. This paper provides a summary of a holistic study to address such environmental challenges in the City of London context, with the aim of improving the health and well-being of cities worldwide.

Environmental Challenges

Also known as the Square Mile, the City of London on the north bank of the River Thames has been a leading global financial center for centuries. With a tapestry of medieval passageways and streets, the City did not feature many tall buildings until the 1980s, when planners set aside an area known as the Eastern Cluster for the development of tall towers to meet the growing need for office space in the borough. Since then, the Eastern Cluster has become home to a number of skyscrapers synonymous with the financial prowess of London, with many others either approved or under construction (see Figure 1).

However, placing modern high-rise towers within the narrow streets of the City is not an easy task; the challenging site constraints often dictate a sophisticated approach to design, and can limit the amount of public spaces that can be created at ground level. Tall buildings can also have severe impacts on their surroundings, as demonstrated by one particular building soon after its completion, a 36-story high-rise at 20 Fenchurch Street, also known as “the Walkie-Talkie.” Located on the edge of the Eastern Cluster, this structure resulted in unexpected and quite dramatic wind and solar effects on the local area soon after construction. This led City planners to seek insight into the potential effects of other proposed structures, to avoid this type of adverse effect from future development.
About the Council

The Council on Tall Buildings and Urban Habitat (CTBUH) is the world’s leading resource for professionals focused on the inception, design, construction, and operation of tall buildings and future cities. Founded in 1969 and headquartered at Chicago’s historic Monroe Building, the CTBUH is a not-for-profit organization with an Asia Headquarters office at Tongji University, Shanghai, a Research Office at IUAV University, Venice, Italy, and an Academic Office at the Illinois Institute of Technology, Chicago. CTBUH facilitates the exchange of the latest knowledge available on tall buildings around the world through publications, research, events, working groups, web resources, and its extensive network of international representatives. The Council’s research department is spearheading the investigation of the next generation of tall buildings by aiding original research on sustainability and key development issues. The Council’s free database on tall buildings, The Skyscraper Center, is updated daily with detailed information, images, data, and news. The CTBUH also developed the international standards for measuring tall building height and is recognized as the arbiter for bestowing such designations as “The World’s Tallest Building.”