CTBUH Research Paper

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Title: **Cities to Megacities: Perspectives**

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Cities to Megacities: Perspectives

The CTBUH 2016 International Conference is being held in the three cities of the Pearl River Delta, the world's largest "megacity," projected to have 120 million inhabitants by 2050. The conference brings together some of the leading thinkers on urbanization, design, development, and the environment. They stand together – not only on stages in a convention hotel, but also high up in the most representative high-rise buildings in Shenzhen, Guangzhou, and Hong Kong – delivering the very best of the knowledge we have so far accumulated about this extraordinary phenomenon in which human civilization is now participating, and offering insights on the way forward. Some of the most prominent voices at the Conference are collected here, alongside short profiles of some of the exemplary projects featured in the Conference program.

Tall Buildings and Context: Appropriate High-Rise Vernaculars

Day 2 Plenary Panel Discussion
Tuesday 18 October, 9:15–10:45 a.m., Shenzhen

Yansong Ma, *Founder & Principal, MAD Architects*

Winy Maas, *Co-Founding Director, MVRDV*

Yan Meng, *Principal & Co-founder, Urbanus*

Patrik Schumacher, *Principal, Zaha Hadid Architects*

Jerry Yin, *President, SOHO China Ltd.*

The issue of skyscraper form and expression being appropriate to cultural and social context is currently a hotly debated topic in China, as well as other parts of the world. Some believe that skyscrapers are starting to homogenize cities architecturally, and often deny hundreds of years of vernacular traditions in a place, replacing these traditions with coldly calculating real estate equations that simply extract the greatest amount of floor space from a building's footprint. As such, countless cities around the world now hold claim to a number of towers conforming to the extruded glass box typology, and this building type is considered to be perhaps the greatest contributor to skyline homogeny. However, in practice, it can be difficult to pinpoint exactly what makes a building contextually appropriate, and thus the basis upon which to measure appropriateness can be difficult to define. Gathering together some of the most prominent and inventive practitioners reshaping the skylines of China and beyond, this plenary panel discussion examines this challenge through a variety of lenses, from both the developer and architect viewpoint.

Towards a Forest City

Plenary 3: Cities to Megacities: The Future
Tuesday 18 October, 3:45–5:15 p.m., Shenzhen

Stefano Boeri, *Founder/ Partner, Stefano Boeri Architetti*

Shijiazhuang, capital of Hebei province, a metropolis of three million in northeast China, is the city with the nation's highest rate of air pollution. The government of Shijiazhuang has asked Stefano Boeri Architetti to design a new city for 100,000 inhabitants. Both a city of new generation, capable of becoming a model of sustainable growth, as well as a small vertical town of public and private buildings, residences, offices, laboratories, museums, and schools, it will be completely covered horizontally and vertically by millions of plants and trees. Due to the great extension of its surface, the Forest City (see image below) will be able to absorb and use renewable energy and transport sustainable networks, which would make a huge contribution to the absorption of CO_2, the reduction of energy consumption and global warming. Its results will be quite evident.

> "Skyscrapers have always been about power, but they should also be about society. As our global society increasingly becomes an urban one, then development of skyscrapers should be taking a critical new direction."
>
> – Winy Maas, *Co-Founding Director, MVRDV*

Forest City, Shijiazhuang, China. © Stefano Boeri Architetti

Assessing the Urbanization of the Pearl River Delta

Session 2B: Megacities – Setting the Scene
Monday 17 October, 11:45 a.m.–12:45 p.m., Shenzhen

Peter Kindel, *Director, Skidmore, Owings & Merrill*

With the world's urban population expected to increase by roughly 2.5 billion people by 2050, developing an understanding of megalopolises is critical to understanding and shaping this trend. The Pearl River Delta, with over 55 million people, is one of the most populous urbanized areas in the world. This presentation explores its growth, the resulting social and environmental effects, as well as strategies for the region's future. It presents historic and current urbanization facts of the Pearl River Delta, comparing it to other urbanized regions of the world. Questions regarding the future viability of megalopolises have global applicability, and the authors will summarize key issues and future strategies for the Pearl River Delta.

Do We Need 700-Meter High-Rise Buildings?

Session 2A: Development Drivers
Monday 17 October, 11:15 a.m.–12:45 p.m., Shenzhen

Jovi Chu, *Design Director, Shum Yip Land Co. Ltd.*

In the era of globalization, the importance of urban and urban areas is increasing progressively. Through analysis of dense urban high-rise building complexes, as well as research on the relationship of those structures to a city's social organization, one can develop a thesis that the source and vibrancy of high-density cities arises from the opportunity for social proximity to build positive relationships among residents. Based on the principle of sustainable development, we can discuss how to deal with space and development models, and to ultimately build a high-density vertical city that raises the standards of livability.

Ping An Finance Center, Shenzhen

Ping An Finance Center, located in Shenzhen's Futian District, represents a new generation of the prototypical Asian skyscraper: very tall, very dense, and hyper-connected. The building rises from a prominent location, connecting seamlessly to neighboring commercial and residential properties, as well as the Pearl River Delta's high-speed rail corridor. At its final height of 599 meters, the tower symbolizes a city that has witnessed unprecedented urban growth, from 300,000 people to approximately 10 million – in the 35 years since becoming China's first Special Economic Zone. The shape of the tower is that of a taught steel cable, outstretched by the sky and the ground at once. At the top of the tower, the façades taper to form a pyramid, giving the tower a prismatic aesthetic.

Completion Date: 2016
Height: 599 m (1,965 ft)
Stories: 115
Area: 459,525 sq m (4,946,286 sq ft)
Primary Functions: Office/Hotel

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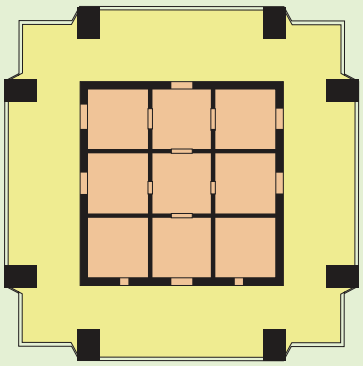
Ping An Finance Center will be featured in many sessions at the Conference, particularly in Session 9B: *World's Tallest Buildings: Technical Challenges,* Wednesday 19 Oct. at 8:30 a.m. It will also host the **VIP Networking Reception**, Sunday 16 Oct. at 6:00 p.m.

中国平安
PING AN

Ping An Finance Center, Shenzhen. © Fang Jian



Typical floor plan. © CCDI

Saudi Arabia, Jeddah City, and Jeddah Tower

Session 6B: Jeddah City and Jeddah Tower
Tuesday October 18, 11:15 a.m.–12:45 p.m., Shenzhen

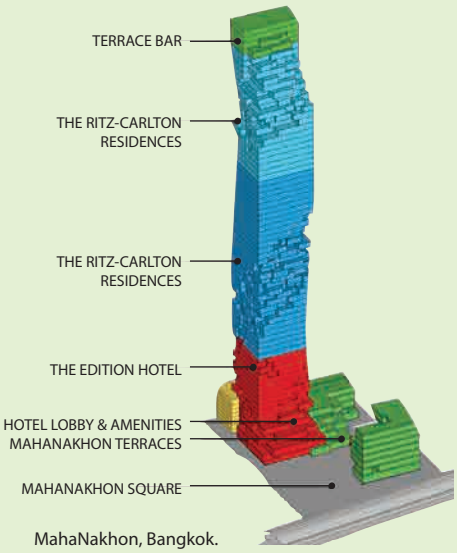
Mounib Hammoud, *CEO, Jeddah Economic Company*

The Kingdom of Saudi Arabia has embarked on an ambitious project to construct the world's tallest building, Jeddah Tower. Surrounding the kilometer-plus building will be a new city built out of the desert on the outskirts of Jeddah. Together, Jeddah Tower and Jeddah City are designed to become a new global destination for Saudi Arabia, introducing new forms of engagement with the country through a changing economic model. Previously reliant on oil, the Kingdom is developing Jeddah as a means of reorienting its economy towards a global model based on business and tourism. The instantly iconic Jeddah Tower will be the new anchor of this changing economic model, attracting investment to the region through its status as a symbol and icon for the country. The surrounding Jeddah City will not only benefit from that investment, but also reorient design in the region towards a more sustainable and vernacular architecture.

MahaNakhon, Bangkok. © PACE Development

MahaNakhon, Bangkok

Upon completion, MahaNakhon became the new tallest building in Thailand and an instant landmark on the Bangkok skyline. The unique shape of the tower began with adhering to a required setback line angling inward from the property line as elevation increases, requiring the top of MahaNakhon to be cut away on the east side. This planning requirement in part inspired the "pixelation" of the tower's exterior, leaving an impressive 30% of the tower's floor plates in cantilever. The name "MahaNakhon" is derived from the Thai meaning of "great metropolis" and integrates itself within the local context through the inclusion of a landscaped plaza intended to serve as a new public space, surrounded by 10,000 square meters of upscale retail and restaurants in a lush garden setting at the tower's base. The tower is then composed of a boutique hotel and luxury residences arranged into single-level and duplex units. The tower is then topped with a multi-level sky bar and restaurant, affording expansive views of the great metropolis stretching outward towards the horizon.



MahaNakhon, Bangkok.
© PACE Development

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Several speakers will be presenting on the MahaNakhon, notably, **Sorapoj Techakraisri,** CEO of PACE Development, in his presentation **"Bangkok and the MahaNakhon Tower"** in Session 4B: *Other Asia Case Studies*, Monday 17 October at 3:45 p.m.

PACE

Completion Date: 2016
Height: 314.2 m (1,031 ft)
Stories: 75
Area: 121,782 sq m (1,310,851 sq ft)
Primary Functions: Residential/Hotel

The Challenge of the Megacity

Session 16: Dense Sustainable Urbanism and the Future of the Megacity
Friday 21 October, 3:30–5:00 p.m., Hong Kong

Bernardo Fort-Brescia,
Founding Principal
Arquitectonica

No longer confined to the realm of science-fiction, the megacity has arrived; teeming metropolises stretch across the world, and probably no more evident than in the Pearl River Delta, with its interconnected hubs of Guangzhou, Shenzhen, and Hong Kong. In order to truly understand the megacity's future, we must first understand the histories, present state and possible futures of its constituent cities. They have been the drivers of development, innovation, and cultures; nothing compares to them for sheer energy and drive. Yet they face ever-growing problems: sustainability, climate change, quality-of-life issues, and the loss of heritage and identity amidst rampant urban growth. Innovative solutions must be explored.

X-Information Modeling (XIM): Data-Driven Decision Making in the Design of Tall Buildings

Session 3A: Tall Buildings and Urban Habitat
Monday 17 October, 1:45–3:15 p.m., Shenzhen

Jamie von Klemperer,
President, Kohn Pedersen Fox Associates

X-Information Modeling (XIM) is a method of data-driven decision-making for the design of tall buildings. The variable "X" represents flexible accommodation of objectives for quantitative evaluation. Developed over its application on more than 200 projects worldwide, XIM comprises a set of digital evaluation tools that match data analysis to 3D models, enabling designers to iterate tens of thousands of design options against criteria tailored to the building's urban context. Particularly for dense urban environments, this interactive system helps designers respond to regionally specific constraints and objectives, such as zoning, climate, and market expectations. XIM has been used in the iterative design of a hypothetical skyscraper in Manhattan; a data-driven analysis of New York, London, and Shanghai; and in aiding a city planning department with rezoning.

Dense Downtown vs. Suburban Dispersed: A Pilot Study on Sustainability

Opening Plenary: The Sustainability of Density and Vertical Urbanism
Monday 17 October, 9:15–10:45 a.m., Shenzhen

Antony Wood,
Executive Director, CTBUH

As cities expand, choices are being made every day about whether they will be dense or dispersed. There are perceived notions about the benefits of both. Given the speed at which development is happening, it is dangerous to operate on these notions. CTBUH has thus undertaken a ground-break-

ing two-year research project, to be presented at the conference, which quantitatively investigates and compares the environmental and social sustainability of people's lifestyles in downtown high-rise and suburban low-rise scenarios, using four residential towers in downtown Chicago, and an equivalent number of households in the suburban area of Oak Park, as case studies. The study is ground-breaking because, to date, similar studies have been mostly based on very large data sets of generalized data regarding whole-city energy consumption, or large-scale transport patterns, which often misses important nuances. The emphasis of this study has been on obtaining real data through, for example, obtaining actual home utility bills, tracking weekly transport movements, etc. Specifically, in both high-rise and low-rise scenarios, the study evaluates: (i) the monthly energy consumption of the homes; (ii) the embodied energy of the materials that comprise the buildings; (iii) home water consumption; (iv) mobility and transport movements via all modes of transport, including automobile, public transport, walking, and biking; (v) urban/suburban Infrastructure; and (vi) quality of life.

> "China will lead the world in building ultra-high-density, connected, and vibrant hubs within its cities, accommodating our new needs by providing public spaces at many levels, and in fusing the outdated concepts of high-rise towns into new vertical cities."
>
> – Keith Griffiths, *Chairman, Aedas*

A Perspective on TAIPEI 101's Decision to Upgrade to LEED O+M v4 Certification

Session 3C: Building Operation
Monday 17 October, 1:45–3:15 p.m., Shenzhen

Joseph Chou, *Chairman, Tower Management, Taipei Financial Center Corp.*

The sheer size and complexity of a building like TAIPEI 101, along with the international nature of the project and newness of LEED v4, can present particular challenges to project teams. Despite this, TAIPEI 101 is in many ways representative of all multi-tenant office buildings, as are the plurality of LEED Operations + Management (O+M) projects; therefore, the success of this building offers a relevant case study for this building type. The increased stringency of the new system presented a number of challenges, all of which were worth overcoming. The exercise brought about a change in management style, due to the practical differences between LEED O+M v2009 and v4. Most importantly, it brought substantial business benefits to TAIPEI 101 and underscored the importance of tenant interaction in LEED O+M v4 certification.

Merdeka PNB118, Kuala Lumpur

The developer of the site for the Merdeka PNB118, Permodalan Nasional Berhad (PNB) had a vision. PNB's dream was not merely to house all its operations under one roof, but to foster an environment for the connectivity, social interaction, discovery, and life needs of PNB's employees and the community at large. This project provides premium class "A" offices to promote productivity; state of the art meeting spaces for 21st century interaction; top end accommodation with desirable guest spaces and amenities; a destination restaurant higher and more impressive than all others in Kuala Lumpur; public access to a multi-level observation deck experience; private and exclusive spaces for the most important heads of state and CEOs; and retail experiences that keep people engaged and coming back again and again.

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Several speakers will be presenting on **Merdeka PNB 118,** notably, **Karl Fender** in his presentation **"Merdeka PNB118 Case Study: Adding Value to the Growing City"** in *Session 4B: Other Asia Case Studies*, Monday 17 October at 3:45 p.m.

Completion Date: 2020
Height: 630 m (2,067 ft)
Stories: 118
Area: 292,000 sq m (3,143,062 sq ft)
Primary Functions: Office/Hotel

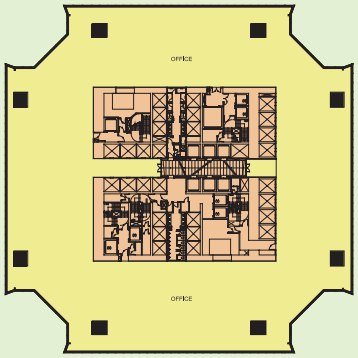
Merdeka PNB118, Kuala Lumpur.
© Fender Katsalidis Architects

International Commerce Centre, Hong Kong. © Tim Griffith

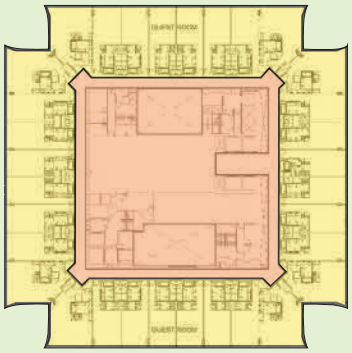
International Commerce Centre, Hong Kong

The International Commerce Centre (ICC) houses some of the most prominent financial institutions in the world. The building is routinely recognized as a paragon of good management, from a commercial, environmental, and community standpoint. The level of energy efficiency achieved by the ICC is unusual for a tall building, and significant investments have been made in improving energy performance over the years, especially since adapting the ISO 50001 Energy Management Systems (EMS) certification in 2011. This commitment was followed by more than 50 advanced energy-saving measures. The Energy Utilization Index (EUI) of ICC's energy performance in 2013 was 157.3 kWh/m^2, placing it among the top 90% of energy-efficient commercial buildings. The first day of the Hong Kong program is hosted here, comprising 12 presentations in Sky100, a 360-degree observation deck on the 100th floor, as is the evening networking reception.

Completion Date: 2010
Height: 484 m (1,588 ft)
Stories: 108
Area: 274,064 sq m (2,950,000 sq ft)
Primary Functions: Hotel/Office



Typical office plan. © KPF



Typical hotel plan. © KPF

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ICC will host the opening afternoon in the Hong Kong segment of the Conference, Thursday 20 October from 12:30 p.m. to 5:00 p.m. **Sun Hung Kai Properties** will also host the **Hong Kong Networking Reception** in the building, Thursday 20 October at 6:00 p.m.

新鴻基地産 Sun Hung Kai Properties

How Tech Companies and Other Work Patterns Are Changing High-Rise Office Buildings

Session 4J Panel Discussion
Monday 17 October, 3:45–5:15 p.m., Shenzhen

Timothy Johnson, *Design Partner, NBBJ*
Robert Pratt, *Co-Head of Global Design & Construction, Tishman Speyer*
Jeremy Sheldon, *Managing Director, JLL*
Ivan Wan, *Executive Manager, Tencent Holdings Limited*

In recent years, creative companies driving the "idea economy" have seen high-rise towers as a distinct business advantage. The dense co-location of human, technical, and urban resources, combined with the high-tech infrastructural opportunities offered by newly constructed office buildings, provide a clear argument for companies to consider occupancy within this building type. As the trend continues, how will companies like Samsung and Amazon push the typology to new levels of innovation, productivity, and sustainability? This expert panel, composed of high-level professionals from the realms of development, construction, architecture, and property management, will discuss emerging trends in skyscraper design, as informed by this new economy.

The Psychological Relationship Between a Tall Building And a City

Session 2H: The Impact of Tall
Monday 17 October, 11:45 a.m.–12:45 p.m., Shenzhen

Claes Caroli, *Chairman, HSB Malmö*

Developing a tall building in 2002 in a city that has its roots in the 11th century was a challenge. At the time this project started, the city of Malmö was in bad shape. For years, it had leaned upon its famous shipyard, heavy industries, car manufacturers, and related activities. When the shipyard closed in 1987, the deterioration began. Luckily there were some far-sighted and visionary politicians in city hall. They realized that the city must evolve from an industry-based economy to a knowledge-based economy. At the same time, HSB Malmö was expanding and looking for new land areas to explore. The

city got a new university and a new industry developing smartphones and computer games. This new platform, however, had to be accepted by the citizens. The Turning Torso was the answer for that – a new icon.

127 Years, 12 Buildings, 9 Footbridges: Creating Horizontal Connectivity Across a Vertical Portfolio

Session 14C: Sidewalks in the Sky: Skybridges and Tall Buildings
Friday 21 October, 8:30 a.m.–12:00 p.m., Hong Kong

James Robinson, *Executive Director, Hongkong Land*

Rickshaws and sedan chairs parked in neat ranks waiting for business in the shade of banyan trees, contrasting with that of businessmen from many parts of the world going about their affairs. That was the street life in Hong Kong's early days. Not until the growing congestion of the 1950s was vehicular and pedestrian traffic a consideration for those designing and buildings Hong Kong's Central District. So in the early 1960s, the idea arose within Hongkong Land to connect two of its prime properties, Prince's Building and The Mandarin Hotel, by an elevated footbridge high above the bustling street. This was the first of many such public overhead walkways. Today it is hard to imagine Hong Kong's Central Business District without these elevated, now mostly air-conditioned footbridges that can take pedestrians from one side of Central to the other without impediment, come heat, rain, or typhoon.

> "Robotic construction, computer enhanced design, and augmented environments are a few technologies that are reshaping how buildings and cities are designed, constructed, and operated."
>
> – David Malott, *Principal, Kohn Pedersen Fox Associates*

Vertical Futures: Technologies that will Shape the World

Session 2C: The State of the Art (Technologies)
Monday 17 October, 11:45 a.m.–12:45 p.m., Shenzhen

David Malott, *Principal, Kohn Pedersen Fox Associates*

We are at the cusp of a building revolution which, for the first time, won't be led by a developer, builder, architect, engineer, or urban planner. Technological innovation operating at unprecedented scale and speed is reshaping how buildings and cities are designed, constructed, and

City of Dreams, Macau

The City of Dreams project is composed of two towers connected at both the podium and roof levels, while additional bridges span a series of voids carved into the singular volume. The exposed exoskeleton of the structure lends both visual appeal and the opportunity to reduce internal structural requirements. The rectangular site outline is extruded as a monolithic block shot through with a series of voids, which will define the hotel's internal public spaces, including a 40-meter-high atrium. Standing 40 stories high, the hotel will contain 150,000 square meters of space, including 780 rooms, suites, and "sky villas." The project is expected to open in early 2017.

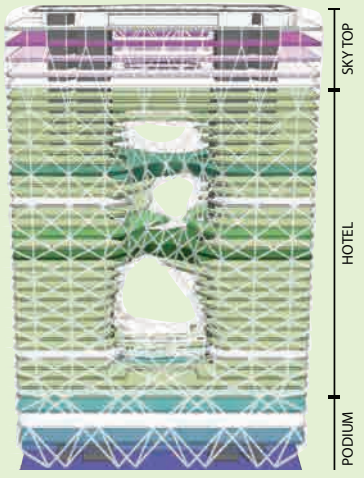

Diagram of function distribution. © Zaha Hadid Architects

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Several speakers will be presenting on **City of Dreams,** notably, **Patrik Schumacher** in his presentation **"High Intensity Urban Order"** in Session 3F: *Rethinking the Skyscraper,* Monday 17 October at 1:45 p.m.

City of Dreams, Macau. © Zaha Hadid Architects

Completion Date: 2017
Height: 169 m (554 ft)
Stories: 40
Area: 150,000 sq m (1,614,587 sq ft)
Primary Functions: Hotel/Casino

One Island East, Hong Kong. © Swire Properties

Swire Properties Brands

The theme of "Investments Across Cultures and Geographies" applies particularly well to Swire Properties, which has successfully transferred its successes in property development from its original base of Hong Kong, across Mainland China, using the "Taikoo" brand, and now to Miami. Each development featured in the program brings international flair and sophistication to its city, but also builds strong connective bonds with, and reflects the values and prevailing culture of, the local community. A vibrant mix of uses, round-the-clock programming, excellent transport access, and a carefully chosen amenities offer ensures that these developments become indelible parts of the diverse cities in which they are built.

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One Island East, Hong Kong will host the closing afternoon of the Conference, Friday 21 October from 12:30 to 5:00 p.m. Owners **Swire Properties** will also host the **Closing Networking Reception** in The Lawn at The Upper House, Friday 21 October at 6:00 p.m.

太古地产
SWIRE PROPERTIES

Taikoo Place, Hong Kong
Tallest Building: One Island East
Completion Date: 2008
Height: 298 m (978 ft)
Stories: 68
Area: 142,792 sq m (1,537,000 sq ft)
Primary Function: Office

Taikoo Hui, Guangzhou
Tallest Building: Taikoo Hui Tower 1
Completion Date: 2011
Height: 211.9 m (695 ft)
Stories: 40
Primary Function: Office

HKRI Taikoo Hui, Shanghai
Tallest Building: HKRI Centre One
Completion: 2016
Height: 250 m (820 ft)
Stories: 51
Area: 107,000 sq m (1,151,738 sq ft)
Primary Function: Office

Brickell City Centre, Miami
Tallest Building: One Brickell City Centre
Completion Date: 2019
Height: 317 m (1,040 ft)
Stories: 80
Primary Functions: Residential/hotel/office

One Brickell Centre, Miami. © Swire Properties

operated. Robotic construction, computer enhanced design, and augmented environments are a few examples that are disrupting traditional processes. In addition to this, the massive global interest in the development of advanced and innovative structures is unprecedented in the history of tall buildings. For progress to be made, it is essential to understand the current best practices, developments in the pipeline, and cutting-edge ideas. This presentation presents the initial results of ***Vertical Futures,*** a research project initiated by CTBUH and funded by the Henry C. Turner Prize awarded to CTBUH in 2015. Following on CTBUH's 2014 ***Roadmap on the Future Needs of Tall Buildings,*** the Future Technology Index aims to identify, audit, and classify the leading-edge technologies CTBUH members believe will transform tall buildings and future cities.

City Hubs

Session 3A: Tall Buildings and Urban Habitat
Monday 17 October, 1:45–3:15 p.m., Shenzhen

Keith Griffiths,
Chairman, Aedas

Our lives are adapting to a convenient, vibrant, and connected live-work dynamic, and our cities must change and respond to those new requirements. Much of the urban population prefers to live in smaller apartments in high-density inner urban areas, due to their convenience and social contacts. With fewer and shorter journeys to work, this urban migration has the potential to reduce land requirements for suburban residential districts as well as demands upon infrastructure. China will lead the world in building ultra-high-density, connected, and vibrant hubs within its cities, accommodating our new needs by providing public spaces at many levels, and in fusing the outdated concepts of high-rise towns into new vertical cities. Existing and future infrastructure nodes will provide the seeds for these hubs, and show how it is possible to predictively plan for the future densification and growth of our cities. Our

inner urban building typologies will continue to evolve into more flexible and pedestrian-friendly structures, whereby the lower levels of the buildings will become a series of porous and interconnected public decks and parks, spanning across roadways and creating a seamless pedestrianized and sustainable high-density environment.

Tall Buildings and Polycentricity

Session 3H: Social Considerations
Monday 17 October, 1:45–3:15 p.m., Shenzhen

Greg Yager, *Senior Vice President, CallisonRTKL*

Dwindling land reserves, water and food shortages, climate change, diminishing air quality, environmental degradation – these are all among the intractable challenges we face when planning for urban densification in cities the world over. Transit, engineering, and architectural planning must evolve to address these issues in a holistic, sustainable manner. Meanwhile, population increases are projected to reach unprecedented levels, and designers and architects are being asked to build cities on a scale unheard of a decade ago. How do we accommodate such rapid growth while maintaining quality of life? What makes one city higher functioning and more attractive to investors, visitors and residents than another? How do we design harmonious, sustainable developments that render our urban areas competitive forces in the global market? As the future of our cities is dependent on high-density, mixed-use development, the role of the tall building emerges as the center of a polycentric planning model. The ways in which tall buildings act as a reference point for all other development, and strategies for finding the right mix of uses and mobility options provide new templates for a more sustainable urbanization. Key Chinese cities – including Beijing, Shanghai, and Guangzhou – will serve as vital laboratories for testing new ideas and methods in the years to come.

Tencent Seafront Towers, Shenzhen

The Tencent Seafront Towers are designed as an adaptation of a suburban corporate campus for a vertical urban setting. Rather than the typical arrangement of placing the total floor space of a company in a single tower, the plan incorporates two towers connected at three different locations, to allow easy passage through the work spaces and provide accommodations for a growing workforce of 12,000. A primary goal for the complex was to implement a number of public features and employee amenities in the vertical campus. These elements were placed within the multi-story connections linking the towers, not only improving circulation within the structures, but also serving as meeting places and areas for informal interactions.

Tencent Seafront Towers, Shenzhen. © NBBJ

Completion Date: 2016
Height: 250 m (820 ft)
Stories: 52
Primary Function: Office

Level 26 floor plan. © NBBJ

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Tencent Seafront Towers will be featured in several sessions at the Conference, and the building will host the off-site program, Session 9C: *Behind the Scenes of the Future of the High-Rise Workplace,* Wednesday 19 October at 8:30 a.m.

Singularly Slender: Sky Living in New York, Hong Kong, and Elsewhere

Session 13: Technical and Social Issues
Thursday 20 October, 3:30–5:00 p.m., Hong Kong

Carol Willis, *Founding Director, The Skyscraper Museum*

A new 21st-century skyscraper typology – the very tall and slender residential tower – has emerged. Its prevalence has created an impetus to analyze the economic, engineering, and urbanistic forces that created it. Once built exclusively in Manhattan and Hong Kong, "pencil towers" of 80 to 100 stories and taller are now rising in a handful of other cities, including Dubai, Melbourne, Brisbane, Toronto, and Mumbai. With a base-to-height ratio of at least 1:10, but with some recent designs reaching a ratio as high as 1:23, the super-slender phenomenon has a wide range. There are two types of superslims with significantly different development strategies: the ultra-luxury towers (defined by the exclusivity of one to two units per floor) currently found only in Manhattan; and all other tall and slender towers that plan multiple apartments per floor.

One Shenzhen Bay, Shenzhen. © KPF

One Shenzhen Bay, Shenzhen

The One Shenzhen Bay development embraces a number of towers, several of them focused on the luxury high-end residential buyer. As we are seeing in New York, London, and Sydney, as well as many other cities around the world, there increasingly seems to be a market in tall buildings for sumptuous apartments, with full floors and facilities such as private swimming pools, not to mention fantastic views. The pairing of such residential towers with complementary functions like office and hotel, and the presence of nearby public spaces is paramount to their success, all of which can be seen within the One Shenzhen Bay development.

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One Shenzhen Bay will be featured in several sessions at the Conference, and the complex will host the off-site program, Session 10D: *Ultra-Luxury Vertical Complex Development*, Wednesday 19 October at 2:00 p.m.

鹏瑞集团
PARKLAND GROUP

One Shenzhen Bay Tower 7
Completion Date: **2018**
Height: **341 m/1,120 ft**
Stories: **71**
Area: **162,568 sq m (1,749,867 sq ft)**
Primary Function: **Residential/Hotel/ Office**

Future Cities: What are the Biggest Threats & Opportunities?

Session 4A: Panel Discussion
Monday 17 October, 3:45–5:15 p.m., Shenzhen

Steve Watts, *Partner, Alinea Consulting*

Jianping Gu, *General Manager, Shanghai Tower C&D*

Rui Gu, *Chief Member of Group Research & Design Committee, CAPOL*

Diane Hoskins, *Co-CEO, Gensler*

Chris Yoshii, *Vice President/Global Director of Economics, AECOM*

Vertical communities of scale are growing at a pace unthinkable just a few decades ago, and yet the risk to our urban centers – be it economic, social or physical through increasing "natural" disasters – is keeping pace. As virtually permanent additions to our cities, skyscrapers must be implemented not only with all of these potential risks in mind, but with a critical sense of forethought that anticipates how our urban and societal circumstances might change in the future.

Even further, our cities as a whole must become responsive to these changes, and must capitalize on developments in technology and shifts in the public consciousness in order to remain proactive, rather than reactive, particularly with regard to the global climate. This multi-disciplinary panel looks through a wide lens at both the myriad opportunities and threats to cities of the future, as we move to a 70% urbanized planet of 9.7 billion by the year 2050.

Quality Public Housing In a Vertical City

Session 13: Technical and Social Issues
Thursday 20 October, 3:30–5:00 p.m., Hong Kong

Ada Y.S. Fung, *Deputy Director, HKHA*

The Hong Kong Housing Authority (HKHA) has been providing affordable public rental housing in meeting the need of about 30% of the seven-million population of Hong Kong, hence HKHA has a major role to play in shaping the city fabric. We are committed to building sustainable communities to promote green, safe, and healthy living, and achieving better public housing design, as we truly believe in living in harmony, based on a people-centric approach. Given tight financial and land resources, we need to tackle the multi-faceted challenges of housing design in the high-rise, high-density compact city. When we face problems, we have to explore options, conduct research and development, and find innovative solutions. These are our drivers for continuous improvement. As a result, we find success stories in improving the process as well as the products of our quality public housing in a vertical city.

> "The traditional tall building core needs to be exploded and replaced by navigation voids that turn towers from shelves into vertical streets."
>
> – Patrik Schumacher, *Principal, Zaha Hadid Architects*

What's Next?: How Do We Make Vertical Urban Design?

Plenary 3: Cities to Megacities: The Future
Tuesday 18 October, 3:45–5:15 p.m., Shenzhen

Winy Maas, *Co-Founding Director, MVRDV*

It seems sometimes as if the further away from the ground we rise, the more architectonic and less urban our buildings become. Skyscrapers have always been about power, but they should also be about society. As our global society increasingly becomes an urban one, the development of skyscrapers should be taking a critical new direction. The question is not, how many skyscrapers can we build, and how high? The questions are: How do we make vertical urban design? How do we take those facets we value the most about our urban villages – informality, flexibility, human scale, evolutionary growth – and incorporate these into vertical cities? How do we validate programs to deal with them in the context of local culture, instead of merely "attacking" localities with monotonous tower blocks? What's next for the planetary skyline, which is inextricable from the question, what's next for life on this planet? This presentation elaborates on the concepts of the Vertical Village and the Porous City as they relate to the realization of a 3D city.

Guangzhou CTF Finance Centre, Guangzhou

The location of the afternoon conference program in its namesake city, the Guangzhou CTF Finance Centre is a mixed-use tower located across from Guangzhou International Finance Center and Canton Tower. The project is adjacent to a large central park and a subterranean retail concourse with transportation interchanges, integrating the project into the city and the wider region.

The design of Guangzhou CTF Finance Centre is derived from the efficient synthesis of its multiple uses. Its form is sculpted at four major transition points: office to residential, residential to hotel, hotel to crown, and crown to sky. Instead of tapering to accommodate the smaller floor plates required for different programs, the tower steps back at four angled parapets. These four setbacks allow for lush sky terraces and dramatic skylights.

Completion Date: 2016
Height: 530 m (1,739 ft)
Stories: 111
Area: 398,000 sq m (4,284,036 sq ft)
Primary Function: Hotel/Residential/Office

Guangzhou CTF Finance Centre, Guangzhou. © KPF/John Chu

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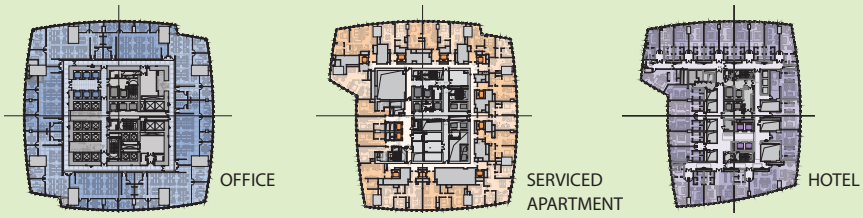
Guangzhou CTF Finance Centre will host the afternoon Guangzhou program of the Conference, Wednesday 19 October from 12:30 p.m. to 5:00 p.m. Owners **New World Development** will also host the **Guangzhou Networking Reception** in the building, Thursday 20 October at 6:00 p.m.

New World Development Company Limited



Typical floor plans. © KPF

All ***145 papers*** presented at the 2016 Conference can be found in the two volumes of the ***2016 Conference Proceedings*** available from the CTBUH Web Shop at: **https://store.ctbuh.org**

Cities to Megacities: Shaping Dense Vertical Urbanism Volumes 1 & 2

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