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## Best Tall Buildings 2019: Dominant Trends

### Abstract

*This year, CTBUH has vastly expanded its Awards program to consider the Best Tall Building category through several classes of height, rather than geographic regions, and seven new awards categories have been introduced, to recognize the specific engineering achievements across projects, as well as the importance of Interior Spaces and Building Renovation. This paper seeks to clarify that these new categories reflect an advancement of the analysis of tall buildings to embrace dominant trends that do not fit easily into a single classification or region, but which can be drawn out through careful observation.*

**Keywords:** CTBUH Awards, Innovation, Best Tall Buildings, Sustainability, Urban Habitat

As much as skyscrapers are celebrated for their iconic presence on the skyline, the projects showcased here attest to the growing investment the tall building industry has made in city-making. The singular focus on skyline presence and attribution to an individual architect or financial mastermind has served the mythology of the skyscraper well, but the reality is something altogether different. The full spectrum of the creation process of tall buildings – a sophisticated act of mass collaboration – is increasingly rising to public prominence and recognition in this global industry.

It has become evident to CTBUH that the regional classification of competitive categories in the Best Tall Building contest was problematic, especially as the story became one of more than height alone, and as broader considerations of cultural context and environmental performance become prominent, even essential characteristics of

Best Tall Building entries. In 2019 the Best Tall Building program was divided into height categories for competition, so that a 100-meter building in South Korea would be compared to a building of similar height in Argentina, as opposed to a 300-meter building in Australia, for example. This was not an uncontroversial decision (see *Debating Tall*, page 5) and comes with its own set of challenges.

Although CTBUH's mission has always been to establish and maintain criteria for measuring tall building height, in this enterprise, it is meant to be used as a way of fairly comparing buildings with similar challenges. The assessment of individual tall buildings remains a predominantly a qualitative task. In this paper, we seek not to rank by height or group by geographical region. Instead, we elucidate some of the common qualities and unifying themes around this year's Award of Excellence recipients, all of which are described here,

and all of which are seeking the Best Tall Building designation, in height and function categories, and the ultimate overall category winner status, Best Tall Building Worldwide. We are not seeking to reveal the actual deliberations of the jury; instead, we hope to provide another mode of understanding the tall buildings the world is producing each year.

### Residential, Reconfigured

As high-rise living becomes more ubiquitous, it is also becoming more varied, moving well beyond the standard double-loaded-corridor, rectilinear model. The amenities that have traditionally been more characteristic of low-rise, single-family districts, such as access to greenery and usable outdoor common space, are now being offered at height. Great creativity has been displayed in reconciling the demand for amenities with the requirements for privacy, the contextual appropriateness of a tall building in a given neighborhood, and access to light and views, both for residents of the towers and for those who live near them.

There is growing recognition that high-rises in general should be “good citizens” – custodians of the urban habitat of which they are part – and this is particularly true of residential towers, which are increasingly being inserted into neighborhoods that did not have a substantial skyline initially.

The **Forma Itaim** apartment tower is located in Itaim Bibi in São Paulo, a neighborhood undergoing a significant transformation, from the traditional fabric of low-slung single-family homes to a skyline of tall



Figure 1. Forma Itaim, São Paulo. © Nelson Kon

buildings. These towers are being constructed to meet the growing residential demand of a prosperous upper-middle-class in the economic capital of Brazil. The tower, highly conditioned by the volumetric limitations imposed by local regulations and the strict requirements of functional optimization, hosts small units with large individual terraces. Its colorful façade is interrupted by a large communal space with significant open-air decks (see Figure 1). The ground plane is equally neighborly. Access to the building is through a garden space separated from the street by a glass partition. This gives a visual extension of the street, and at the same time creates a pleasant, private and enclosed waiting space.

A similar guiding philosophy was undertaken at **One Park Taipei**, situated across a highway from a large park (see Figure 2). The twin-tower development is staggered in order to give all apartments views to the city and surrounding mountains. Like their contemporary in São Paulo, these towers make extensive use of color, in this case to accentuate the stair cores with translucent red panels that glow at night. Its two swimming pools at the ground level are surrounded by vegetated trellises and topped with a brightly painted, louvered steel canopy. The atmosphere of the landscaped area of the development grounds and that of the neighboring park are thereby blurred, breaking down the discontinuity created by the adjacent busy, elevated road.

In Manhattan, the context, of course, is already one of dense settlement. The **277 Fifth Avenue** project needed to meet certain design parameters to be viable, including the promise of sweeping views for residents. But it also had to fit into the existing setting, which is a combination of high-rises, five-floor brownstones, and pre-war mid-rise apartment blocks (see Figure 3). To generate a uniform floor plate and units of the desired size, the building is cantilevered over an existing five-story brownstone. A series of open-air, double-height loggias provide outdoor space for residents, as well as break down the scale of the tower.

In some cases, tall buildings have risen in a context of regeneration, with strong desire lines and embedded infrastructure, but little in the way of built history. **Manhattan Loft Gardens**, London, is situated between one of London's largest and newest transport interchanges and the Queen Elizabeth Olympic Park. The project stands at the intersection between four main axes in the Stratford City Master Plan, at the crossroads of two distinct urban grids; one oriented north-south, and the other diagonally, from northwest to southeast. The intersection of these two grids informs the building's unique geometry, which addresses both grids, resulting in the tower's triangulated plan and cantilevers. This triangulated geometry informs the opening of the triple-height lobby piazza at ground level, and also creates openings for the building's three skygardens (see Figure 4). The variations in scale across the aspects of the tower reflect the inspiration from the diverse range of housing types that comprise London.



Figure 2. One Park Taipei, Taipei.  
© Rogers Stirk Harbour + Partners



Figure 3. 277 Fifth Avenue, New York. © Lester Ali



Figure 4. Manhattan Loft Gardens, London.  
© Manhattan Loft Corporation



Figure 5. Emblem, Sydney. © John Gollings



Figure 6. Crystal Laputa, Chengdu . © 5+design



Figure 7. China Resources Headquarters, Shenzhen. © Tim Griffith

“The buildings at the higher end of the height spectrum form a collection of elegant shapes, which are nevertheless practical solutions, acting almost as diagrams of the incredible forces at work, keeping them aloft and stable.”

Another project erected in a new urban context, **Emblem** in Sydney represents an opportunity to define the character of a place while it is still being formed. Emblem sits within a large urban rejuvenation area located midway between Sydney’s central business district and its international airport, which is transitioning from industrial to mixed-use, higher-density development. The design establishes a strong architectural response that integrates it into the developing urban context, modulates its form to respond to neighboring buildings, and extends the landscaping of the adjacent park vertically. A horizontal cut in the building at the eighth floor responds to the eight-story height limit of the neighboring buildings (see Figure 5). Here, there is a communal skygarden that allows residents to enjoy the significant views from the site, within a sheltered environment. The massing is articulated vertically to establish slender forms and reduce the visual bulk of the building.

In rarer cases, an opportunity arises to build tall residential projects in a comparatively “natural” context, such as the Luxelakes development outside Chengdu, a master-planned community intended to accommodate up to 100,000 people when complete, which consists of some 1,200 hectares of hills, wetlands, lakes and canals, with over 45 kilometers of shoreline. Here rises **Crystal Laputa**, a vertical residential community consisting of two high-rise towers and one mid-rise building, nestled in a park-like setting along the water’s edge (see Figure 6). A generous third-floor sky park connects all three towers and contains



Figure 8. Shenzhen Energy Headquarters, Shenzhen. © Chao Zhang



Figure 9. Ping An Finance Center, Shenzhen. © Terri Meyer Boake

recreational spaces to engage the community in outdoor activities. In the high-rise towers, three units stem outwards from the core, connected by sky terraces, and share one infinity pool between them. Each unit features a dedicated sky terrace and casita, positioned between the elevator core and unit entrance, allowing the experience of nature to extend to the project's upper levels.

### Column-Free Interiors, Symbolic Surfaces

At the higher end of the spectrum, both in terms of height and the level of finish expected by the client, incredible demands are being made on designers, particularly. In 2019, several 200-meter-plus towers came onto the market, responding to the dual imperatives of “symbol of pride for the city” and “optimization of interior space for rapidly changing market conditions.” The result is a collection of elegant shapes that are nevertheless practical solutions, acting almost as diagrams of the incredible forces at work, keeping them aloft and stable.

In Shenzhen, the **China Resources Headquarters** has a distinct tapering form that is emphasized by a series of external columns. These 56 columns converge into 28 columns along both the bottom and upper sections of the tower in a diagrid form (see Figure 7). The diagrid not only strengthens the building's structural integrity, but creates unique visual and functional conditions. At the base, it serves a series of entry portals, while at the top, it facilitates the building's iconic form with a series of circular plans terminating in a sharp point. This structural

system also allows for column-free office interiors.

Also a new, dominant form on the skyline of Shenzhen in a prominent location, the **Shenzhen Energy Headquarters** transmits a symbolic power that goes beyond iconicity. Rather, it is a statement of values by its owners about conserving energy and living sustainably – while still providing high-end office accommodation. The building has a folded skin that is optimized for the local subtropical climate (see Figure 8). With solid façade panels on the southeast and southwest sides for shading, the glazed façades facing northwest and northeast are able to achieve high sustainability requirements with more clarity and less coating.

Nearby, the **Ping An Finance Center** deploys a massive set of outriggers and megacolumns to achieve its 599-meter height (see Figure 9), as well as provide maximum configurability for its interior spaces. As a design, the building is meant to evoke both “stability” and “opportunity,” and takes every opportunity to expose the size and power of the megacolumns as they carry the weight of the tower into the ground, and rising to the sky, converging in a diamond-like pinnacle.

In Beijing, that city's tallest building, **CITIC Tower**, is rendered in the shape of a “zun,” a Chinese ceremonial vessel (see Figure 10). Here also, the objective of the hourglass shape is not merely to create a pleasing form, but also to provide more usable space at the higher floors; the outrigger-and-perimeter-column system is also strategically revealed at



Figure 10. CITIC Tower, Beijing. © Lester Ali



Figure 11. Salesforce Tower, San Francisco.  
© Nathaniel Lindsey

key moments. At the bottom, the tower thrusts into the ground with massive corner supports, while the exterior shell is lifted up and stretched forward along each side. The design visually extends the lobby outward, forming dynamic drop-off spaces and creating a focal point for the city's urban core. At the top, the exterior envelope becomes more transparent at the observation deck, allowing more visibility to the inner trumpet-shaped business center, which lights up at night, forming a beacon.

Also taking up the important mantle of becoming a city's new tallest building, **Salesforce Tower**, San Francisco, also interprets the role as that of a beacon. In this case, its curtain walls rise past the top floor to form a transparent crown that appears to dissolve into the sky (see Figure 11); at night it features 11,000 LED lights that project photographs of city life. It also features column-free bays and corners, which offer wide-open office spaces without any structural encumbrances, providing unobstructed views of the city and bay.



Figure 12. 181 Fremont, San Francisco.  
© Nathaniel Lindsey

While Salesforce Tower takes on the smooth, tapering form of an obelisk, its nearby neighbor, **181 Fremont** emphasizes angles and raw muscularity. It stands out in a sea of new glass towers because of its eye-catching exoskeleton, diagonal bracing and sawtooth curtain wall (see Figure 12). Utilizing the exoskeletal system for stability allowed for open floor plates without interior columns between the façade and the core, and an efficient use of steel, which reduced both the building's cost and weight. Two large truss structures, at the second floor and at the amenity setback level, dividing the commercial and residential uses, take the vertical weight of the building above and create the column-free ground floor and amenity level.

#### Collaboration and Collision, Inside and Out

The vaunted "open-plan" office, which has moved forward from the cellular layout in fits and starts since the late 1950s, has moved into another dimension recently, as the



Figure 13. Baidu Headquarters, Shenzhen.  
© CCDI Group

centroid of demand for office space has veered toward facilitating serendipitous collisions between employees of large, knowledge-based companies.

One version of this can be observed at **Baidu Headquarters** in Shenzhen, where the building floor plate is skewed into two wings, the air gap between them filled with sailing "social" staircases on the exterior that lead between collaboration areas on every four floors, extending the collaborative workspace into the balmy outdoors (see Figure 13).

Taking the hollowing-out approach further, **Amorepacific Headquarters** in Seoul places an almost perfect-square, box-like form atop a colonnade, then punctures the box with significant cut-outs, creating outdoor gathering places for employees from different divisions (see Figure 14). These landscaped spaces play a central role in the life of the building, provide natural ventilation and access to light for interior-facing offices, and frame views outward to Yongsan Park and the mountains in the distance.

**Lè Architecture**, Taipei, is situated alongside the Jilong River. Its striking ovoid design draws inspiration from water-smoothed pebbles, which, in addition to forming an allusion to nearby natural features, also positions occupants of the building to optimally view the river, despite the intercession of a double-deck highway between the building and the water (see Figure 15). Within the

“The centroid of demand for office space has veered toward facilitating serendipitous collisions between employees of large, knowledge-based companies.”

billows of this parabolic armature, communal space incorporates pantries, coffee shops, libraries and brainstorming areas. These spaces function together as “urban living rooms,” aiming to promote creativity and catalyze interaction between office users. The lobbies echo the water-based themes of the overall architecture, with walls and seating pavilions sculpted from smooth bands of wood, into waveforms resembling eddies and currents in the river.



Figure 14. Amorepacific Headquarters, Seoul. © David Chipperfield Architects

Taking the approach into the government realm, the **European Patent Office** in The Hague area of the Netherlands is both a flagship of noble scale and proportion; it is also a building with indistinct materiality and a high degree of geometric abstraction (see Figure 16). The challenge of its brief was to encapsulate the whole of the European Union’s spirit of innovation. Here too, the communication of innovation is paired seamlessly with a broad array of advanced environmental strategies, including a double-skin façade, thermal energy storage system, and hanging gardens. The innovative spirit is also supported by a reorganization of the EPO campus to foster better collaboration.



Figure 15. Lè Architecture, Taipei. © Aedas

### The Urban Embrace

Collaboration and community in comfortable surroundings don’t have to be confined to private spaces in tall buildings, of course. The fusion of height and human habitat continues apace, with extraordinary projects around the world that shape the public experience, indoors and out.

In Singapore, two standout projects make the most of the city-state’s copacetic, warm climate. At **Kampung Admiralty**, an infill development builds upon a layered approach. A “vertical kampung (village)” is devised, consisting of a “People’s Plaza” in the lower stratum, a medical center in the middle stratum, and a community park with apartments for seniors in the upper stratum. These three distinct strata juxtapose various building uses to foster cross-programming



Figure 16. European Patent Office, Rijswijk. © European Patent Office. Photo by Ossip van Duivenbode.



Figure 17. Kampung Admiralty, Singapore. © K. Kopter



Figure 18. DUO, Singapore. © Iwan Baan

and free up the ground level for activity generators (see Figure 17).

Another project, **DUO**, took an awkward, U-shaped site ringing an existing building, and turned it into an “urban poche” consisting of a landscaped public plaza between its two towers, which curve and cantilever towards each other (see Figure 18). The plaza is open to the public 24 hours a day and mixes a series of gardens and landscaped leisure zones, which are linked to the rest of the city through multiple connections above and below ground.

Among the greatest challenges in the design of supertall buildings is that of how to

reconcile them with the scale of their occupants, and with that of the citizens who regard these towers as a collective possession of their city. **King Power MahaNakhon**, actively engages the city and surrounding social and urban context, and stands as an emblem of Bangkok’s aspirations and its emergence as a truly global capital. The design of the project dismantles the typical tower-and-podium typology, creating a skyscraper that merges with the city by gradually “dissolving” as it flows downward to meet the ground. The tower has been carefully carved to introduce a three-dimensional ribbon of architectural pixels that coil up the tower’s full height to reveal the inner life of the building. This generates a set



Figure 19. King Power MahaNakhon, Bangkok. © Wison Tungthunya

of unique features: projecting glass skyboxes with sweeping views, and generous indoor and outdoor spaces, crowned with an open-air observation deck with a cantilevered glass floor (see Figure 19). This “erosion” of the form generates actual living spaces: terraces, balconies, floating rooms and apartments that merge the tropical outdoors with the indoors.

### Digitization and 3D Design

The mind-bending shapes of some of today’s most extraordinary high-rise designs would be impossible without parametric software, whose coordinated use now extends into and past the main structural assembly, to the finishing touches on the exterior. At the **Jumeirah Nanjing Hotel & International Youth Cultural Centre** project, the façade contractor also used its digital file library to produce shop drawings and fabrication data. Additionally, it was the first tall building complex in China to be completely constructed at grade, while building upwards and downwards in tandem. Constructed in only 30 months, by using 3D BIM design and construction management, the team reduced the on-site program by a year (see Figure 20).

At **Morpheus** in Macau, the intricate exoskeleton supporting the building was optimized so as to avoid the need to use any double-curve warped structural members; this was accomplished using a fully parametric



methodology, which extended to the design of the free-floating shapes in its midsection (see Figure 21). The digital strategy also facilitated backtracking, enabling previously explored options and geometry to be revisited.

Similarly, **The Opus**, Dubai was constructed based on a comprehensive 3D model, which constituted the basis for all suppliers (see Figure 22). More than 10,000 individually curved aluminum profiles were supplied from Denmark and the Netherlands, the glass units were produced in three factories in China, and ultimately the entire 3D puzzle was precisely pieced together on the construction site.

## Conclusion

This survey of the 2019 Best Tall Building Award of Excellence recipient projects is not intended to set forth the reasoning of the Awards Jury behind the selection of each project – this will be revealed through the Awards process itself. Rather, it is intended to place into context the huge variety of design choices reflected in these selections, and infer from these a set of common characteristics that can foster a better understanding of how tall building design and execution can be directed toward the goal of making better buildings, and more livable cities. ■

*Interested in the question “What Makes an Award-Winning Tall Building?” Attend the opening plenary at the 2019 Tall + Urban Innovation Conference, 9:00 a.m., Tuesday April 9 in Shenzhen, China. Panelists will include 2019 Best Tall Building Jury Chair **Karl Fender**, Fender Katsalidis Architects (see also Meet the CTBUH, page 58); **Hashimah Hashim**, KLCC Property Holdings Berhad; **Thomas Oetterli**, Schindler (see also Ask a CTBUH Expert, page 53), and more. [www.tallinnovation2019.com](http://www.tallinnovation2019.com).*



Figure 20. Jumeirah Nanjing Hotel & International Youth Cultural Centre, Nanjing. © Hufton+Crow



Figure 21. Morpheus, Macau. © Ivan Dupont



Figure 22. The Opus, Dubai. Photo courtesy of Omniyat Properties, © Zaha Hadid Architects.