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MahaNakhon: A Pixelated Punctuation Mark on the Bangkok Skyline

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As Thailand becomes an increasingly important economic force in Asia, the quality of its architecture has risen to match the expectations of an increasingly sophisticated clientele. MahaNakhon, a 314-meter, mixed-use tower, will be the tallest building in the country when complete in 2016 and command its highest residential prices. The international design and development team has created a development that is optimized for the tropical climate of Bangkok, and introduces a level of international design quality previously unseen in the capital. Its "pixelated" design concept affords highly valuable outdoor space to tenants, while breaking down the mass so as to better integrate with the urban fabric. Importantly, the development also addresses the city's notoriously congested traffic conditions and its lack of open spaces by

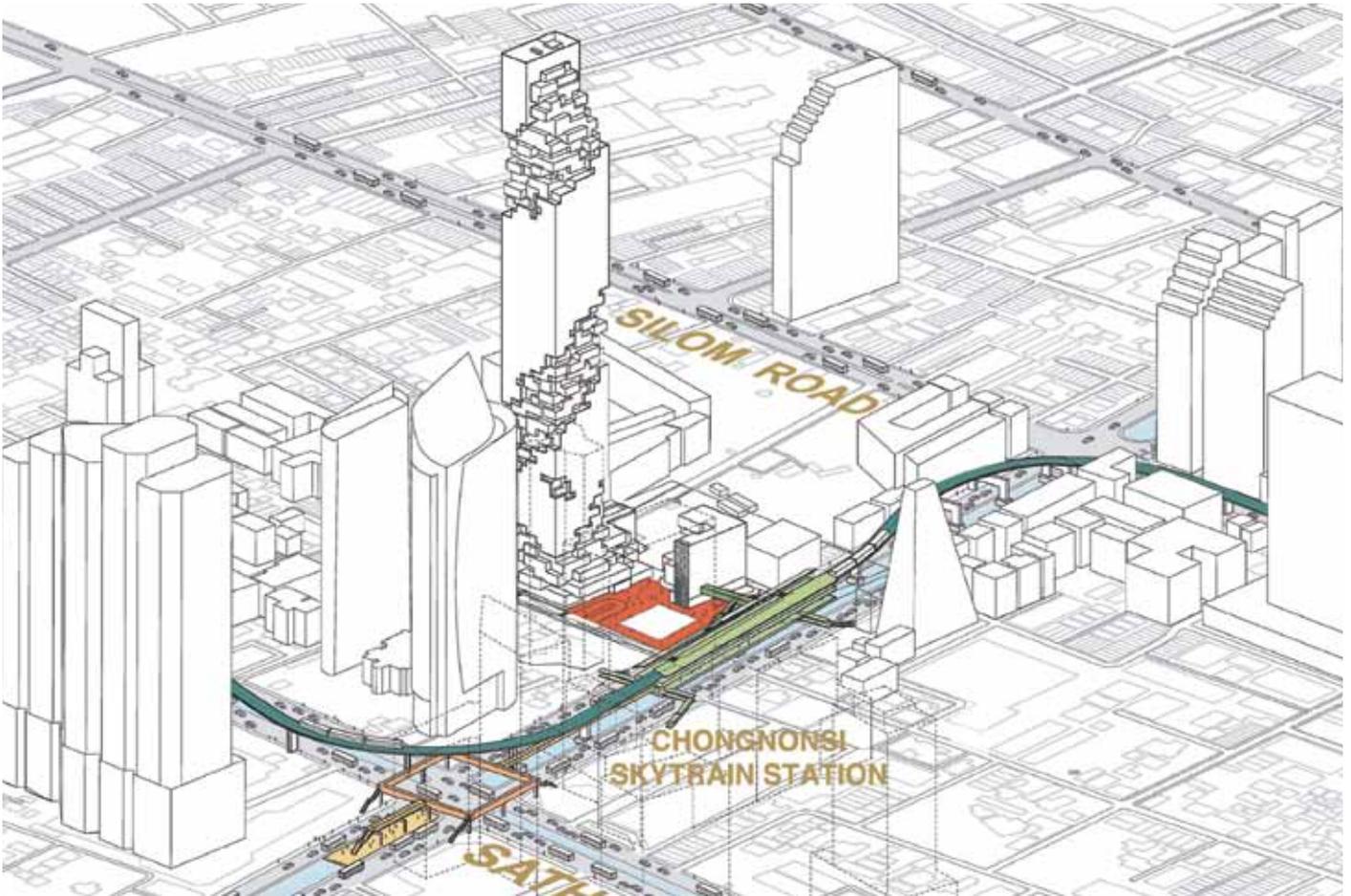
connecting directly to the Skytrain rapid transit system, and by using its design to return part of the property to public use.

MahaNakhon is a mixed-use development in Bangkok, including Ritz Carlton-branded serviced residences, a hotel, retail, an observation deck, and an outdoor bar. Meaning "Great Metropolis" in Thai, MahaNakhon will be 314 meters high, earning its place as the tallest building in Thailand when completed at the end of 2015. Designed for the warm climate of Thailand and located in the prime Sathorn/Silom CBD area, the building's unique "pixelated" form creates a series of large-scale outdoor areas, perfect for tropical climates, offering indoor/outdoor dining, residences,

and retail layouts that are refreshingly diverse. The building was envisaged as a representation of the development of Bangkok, breaking away from the traditional podium-and-tower configuration, instead producing a much more organic form rising above its neighbors, one which melts into the ground and the street life for which Bangkok is well-known.

The aim of the development was to provide three independently financially successful elements, in a 1+1+1=5 configuration, enabling each component to feed into and reinforce the other. The three elements are residential (The Ritz-Carlton Residences, Bangkok); hotel (The Edition Hotel, operated by The Ritz-Carlton); and, retail (the MahaNakhon CUBE, Sky Observation Deck,





Project Data: MahaNakhon Tower

Location: Bangkok, Thailand

Height:

Architectural: 314 meters (1,031 feet)

To Tip: 314 meters (1,031 feet)

To Occupied Floor: 299 meters (981 feet)

Floors Above Ground: 75

Floors Below Ground: 1

Tower Area: 150,000 m² (1,614,587 ft²)

Use: Residential / Hotel

Structural Material: Concrete

Proposed: 2009

Start of Construction: 2011

Completion Date: 2016 (expected)

Number of Apartments: 207

Number of Hotel Rooms: 159

Owner/Developer: PACE Development Corporation Plc.

Architect: Office for Metropolitan Architecture; designer & partner-in-charge Ole Scheeren (now at Buro Ole Scheeren)

Structural Engineer: Bouygues Thai Ltd; Warnes Associates Company Limited (design); CivilPark International, Robert Bird Group (peer review)

MEP Engineer: P & T Group (design)

Main Contractor: Bouygues Thai Ltd

Other Consultants: CivilPark International (geotechnical); David Collins Studio, Ian Schragger Company, Kengo Kuma and Associates (interiors)

Opposite: The 314-meter MahaNakhon building in its context, the Sathorn district of Bangkok. Source: PACE Development

Top: Axonometric view of MahaNakhon's location near the Bangkok Skytrain and other high-rises in the Sathorn district. Source: PACE Development



and outdoor bar) featuring luxury gourmet dining. The composition is roughly divided into 60% residential, with the hotel and retail splitting the other 40% evenly, both in terms of space and financial income.

A special component that occupies the space between the tower and MahaNakhon CUBE is called MahaNakhon Square, a park-like plaza area at the front of the site, which will enable the city to host cultural, art, and music programs, while giving the office workers and local residents a green area in which to relax.

The design was unveiled in 2009. Sales of residential units commenced in 2010. Construction completed on the retail CUBE building, and the tower is expected to complete in 2016.

Location

MahaNakhon is located in the heart of Bangkok's CBD, directly adjacent to Chongnonsi SkyTrain Station (BTS), between Silom and Sathorn roads. The surrounding neighborhood is fast developing as the commercial hub of Bangkok, with hospitality and new buildings, including a

W Hotel, Sathorn Square, and other Grade A office space.

The tower's height and large site enhance and draw full advantage from the location, providing breathtaking views across to Lumpini Park, The Chao Phraya River, and even to the Gulf of Thailand.

The elements of the mixed-use development such as The Ritz-Carlton Residences, The Edition Hotel, and the MahaNakhon CUBE Retail Center all offer a truly special location in the heart of Bangkok.

This prime inner city location benefits from infrastructure such as Bus Rapid Transit System (BRT), expressway and BTS, providing easy access to the development both from the main Narathiwat Road frontage and also from the rear via Sathorn Soi 10, where there is a private residential entrance. Sathorn is known as "Embassy Row" in Bangkok, with a large number of high-end offices, hotels, and embassies surrounding MahaNakhon, which is located strategically between the river to the west, and Lumpini Park to the east. Surrounding the development are leading Grade A office towers, hotels, and lifestyle

retail, with easy access into the shopping zone of Siam/Ratchaprasong, approximately three kilometers away via road or BTS.

The base of the tower features MahaNakhon Square, which provides an events and cultural space, with a small public park for residents and the public to enjoy, made possible as a result of manipulating the tower design so as to free up ground-level space.

Development Concept and Imperatives

High-rises in Bangkok have a number of restrictions, which affected the planning of MahaNakhon. The total gross floor area (GFA) is calculated at a factor of 10:1 relative to the ground area. There is a 60-degree setback angle to prevent the over-shading of adjacent streets, which also restricts the height. Parking is mandated by the Bangkok Metropolitan Authority at a set ratio to the number of residences; in addition, it is standard market practice to provide parking on a 1:1 correlation with the number of bedrooms.

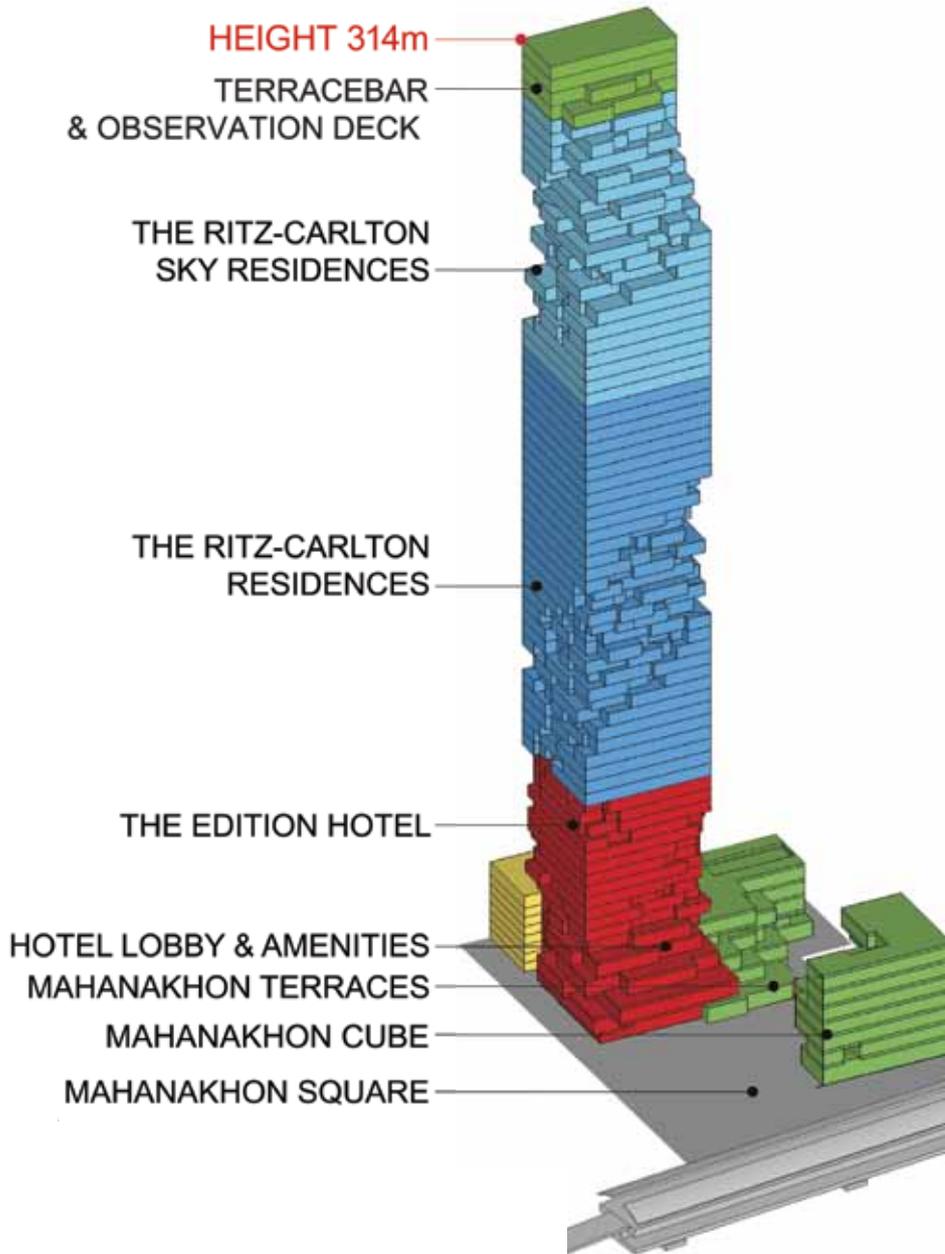
The design envelope showed that it was potentially possible to create the tallest building in Thailand, initially set at 314

Opposite: Map showing location of MahaNakhon in Bangkok.
Source: PACE Development
Bottom: The "pixelation" breaks down the tower's mass and complements the generous open space in front.
Source: PACE Development

"The building was envisaged as a representation of the development of Bangkok, breaking away from the traditional podium-and-tower configuration, instead producing a much more organic form rising above its neighbors, one which melts into the ground and the street life for which Bangkok is well-known."



Bottom: Diagram of the residential and hotel components of MahaNakhon. Source: PACE Development
 Opposite: The residential amenities lounge. Source: PACE Development

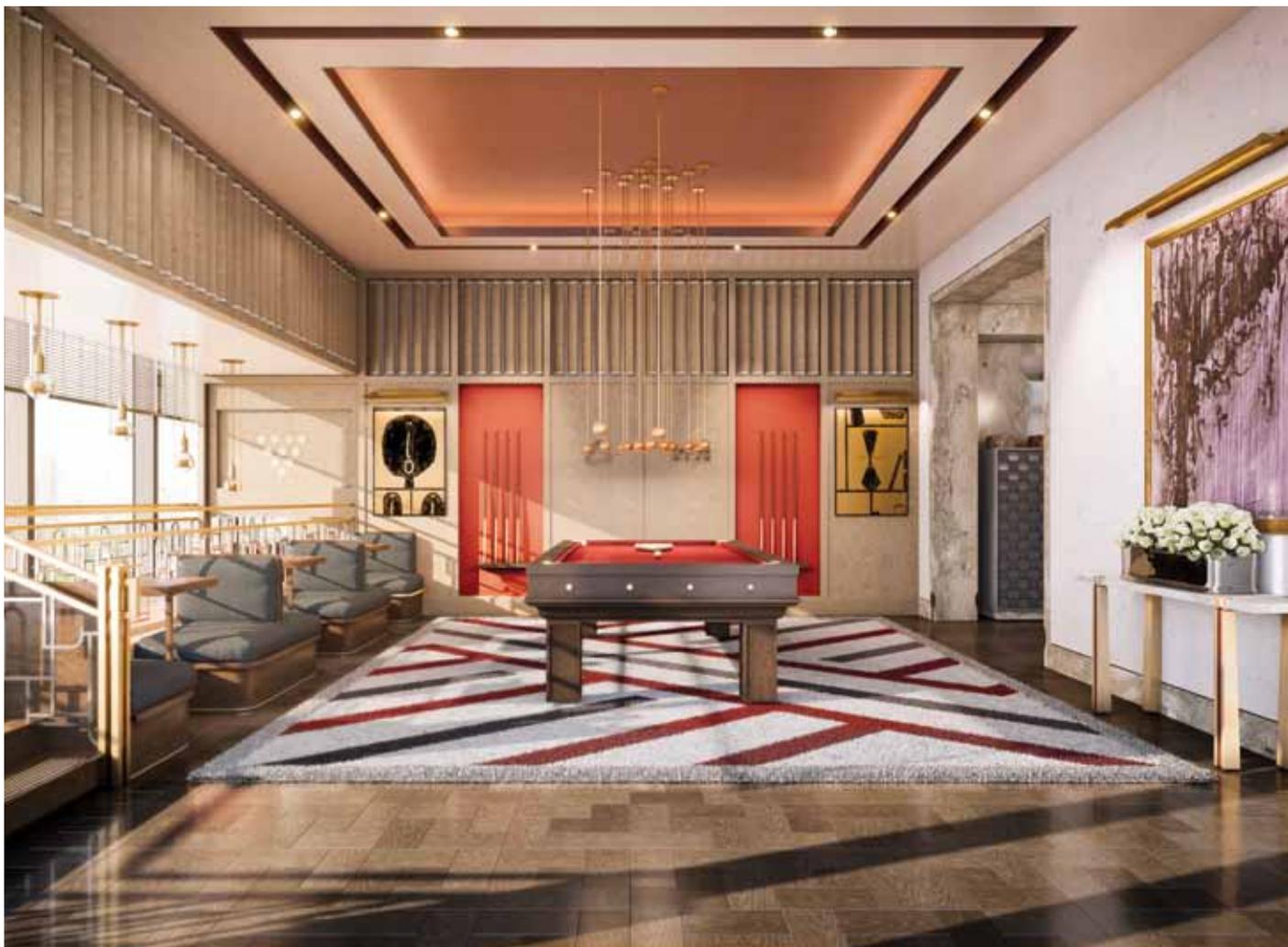


meters, but that a standard, extruded form would exceed the GFA allowance. In addition, there were constraints of customer preference regarding unit size and balconies; at the highest end of the luxury residential market, clients in Thailand have many different requirements relating to size, layout, and the presence or absence of outdoor areas, etc. For retail and mixed-use functions, there was a desire to keep the retail component as close to the main road and Skytrain (BTS) station as possible, while the residences should be as far from the road as possible for privacy and noise reduction. However, zoning did not allow a building of a single mass that was both close to the road and which would place the tower far away from it, without exceeding the GFA and setback restrictions.

To manage these issues, a decision was made to first create two buildings, with each being handled separately with regards to the setback issue. Secondly, the introduction of the “pixelation” concept, in which volumes are pushed back and pulled out to create outdoor spaces, enabled the tower to increase height by reducing the floor size of each floor, while also satisfying the demands of customer research that called for creating multiple residence types, some with and some without outdoor spaces.

The “pixel” residences have been sold at a premium of approximately 10% over “non-pixel” residences, thus neatly handling the loss of net sellable area cut away from the building form. Through carefully adjusting the crown, the total height is now 314 meters. The increased height has enabled MahaNakhon to not only become the tallest building in Thailand, but also, since pricing is set by floor, to increase the average price per square meter, so that the tower now commands the highest price per square meter in the country.

An adjustment in leasing terms was made in early 2014. The development was converted from a 99-year leasehold, to freehold, in which the buyer owns his fraction of the building and the according proportion of



land upon which it stands, in perpetuity. The conversion entailed almost every existing purchaser paying a small premium to convert ownership to freehold, and all future buyers paying a freehold price. This has further helped MahaNakhon to continue the successful marketing of the residential component. Significantly, this successful marketing campaign occurred during a period of political and economic uncertainty, both within Thailand and around the world – a testament to the strength of the design and the marketing/positioning of the product.

Components

The components of MahaNakhon are broken down as follows:

- Tower lobby with segregated zones for Residences, Hotel, and Observation Deck and Sky Bar
- The MahaNakhon CUBE occupies 5,000 square meters
- The Edition Hotel, with 159 rooms, occupying floors 9–18
- The Ritz-Carlton Residences, Bangkok, with 207 units, occupying floors 23–73. Standard “Residences”

comprise floors 23–54, with larger “Sky Residences” taking up floors 56–73. A full single floor of facilities for residents only is on the 7th floor, and The Ritz-Carlton Club Lounge for residents is located on the 54th floor

- The Sky Observation Deck occupies floors 74–75, and the Sky Bar occupies floors 76–77

Marketing and Positioning

All elements of MahaNakhon (hotel, residential, retail) share similarities in the target audience, focusing on delivering a single offering which appeals to a fashion-forward, affluent audience, comprising both Thais and foreigners. Marketing has focused on communicating the features and strengths of the development, with extensive international sales combined with ongoing social media and updates, enabling high awareness and interest from the design community and press.

The target audience for retail is the local office population, consisting of affluent Thais from across the city, expats, and tourists familiar with Bangkok. Through

its location adjacent to the SkyTrain (BTS) system in Bangkok and local above-ground bridge links, it is possible for shoppers to easily access the MahaNakhon CUBE retail center, which is already open. In addition, when completed, the building will feature a four-story observation deck, where visitors can partake of views across Bangkok. The observation deck offers an experience that takes visitors through the heritage of the city, provides views and a dedicated retail experience in the base of the tower. MahaNakhon CUBE features retailers such as VOGUE Lounge, L’Atelier de Joël Robuchon, Dean & DeLuca and the Chinese restaurant M Krub as flagships under the concept of “Bangkok’s finest dining experience.”

The Edition Hotel will be positioned as a high-end boutique hotel, featuring touches of hospitality from Ian Schrager and The Ritz-Carlton Hotel Company’s team, thus appealing to a similar audience coming from around the world and across the city. The interior of the hotel, residences, and public areas feature detailing and exquisite styling with a timeless elegance of design, using a contemporary-classic design appropriate to the heritage of the hotel-branded residences.



Left: MahaNakhon CUBE provides residents and visitors with many fashion and dining options. Source: PACE Development

Bottom: The site plan allows for easy access to the tower and MahaNakhon CUBE. Source: PACE Development

Opposite Bottom: The wide open first floor lobby allows for the easy flow of foot traffic for visitors and residents alike. Source: PACE Development

The Facebook page of MahaNakhon is one of the most extensive social media sites in Thailand, outlining the construction progress and challenges on an almost daily basis, and followed by over 200,000 fans. Coverage includes video, photos, and stories.

Access

MahaNakhon is connected directly to Bangkok's main public transport system, the Skytrain (BTS), via an above-ground bridge link in 2015, enabling easy access to the property.

Vehicular access to the property has been maximized through careful planning, with road access at the front and rear of the site, enabling Bangkok's notorious traffic jams to be avoided. As per standard practice in Thailand, a managed taxi rank together



with Bangkok's motorcycle taxi system, are integrated into the street-side access of the development. A larger entryway, which completes when the main tower finishes, provides access for buses and larger tour vehicles to the hotel and observation deck.

Private car parking is provided using an automated system, broken into separate zones to maintain privacy for residents. Retail clients have basement parking below the CUBE building, with valet service also available. Hotel clients park in the base of the main tower. Residents have their own parking below the main tower in a basement floor, with valet and doorman services accessing an offsite parking lot with a mechanical parking system, maximizing the total number of on-site parking spaces to approximately 900.

Design Concept

With its distinctive, faceted appearance, MahaNakhon has been carefully carved to introduce a three-dimensional ribbon of architectural "pixels" that circle the tower's full height, as if portions of the elegant glass curtain wall have been excavated to reveal the inner life of the building. MahaNakhon is a building that actively engages the city and connects to the urban fabric. The three-dimensional pixels that spiral up the tower integrate the grain of the pedestrian scale and offer differentiated indoor and outdoor spaces of both energetically public and exclusively private nature. The building absorbs Bangkok's intensely vibrant energy and simultaneously gives it back to the city.

The design of the building aims to provide several elements to match with each mixed-use function/component:

- The retail component is a center for gourmet dining; therefore most retail units have oversized terraces, with indoor/outdoor flow and views between the base of the tower and smaller CUBE building.
- The hotel is mostly uniform in room size and layout, with a dedicated elevator core and some special units, ensuring cost-efficient operations in a unique building, with a dedicated amenities floor.
- Residences feature both balcony-less and oversized balcony





residence types, with many bespoke, unique layouts.

- The observation deck has its own high-speed elevator zone, taking guests up to the 74th floor and connecting to dedicated tourist retail space on the lower floors of the tower, separate from, but connected to the hotel and residential lobbies.
- Each component has its own entrances and exits in the main tower, with a single formal arrival area connecting to the park grounds in front, giving a true sense of arrival and community.

In response to the client's preferences, the form of the building enables the developers to provide a truly bespoke home to each client, since the balcony size, view, and overall layout of each pixel residence is "one of a kind."

The pixelation gives MahaNakhon an arresting profile on the skyline while generating a set of very special features – projecting glass skyboxes with sweeping views and generous indoor/outdoor spaces well suited to the tropical climate of Bangkok. The design

creates many unique layouts, and each Residence comes fully fitted at the highest level of specification.

The specifications of the entire building match the requirements set by The Ritz-Carlton, establishing a very high quality of finishing on both the interiors and façade. Well thought-out elevator/MEP services and ample parking set within four zones (tower basement, tower above-grade, MahaNakhon CUBE basement, and mechanical offsite parking).

Materials used in the façade and exterior are all reviewed and approved by The Ritz-Carlton organization, to ensure standards are truly world-class in every respect in the front of house, while back-of-house operations are optimized carefully for future cost control. Interior architecture provides 3.1-meter ceiling heights, with 3.4 meters in the Sky Residence simplexes. Some Duplex Residences feature double-height ceilings of more than 7 meters.

Components:

The Residences

Residences range in area from 125–850 square meters; a number of clients will

combine residences up to a size of 1,500 square meters. The Simplex Sky Residences found in the upper section of the tower offer a sense of space and luxury, featuring design interiors by the world-renowned design house, David Collins Studio. Designed to be similar to a grand New York apartment, the sense of space is enhanced through a ceiling height of 3.4 meters, combined with indoor/outdoor living including an oversized terrace and "pixel skybox" dining room.

A formal sense of arrival begins with the circular entrance hallway, lined with decorative imported stone. An option of either a study or guest bedroom is adjacent to the hallway, neatly separating the more private bedroom quarters from the public areas of the residence.

Bedrooms are decorated with unique end-grain-laid oak flooring and stone, offered in two colors. Each bedroom is large, featuring ensuite bathrooms with dual sinks in master bathrooms, Lefroy Brookes tapware, separate showers, and TOTO water closets. Each bedroom is provided with Poliform and Molteni & C wardrobes, and controls for air conditioning, with a double-glazed curtain wall façade offering stunning views across the

Opposite: One of the several lounge and gourmet dining options. Source: PACE Development

Bottom: The pixelation concept continues all the way up the tower, forging unique, climate-optimized spaces.

Source: PACE Development

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city, while controlling internal temperature and noise levels.

The master bedroom features an oversized walk-in wardrobe, with a custom tub by Agape provided for each Sky Residence and distinctive marble.

As with all Ritz-Carlton Residences globally, ample storage and a powder room for guests are provided from the hallway leading to the living room. The oversized living room features custom furniture (available as part of a bespoke David Collins Studio furniture package for a surcharge) and decorative elements, such as the custom curtains. Adjacent is the protruding skybox, offering 270-degree views and providing a formal dining room.

The kitchen has a breakfast area, with appliances provided standard by Gaggenau, and cabinetry by Poggenpohl. The kitchen and living room both lead onto a large 40 square-meter terrace, which allows residents to look across the city while enjoying outdoor living, a barbecue, and a sense of space.

Every detail within the home has been considered, including a separate private maid's entrance and quarters, enabling food preparation, washing, and cleaning to occur without affecting the living areas.

Standard fittings included in the sale price of each residence include flooring; standard lighting; designer wardrobes; bathrooms; designer kitchen, including kitchen island and washer/dryer with solid hardwood

Opposite Top: Interior view, living room, space by David Collins.
Source: PACE Development

Opposite Bottom: Interior view, bedroom, space by David Collins.
Source: PACE Development

Bottom: Interior view, Ritz-Carlton living area.
Source: PACE Development

entrance doors; Clipsal home automation; and centralized air-conditioning with compressors in dedicated mechanical/electrical floors. Sky Residences have an oversized bathtub in the master bathroom, standard.

Residences' public areas include seven high-speed elevators, with 2.5-meter-wide corridors featuring custom-designed patterned Ocean Travertine stone and carpet, with custom silk wall coverings.

The Ritz-Carlton Residences at MahaNakhon feature Ritz-Carlton standards in property management to ensure the privacy and well-being of residents:

- Dedicated entrance and private lobby for residents only (separated







Opposite: Detailed view of the MahaNakhon's "pixelation" that creates setbacks and varying balconies. Source: PACE Development

Left: MahaNakhon, with its pixelation, will serve as a union between public and private space. Source: PACE Development

- via keycard doors from hotel/retail)
- 24-hour doorman, porters, valet, and concierge
- Director of Residences
- Multiple resident-only facilities including lobby, seventh-floor amenities (50-meter swimming pool, gym, sauna, fitness, games room, screening room), and the 54th-floor Ritz-Carlton Lounge
- Smart elevator key card, controlling floor access
- Resident-only parking zones (in basement and parking buildings) with valet parking service
- Wide range of in-room services on demand, including in-Residence dining & food preparation, spa services, personal trainers, housekeeping, pet services, laundry & dry cleaning, event planning, and plant services

The Hotel

The Edition Hotel at MahaNakhon features Ritz-Carlton standards in property management to ensure the privacy and well-being of hotel guests.

- Dedicated entrance and private lobby for the hotel
- 24-hour doorman, porters, valet and concierge, with a full range of hotel services, including room service, laundry, conference facilities, etc.
- Hotel amenities on the sixth floor (50-meter swimming pool, gym, sauna, fitness, and spa)

Building Performance

Each home and hotel room is provided with a low-*e* double-glazed curtain wall façade that maximizes views while minimizing heat transfer inside the Residence and hotel portions of the tower. Retail units have their own independent controls for air, power, and water, enabling regulation of utilities, with individual metering.

Lighting controls with modern LED technology is used in the building in addition to other conservation strategies, i.e., energy management, traffic management, mechanical parking systems, smart home automation, and other Ritz-Carlton property management systems to ensure that energy efficiency and resource management is maximized.

The design itself provides innovation through careful service routing to maintenance floors, thus reducing the impact on Residences for servicing HVAC equipment. Global Ritz-Carlton water management and energy conservation standards are implemented in public areas.

A Final Note

MahaNakhon will serve as a case study and exemplar of design and development in Southeast Asia, and a project that alters the tried and tested typologies of tall buildings, reorienting the world audience toward a new vision of skyscrapers' participation in the urban realm. In pixelation, the relationship between tall buildings and the city becomes that much clearer.