Council on Tall Buildings and Urban Habitat

CTBUH
Research Paper

ctbuh.org/papers

Title: **Three Mega-Tall Buildings in Hong Kong: Central Plaza, Two International Finance Centre, and International Commerce Centre**

Authors: John W.K. Luk, Sun Hung Kai Properties Limited
Julia M.K. Lau, Sun Hung Kai Properties Limited
Tim M.T. Mak, Sun Hung Kai Properties Limited

Subjects: Architectural/Design
Building Case Study

Keyword: Megatall

Publication Date: 2005

Original Publication: CTBUH 2005 7th World Congress, New York

Paper Type:
1. **Book chapter/Part chapter**
2. Journal paper
3. Conference proceeding
4. Unpublished conference paper
5. Magazine article
6. Unpublished

© Council on Tall Buildings and Urban Habitat / John W.K. Luk; Julia M.K. Lau; Tim M.T. Mak

John W. K. Luk, Ph.D., C.Eng., P.E.
Sun Hung Kai Properties Ltd.

John Luk, BSc (Eng), LLB (Hon), MSc (Eng), MBA, LLM, MA Arb DR, PhD, CEng, FICE, FIStrE, FITHE, FHKIE, FICArb, PE (NY), AP (HK), RSE (HK), RPE (HK), Barrister (UK, HK), is a chartered civil and structural engineer, barrister, arbitrator, and senior business executive. He is a past president of the Hong Kong Institution of Engineers, the Hong Kong Institution of Arbitration, and the Asia Construction and Management Association. He is also the current chairman of the Institution of Civil Engineers Hong Kong Association; a past committee member of the Hong Kong Chartered Institute of Arbitrators Hong Kong branch; and a past honorary professor and current adjunct professor at the Civil Engineering Department of the University of Hong Kong in structural engineering, construction law, management, and dispute resolution.

He has over 30 years of international experience in civil and structural engineering design and supervision, project and construction management, property and infrastructure development, and construction and commercial arbitration, with a substantial part in the United States, Hong Kong, and Mainland PRC. At present, Dr. Luk is a project advisor with the Sun Hung Kai Properties Ltd. (a leading property developer in Hong Kong), handling complicated and/or difficult problems in project feasibility studies, engineering designs, and other construction-related matters.

Dr. Luk also heads the Project Monitoring Department and the Central Tender Board of Sun Hung Kai Properties Ltd., responsible for cost and technical audit, quality management, and procurement operation.

Three Mega-Tall Buildings in Hong Kong: Central Plaza, Two International Finance Centre, and International Commerce Centre

The Sun Hung Kai Properties Group is the developer/co-developer of three major tall building commercial complexes in Hong Kong: the Central Plaza, the International Finance Centre, and Union Square. At 1,227 feet (374 meters) and 78 stories, the Central Plaza is at present the tallest reinforced concrete building in the world, providing 1.1 million or so square feet (102,193 square meters) of office space. The 88-story Two International Finance Centre stands 1,378 feet (420 meters) tall and provides more than 2 million square feet (185,806 square meters) of office space and 4.7 million square feet (436,634 square meters) of retail, office, hotel, and serviced suites above of the Airport Railway Hong Kong Station. The upcoming Union Square mega tower is 108 stories and 1,604 feet (489 meters) in height, providing 3 million square feet (287,709 square meters) of office space in the 11-million-square-foot (1-million-square-meter) development on top of the Airport Railway Kowloon Station. Sitting on two main airport stations on both sides of the harbor, the latter two mega towers will form a major landmark of Hong Kong — the "Gateway of the Victoria Harbor of Hong Kong."

This presentation will cover Sui Hung Kai Properties Group's experience in developing these mega tall buildings and ultimate mixed-use complexes, which include offices, shopping malls, six-star hotels, underground and airport express transportation, and transportation terminals.

Specifically, various urban and building planning, design concepts, and the philosophy of the two unique mega complexes will be discussed. Additionally, the impacts or influences of these developments on Hong Kong and its nearby cities, particularly those on mainland PRC, will be addressed.

THREE MEGA TALL BUILDINGS IN HONG KONG :- CENTRAL PLAZA, TWO INTERNATIONAL FINANCE CENTRE, INTERNATIONAL COMMERCE CENTRE

Dr John W.K. Luk
johnluk@shkp.com
Julia M.K. Lau
Tim M.T. Mak

Sun Hung Kai Properties Group, Hong Kong
(www.shkp.com)

Abstract

The Sun Hung Kai Properties Group is the developer/co-developer of three major tall building commercial complexes in Hong Kong : the Central Plaza, the International Finance Centre and the Union Square. With a height of 374 metres and comprises 78 storeys, the **Central Plaza** was the tallest reinforced concrete building in the world at the time when it was completed, provides 1.1 million some sq. ft. office space. The 88 storeys **Two International Finance Centre** stands 420 metres, provides over 2 million sq. ft. prime office accommodation of the International Finance Centre, a complex comprising 4.7 million sq. ft. of prime retail, office, hotel and serviced suites space on top of the **Airport Railway Hong Kong Station**. The upcoming **International Commerce Centre** of the Union Square is of 108 storeys and 490 metres in height. It provides 3.0 million sq. ft. office space of the 11 million sq. ft. Union Square development on top of the **Airport Railway Kowloon Station**. Seating on the two main Airport railway stations on both sides of the harbour, the latter two mega towers will form a major landmark of Hong Kong – the "Gateway of the Victoria Harbour of Hong Kong".

We would like to share our experience in the planning and development of these mega tall buildings and commercial complexes including :

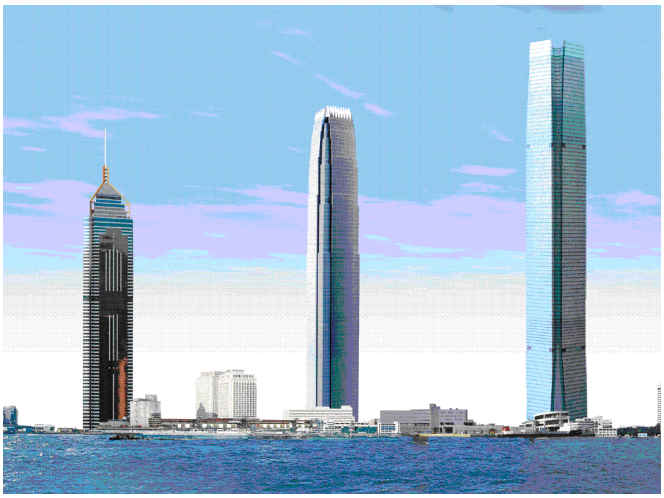
- Top class offices
- Top class shopping malls
- Top class six star hotels and serviced hotels
- Underground and airport express transportation
- Transportation terminals

In this paper, we will discuss various urban, and building planning, and design concepts and the philosophy of the latter two unique mega complexes.

We will also discuss the impacts or influences of these developments to Hong Kong and its nearby cities, particularly those on the mainland of China.

INTRODUCTION

By the 80's, Hong Kong had seen many tall buildings being completed. Just to name a few : the Jardine House, the Hopewell Centre, the Hong Kong Bank Building and the Bank of China Building. The Sun Hung Kai Properties Group in Hong Kong, after the completion of its headquarters, the Sun Hung Kai Centre in 1981, has developed on its own or with its joint venture partners three major tall building complexes : the **Central Plaza**, the **Two International Finance Centre** in the International Finance Centre and the **International Commerce Centre** in the Union Square. All these developments have their unique features, and are key elements in the cityscape of Hong Kong.



Three Mega Tall Buildings in Hong Kong :
Central Plaza (left), Two International Finance Centre and International Commerce Centre (Right)

CENTRAL PLAZA

Situated in Wanchai North commercial district in the heart of Hong Kong's expanding business center, the Central Plaza was completed in December 1992. With a height of 374 metres and comprising 78 storeys, it was the tallest reinforced concrete building in the world at the time when it was completed, provides 1.1 million sq.ft. Grade A office space. Topped with the revolutionary time pieces mast called 'Lightime', it created a new landmark in Hong Kong.

The Site

- The site, which is 77,800 sq ft (7,230 sqm) in area, is located in Wanchai, about 1 Km to the east of Central. It was acquired at a price of HK$ 3,350 million (US 430 million) on 25th January 1989 at a Government auction. On a per sq. ft. basis, it has set the record of being the highest in Hong Kong.
- Strategically positioned in Wanchai North commercial district in the heart of Hong Kong's expanding business center, it lies across from the Hong Kong Convention and Exhibition Centre (HKCEC)
- It is within 3 min walk to Wanchai Mass Transit Railway via a covered elevated walkway link, bus station, and Wanchai Ferry

Design Concept

Planning & Layout

- The design was resulted from a careful study of many different schemes and eventually a triangular plan and building form was selected. Normally, many would refrain from a triangular plan as it may lend itself to too many dead corners which may not be functional. However, when placed into context of the site, this urban fabric is a genius solution, as it optimizes the harbour view, rendering over 66.6% of the office having such prime views, maximizing the value it could generate.
- It is not a true triangle, the corners are cut off and dissolved and receded to create 6 corner office space, which is of high demand in the local context. This is also better for 'fung shui' as sharp corners are offensive to neighbours
- Aesthetically, it also helps the 1.86 million sq ft (173,000 sqm) bulk of building with a height of 1,228 ft (374m) appears to be much slimmer than it actually is.

Tripartite system

The building is composed of a tripartite system :

- a **base** of 100 ft to house the Grand Lobby & the dedicated Public Circulation Space
- the **body** containing 57 office floors, a sky lobby and 5 mechanical plant floors,
- the **top** containing 6 mechanical plant floors with a tall mast of a 'Special Lighting Feature'

Building Facade

- The building facade is made up of insulated glass of 3 different colors -
- Gold and silver coated glass are used in a vertical and horizontal pattern juxtaposed with a kind of ceramic painted patterned glass, to create the classical and slimmer image.
- The ceramic frit glass is also used as the 'cat-scratches' inlaid on the main gold façade and adds to the slim and elegant touch.
- The tower top has a central mast with three legs at the three truncated corners. It forms the crown of the building and completes its simple, majestic and yet elegant look.
- The 'Special Lighting Feature', mast 210 ft tall at the pinnacle of the building, is a ' Time Telling Light Feature and Anemometer'; it is directly linked to the Hong Kong Observatory; at the base of the glass pyramid, the embedded light tubes are programmed and computer controlled, it tells the time by the change of the different color hues of the light spectrum.

Interior

- The classical postmodern style, carries throughout the interior as well. The Grand Lobby is decorated as a 5-star hotel lobby, with Norwegian Baltic Green marble columns and Golden Giallo Veneziano Brazilian marble and Italian sandstone all fabricated in Italy.
- The lobby is done by Hirsch Bedner and Associates

Efficiency

- Having reviewed the time and cost factor , because of the tight program, and the worry that the program facilities might alter over time, and that steel might not be readily available in a timely manner, it was decided that a concrete building would be the way to go. Hence resulting in the tallest concrete building in the world.
- The use of concrete would allow maximum flexibility to adapt to change, and so Grade 60N/sq mm concrete was used for the first time in Hong Kong.
- The team managed to complete the building in 44 months and open for use in December 1992.

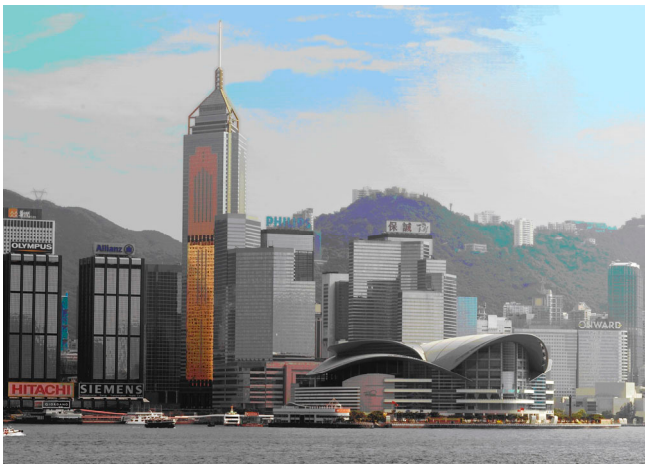
World Class Standard

Accessibility

- The covered pedestrian walkway links to the Wanchai MTR railway stations, Bus Terminus, Wanchai Ferry Pier, Hong Kong Convention and Exhibition, Government Office Tower (Inland Revenue Tower & Immigration Tower), Grand Hyatt, New World Harbour View Hotel.
- Regular Shuttle Bus to Central, the business heart of Hong Kong, is also operated

Design Standard/ Provisions

- This is a Grade A office tower with 1.4 million Office GFA.(Lettable 1.1 million sq ft) Typical footprint of each floor is over 23,600 sq ft
- It is equipped with an unprecedented Executive Club which surpasses any local Grade A office standard of its time. The 18,000 sq ft Executive Club facilities include – café, multi-purpose function rooms, sauna and steam rooms, swimming pool, Jacuzzi as well as hi-tech gymnasium and aerobics studio.
- The hotel like – Grand Lobby, is decorated with marble and granite rises 49.5 ft (16.5m) in height.
- There are 39nos of computerized high speed lifts. To get to any floor, users only need to change lift once.
- Ceiling height (to soffit) is 8'6" (2.6m) for all office floors, with Executive Restrooms on all floors.
- Other provisions include : fibre optic backbone, satellite TV antennas and emergency back-up power supply



Central Plaza with the Hong Kong Convention and Exhibition Centre – probably the most photogenic frame of the waterfront photos

Transformation of Cityscape

The majestic and graceful 'Central Plaza', topped with the revolutionary timepiece mast called the 'Lightime', created a new landmark in December 1992. When HKCEC was completed in June 1997, it superimposed in front of Central Plaza and enriches the harbourfront landmark and became the waterfront focus.

TWO INTERNATIONAL FINANCE CENTRE

The 88 storeys Two International Finance Centre (Two IFC) was completed in 2003. It is a major component of the International Finance Centre (IFC), a complex comprising 4.7 million sq ft of prime retail, office, hotel and serviced suites space on top of the Airport Railway Hong Kong Station. Stands 420 metres, the Two IFC provides over 2 million sq ft prime office accommodation. Being the tallest visible structure in Hong Kong upon its completion, the Two IFC became another focal center of the city upon its completion.

IFC Development

The island topography of Hong Kong, meant that the bulk of her usable land is along the flat thin coast-line along an east-westerly direction. Since the beginning of the century, the insatiable commercial growth in this once British colony meant that the coast-line has to be constantly reclaimed to cater for additional real estates and new roads. With the development of the new Kai Tak International Airport in the 1990's, a new land mass was created to house the Airport Railway Terminal connecting this new airport to the downtown urban area. The resultant land area shall be the gateway to the city from the airport. It will have the existing Central Business District (CBD) as her hinterland and most important of all, an unrivaled view of the marvelous Victoria Harbour.

The IFC development comprises 4.7 million sq ft of prime real estate of which 2.8 million sq ft's office, 0.8M is retail and 2 hotels including the six-star Four Seasons Hotel totally over 1,000 rooms altogether, 140,000 sq.ft. of designed public open space and amenities and 1,800 car parking space. The Developers' proposal was for a three-phase development. The Airport Railway opened in mid 1998 together with the first phase of the IFC Mall. The 38-storey One IFC tower opened in December 1998. The second phase of the development, comprising Two IFC, the northern IFC Mall and the basement opened in 2003, and the final phase, 2 hotels, will open in 2005.

Functionally, the whole development will be fully integrated with a network of pedestrian footbridges from various parts of Central through to the outlying islands ferry piers, the Airport Express and MTR system, public transport terminus and vehicular drop-off points within the development. With the Airport Express and its in-town check-in, and the subway to the MTR below, the footbridge connection to Exchange Square, Western and the Macau ferry terminus to the south, the Star Ferry and the outlying island ferries to the north, the completed development is set to become a focal hub in the heart of Central.

Clear Project Requirements and Expectations

Key planning principles were;

- To derive an appropriate layout and internal road to ensure a smooth operation of the Airport Railway,
- To form a seaward extension of the existing Central Business District to the new waterfront by developing a hierarchical pattern of pedestrian linkages across the site,
- To achieve a mix of high quality office, hotel and retail expansion of Central Business District functions as envisaged under the Metroplan framework,
- To provide focal buildings which will be compatible with the other nearby planned developments in the new reclamation area,
- To maintain a high degree of intervisibility between Victoria Harbour and the Central Business District's landmark buildings in the vicinity,
- To take into account environmental issues, especially noise and air pollution.

Design

The original Master Layout Plan inherited by the Developers had 5 towers compared to the 4 that are now built. For environmental and commercial reasons, it was decided to combine the 2 office towers on the northern site – and Two IFC was conceived. Major advantages of this scheme included;

- The creation of a landmark building (420m in height) for Hong Kong,
- The removal of one tower freed up space on the podium roof, enabling the design of a major public park, 1.3 hectare in area in lieu of the 0.7 hectare in the original scheme.
- Visual permeability through the development was greatly enhanced with one less 40-storey tower above the podium and the wall effect was eliminated,

Two IFC

As a result of combining two 40-storey towers in the original Master Layout Plan, Two IFC was mandated to be Hong Kong's tallest building. With such stature, comes a uniqueness of urban responsibility as the tallest visible structure instantly becomes the focal center of the city.

The design of Two IFC is in the tradition of true skyscrapers. With a centric form that tapers with well-proportioned setbacks, the architects aspired to express a vertical movement towards the sky. The massing of the tower becomes more sculptural near the top, further enhancing this expression. The height is further emphasized with vertical fins on the external facades which gradually lightens in colour as it ascends to its top. These simple fins gave the façade an extra dimension in aesthetics: looking at the building perpendicular to the fins, one would see more of the glass and less of the fins and the reverse holds true. The colour of the building will appear to have varying shades when looking at it at an oblique manner.

Engineering Concept

One of the key drivers for the structural design was the requirement to maximize the views from the tower. The tallest building in Hong Kong, overlooking the harbour had the potential for breathtaking views and obstruction of the views was not allowed. For this reason a mega-column and outrigger system was adopted in preference to other common tall building systems. The three outriggers, each three storeys high, would be located at the mechanical and refuge floor zones so as to eliminate intrusion into the lettable space. The mega-columns, of which there are only two per face of the building, are spaced 24m apart, thus satisfying the criteria for maximized view.

The result is virtually column-free floor plates of 2,500sqm^2. Together with the unbeatable views and the flexibility the space allows for planning. Two IFC has become the most sought after office space in Hong Kong and the region.

Site Utilization

The urban design concept as required by the Government Planning Brief provided for a mix of high quality offices, hotels and retail development above and alongside the Station, expanding the Central Business District. The concept provides focal high-rise buildings spaced apart, which will be compatible with the nearby planned developments while maintaining a high degree of intervisibility between Victoria Harbour and the landmark buildings of Central. The spacing of the towers will also allow breezeways through the development.

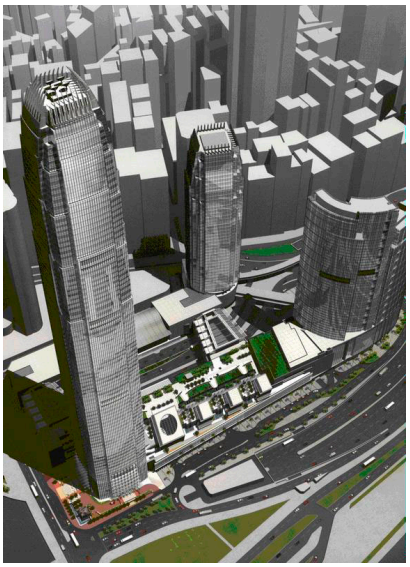
The design proposed a podium over the whole site comprising mainly retail accommodation with internal atria forming the major pedestrian routes through the site at several levels, while integrating with the public walkway routes from the south to the new ferry piers.

Context and Contributions To Urban Development

By its scale and its prominent location at the hub of the Central Business District connecting 7 ferry piers, 2 railway station interchange, bus and taxi subway terminus, the development is becoming a key element in the cityscape of Central. With direct access to the transportation networks below it is a fully-fledged transportation hub and a gateway to the City. A total of twelve footbridges have been constructed as part of the Development providing excellent pedestrian links to the surrounding areas. The success of the development lies in the careful.

The podium is a multi-level network of interlocking and interpenetrating arteries drawing people through various routes and delivering them to various destinations. From general post office in the east to the Ferry terminus in the west, from the ferry piers in the north to the existing CBD in the south and from the station underground to the landscape garden at the podium roof.

The development has also been designed to integrate into the existing city grid. The grid of the first phase is oriented such that it is orthogonal to the Hang Seng Bank building to the south and transforms across the site such that the grid for the second phase is parallel to the harbour.



Two IFC (left) and other major components of the IFC development : One IFC (middle), Four Seasons Hotel (right) and the IFC Mall (Podium under the three towers)

Socio-Cultural Response

With a site area of 57,107 sqm (614,700 sq ft), the size of 11 football fields, the completed development will determine the image of Hong Kong for years to come. With four high-rise towers the design of the development as a whole was an exercise in spatial transparency. The design sought after was also to be simple and timeless and it was important that the merits of the design be acknowledged and understood by all.

The impact of having 4.7 million sq ft of real estate space in an already developed area needs to be studied carefully. Apart from the obvious terminal design concerns over blocking, traffic and connection with the existing pedestrian flow. The socio-economic balance and implication with its surroundings became one of the developer's very concern. The developer's vision will in time shape and mould the character of this micro community. Like all major cities in the world, the CBD is a place where people work and commute with little reason to stay after working hours. The introduction of a shopping center provides the developer with an opportunity to change the urban pattern of the area by creating a leisure and entertainment hub. Office workers within the area could now have the option of spending the after work time within the area avoiding the exodus of office workers to other established retail areas after work. The introduction of cinemas, shops, restaurants with outdoor harbour view spaces, a gymnasium and with ample provision of carparks, IFC mall had quickly became the place to be for people within and area afar.

INTERNATIONAL COMMERCE CENTRE

The International Commerce Centre (ICC) is now under construction and is anticipated to be completed by 2010. It is a major component of the Union Square development, which is of 11 million sq ft of luxury residences, top class offices, retail, hotel and service apartment. The International Commerce Centre, stands 490 metres and of 108 storeys, will break the record of the tallest building height in Hong Kong. It acts as a counterpoint of the Two IFC on the other size of the harbour, and together they will form the 'Gateway' of the glamorous Victoria Harbour.

Background of the Kowloon Station Development – Union Square

- In 1992, the Mass Transit Railway Corporation Ltd. (MTRCL) was awarded the contract to design, build and operate the Airport Railway Link and the Tung Chung Mass Transit Railway Line to serve the airport linear city. Kowloon Station is the largest along this Airport Railway Line to act as a fully integrated interchange between the railway and other forms of transportation.
- The Kowloon Station Development - Union Square, is intended to be a 'Super Transport City'. The density of construction around the station reflects how modern rail can provide a catalyst for the creation of a highly compact and efficient 'Vertical City.'
- The Comprehensive Development Area (CDA) of the site is 11 million sq ft in area, and occupies part of the massive reclamation area in West Kowloon. Originally, the site was divided into 7 phases. By the end of 2000, 4 phases were already awarded/ completed; and 4 developers were already locked in to the CDA development. Sun Hung Kai Properties (SHK) finally won the bid for the remaining 3 phases in September 2000 through invited tender.

Union Square

The site area of this CDA is 1.46 million sq ft and is equivalent to 16 nos of football fields of international standard. SHK develops over 50% of the 11 million sq ft (Access Floor Area) development, the ones marked with asterisk are developed by SHK:-

- 1.0 million sq ft of **Hotel***, including the Ritz Carlton Hotel
- 0.8 million sq ft of **Service Apartment*,**
- 1.0 million sq ft of Retail,
- 2.5 million sq ft of **Top Class Offices***, and
- 6.5 million sq ft of Luxury **Residences, (1.5 million sq ft*)** all equipped with Clubhouse & Recreational Facilities.

Master Planning of the Union Square

T1, T20 & T21

- After acquiring the site, SHK had proposed to redistribute the Gross Floor Area, reorganize the planning so that the original 5 towers are composed and consolidated into 3 towers, namely T1, T20 & T21. T1 then became the International Commerce Centre (ICC).

Station Box

- The Station Box, already built and in operation, is the Grand Entrance to this 'Supercity', it is defined within a rectangular box in the center of the site. It is the focal point of the development - Union Square and people are disbursed from this node.

Pedestrian Network

- From G/F to 1/F, a 24 hour pedestrian link is provided for users to approach from outside of Union Square to this supercity via air-conditioned route.
- In fact, at 1/F level, there are a series of footbridges to connect to other sites.
- At podium level, pedestrians can move through the towers via covered walkways, and landscaped garden. Private Areas entries are controlled with access cards.

Landscape

- The size of the Landscape Deck is more than 4 nos of football courts of international standards including 1.7 hectre of public open space.
- It is divided into North Garden with active uses and South Garden with passive uses.

Rail Axis

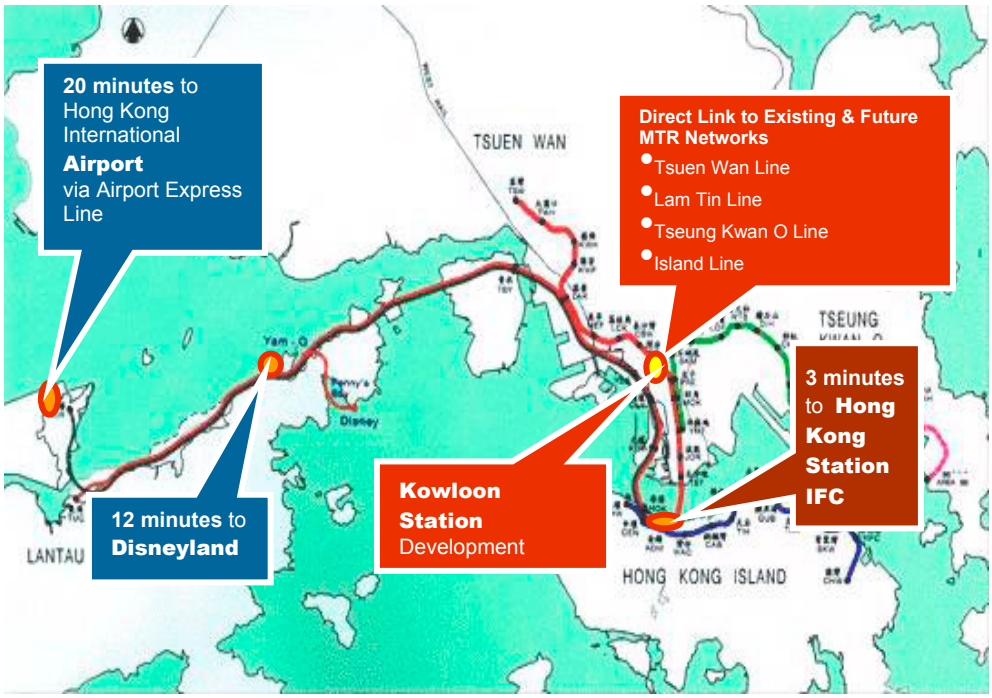
- The rail alignment generates a north-south axis through the site. Large foundations and tower structures are kept away from the rail line.
- The station is on a 12 m structural grid and provides the controlling discipline for the station layout. Above the station it provides the urban grid for the location of the buildings

Layered Roads

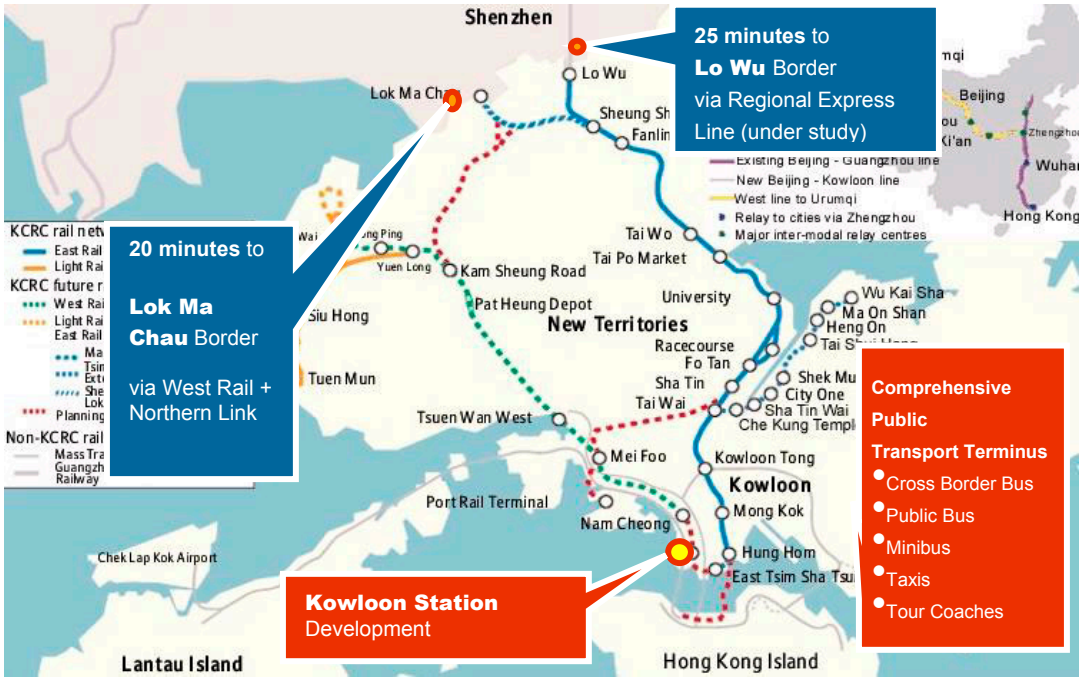
- G/F is zoned for road and public transport; and the main trunk road is the 'Station Perimeter Road' serving the different entries of public transport mode.
- 1/F and 2/F are retail, with easy access to parking on different levels.
- The podium road system is reserved for local road network.

Transport Supercity

- Sitting on top of the Airport Express Railway Line planned by the MTRCL, the Union Square is designed as a major transportation hub, with great accessibility via bus and railway linkages to both PRC and local districts:-
  - 35 min to People's Republic of China by KCRC railway line
  - 23 minutes to Chep Lap Kok International Airport by Rail,
  - 3 minutes to Central CBD by Rail
  - In addition, there is a Cross Boundary Coach Terminus at the G/F of the podium which operate coaches to and from China.
  - A Hotel Shuttle Vehicle Terminus, and Bus Terminus as well.
  - Certainly, there is also ample parking (over 5,600 nos of carpark)
  - Various taxis points are also available.



Subway Connections of the Union Square (Kowloon Station) – a "Super Transport City"



Rail Connections of the Union Square (Kowloon Station) – a "Super Transport City"

The ICC & Twin Tower of Union Square

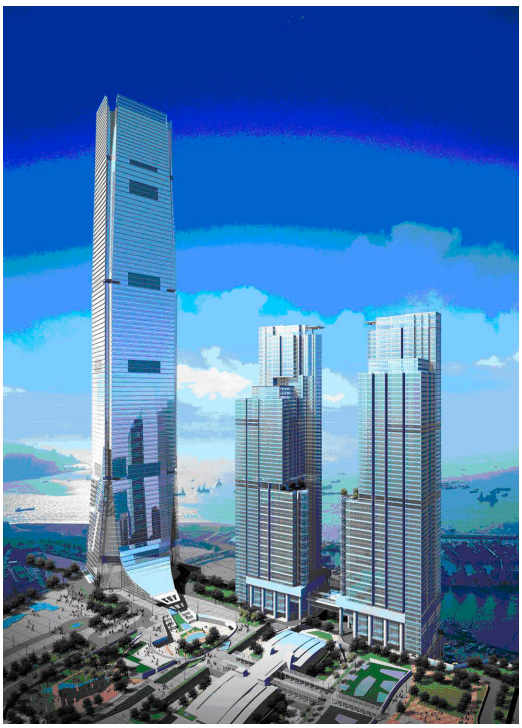
The consolidation of 5 towers into 3 has transformed and renewed the urban landscape totally, creating the opportunity to have a tall landmark building, the ICC, which would be the tallest building in Hong Kong, plus a pair of Twin Tower, T20 & T21 at the waterfront. At the same time, this opens up the Central Landscape Garden for public enjoyment, now equivalent to 4 nos of football fields. Not only the Green Environment was enhanced greatly, it had created better view for the residents facing the original Landscape.

ICC

- Originally there were 2 office towers, T1 had combined it into ONE TOWER together with the hotel component. It now rises 490m in height, and had just unveiled its name as ICC back home, namely - International Commerce Centre.
- ICC itself owns 2.5 million sq ft of office area with mail room, conference and exhibition facilities; a 312 - room Ritz Carlton at the peak, sandwiched in between would be the first 'Public Observation Deck' in Hong Kong.
- The 108 storey tower (ICC) will be the new Landmark in late 2009 to rise above the Kowloon Station Development, now called - Union Square. It act as a counterpoint of Two IFC, forming the Gateway of the Victoria Harbour.

Twin Tower

- The 2nd and the 3rd Tower is a pair of Twin Tower, namely T20 & T21.
- T21 (yet to be named) is the first tower to be completed by 2nd Quarter of 2007. It is comprised of Luxury Apartments.
- T20 (also yet to be named) is a **hybrid** of 2 Hotels, topped by some large Service Apartment units. T20 will be home to the **1st W Hotel in Hong Kong** with 394 rooms, which is scheduled to open in May 2008.



ICC (left) and other major parts of the Union Square development: T20 (middle), T21(right) and the shopping mall (Podium under the towers)

Landmark Building - ICC

Architectural Expression & Design Concept

- The creation of the Landmark was an outcome of an invited competition, that Kohn Pederson & Fox (KPF) was selected from a few international renown firms. According to KPF -

  "the scheme succeeds in wedding the high-rise building form with a highly efficient structural and operational agenda. Square in plan, the tower's re-entrant corners taper to create a graceful profile against the sky. At its base, the tower splays out, creating an impression of a plant emerging from the ground. The walls of the tower peel away at the base, the tower splays out, creating an impression of a plant emerging from the ground."

- The building form has created great drama to the building, yet very functional. The way it meets the ground is by way of creating a sweeping curve 'tail' to the podium deck floor.
- The entire skin – from top to bottom, is articulated by rows of shingled curtain wall. Each row of the curtain wall tilts slightly, and each row overlap the other to create the shingle effect. By creating this shingled wall, the silvery blue sky it reflected created a stunning impact which will leave one with a lasting memorable impression.
- At night, the peak will feature lighting effect like a beacon that shines afar and calls for attention, echoing ifc across the other side of the Victoria Harbour.

Top Class Design Standard/ Provisions

- The orientation of the building was adjusted in order to maximize the harbour view, rendering 80% of the office area now have sea view.
- Of the 5 zones of offices, it totals up 65 floors of offices with 2 typical office floor to floor height, they are 4210 mm & 4510 mm. (the net height would be 2850 and 3150mm respectively), being typical floor heights, are the most spacious standard in town.
- Having studied the usual height needed for the raised floor, no excess height is given to these, but instead they were apportioned to the net office floor height for users to enjoy
- Span depth varies from 12.6 to 16m to cater for different tenants requirement
- At most, tenants at high floors only need to change to another lift bank once to ensure convenience.
- There will be 2 nos of exhibition floors with conference facilities
- There are 86 nos of lifts of different types, sizes and speed. First 4 zones of offices are served by double deck lifts while the 5th zone is served by single deck lifts.
- The Observation Deck and Hotel are served by separate banks of double deck shuttle lifts from the main lobby.
- High speed lifts are adopted by all shuttle and fireman's lifts for tower, with speed achieving 9m/s. The fireman's lifts can reach the top floor within 1 minute after departing from the main contrance floor.

A Compact Urban Fabric that offers Great Opportunities

A truly Metropolitan City

- In addition to the comprehensive infrastructure network of the Union Square, tenants of the ICC, occupants of the Ritz Carlton and W, and residents of the Service Apartments and Residences, - have access to the 1 million sq ft of Retail facilities with Alfresco dining areas, an indoor ice-skating rink, and 11nos of mini-cinemas for entertainment; other recreational facilities include Tennis Court, Squash Court, Table Tennis, and a Multi-ball court for Badminton, Volleyball, & Basketball; there is also leisure park for strolling & resting. Active and Passive Design elements are being carefully put in to cater to different needs for all.
- The development is largely a vertical city, with the horizontal development of the podium (mostly retail, parking and transport facilities) as a counterpoint, the compact composition offers great convenience, speed, accessibility & efficiency to users & occupiers who live or visit here, - which is what urbanism is all about. The development is by itself a **'Super City'** offering different **varieties and Star Attractions.**

IMPACT OF THE MEGA TALL BUILDING DEVELOPMENTS

Transformation of The Hong Kong Cityscape

The graceful Central Plaza, topped with the revolutionary timepiece mast 'Lightime', created a new landmark in 1992. With its harbour front further enriched by the completion of the Hong Kong Convention and Exhibition Centre in 1997, a waterfront focus was formed and became probably the most photogenic frame of the Hong Kong harbour-front photos. The completion of the Two IFC, the tallest visible structure in Hong Kong became the focal center of the business centre of the city. By 2010, the then tallest building in HK – ICC will complete the Gateway concept embracing the Hong Kong coastline on both sides of the Victoria Harbour and welcoming each and every ship and aeroplane coming into Hong Kong.

ICC (left) and Two IFC (right) will be forming a major landmark of Hong Kong – the "Gateway of the Victoria Harbour"

Urban Development

Being strategically positioned in Wanchai North commercial district, the Central Plaza development completed an efficient cluster of convention and exhibition centre, government offices, offices and hotels in the heart of Hong Kong's expanding business center. The Two IFC together with the entire IFC development provided a mix of top quality offices, hotels and retail development above and alongside the MTRC terminal, thus expanded the Central Business District of Hong Kong. The ICC together with the Union Square development will be creating a vertical city of which the compact composition offers great convenience, speed, accessibility and efficiency to users and occupiers who live, work or visit here.

Transportation

The Central Plaza demonstrates the developers' vision for a first generation high rise office tower playing a very urban role in providing a pedestrian network to its immediate surroundings. The IFC development encompasses more than just that. It formed a regional transportation hub of land, sea and air. The Union Square development, where designated as a 'Super Transport City' will create another major transportation hub. These three mega tall buildings and commercial complexes are effectively linked by MTRC and express roads, and with that a bigger cluster of commercial and business accommodation is formed. Both the IFC and the Union Square provide express transportation to the Airport, giving high efficiency in international business context. The Union Square's railway and highway links to the mainland of PR China on the other hand give high efficiency in China link business. They are also the centre of Hong Kong local transportation links, each echoing the other on opposite sides of the harbour.

CONCLUSION

Since the 80s', developing residential and commercial accommodation in clusters has become a growing trend in Hong Kong. This concept in urban development was found to be very effective, such that the Sun Hung Kai Group's New Town Plaza in Shatin New Town developed in the early 80's turned out to be a tremendous success. The trend of developing cluster complexes for business and commercial accommodation has also been formed subsequently, and results were equally successful if not more successful. This trend had great influences on many large scale developments on the mainland of China, for instance the Sun Dong An Plaza, the Oriental Plaza and the Henderson Centre developed by Hong Kong developers in Beijing. There are also many good examples in other cities in China. With its successfully track records, the Sun Hung Kai Properties Group has been invited to participate in a number of mega projects in PRC. A recent such complex now being developed is in Lu Jai Zui of Shanghai. The new mega tall building complex of this project is envisaged to be a bright star on its own, and will have its own unique character to meet the needs of the new era.