Huawei Research & Development Centre

RMJM

RMJM won this international design competition for a new campus development for Huawei Technologies. The scheme incorporates offices, laboratories, a data centre and civic plaza and is located to the south of Nanjing, one of the four great ancient capitals of China.

Responding to the client's brief, the RMJM team's design incorporates a simple, orthogonally arranged architectural composition, with the focus on sustainable and technical aspects of the scheme.

The masterplanning of the site has a synergy with the relationship between the Purple Mountain and the tranquillity of the Yangtze River. Integral to the scheme is the integration of the natural typography of the surrounding hills and valleys, with the landscaping being brought through the scheme, blurring the edges between the built and soft environment.

The key objectives for the development were:

- To create a development that enhances and embraces the existing natural environment
- To create a development that provides a positive contribution to the surrounding urban context
- To create a development that is highly secure, elegantly detailed and flexible enough to meet all Huawei's future requirements

The design approach has placed the highest priority on preserving and enhancing the existing landscape. The three naturally occurring valleys within the site are reinforced through dense planting along their upper slopes and the introduction of a series of water channels flowing continuously along their base. Echoing the strength of Nanjing's setting between Zhong Shan Mountain and the Yangtze River, the planning of the development locates all the buildings within the base of these valleys, embracing the continuously flowing water and ensuring a fully integrated relationship between architecture and landscape.

Buildings are arranged around a series of interlocking courtyards, creating various layers of defensible yet permeable open spaces.

Regular openings at ground level enable the water, vegetation and topography to run through the buildings. Environmental analysis has ensured these openings are orientated to allow the passage of cooling summer breezes whilst sheltering the courtyards from the colder winter winds.

The organisation of the masterplan divides the office and laboratory accommodation into four identifiable districts within the more secluded zones of the site. The central valley is richly landscaped and forms the primary focus of the scheme, beginning at a large open water body at the main entrance to the development, running through a sheltered civic plaza to a series of terraced gardens. The staff canteen frames this civic plaza providing a central social focus at the heart of the site. The high security data centre located to the rear of the site for security is clad in translucent white glass as it sits as an illuminated beacon providing a positive landmark for the development.

Vehicular circulation is restricted to the perimeter of the site, with a network of landscaped pedestrian routes provided between buildings and across the hillsides to ensure the two are completely separated.

The architectural design employs a classic material

Outdoor view looking into the atrium

5-storey atrium

One of the orthogonally designed buildings and interlocking courtyard

The staff canteen forms the central social focus at the heart of the site

palette on a highly modular basis, maximising the benefits of increased construction quality and speed of prefabrication. Each courtyard is framed by a pair of complementary façade treatments, one of depth and recess the other of veiling and tension creating a visual contrast in any vista through the site. The buildings employ a range of sustainable strategies in order to minimise the environmental impact of the scheme and reduce their lifetime running costs. These include utilising the thermal mass of the structural frame, insulated green roofs, heat recovery systems, water recycling strategies and hybrid natural ventilation systems using 'eco-shafts' to reduce the dependence on conventional air conditioning systems.

Name of Building	:	Huawei Research & Development Centre
Location	:	Nanjing, China
Client	:	Huawei Technologies
Skills	:	Architecture, masterplanning, landscape design, interior design, environmental strategy
Site Area	:	454,000m^2
Facilities	:	R&D, data centre, convention facilities, office
Building Height	:	15-25m

Xilin Sales Pavilion

CL3

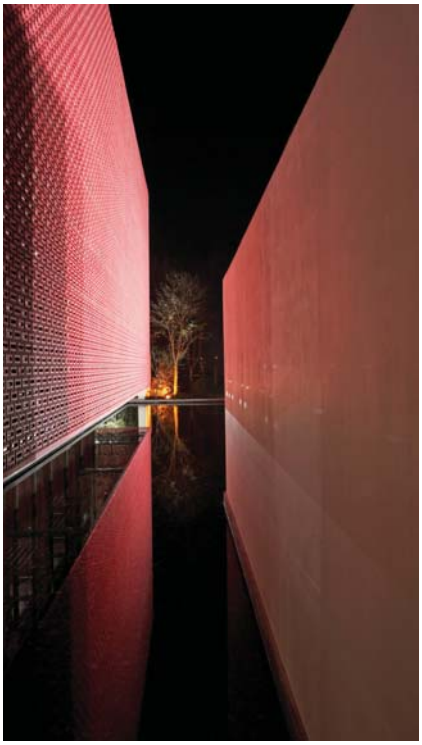
Once again I am on a plane to Greater China, this time to Chengdu, one of my favorite cities in China. I have been coming here for almost five years. Here we have done some of our most creative works, where I find the people very receptive to new ideas and have good artistic sense.

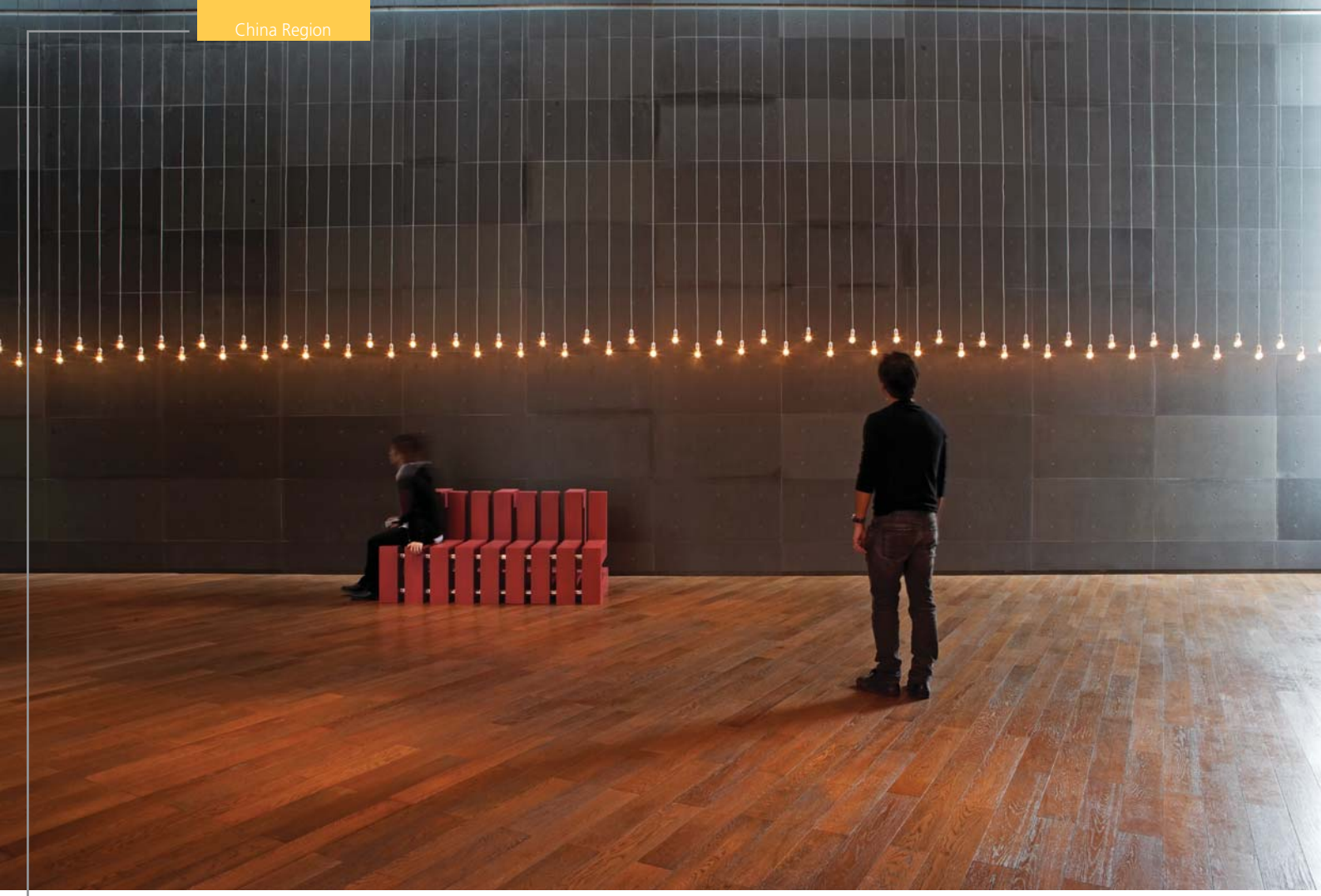
We recently completed an architectural project, the Xilin Sales Pavillion for Chengdu Vanke Real Estate Co., Ltd. The project was extremely fast track, as many China projects are, taking about eight months from start of design to move in. With such a tight schedule a lot of close coordination with the client and contractor was necessary and the design needs to be quite simple.

The project takes the planning principle of a Chinese courtyard house with an entry court, front garden, a main pavillion, side pavillion with support facilities and a back garden that leads to the show flats exhibition area.

Inspired by traditional Chinese paper cutting, we used a cast fibre cement lattice screen with a Chinese motif as a sun screen to wrap the exterior of the pavillion, giving the building a translucent outer skin, letting in soft, diffused daylight into the building interior. The same cement screen is used as a landscape element in the entry court, framing the landscape gardens and giving a stark contrast to the white washed garden walls and green vegetation. Water features are used as part of the landscape element to create reflection ponds for the pavilion, which becomes a very dramatic feature at night.

Taking the concept of a Chinese courtyard house, the sales pavillion is a simple post and beam structure with a glazed courtyard in the middle above the model display. The same exterior architectural articulation is carried to inside the pavillion. Here the cement screens are replaced by timbre screens of the same scale, creating a continuity between the inside and outside spaces.





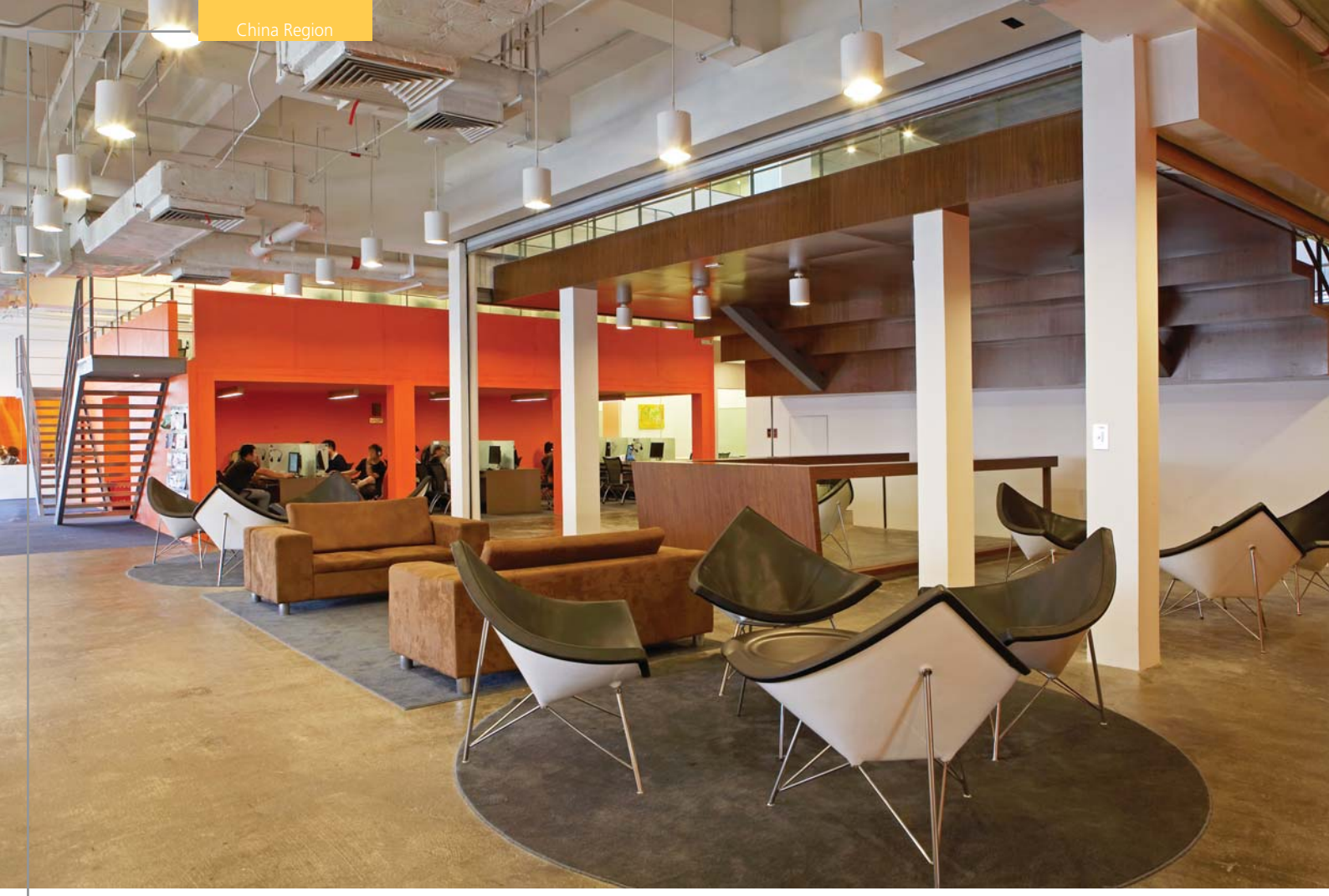
CR Land Showroom

CL3

Another recent project in Chengdu is the interior design for CR Land Showroom of China Resources Land (Chengdu) Ltd. Situated inside a contemporary structure, the project aims to showcase the property developments of CR Land within an artistic environment. The internal spaces consist of two levels, with reception and showroom area on the ground level, and a ramped galleria leading to the second level with guest lounges, conference and back office area. Using light as a theme, we created four large installation pieces with neon light, florescent light, LED light and incandescent light bulbs respectively, to guide visitors to various parts of the showroom.

Drawing inspiration from modernist artists, other installation pieces and furniture are designed, including an eight meter tall red pergola linking the showroom spaces.

The material palette used are mainly monochromatic with cement boards, stainless steel, black slate, white wash wall and white marble floor.



English First Mega Centre

CL3

English First Mega Centre is a recent project in Shanghai for an English language training school. With an area of 5,100 m^2, the school occupies two levels of a commercial podium, linked by an eight meter high atrium. The lower level is used for teaching and the upper level is the faculties and administration office. With a concept that learning takes place not only inside the classrooms but more importantly should be among the students, we focused the design on a series of open recreation spaces like café, snooker area, stadium, lounges, etc, where students and faculties can interact. The atrium, the symbolic centre of the school where the students and faculties are divided onto two floors, was converted into a stepped stadium which links the two floors physically, resulting in a gathering space where movies are screened in the evening. Suspended over the stadium is the boardroom with a glazed opening in the middle of the floor with a view back into the stadium. Substantial structural modification was done in order to create this interactive space.

Having worked in China for a few years, I have learnt to overcome some of the difficulties, namely workmanship and material availability. Nowadays, a lot more materials become available in China, and we would try to use simple, locally available and sustainable material and focus more on spacial quality of the design. In terms of workmanship, we find the contractors are usually keen to learn and work with us, however, close supervision is key to a well finished project.

Zhujiajiao Master Plan

Shanghai, China

Ronald Lu & Partners

A Modern JiangNan Water-Town

As the only well maintained historic water-town in Shanghai, Zhujiajiao is also the origin of where Shanghai began. This project site is at adjacency of the entrance into the historic water-town. This is a commissioned conceptual master plan for a local developer in seeking government's endorsement.

The master plan is asked to provide tourist retail, cultural life-style, food & beverage, various performing venues, waterfront resort & boutique hotel, and a JiangNan SOHO cluster; on a flat site of 176,425 sq.m. The total Gross Floor Area is 150,000 sq.m. above ground and 100,000 sq.m. in basement. To be consistent in atmosphere with the historic sector, the site coverage is at 40 to 45% and the building height is controlled at 12 meters in the new development.

Planning Concepts

The planning concept has adopted the "Ice-Crack" pattern in traditional JiangNan culture as a reference fabric for streets layout and massing formation, together with sets of three-dimensional network of people movement; the result will be a stereoscopic modern JiangNan water-town.
To form a formal central open space as a people collector, opera house and a piazza are inserted there as an open cultural space in this high density community.

Waterway is laid to run through and link all various zones in different parts of the master plan, it is designed to be city fabric at the bottom layer. Over the one to two stories street blocks, sky-bridges are spanning from west to east leading people into the historic sector of the water-town.

Architectural Applications

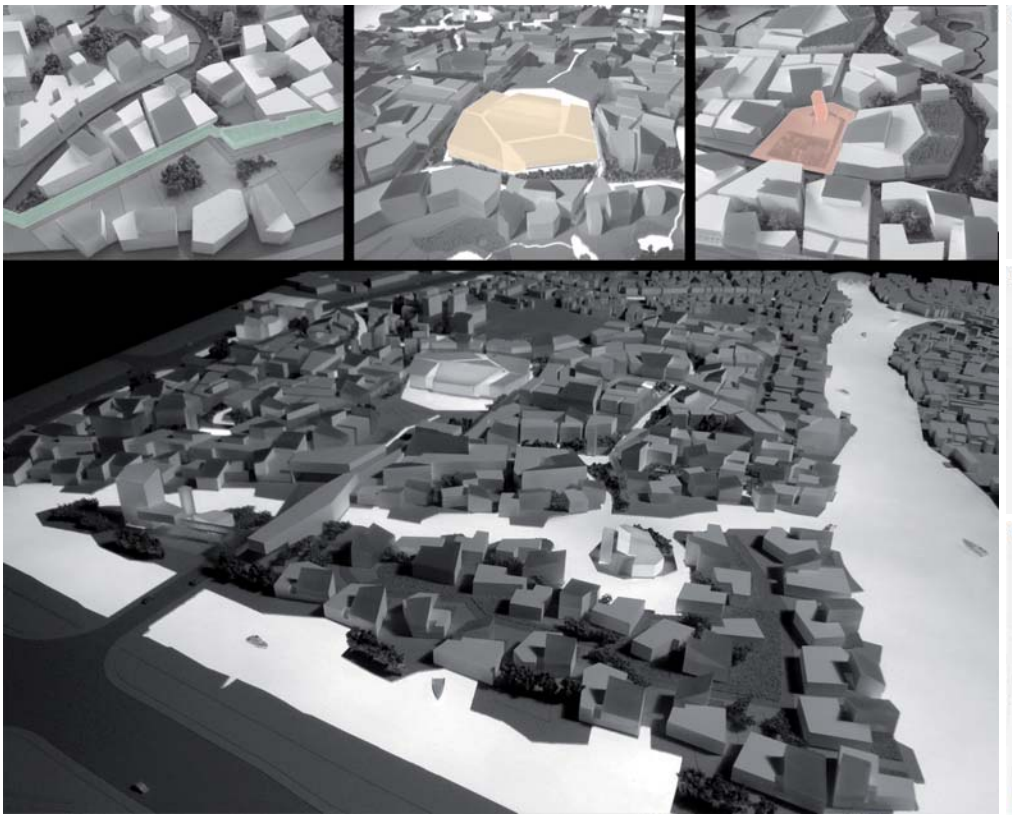
As controlled by the master plan on the building height and the massing form, the architecture is conceived as a series of material composition, to signify the contents within. Besides scale, sloping roof together with penthouse, and walled structure; are elements to be associated with the architectural style of the neighboring vernacular JiangNan water-town.

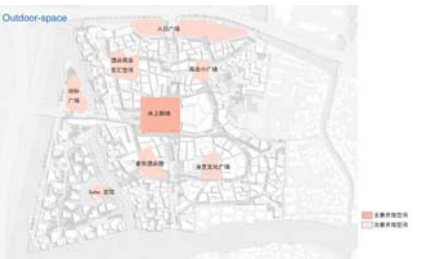
On the major portion of the building blocks, the retail and commercial architecture is to be made out of frosted glass walls and sloping corten steel screen-roof. On the waterfront resort hotel, the blocks are built out of pre-cast masonry walls and sloping lead metal roof. And, on the JiangNan SOHO villas, they are made out of stonewalls and sloping stainless steel roof.

The entire development is thought of as a setup for eventful street-life with multi-dimensional layers, modern architecture but embracing traditional vernacular values. It is also setting example of how new development could be transitional with heritage, and still in contemporary language.

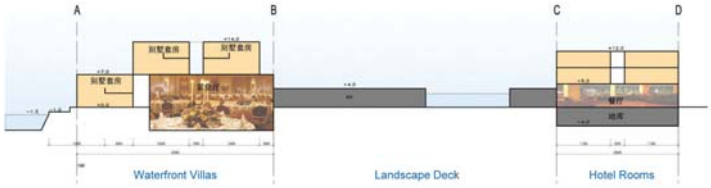
This project was honored with People's Choice Award of 2007 The American Institute of Architects Hong Kong and one of the selected exhibitors in the 2007 Shanghai International Creative Industry Week.

Architect : Ronald Lu & Partners
Design / Completion : 2007/2010
GFA : 250,000 sq. m.
Client : Shanghai Zendai Commercial Investment Co. Ltd.





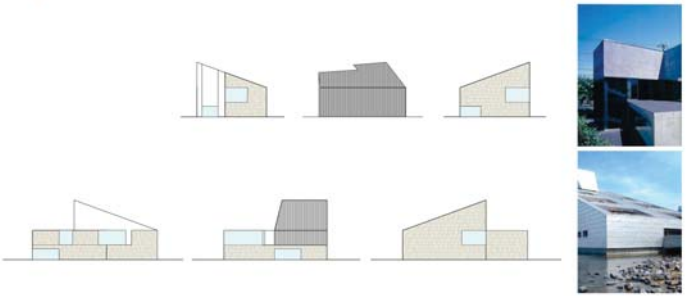
Section Across Hotel

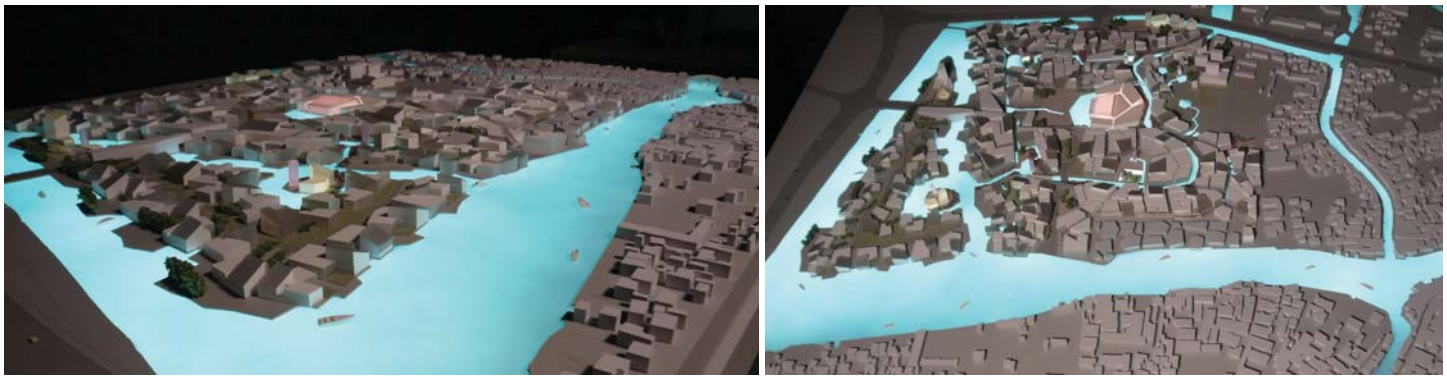


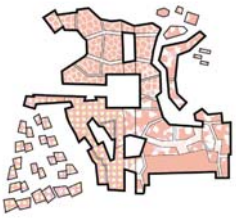
Retail Architecture

Waterfront Resort Architecture

JiangNan SOHO Architecture







Government Ministry Building in the Middle East

Leigh & Orange Ltd

This government ministry headquarters building provides various functions for the people of a country in the Middle East. The complex includes offices for the Chairman, Deputy Chairman and Secretary General, various public committees and departments, a prayer hall, multipurpose theatre hall, hierarchical entrances and ample parking. The concept of the design is the "People's Courtyard", a symbolic household unit for the country, within which the sense of security and at the same time, the degree of intimacy is elaborated.

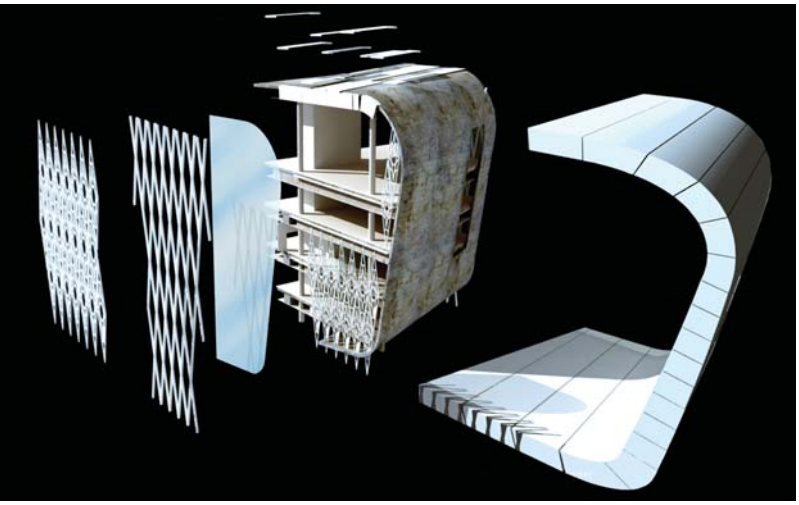
The project area is literally enclosed by a "desert" and the insertion of such courtyard in the middle of nowhere would be phenomenal. By undulating the ground plane, not only the car parking spaces are screened off, but it also provides the public an exceptional landscaping experience atop with this iconic breathing space in the region. In the centre of this landscape is a large, toned egg-shaped structure that acts as the focal functional hub of the complex. It is cradled between two office buildings, one curvaceous in silhouette and plan, the other an angular, facetted piece that "bends" around the egg, hence creating an inner courtyard - the "majlis" to the community.

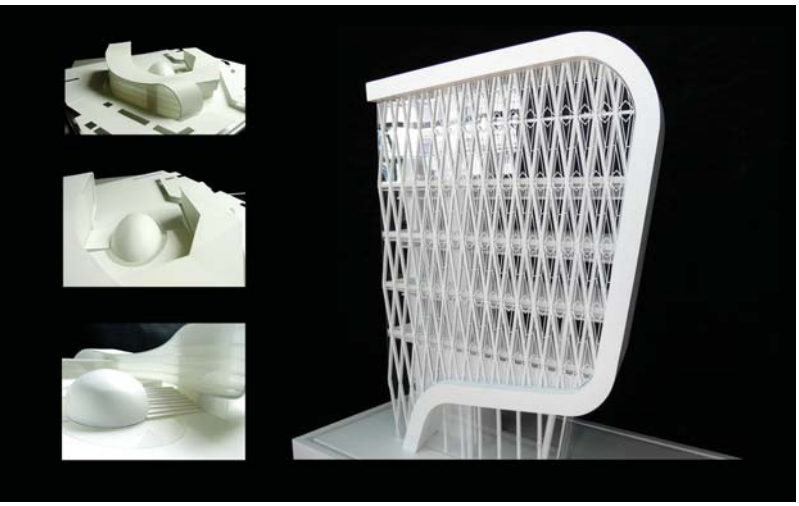
The two office building blocks are designed to look as if it is emerging from the soil; having a dialogue with the landscape; and having the character of an extension of the land. By introducing the two arms, the structure is read as a tubular channel on one side, and a smooth skin on the other. These two complementary elements intertwine coherently as every natural occurrence, simply like mother and child, day and night, sun and moon, point and space, solid and void ....

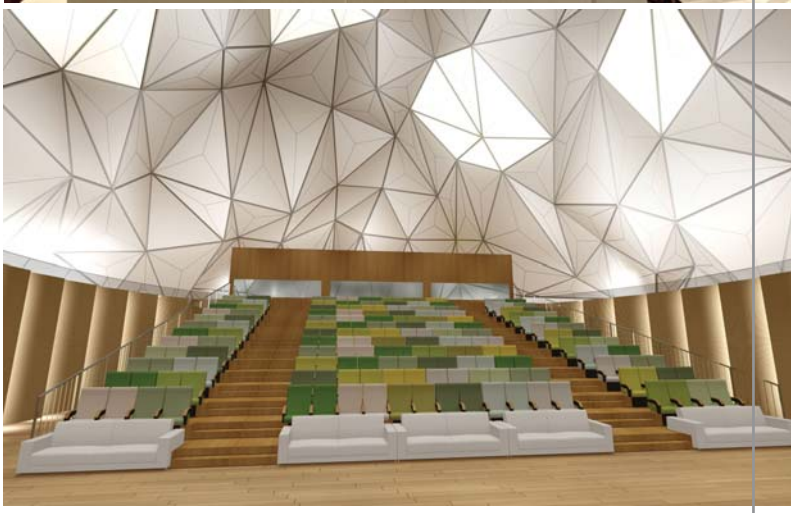
The smooth skin and the tube structures comprise three separated entrances for the public, staff and VIP. They each are sited at 120 degrees apart. This equilateral triangular relationship harmonizes the arrangement of the building forms and its function. Together with the egg shape ceremony volume in the middle, the equilibrium of the building mass is achieved.

Project Data

Location : Gulf Region
Project Size : 16,000 sq.m.
Project Date : 2006
Completion Date : 2012
Architect : Leigh & Orange Ltd
Consultants : Davis Langdon & Seah
Hyder Consulting Ltd
Sinclar Knight Merz Group
Pelton, Marsh, Kinsella
Al Khatip Cracknell
Form & Structure
Pacific Lighting







Pentominium
Aedas Ltd


Aerial View - South

Upon its completion, the Pentominium Tower at Dubai Marina will potentially be the tallest residential building in the world. Articulated as the fusion of two widely known terminologies in the residential sector - the condominium and the penthouse - it is a high-rise 516-metre skyscraper offering a single unit per floor, containing all the amenities and premium luxury features expected in a modern building of this type. The tower is also a stunning answer to a set of unique challenges.

Context & conditions

A crucial part of Pentominium's project brief was the need to respond to the high density and close proximity of neighbouring structures and the extreme environmental factors inherent to Dubai. The Aedas team, led by Design Director Andrew Bromberg, met these challenges primarily by giving the building a unique general configuration of two different sides centred around a shared core. One side is a simple extrusion that extends to the full height of the tower. This side is primarily southern-oriented and utilises a system of balconies and vertically layered glass to significantly reduce solar gain. As the building ascends, this layer of glass broadens, thereby forming an integral windbreak that effectively shields the balconies from the powerful winds experienced at higher elevations.


Aerial View - South West

Pentominium

By contrast, the opposite side of the building takes on a segmented profile, alternating between apartment volumes and voids containing sky-gardens. The former volumes comprise of six five-storey-high pods that cling structurally to the building core. Their alternation with garden voids allows for an engaging and highly functional mix of communal and/or semi-private spaces, and thus enables the tower to "breathe" within its dense context.

The influence of wind loading

The structural design of tall buildings in the Gulf region is influenced to a great degree by the demands of wind loading factors. Certainly, as new buildings in this region and elsewhere tend to be simultaneously taller and more slender than their predecessors, they also become increasingly susceptible to cross-wind dynamic response, also known as "vortex shedding". This can in turn lead to both large aerodynamic loads and uncomfortable accelerations (swaying) for the building occupants.

The irregular vertical profiles of Pentominium are the key to thwarting these common problems. Thorough analysis of aerodynamic forces at work in the region of the building site and meticulous "tuning" of the building's general and detailed form has resulted in a shape that works effectively to break up the formation of vortices that would otherwise generate large and undesirable cross-wind responses. Because of its unique looking - and meticulously refined - architectural form, Pentominium will experience loads and accelerations that are unprecedentedly moderate for a building of its equivalent height and slenderness.

Innovative direct lift system

Another notable challenge evolved from the client's preference for a vertical lift shaft without the lobby transfer system commonly employed in buildings of this stature. In Pentominium's case, a "direct" lift system would necessitate an unprecedented straight run of 500 metres. To achieve this, a series of major design and engineering challenges had to be overcome.

Observation Deck

Of particular concern was the undesirable "stack effect" that would result from the enormous differential in air pressure and temperature between the building's lift shaft and the ambient conditions outside the shaft. As it was determined that conventional HVAC systems would be inadequate to overcoming this effect completely, the design and engineering team sought alternative means to lessen or eliminate its impact. The task was complicated by the fact that precise pressure patterns on each floor differ according to the sizes and heights of the various openings and leakage paths into the building. An excellent collaborative effort between lift engineering specialists and the Aedas team resulted in the development of a vertical transport system which meets client requirements whilst providing an excellent margin of safety, efficiency, reliability and ease of operation.

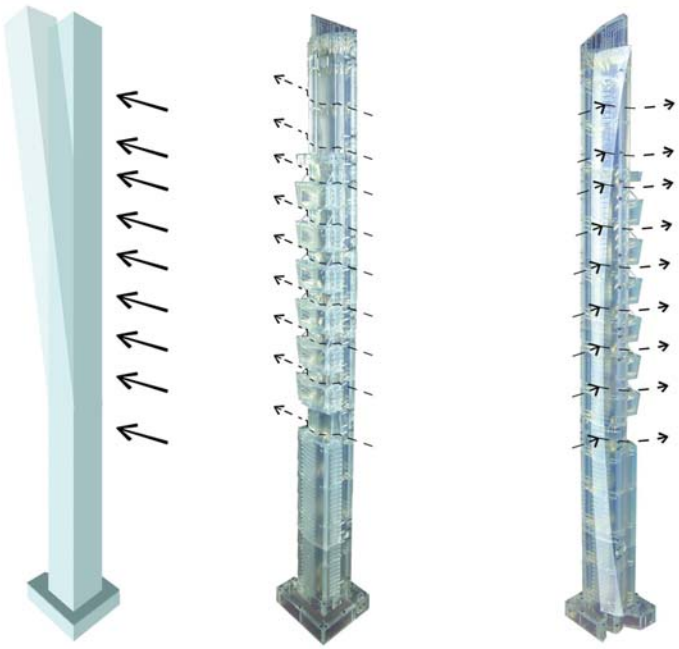
A new icon of originality

Pentominium's elegant form and innovative architectural design will make a striking visual impact on the Dubai skyline. With its unprecedented slenderness ratio of 1:14.3 (width-versus-height), the end-result is a very thin, lightweight 516-metre tower that takes its place naturally within a setting of extruded neighbours, whilst still maintaining a powerful, iconic presence that is uniquely its own.

Pod Gardens

Pentominium: key facts

Development type: Residential tower
Programme residential site area: 3,500 sq-m
Floor area: 111,730 sq-m
Building height: 516m
Location: Dubai, United Arab Emirates
Awards: CNBC Arabian Property Award 2006 (Best Apartment, Best Development, Best Architecture, Best Property, Best High-Rise Architecture)



conventional building effect of the pods effect of the screen

Empire Tower
Aedas Ltd

Empire Tower - Day View

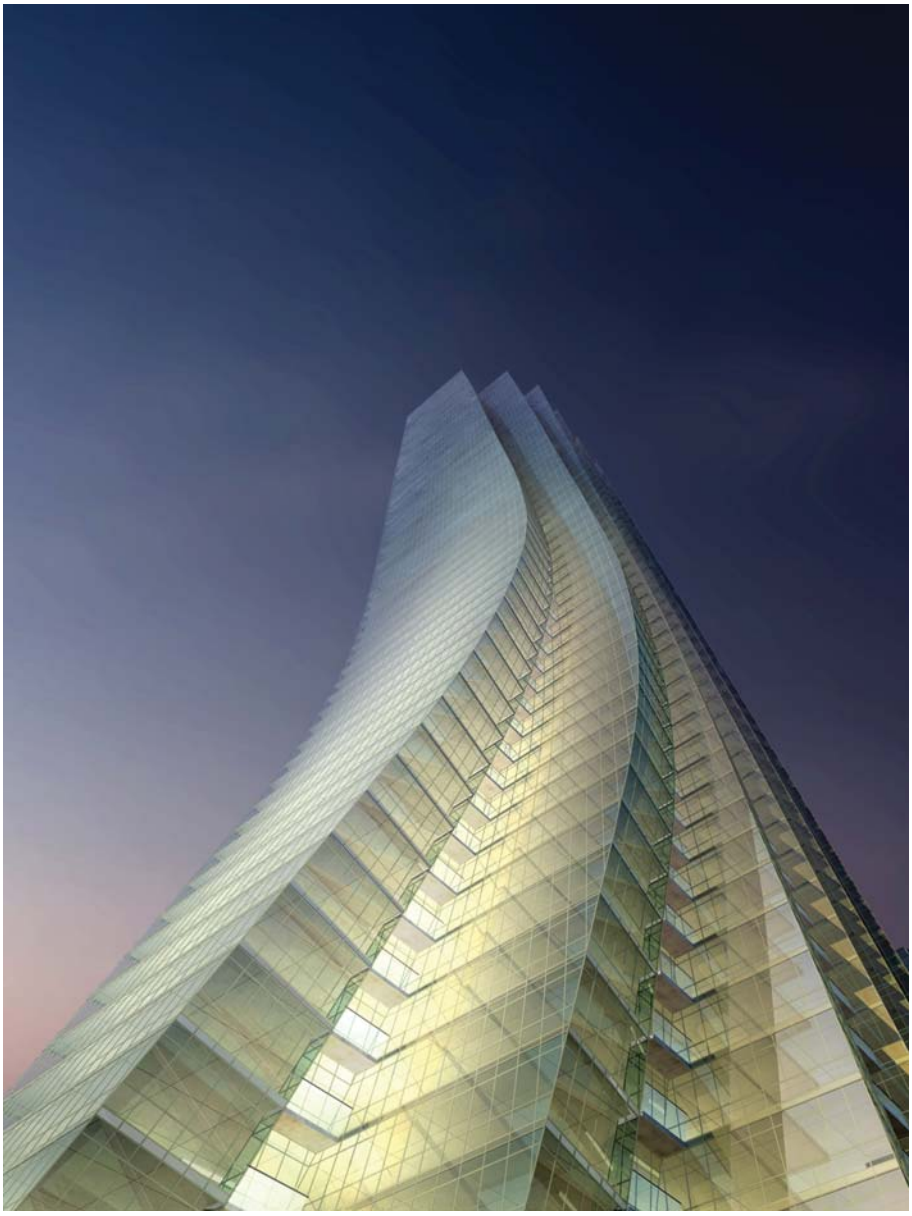
Unsurprisingly given its striking originality, this 60-storey luxury residential building evolved from an unusually challenging brief. In 2006, Empire Holdings approached Aedas, the well-known global architecture practice, to work on a design for a prime 7,013 square-metre plot near the coast at Al Sorouh Abu Dhabi in the UAE. Bordered by three major streets, the site is part of a larger masterplan that places a clutter of potentially iconic buildings within close visual range of Empire Tower. It was vitally important to the client, therefore, that the design "cut through" with a singular visual presence.

A challenging site

Led by Design Director Andrew Bromberg, the Aedas team began their effort by intensively scrutinising the site and discovering the challenges and advantages it posed. Among the latter are ocean views to the northeast and park views to the southwest. Among the former was the immediate presence to one side of the site of a large commercial tower. The Empire Tower evolved its response to both through an outstanding balance of form and alignment.

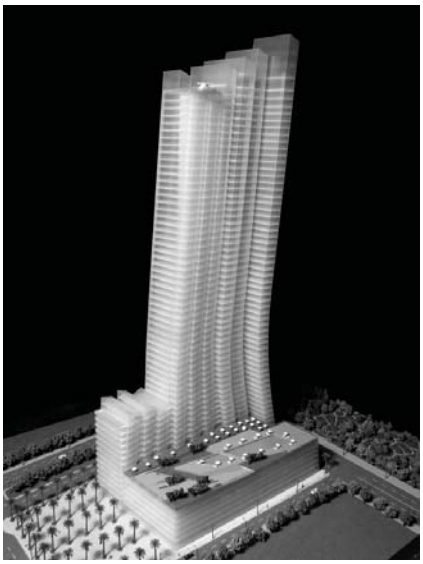
Evolution of the form

The tower's eye-catching form grew from the desire to maximise its street-level presence whilst establishing an identity apart from its commercial neighbour. Thus, its form splays



Upshot Night View

Model Photo - Bird's Eye View North East Corner



Model Photo - Bird's Eye View South West Corner

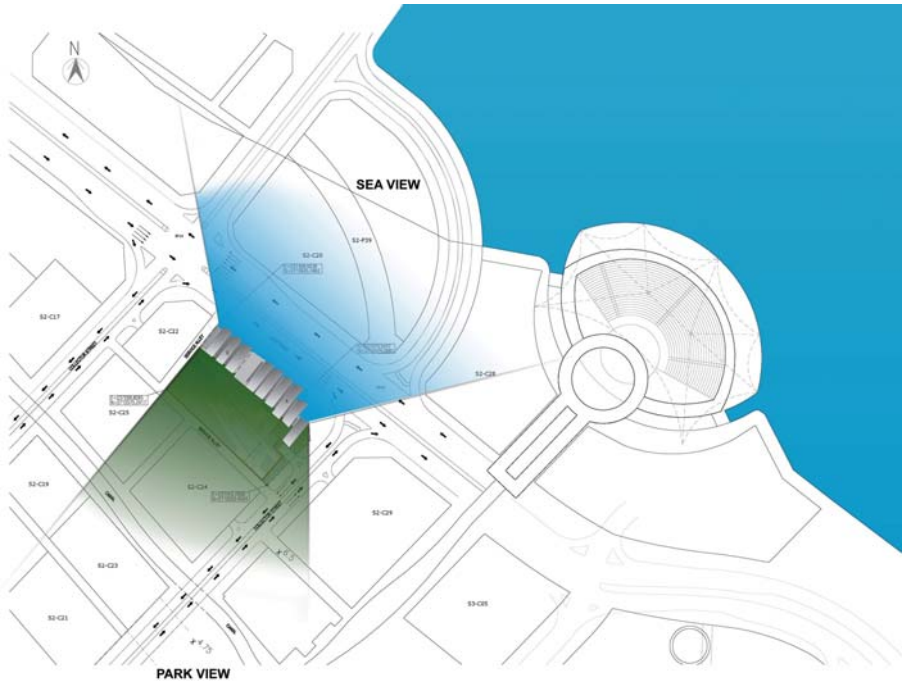
widely at the base, like the root system of a tree, inclining away from the street as it progresses upwards before transitioning to a moderate slant in the opposite direction. Contrasting with the sheer surfacing and soft contours of the building's "face" are nine sharp-edged "blade" structures defining its flanks, six of which rise from ground level all the way to the tower's 238-metre total height. Apart from its undeniable visual impact, the tower's complex form brings the practical benefit of enlarging the view corridor past the neighbouring commercial building to the sea one block away. The "blades", meanwhile, serve to maximise individual units' frontage, and hence their views. Overall, 70 percent of the tower's units boast sea views, with the remaining 30 percent enjoying superb views of the nearby park.

Adding yet further characteristic detail to Empire Tower are its south-facing balconies. Besides allowing residents' an even wider and more intimate view of their surroundings, they serve the practical purpose of shading the apartments below. The southern façade as a whole has been angled to avoid direct solar gain. Conversely, the tower's north face is oriented to maximise natural light. The blades, meanwhile, are clad with an insulated glass curtain wall. Thermally efficient and fine-tuned to match local climatic conditions, the glass also makes a contribution to the building's aesthetic imprint thanks to its distinctive tint and reflectivity.

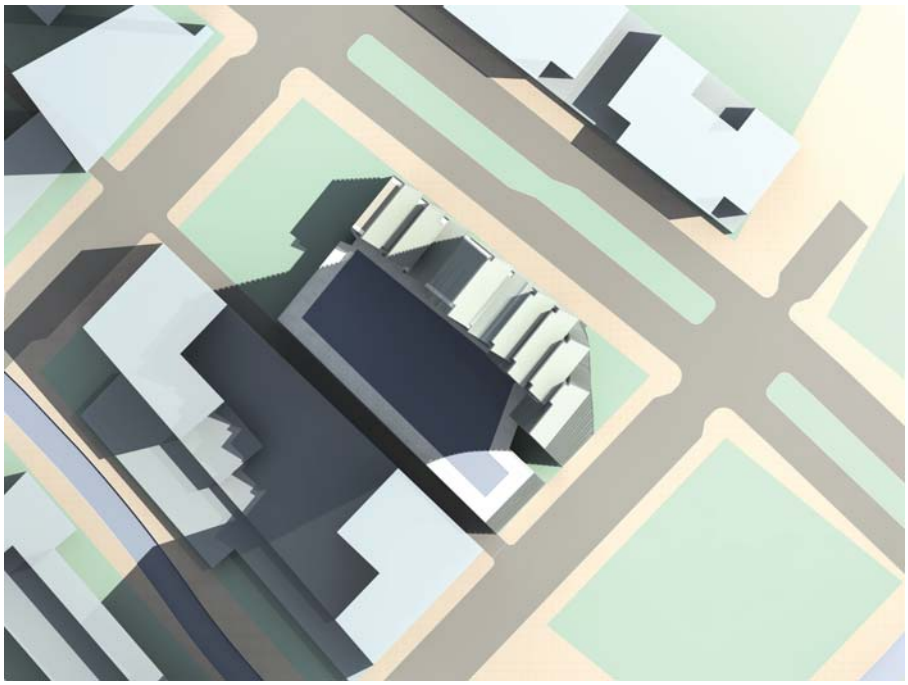
Inherent sustainability

Literally underpinning this unusual form is an innovative - and extraordinarily efficient - structural scheme. Rather than placing the building's shear walls in their traditional location along the inner side of the core, at Empire Tower they are pushed to the outer edge of the corridor. At a stroke, the effect is to widen the structural base, reduce the distance between core and façade and the overall structural depth, and ultimately, reduce the mass of the structural members.

Unexpectedly given its external contours, the residential units of Empire Tower are largely standardised in size and layout, though they horizontally "shift" in step with the building's inclination. All 60 of the floor plates that give the development its 95,411 square-metre GFA are "non-typical". By contrast, the building core is centralised and vertically stacked, maximising ease of construction and functionality. Modular units were employed on the eastern and western sides, their individual positions progressively shifting to form the structure's distinctive "blades".



Location Plan



Site Plan Rendering

Smaller floor plates and a reduced core area on levels 59 and 60 allowed for the creation of a unique duplex unit.

Upon its completion, Empire Tower will no doubt take its place among Abu Dhabi's prime iconic buildings.

Empire Tower: key facts
Development type: Residential tower
Plot area: 7,013 sq-m
Building height: 231m
Location: Al Sorouh Abu Dhabi, United Arab Emirates
Award: CNBC Arabian Property Awards 2008, Best High-Rise Architecture

Kensington Tower

Dubai, United Arab Emirates

P&T Group

Born out of the vision of his Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vise-President and Prime Minister of the United Arab Emirates and Ruler of Dubai, Dubai Maritime City, a man-made peninsula with an area of approximately 227 hectares, will be the world's largest purposed built centre for maritime commence and business. This new iconic city will capitalize on the strengths of Dubai as a regional and global hub for trade, finance and living and create a dynamic urban address for the maritime community to work, build, live and play.

The Dubai Maritime City is only approximately 1.5 km away from the most populated areas of the city: Bur Dubai, Deira, and Jumeirah. The Dubai Maritime City will provide the full spectrum of maritime business including commerce, management, retail & recreation, maritime education/research and shipyard repair and maintenance. The development in the Dubai Maritime City comprises several districts including Harbor Offices, The Maritime Centre, The Marina District, Harbor Residences, Industrial Precinct and Academic Quarter.

Snaking its way up from the mainland and around the peninsula is Ahmed Bin Majid Road, which is a highway that circumnavigates the development and offers travelers a seaside view on one side, and an urban landscape on the other side. Financed by Kensington Real Estate and designed by P&T Architects and Engineers, the 37-storey Kensington Tower is situated at the Harbor Offices District, the first district one would encounter when entering the Dubai Maritime City. Dubai Maritime City forms an ambitious district, located in one of the most sought-after business areas close to the heart of the city, the master plan will serve as a self-sufficient corporate base for a diverse world of businesses from logistics and trading to services, retail and recreation. In Dubai Maritime City, comes alive a vibrant district that reflects the union between water and commerce.

The Kensington Tower is mainly an office building with a small amount of retail space which equipped a helicopter pad located at the roof top. The total GFA is approximately 60,000 square metres and the construction is due to be completed in February 2011. The estimated project construction cost is approximately AED 450 million (HK$ 990 Million).

Having considered the original design concept of the master plan and the location of the site within the city. The design concept of the tower is to create an unique landmark by adopting the idea of having a dynamic "black crystal", which is very rare and valuable, standing by the marina harbor.

The building form was inspired by the Kensington logo - "K". The resulting form is an amalgam of both visions: it is an efficient and unique structure that resembles an abstract "K". This rising crystal tower gives an appearance of sharpness, elegance and energy. Its dynamic form commands attention along the waterfront. The tower envelope is carefully crafted to carry through this idea to form a series of harmonic proportions. The tower stands proudly at this prominent site.
In response to its urban context, the tower addresses the important axis along the Ahmed Bin Majid Road. Looking from the north of this axis, the tower, being the vista, is split in the middle with an irregular slot into 2 bodies. These are composed by ways of different faceted triangle planes. The dynamic and energetic movement are thus created.

The site is fairly exposed to all sides with views to various interests including water views at different directions. Hence, a central core is adopted with office space located at perimeter to maximize the full potential of the character of the site.

To pursuit LEED certification is an important element of the company's commitment to environmental stewardship. The client is taking significant steps to protect the environment while providing reliable and affordable electricity, as well as serve as a model of sustainable practices. The tower is designed to be a LEED certified building with at least Silver LEED Rating.

This Grade-A office tower will incorporate all the latest intelligent building features including Building Automation System, Office / Communication System like raised floor and high-speed backbone network, Security and Fire Automation Systems etc.

Kensington Tower offers an inspiring executive ambience and a wide range of high-end business facilities such as the Sky Lounge and a conference centre, a fitness centre and swimming pool as well as generous retail area on the ground floor. The tower also comes equipped for corporate glitz and glamour with a helipad, berths for yachts and direct access to marina. The in-house concierge serve from an exclusive team of Kensington 'Lifestyle Managers' adds that personal touch which makes Kensington Tower the perfect address for tomorrow's corporate lifestyle.

The structure of the tower is basically adopting a central structural core with inclined columns located at the perimeter of the floor plate plus some local cantilever to handle the various projected planes.

Kensington begins an exciting new chapter with its signature development in Dubai. Kensington Tower at Dubai Maritime City, the world's first purpose built maritime centre, aims to establish itself as the benchmark of corporate luxury.

Other Information
Site Area : 10,199 SQM
GFA : 60,174 SQM
Expected Completion Date : 2011

1. Perspective
2. Night View
3. Landuse Plan
4. View Analysis Plan
5. Site Location
6. Site Access Plan
7. Section
8. Floor Plan

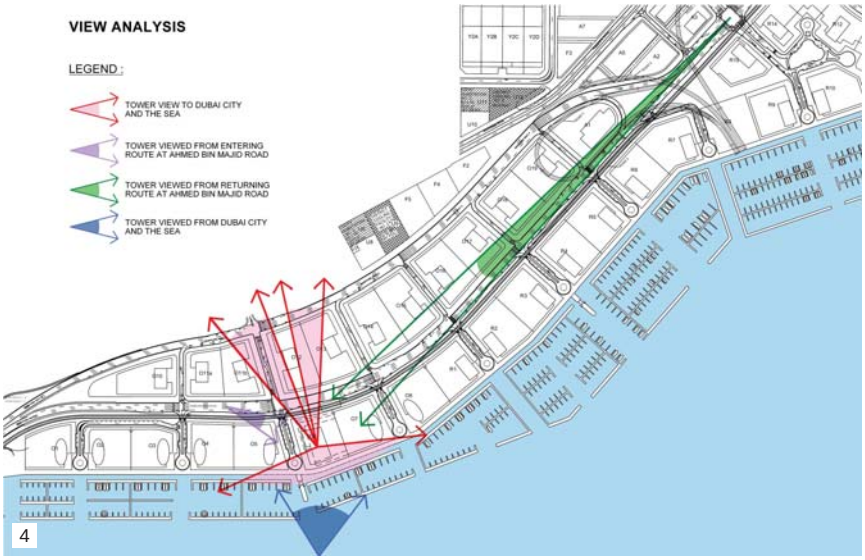
1

1

2


Commercial Precinct
LEGEND
Residential
Office
Office (Showroom)
Office (Maritime Center)
Office (Landmark Building)
Mixed Use Commercial
Maritime Academy
Hotel
Dry Boat Storage
Utilities and Support
Community
Seafarers Club
Open Space
Future Development
Industrial Precinct
LEGEND
Ship Repair
Warehouse
Workshops
Shops
Showrooms
Yacht Repair
Yacht Manufacturing
Yacht Manufacturing / Other Futu
Development
Dry Berths
Covered Berths
Staff Accommodation
Administration
Community
SITE

3


VIEW ANALYSIS
LEGEND :
TOWER VIEW TO DUBAI CITY AND THE SEA
TOWER VIEWED FROM ENTERING ROUTE AT AHMED BIN MAJID ROAD
TOWER VIEWED FROM RETURNING ROUTE AT AHMED BIN MAJID ROAD
TOWER VIEWED FROM DUBAI CITY AND THE SEA

4


DUBAI AIRPORT


SITE
Port Rashid
Dubai Dry Docks

5


SITE ACCESS
TO / FROM DUBAI CITY

6


KEY PLAN
SECTION A - A
SECTION B - B

7


1
OFFICE
2
OFFICE
L30 PLAN
N

8