



VANKE CANAL ROAD COMMERCIAL DISTRICT, DONGGUAN, CHINA  
中國東莞萬科運河東一號花園商業區



## 中國東莞 萬科運河東 一號花園 商業區— 舊城再現

文：余嘯峰 (Frank Yu)

還記得第一次踏足此地時看到的光景：多樣而雜亂的建築型態、被風化得破落的建築材質與顏色、還有從一座舊醃菜製造工廠傳來的陣陣氣味。感覺就像小孩子跑進了一座迷宮/廢墟之中，心情既新鮮又興奮，同時也帶點不安及荒涼。縱橫交錯的小巷，不停地誘惑著你向未知的境地前進；然而，現實的空間在剎那間卻變成一幅幅活像De Chirico或Sironi的油畫裏的荒涼描述。



項目地塊原本是一片不甚顯眼的夕陽輕工業區，位於一條貫穿東莞城中心的運河的東岸。地塊沿運河邊南北向約長300米，東西向最長300餘米深，裏面混雜了民居，各樣的舊廠房及沿街商店。發展商計劃沿運河東側50米的範圍內均設計2至4層建築，發展成低層商業區及餐飲區，並在其後面較東位置發展高層住宅，這樣不僅可以增加規劃設計的層次感，而且可以減低對沿河景觀的破壞，減少對城市道路的壓迫感。

地塊原有的這些“原風景”，不知不覺地為我們的設計方向定了基調。由於本方案為舊城改造工程，在規劃設計中我們都把重點放在挖掘用地的歷史文化內涵及原有的建築型態，並嘗試將它以現代的手法“再現”。另外我們又保留了大量的原生植被，或以最少限度移植，儘量保護原始的生態環境。結果，



在大家共同努力下，部份有代表性的舊建築被保留下來，使新的發展區中，保留了一些歷史鱗爪。



像所有的設計項目一樣，建築師本能上不會滿足於純商業的成就，反之，能成功地活化項目所在地區域，才是建築設計中最具意義的使命。我們嘗試把後排那略為深入的住宅用地，與“城市”接軌，利用了一組有機的內街網路及大量的“綠化視覺通道”，把運

河邊的人流給帶引進來。就在這個設計過程中，上述的“原風景”被派上用場。很多原有的建築型態、材料、空間序列被假借，重組及再現；也有些較有價值的舊元素舊建築被保留下來，與其他新建元素並置。這樣，在規劃設計中保留下來的城市的歷史和片段，在新的社區中能得以延續下去。回想起整個設計過程，我們學到的，不是恣意的改造，而是一場與歷史和原地文化之間的虛心對話。



開發商：中國東莞市萬科房地產有限公司  
 建築設計單位：嘉柏建築師事務所  
 設計師團隊：余嘯峰，王克江，廖國安，鄧天齊



## The Parkview Green Integrated Design Associates Ltd.

In December 2000 the Hong Kong Parkview Group set out a brief for the project that would ultimately challenge the convention of all large mixed-use commercial developments, in China and internationally. The client wanted an iconic building, their first significant commercial development in the city of Beijing. For the project to be commercially feasible and to remain successful beyond its completion the client demands that the design must not only meet the brief requirements in gross floor area terms, but also it must set a new standard in the design of an office facility of tomorrow for it to be commercially sustainable.

Beijing has been awarded the 2008 Olympic Summer Games earlier in the same year, and with the new millennium an era of a confident, respectable, forward-looking China was highly evident. The timing for a revolutionary, self-made, class leading, state-of-the-art commercial development was so perfect that we believe our design must be a technological tour de force in concept and in execution. The idea of an ecological, environmentally-friendly office design evolved from our numerous discussions with the client during the inception stage, and an architectural concept was later presented on Christmas Eve, 2000.

Beijing has many statutes and bye-laws that safe-guard its citizens their rights to natural light, sun light, and air. One environmental law that governs building set-backs, heights and the minimum one-hour sun light exposure to each neighbouring window on Winter Solstice is particularly onerous, as the law dictates the volume of development sited in front of these neighbouring buildings from

blocking the sun path and imposing an excessively overbearing urban development scale to the surrounding streets. Although the loss of daylight and the lifting of height restrictions are not strictly enforced and they can be circumvented by compensating the affected neighbours financially by the developer, the client was absolutely adamant, right from day one, that the environment of Beijing as envisioned in the planning statute should be respected. The architectural concept, under such a brief, was an unconventional, seemingly over-reached solution even for an ecological building. However the client saw the challenge of the concept as an opportunity. He commissioned the design in 2002, initially as an R&D study to satisfy the project's technical feasibility. After many months of discussions, debates, engineering analysis, computer simulations, the project finally obtained Preliminary Design Approval and Construction Consent in 2005, and the construction started later in the same year for completion in 2009.

As Beijing was pushing for a Green Olympics and is keen to be seen to be environmentally conscious, the project received tremendous administrative supports from all relevant statutory authorities, and with the help of a highly motivated technical design team they played a pivotal role to ensure the first major environmentally-friendly, ecological commercial building in China will be built. Under such a long and arduous process the fate of the project at times seemed to become overwhelmed by challenges relating to technical complexities and costs. Without the client's vision and relentless tenacity to stay the course a pioneering project such as this

may never become a reality.

The design concept came from a simple idea that the development must make use of all available floor areas otherwise conventionally classified as un-useable to achieve the 200,000m<sup>2</sup> gross area requirement, as half of its floor space and volume above ground is lost to the 26° Winter Solstice sun angle and the 24m eaves height limit. The design objective is to turn these unconventional "free" spaces into not just useable areas but also spaces that are enjoyable by the users all year round, preferably under a comfortable, natural environment as opposed to an energy-costly, air-conditioned environment. These useable spaces, apart from the typical enclosed private areas such as shops, restaurants, offices, hotel rooms etc, now include public and semi-public spaces such as the sunken ground level social piazza, the open mall, 18 levels of sky gardens and terraces, and the suspension bridge public access. To achieve such an objective an environmental envelope of steel, glass and air-filled ETFE cushions is built to create a micro-climate that would temper the huge internal air volume by means of natural resources to provide thermal comfort throughout the extreme seasons of Beijing. The all encompassing environmental envelope also helps to reduce the overall energy consumption and long term maintenance costs substantially for the buildings within it, as it protects the fabric of these buildings from damages typically caused by fluctuations of temperatures and prolonged period of solar, rain, sand dust and snow exposures.

The commercial development is made up of 4 multi-functional, independent buildings



situated in a 10m deep sunken garden that forms a green surrounding moat. All 4 buildings are enclosed by the vast, breathing environmental envelope totally automated to respond to changing weather, temperatures, solar angle, humidity and wind direction. The envelope is effectively the outer "jacket" of the entire development. The envelope, supported by its own steel structure, is separated from the 4 buildings by a continuous 2m wide canyon, which acts as either a solar chimney or an air supply chamber. All micro-climatic air movements within the envelope are entirely driven by natural forces created by the heat from the sun. As hot air escapes from the pinnacle of the environmental envelope cool air from outside is drawn from the sunken garden moat through controlled panels to replenish the air loss. Each of the 4 buildings has its own air and light atria and openings to the sky-gardens or terraces. Through these systems of openings and controls the whole development is naturally ventilated, and when used appropriately during the moderate and favourable seasons they can save a significant amount of energy required for ventilation and cooling.

The 50,000 m<sup>2</sup> retail mall occupies the lower levels of the development. The mall wraps around the natural light-filled atrium, the lowest level being the social piazza, which is landscaped to provide pockets of tranquil spaces for resting and public interactions. The design of the mall is intended to give a unique experience to visitors, and this is at its most dramatic where it is connected to the 225m-span suspended footbridge spanning diagonally across the two furthest corners of the site at street level. This special design provides the mall with a unique feature - it has "ground level access" on 3 out of the 4 levels of structures, an invaluable commercial asset in developing an interesting tenant mix and anchors within the retail mall.

The 82,000 m<sup>2</sup> offices, spread over the 4 separate buildings, all have access to views and abundance of natural light from the sides facing the streets or the atrium. Over 50% of the offices have direct access to sky gardens, landscaped bridges or terraces outside of the building curtain wall. These landscaped outdoor spaces provide an informal environment in addition to the conventional office spaces, affording the office users with a different, enhanced work place that is more relaxed and sociable.

The 60-roomed boutique hotel is located at the highest floors of the development, accessed exclusively via glass shuttle lifts from the hotel foyer at street level to the respective landscaped sky lobbies. The luxury rooms, each ranging from 72 to 144 m<sup>2</sup> in area, have their own expansive outdoor terraces, individual swimming pools, jacuzzis, saunas and entertaining facilities. A Sky-lounge in the form of a suspended cocoon-like structure of glass and steel is located at the pinnacle of the whole development. Here, guests and patrons to the hotel are able to take in the dramatic and breathtaking views of the historic city below and beyond.

The advanced technologies that are incorporated into the building are unique for a commercial development. Apart from having a naturally-ventilated indoor environment for 6 months of a year the office buildings also utilize an energy recoverable, efficient HVAC system that combines under floor air-conditioning and water-piped chilled ceiling during the other seasons, whether it is for cooling or heating. This innovative and low energy M & E and HVAC system design is the first in the world to be applied in a commercial development at such a large scale. The mechanical systems and architectural elements of the buildings must therefore be designed to be totally integrated

in order for the systems to work seamlessly and effectively. Many of these features are bespoke designs, which we often have to develop their concepts and details from first principles.

The architecture is highly visible and distinctive, not just because of its uniquely recognizable form but that the architecture is entirely derived from environmental considerations. The form of the building is shaped by the need to maintain a minimum 1 hour unimpeded sun-light to every window on the northerly and westerly neighbours on Winter Solstice day, which determines the eave and building heights, slope angle of the roof, and separation from the neighbours. The major benefits in adhering to this requirement is the City and her citizens, as the narrow streets to the north and west that exist in many parts of Beijing will always be guaranteed with plenty of day-light, minimal wind funnel effects, and an urban environment that is more human in scale.

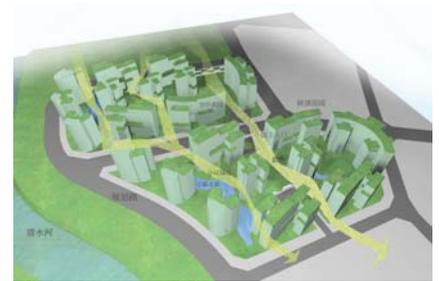
#### Project Data

Client: Beijing - Beijing Chyau Fwu Properties Co., Ltd  
Hong Kong - Hong Kong Parkview Group  
Project Management: Jandun Construction Company Ltd.  
Lead Architect & Design Consultant: Integrated Design Associates Ltd  
Engineering Consultants: Ove Arup & Partners H.K. Ltd.  
Hotel Interior Design Consultant: LRF Designers Ltd.  
Local Design Institute: Beijing Institute of Architectural Design & Research (BIAD)  
Lighting Consultant: Fisher Marantz Stone Inc.  
Cost Consultant: Levett & Bailey

# Charming Port, Chengdu

Chengdu, China

Ronald Lu & Partners



This large-scale riverside development comprises of thirty 13 to 18-storey residential buildings and associated facilities including ground floor shops, one sports clubhouse and one kindergarten, covering 255,000 square metres of total gross floor area on an 8.7-hectare site.

The site, which consists of two relatively independent lots separated by a proposed road, is located at the sub-urban QingYang Area in the West Sanhuan of Chengdu, embraced by the QingShui River on its western coast and greenery of 3 major city parks in the north. Chengwen Expressway on its south side provides a convenient shortcut to the city center, making it just a less than ten minutes journey going to the city center.

The concept of "Sustainable Community in the City" is developed in response to the surrounding natural environment and its proximity to the city center, providing high quality living spaces in harmony with the natural topography and environment. Visual links with the natural environments are maximized through strategic master planning. The form of building clusters follows the flow of prevailing wind, maximizing the potential of natural ventilation in both interior and exterior environment, with orientation of

residential units maintained south-north captioning the daylight of best quality. Greenery is extended beyond the ground surface up to roof level of residential towers for better enjoyment of natural environment for the high-rise residents.

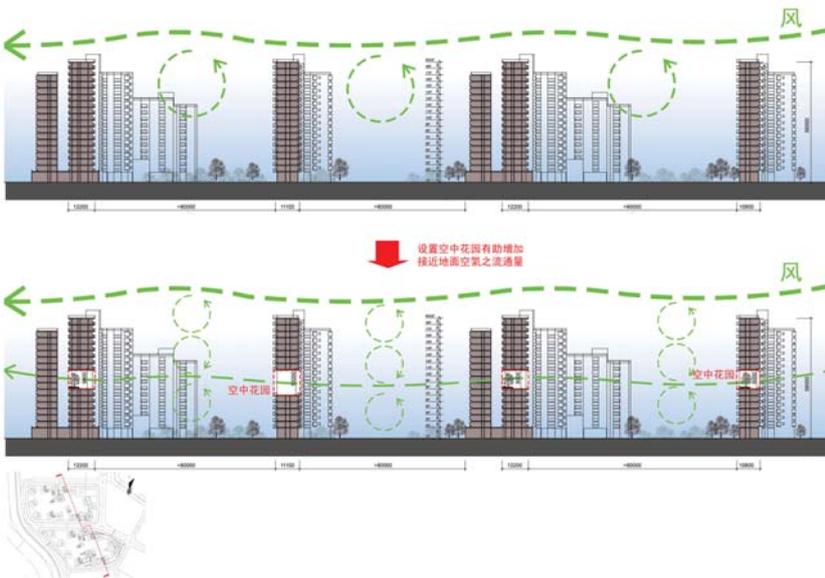
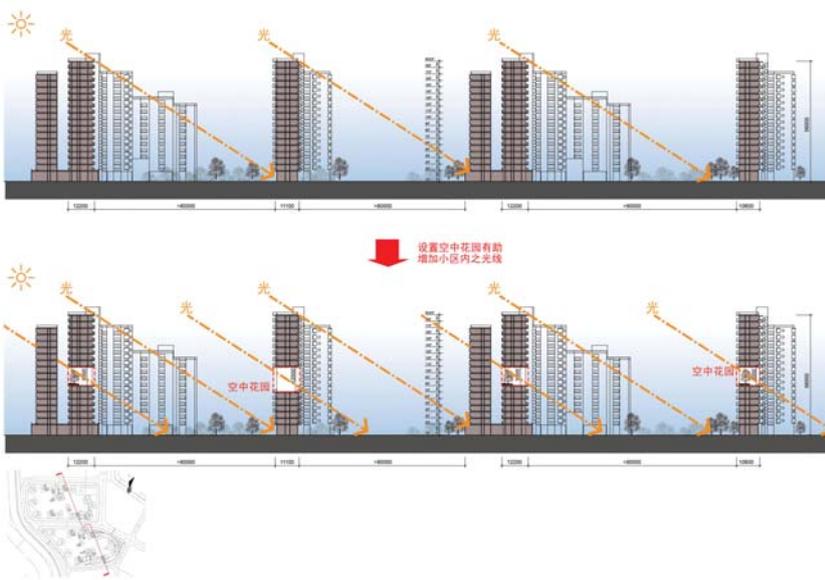
One of the challenges of this project is to maximize open spaces in such a high density development within the height restriction of sixty metres with respect to the Chengdu Airport. With the creation of a sustainable environment as its aim, the developer decides to reduce the total gross floor area of this development far below the allowable density. Slab blocks in north-south orientation are adopted not only maximize the open space, but also facility better day-lighting and natural ventilation of residential units.

Point towers of lower density are disposed at the western edge of the lot along the riverside to enhance the visual connection between the river and other part of the lot. Slab blocks are arranged along other three edges of the lot rhythmically, with lower slab blocks connected orthogonally in the inner side, creating a central open space consisted of inter-connected landscaped spaces of different scale. Views of residential units are carefully considered in disposition of building blocks

so that views of either the river, the city park on the north or the central open space can be enjoyed. Flat types are designed with large frontage to depth ratio, further maximized the enjoyment of views.

To harness the north-eastern prevailing wind for comfort and healthy living, the master layout design has the disposition of residential blocks diverting the wind flow throughout the site. Sky-gardens are also strategically articulated to all slab blocks of north-south orientation to optimize the potential of natural ventilation of open spaces by inducing turbulences near ground surface, relieve the adverse visual impact of the wall-like slab blocks, and create a view corridor across the slab blocks. Sky-garden further provides a semi-public and semi-outdoor leisure space for all residents, but part of floor slab is connected with private entrance court or balconies so that it transforms a private garden, connecting to the other parts of the sky-garden spatial and in terms of elevation treatment.

Greenery, which can dramatically improves the living quality of mid-rise residential environment, is integrated with the architectural design in an innovative three dimensional way, from sunken courtyards,



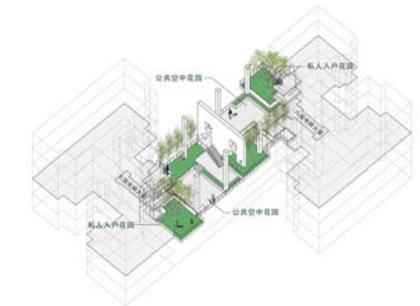
ground level landscaping features, sky-gardens, to rooftop terraces, for creating a liveable community symbiosis with nature. Most of the units are provided with entrance courts and balconies to cater for the extension of living space to the exterior, residents can enjoy maximum amount of sunlight and fresh air in their daily living environment. The variation in height of different parts of the residential tower allows some roof gardens to become private terrace gardens so that they can be best utilized, providing a greater diversity of building products.

Sunken courtyards are introduced at the base of the riverside point towers, connecting lower ground entrance lobbies and the basement car-park, utilizing the natural ventilation and day-lighting for the basement car-park. They enhance the overall spatial quality of landscaped area sandwiched between zones of point towers and slab block, and energy conservation is achieved at the same time

through adoption of passive environmental measures.

Separation of vehicular and pedestrian traffic is the main objectives of traffic design for the development. The central open space is fully pedestrianized by limiting guests to drop-off at the entrance plaza next to the proposed road and arranging all car-park exit/entrance ramps at the perimeter of the lot. Residents can hang around safely in the central landscape area free of exhaust gases and noise generated from the vehicles, at the same time, direct access to main entrance lobby of each tower from the vehicles is still maintained at the basement car-park level at the convenience of the residents.

The concept of "internal river" is adopted in the landscape design of the central open space to echo the natural QingShui River. Different landscape elements in form of curves are composed together in a dynamic way



simulating the movement of water. Such "internal river" encourages the visual and spatial connection between the two central open spaces separated by the road, tying the two lots into a unity. The central open spaces at ground level are integrated with sunken courtyards at basement levels by means of undulating ground floor slab, creating a comfortable environment filled with three-dimension greenery, which recalls the natural topography of rural areas of Chengdu.

"Simplicity" and "sense of unity" are the client's only requirements for the elevation design. But the numerous types of unit plans, undulating skyline of residential towers created by variation of building heights and the disposition of blocks in a tilt manner to the pedestrian street make the elevation of the towers look complicated and the identity of individual blocks highlight. The great challenge for the elevation design of the project is to develop a pattern language overriding the undulating surfaces of complicated building volumes, creating a sense of clarity and consistency. The height and materials of the roof parapets were strategically articulated to simply the complicated building volumes of the towers. Bay windows, balcony slabs, a/c platforms and solariums are unified by horizontal elements of different contrasting colours on different planes, creating a 3-dimension elevation with strong sense of unity.

Architect	: Ronald Lu & Partners
Design	: 2006
Site Area	: 8.7 hectares (Residential 8.4 hectares, Kindergarten Use: 0.3 hectares)
GFA	: 255,000 sq. m.
Client	: Chengdu Longhu Real Estate Development Inc.

# Hang Lung Plaza, Jinan, China

## P&T Group

Jinan Hang Lung Plaza is a 7-storey shopping mall with approximately 2 million square feet of retail space. Situated at the heart of the city's central district and directly facing the city's most popular public open space, the Quan Cheng Plaza, this prominent project will become one of the largest shopping mall in Jinan. Apart from its prominent frontage, it is also situated in the middle of an urban pedestrian connection network between Quan Cheng plaza, the historical Fu Rong Street, and the famous Da Ming Lake. The shopping mall hopefully will become a new landmark destination, creating seamless links between the neighboring nodes and enhancing the surrounding urban environment.

Famous as the city of natural spring, Jinan has abundant cultural history and natural landscape. The city is surrounded by undulating plains and blessed with pockets of natural springs around its center, where famous lakes and parks are formed. As a city of strong tourism and socio-economic background, grand plazas and new developments have evolved rapidly and changed the existing cityscape into a fusion of old and new.

Quan Cheng Plaza being the largest open space and urban park in the center of the city is visited by locals all day long. The plaza activities can potentially flow into the shopping mall by seamless connections between the plaza and the mall. To promote this interaction, a new bridge will be constructed over the existing canal to link the plaza to the internal landscape courtyard street of the new development. It is this courtyard street that will function as connection between Quan Cheng Plaza, Fu Rong Street and Da Ming Lake. Anticipating high volume pedestrian flow, entrances to the mall will be located facing the courtyard street to pull people in. On both sides of the courtyard street, terraces of restaurants and cafes are created on upper levels for al-fresco drinking, dining and social gathering.

The façade of the shopping mall has a length of more than 200m facing Quan Cheng Plaza.

This allows for prominent visibility from far away, forming a backdrop to the Plaza. The shopping mall's form is composed by a pair of 7-storey buildings and a linear sculptural glass atrium that spans the entire diagonal

length of the buildings and connects them at high level. Inspired by the concept of water movement of natural spring, the sculptural glass atrium was designed to undulate and flow freely throughout the entire building, partly to reach the ground and partly to sit on the podium blocks. The contrasting elevation aims to attract attention and accentuate a new landmark to the surrounding. The entire building's composition is strongly defined by the sculptural glass atrium, within which large atrium spaces and multi level retail activities will juxtapose with bridges and arcades, visible from outside through the transparent glass facade. The glass atrium will glow at night and create an enticing silhouette at daytime, especially when viewed from Quan Cheng Plaza.

The buildings' elevation is horizontally divided into 2 portions to reduce their massive scale. The lower portion is formed by a continuous strip of 2-storey shop-front with display and retail activities that respond to the surrounding streetscape. The upper portion of the podium is formed by a composition of patterned glass panels and transparent advertisement feature walls that can be viewed from afar. While the street facing facades attract attention and bring people into the mall, the courtyard facing facades are flanked by terraces and shops to create multi-level interactions and activities. Bridges span across the central courtyard on high levels to connect the buildings on both sides, yet maintain the visual and physical permeability on lower levels. The central courtyard is landscaped with water features, terraced green and sculptural plants to resemble the river-side gardens, located adjacent to the mall. Water features that echo the flow of natural spring demarcates both entrances to the central courtyard, flowing inward into the central event space.

In response to the surrounding traffic and pedestrian network, the building will become an important urban crossroad, connecting and rejuvenating the surrounding scattered urban spaces. The half a million square feet site will receive traffic from the busy Quan Cheng Road from North and Hei Fu Quan Xi Road from South and divert them into the basement central drop off area. This allows the ground level to be freed from traffic congestion and create more spaces for pedestrian circulation. Entrances are

strategically located at all corners of the building to ease pedestrian flows approaching from all directions.

Internally, both building blocks mirror each other with a complete circular loop of arcades that connect all the entrances from the main roads and the central courtyard. Escalators and lifts are located within optimum distance to support the retail activities in the mall. The entire shopping experience is greatly enhanced by a rich variety of spaces ranging from atrium entrances, overhead bridges, skylighted arcades, transparent walkways, landscape balconies and sky terraces.

The project strives to achieve a long term sustainable environment by controlling the solar heat gain and thermal comfort within the building interior. Other than the use of low-e double glazing to reduce the transmittance of solar heat into the building, the mall can be naturally ventilated during mild season through operable windows to save energy. It is estimated that the available operating time for natural ventilation can reach 300 hours annually and greatly reduce the energy consumption of the building from air conditioning. The entire roof area of the sculptural glass atrium will be covered by solar panels contributing to the energy needs for lighting.

### Other Information

Site area :52,569 sqm

GFA :250,000 sqm

Expected completion date : 2011

- 1: Perspective - aerial view
- 2: Perspective - view from riverside
- 3: Overview of the development
- 4: Courtyard
- 5: Streetscape
- 6: Facade of the mall
- 7: Level one floor plan



# R&F Centre

## Aedas Ltd

The stunning new focal point of Guangzhou's central business district is R&F Centre, an iconic office tower housing the headquarters of R&F, one of China's most successful property development firms.

Momentum for the project began with the emergence of Guangzhou-based R&F as one of the most influential property developers in China. Recent years have seen the firm penetrate the vital Beijing market with the creation of R&F City, an impressive complex of 1.5 million square-metres adjacent to the capital's central business district. Besides giving the company an appropriately prominent presence in Guangzhou, the new R&F Centre was also intended to bring new efficiencies to their business, consolidating all the firm's disparate departments into a single location.

### An icon among icons

The location itself acted as a major influence on the building's design. Occupying a plot in the city's rapidly developing Jujiang Xincheng district - designated as Guangzhou's new "CBD cradle" - an important characteristic of the site is the close proximity of several other distinctive high-rise structures. With this backdrop in mind, the Aedas design team's foremost goal was to create an architectural "icon among icons" which would stake out a strong visual identity whilst meeting or exceeding the client's functional requirements.

The design process culminated with a concept for a 250m-tall, 54-storey tower of wholly original character. Aesthetically, R&F Centre takes its basic inspiration from the form of the traditional Chinese jade vase, with strongly

defined and yet subtle sculpting lending the structure finely balanced proportions and an aura of timeless elegance. A façade largely composed of clear glass - contrasted with glass fritting and sun-shading devices - seems to exude radiant energy under natural daytime lighting, while a sophisticated illumination scheme gives the building an evocative 'beacon' quality by night.

### Grade A spaces & amenities

Designed as an ideal location for offices of international companies, R&F Centre boasts an above-ground GFA of 121,755 sq-m, and is crowned with a unique 45th floor "sky lobby" surrounded by a continuous glass wall. Additional double-height "sky garden" refuge spaces are located at levels 18 and 35, and are visually accented by metal louvre systems that provide shade and control heat gain. The head office of R&F itself occupies the top 10 floors of the building, comprising 20,000 sq-m in all. Two levels of R&F Centre are given over to fine dining establishments, whilst another entire floor accommodates a state-of-the-art business centre with high-tech auditoriums and conference facilities. The remaining floors have been marketed to international companies.

Another notable feature of the R&F Centre design is the entrance lobby. In order to maximise the building's available rentable floor area, the entrance volume's ceiling has been constrained to a maximum height of 10m. Aedas nevertheless endowed the space with impressive presence via an intriguing three-element design strategy embracing the lobby floor, the building core and the ceiling.

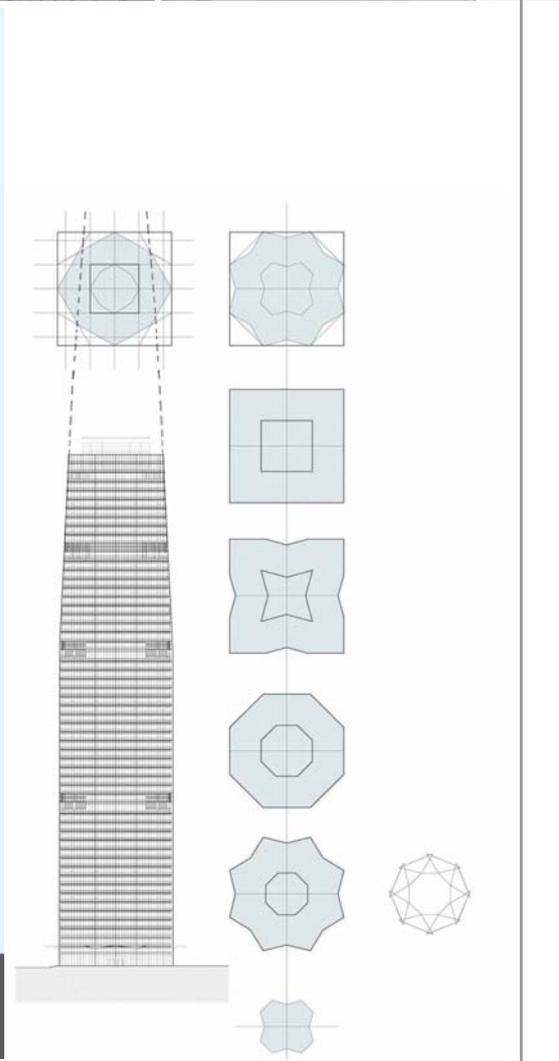
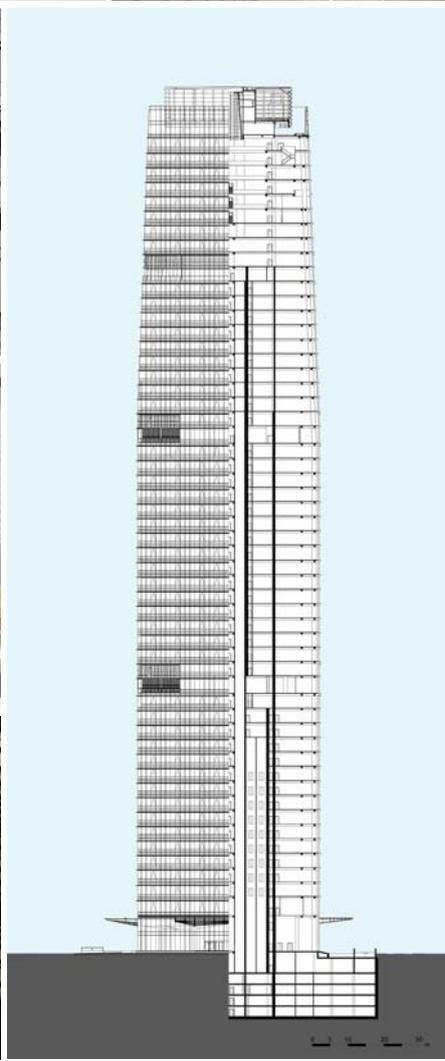
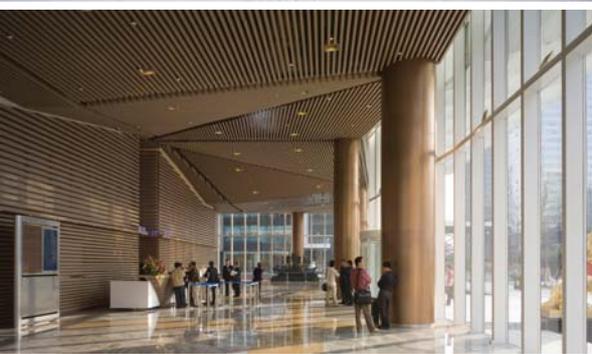
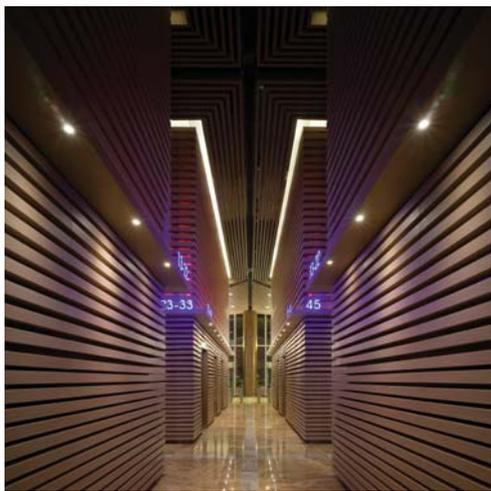
Taking their cue from Chinese watercolour paintings, the architects envisioned the building core as a "mountain", and the ceiling as a "cloud". Accordingly, the latter element was geometrically sculpted using planes formed with stained white oak strips. The geometry of the ceiling emphasises the maximum height of the lobby volume - giving it a hint of "cathedral-like" atmosphere - while simultaneously drawing the eye through the space by extending to the entranceway canopy.

### Practical sustainability

As is becoming the mainstream in architecture, the designers endowed R&F Centre with a number of practical features in the interest of boosting its sustainable qualities. The translucent "white jade" façade, for example, is double-glazed with an e-coating that considerably reduces solar gain. Ceramic fritting lines on the lower portion of the glazed panels reduce glare into the structure. Finally, a fixed louvre bris-soleil system behind the glass significantly reduces heat transfer into the office environment.

### R&F Centre: key facts

Development type: Grade A office building  
 Total area: 121,775 sq-m (offices); 25,825 sq-m (basement)  
 Floors: 54  
 Location: Guangzhou, China  
 Project completion: September 2007





利用迴廊的過渡性空間處理融和咖啡廳內、外空間

## 博鰲藍色海岸 — 凱賓斯基渡假酒店會所

許李嚴建築師事務所

設計年份2005 · 完成日期2006  
設計小組：嚴迅奇、譚偉霖、盧智恆

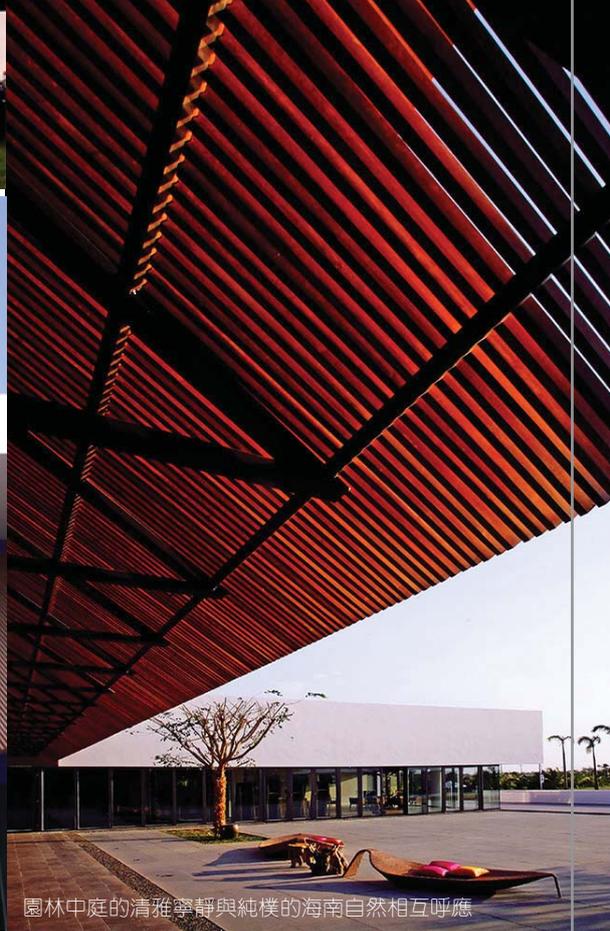




刻意低調融和自然的酒店會所入口處理



迴廊上空的屋簷格柵帶出寧靜的驚喜



園林中庭的清雅寧靜與純樸的海南自然相互呼應

「鎮環四流、戶戶相望、家家臨河、因水成街、因水成市、因水成園。」陳從周•說園。

海南博鳌自然風景優美，於萬泉河與大海之交匯處，河道交錯，水道縱橫，地勢平坦，椰林處處。博鳌藍色海岸的設計，利用當地的天然環境：引水造河，粉白色的房屋依水而建，營造一個錯落有致的河景。廣場、碼頭、下水斜道點綴其中，使遊人、水體，建築的聯繫更為密切。房屋與河道相依相傍，配搭開放的玻璃窗戶，室內外景色交溶。大自然的元素，比如清風，比如陽光，透過空間佈局，建築手法，得以吸納和發揮。

隨著博鳌藍色海岸於2002年落成，凱賓斯基酒店加入管理團隊後，為增強服務，提供相關的配套設施：會議/宴會大廈，商務中心，餐廳等等，再次邀請RDA負責設計會所。

會所佈局簡單直接，建築貼近入口道路的一角，減低對現有植被和房屋的干擾，於園區入口營造一個大門，方便遊人聚合交流。會所以三面圍繞的合院組織各項功能，一層高的建築，藉著迴廊，讓遊人徘徊於室內外間，調節並引領着清風和陽光緩緩入室。

迴廊隨功能、朝向變化着，由簡單懸挑的頂板，而至下垂的吊牆，進而變成斜斜而下的木柵架，光影交錯。白牆上，陽光和浮雲給合院添上生氣。夜幕低垂，燈光通過木柵架，滲透到合院裡。樹影、花香、涼風歡迎遠道而來的遊人。建築恰如其分，摒棄造作與華麗，讓遊人重歸自然，感受自然之趣，延續藍色海岸的氣氛神髓。

# 深圳市寶安區中心區中央綠軸公共建築

許李嚴建築師事務所

設計年份2007 · 預計完成日期2012

設計團隊: 嚴迅奇, 譚偉霖, 馮景行, 張艷芬, 楊穎心, 熊斌, 陸焯婷, 程沛璇

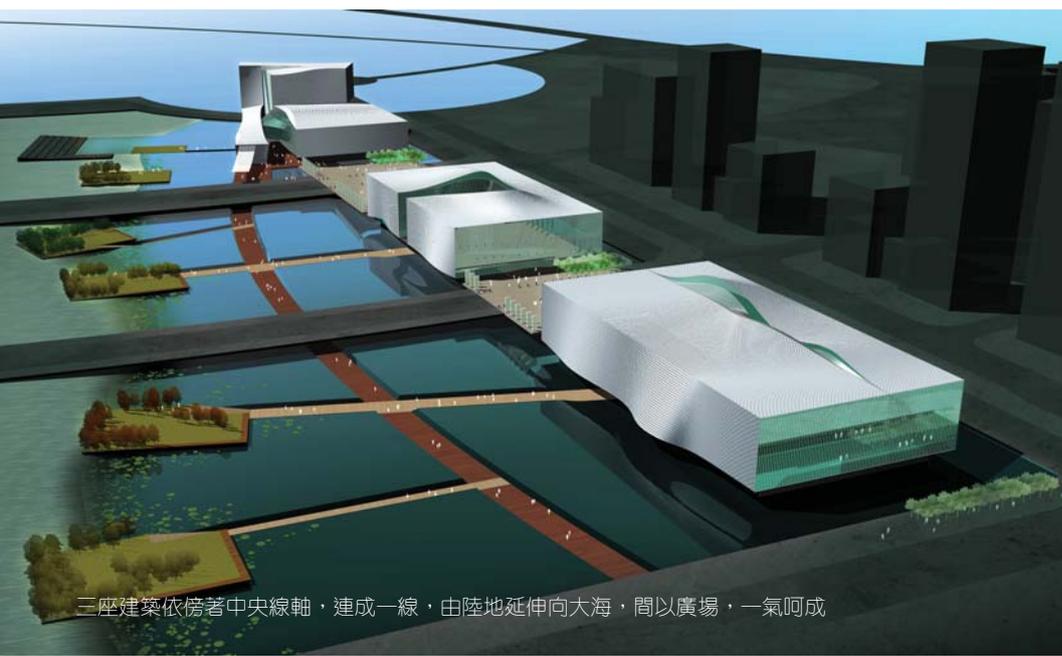
演藝中心通往海濱的半開於式長廊



深圳市寶安區中央綠軸公共建築，由三座相對獨立而又相互呼應的建築組成，其中包括圖書館、青少年文化宮和演藝中心。此設計於2007年底，由四個來自不同國家的參賽作品中脫穎而出，獲得一等獎，預計於2009年開始動工。

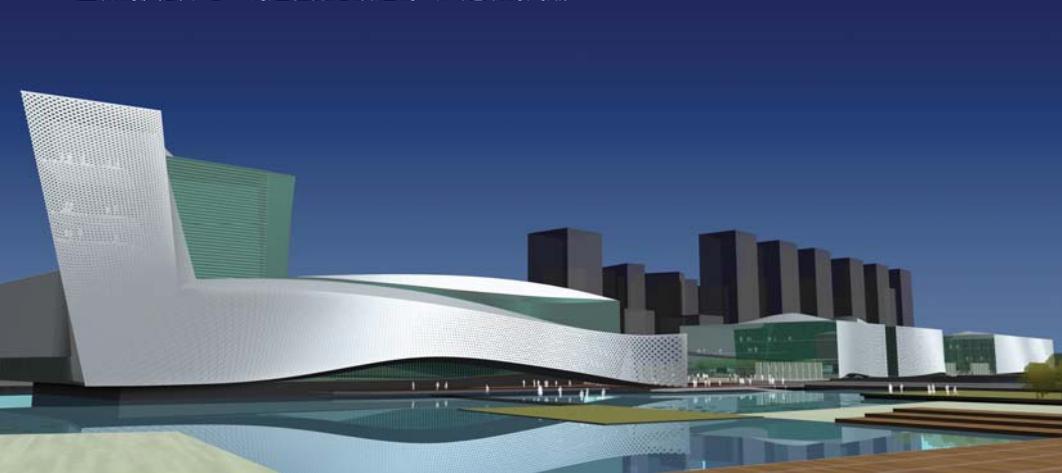
三座建築依傍著中央綠軸，連成一線，由陸地延伸向大海，間以廣場，一氣呵成，為寶安區市民提供文化活動的場所。簡潔的長方體，形態由靜而動。造型上，圖書館微曲外挑，青少年文化宮旋動開啟，而至演藝中心拉開帷幕，仿如海浪流痕，風吹而動，透過建築，凝住了瞬間的自然，為寶安區營造一組動感飄逸的新地標。

東西立面的意念繼承著嶺南通花木雕，象牙繡球的精巧技藝，營造了一幕環保遮陽、玲瓏通透，層次豐富的外牆。隨著功能上的佈局變化，漸漸地由開敞而至關閉，創新的造型承傳著東方的掩映含蓄，內外交融。內部空間組織，則以形態相同，手法不一的開放式或半開放空間為中心，或以內街：圖書館，或以中庭：青少年文化宮，抑或以長廊：演藝中心，組織其內部功能。含蓄的圖書館以長而蜿蜒的有蓋中庭連繫外界；外向的青少年文化宮以旋渦狀的合院扣繫著兩個獨立的功能，以棧道相連，令綠化自然氣息延伸到建築的室內部份；造型豐富的演藝中心以其東西翼張開之形態，以半開放式的長廊，將觀眾引領到中心的大堂主入口，並延伸至海濱。

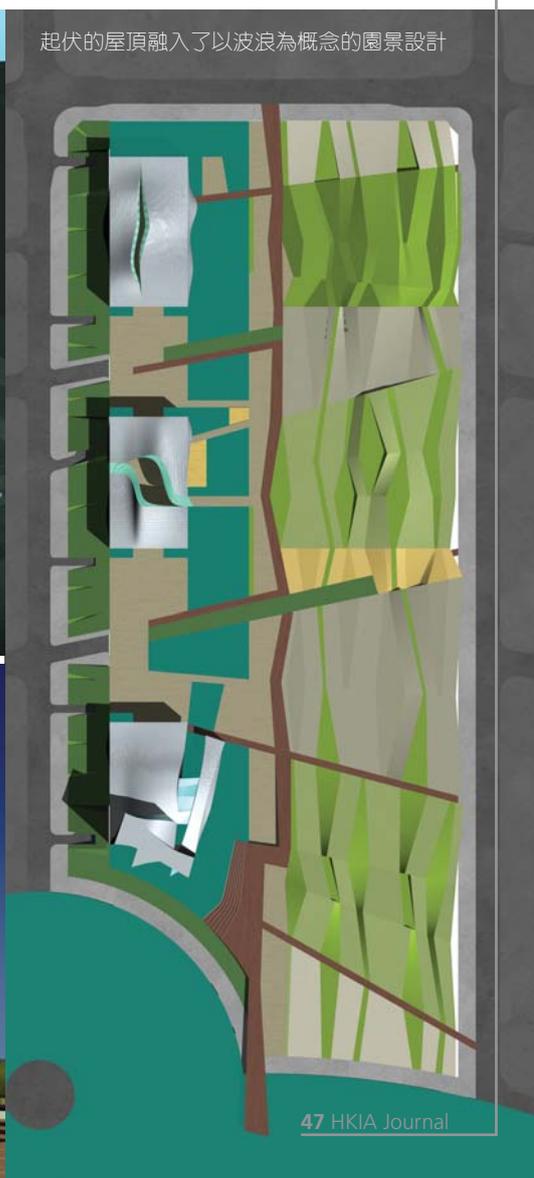


三座建築依傍著中央綠軸，連成一線，由陸地延伸向大海，間以廣場，一氣呵成

壓軸的演藝中心，為這組動感飄逸的公共建築的高潮



起伏的屋頂融入了以波浪為概念的園景設計



# Beijing Normal University - Hong Kong Baptist University United International College Zhuhai, China Ronald Lu & Partners

United International College is located within Beijing Normal University Campus in a suburban area of Zhuhai, which offers associate degree, undergraduate and post-graduate curriculum to both Mainland and Hong Kong students. In full capacity, it is expected to accommodate 4,000 full time students.

The site is in a natural hilly terrain covered with trees and shrubs with a total area of 133,000 sq.m. To achieve a simple low density functional development with maximum flexibility for future expansion and mix of use, the development has a low plot ratio of 0.27 and site coverage of 25%. The total GFA is approx. 33,520 sq.m.

The university consists of 5 faculties. Classrooms, resource centre, lecture rooms, teaching laboratories, open laboratories and administration offices form the major facilities of the university. The construction of the UIC was carried out in two phases and were completed in January 2006 and January 2007 respectively.

The design has brought the University campus into existing topography and lake environment. The development comprises a series of 3 to 4-storey low rise buildings comfortably sitting along the contour lines on the flatter part of the site, creating different kinds of semi-open courtyard spaces for students' socialization and gathering. The courtyard spaces also integrate to the classrooms as an extension for studying and discussion. This is the concept of 'Student Street'.

In the student street, students, faculty and staff can socialize, eat, study, collaborate, spend an hour, comfortably between classes, and perhaps most importantly let other people

in on what they are doing. The area brings together the energy, enthusiasm and creative juices of the communities in ways that have never been able to be done before. The space also allows people to congregate by providing inviting areas for people to work in groups. There are also alcoves for students to hold impromptu gatherings. The student street is flexible, creative and adaptable and the impact have timeless value.

Establishing visual links between the various areas of the university was a further aim of the design. Wide external balconies along the internal facade, which affords views to the courtyards, can also be used as social spaces. Linking bridges and staircases are suspended in the air and laid out in such a way that they are not directly above each other. This enabled a series of visual links to be created between the lively circulation routes. Circulation space is no longer a necessary evil; it becomes social space and forms part of the theme of the design.

The Resource Centre or the Library is the hub and focus of the development. It is strategically located near the entrance for convenient access. When approaching the school from the road, one is confronted initially by this structure floating on the lake. It is also detached from the other part of the campus to the lake to take advantage of the effect of water for serenity for independent studies. The icon of the university is in the uniqueness of the whole development with its 'student street' and the Resource Centre floating on water.

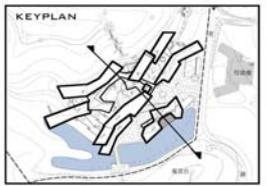
As Zhuhai is located in a region with severe summer sunlight, external metal louvre panels are introduced to the envelopes of the building. A sliding louver system allows flexibility to



adjust and screen off or to allow sunlight to pass through, to satisfy the wish and different needs of the user at different times of the day and to achieve different atmosphere to the interior spaces. The louver panels have a value both environmentally and aesthetically, as they create a randomness and interest on the elevation of the building. Broad cantilevered roofs sweeping in different directions also help to provide sun shading to the facade and the skyline formed creates a visual icon and tells a story from far off.

To minimize operational cost, natural resources are best utilized in the development. Narrow building blocks encircled by open spaces and greenery allow maximum daylight and cross ventilation. On the western side of the development, existing trees provide natural shading to the low angle sun. During summer, air temperature is reduced by the evaporative cooling of the lake on the eastern side. By following the contour, the disposition of the building creates a corridor for the south-eastern summer breeze through the whole campus.

Architect : Ronald Lu & Partners  
Design / Completion: 2004 / 2007  
Site Area : 133,000 sq. m.  
GFA : 33,520 sq. m.  
Client : Hong Kong Baptist University





## 基於傳統建築技術的生態建築實踐 毛寺生態實驗小學

穆鈞·吳恩融



地處西北的黃土高原是中國最為貧困的地區之一，經濟與技術水準的落後是當地生態建築發展所面臨的最大挑戰。歷經四年的田野考察、實驗研究和設計建造，2007年夏於甘肅省毛寺村新近落成的小學校正是我們在此背景下所進行的示範研究。新學校的設計和建設不僅僅是為孩子們創造一個舒適愉悅的學習環境，更關鍵的是要以此為契機，詮釋一個符合於當地有限的經濟、資源和技術條件，切實可行、行之有效的生態建築模式。因此，新學校被命名為“毛寺生態實驗小學”。學校的設計與建造是以一個科學化且

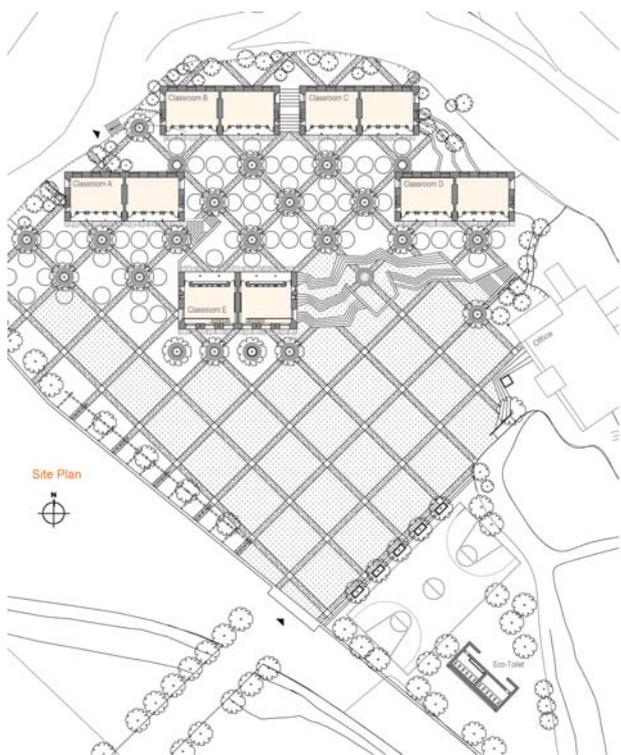
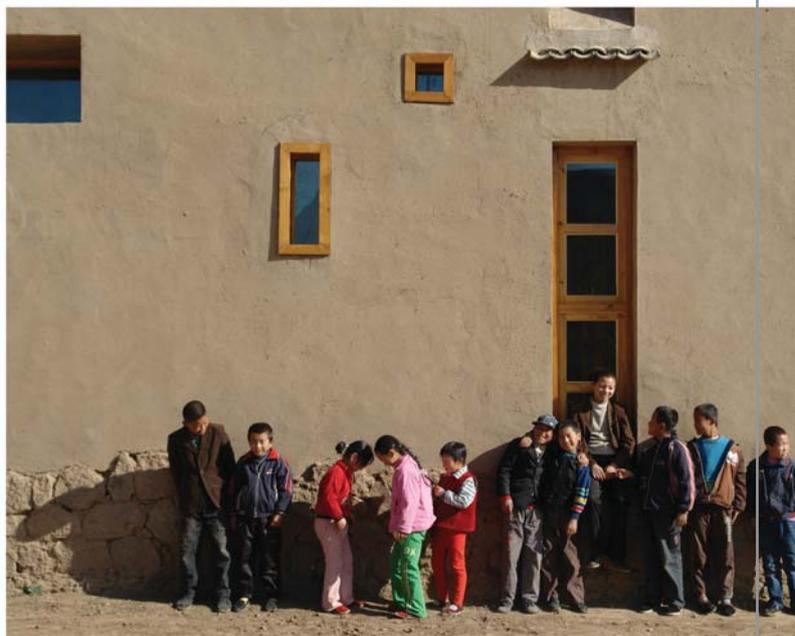
可推廣的設計與研究方法為基礎，其中包含三個基本階段：實地調研與現狀分析，模擬實驗研究，設計與施工建造。首先，根據對當地冬季寒冷夏季溫和的氣候特點、有限的經濟和建築資源水準、以生土建築為代表的傳統建築等方面的調研研究發現，在這一地區針對冬季的熱工設計（Thermal Design）是減少建築能耗和環境污染最為有效的生態設計手段。而當地以生土窯洞為代表的傳統建築中蘊含著大量基於自然資源並值得生態建築設計借鑒的生態元素。與此同時，學校的設計與建造需要遵循四個基本原資：舒適

的室內環境、能耗與環境污染的最小化、造價低廉與施工簡便。以此為基礎，我們利用教室為模型，借助TAS軟件進行了一系列電腦熱學模擬實驗。通過對當地所有常規和自然材料、傳統建造技術和生態設計系統的篩選與優化，我發現最基本的建造技術--以生土和其他自然材料為基礎的建築蓄熱體與絕熱體的使用，是提升建築熱特性、減少能耗和環境污染最為經濟和有效的措施，因此應被充分地運用在學校教室的設計之中。



順應學校所處的地形，十間教室被分為五個單元佈置於兩個不同標高的台地之上，使每間教室獲得儘可能多的日照和夏季自然通風。場地中大量栽植的樹木園藝有助於為孩子們創造一個舒適愉悅的校園環境。教室的造型源於當地傳統木結構坡屋頂民居，對於村民而言更容易施工建造。教室北側嵌入台地，可以在保證南向日照的同時有效地減少冬季教室內的熱損失。厚重的土坯牆、加入絕熱層的傳統屋面、木框架雙層玻璃等蓄熱體或絕熱體的處理方法可以極大地提升建築抵禦室外惡劣氣候的能力，維護室內環境的舒適穩定。為進一步提升教室的總體環境效果和順應孩子們的活動特點，設計中還加入了許多細部處理。例如，根據位置的不同，部分窗洞採用切角處理，有助於提升室內的自然採光。在厚達1m的土坯牆體上加入了局部凹陷處理，被附以書架、座椅等功能，不僅滿足了功能需要，而且為室內空間添加了許多趣味性。

小學的建設施工繼承當地傳統的建造組織模式，施工人員全部是本村和周邊地區的能工巧匠。除平整土方所必須的挖掘機以外，所有施工工具均為農村常用的手工工具。因此，整個施工所產生的能耗和污染遠遠低於常規的建造模式。與此同時，除少量的鋼構



架、玻璃、聚苯乙烯保溫板，絕大部分材料都是就地取材的自然材料，如土坯、茅草、蘆葦等。並且，由於這些材料所具有的“可再生性”，所有的邊角廢料均可通過簡易處理，立即投入再利用。

根據對教室使用過程中的觀測結果發現，與當地常規的磚瓦房相比新建教室室內氣溫始終保持著相對穩定的狀態。在整個冬季，無需任何燃料採暖，教室仍可達到較為舒適的室內環境，極大地節省了建築運行能耗和對環境的污染。而整個教室的造價只有480RMB/ m<sup>2</sup>，低於當地常規建築的造價。

生態實驗小學的建造，向當地村民們詮釋了一條適合於當地發展現狀的生態建築之路。在改善自身生活條件的同時，他們完全可以利用熟知的傳統技術和隨地可得的自然材料進行建造，來減少對於環境的污染和破壞，並實現人與建築、自然的和諧共生。最後，引用校長的一句話：“從現在開始，學校不再需要燒煤來取暖了，不僅室內空氣清新舒適，而且省下來的錢可以為孩子們多買一些書了。”

吳恩融教授，穆鈞  
香港中文大學建築學系



# Beijing Olympic Green Convention Centre

RMJM

The commission to design the Beijing Olympic Green Convention Centre, a key venue in the 2008 Olympic Games, was one of RMJM's major successes of 2004. The practice beat off strong competition from three other internationally renowned architectural firms in a design competition organised by client Beijing North Star. The commission involved the masterplanning of the 12.2hectare site, the design of the 270,000m<sup>2</sup> convention centre and 260,000m<sup>2</sup> related commercial facilities located at the heart of the Olympic Boulevard.

The original design objectives for the Convention Centre were:

- Civic scale and presence: interpreted in the size of the building, with the length at 400m and height at 42m
- Historical reference: inspiration for the form came from the curved 'elevation and depression' roofs and eaves of traditional Chinese pagodas
- Development at human scale: through the definition of the parts and unification of the whole

The resulting design is a creation of timeless and understated simplicity in an appropriately scaled urban form addressing the formal Olympic Boulevard amongst the three other principal Olympic buildings.

During the Olympics Games the BOGCC complex will host Olympic and Paralympics fencing and pentathlon pistol shooting events in its two sports halls. The adjacent hotels in the multi-purpose complex will be used to accommodate

some of the visiting media contingent, retail and some commercial space.

The largest media centre in Olympic history is also part of the complex that includes both the Main Press Centre (MPC) and International Broadcasting Centre (IBC). Occupying more than 150,000m<sup>2</sup>, the MPC and IBC will be home to more than 20,000 accredited journalists, photographers and broadcasters.

In line with BOCOG's 'Green Olympics' message, RMJM's design includes systems that make use of natural elements together with a high degree of insulation throughout the building. Green features include the rain water collection on the roof for flushing systems and the irrigation of the surrounding landscape, an ice storage cooling system and a 'free air cooling' ventilation system in the public foyers of the convention centre.

Part of the brief for this assignment was to ensure that the facility had a distinct and viable 'second life' after the Olympic and Paralympic Games in order to maximise the return on investment and ensure the highest rate of commercial viability. To enable this, the 270,000m<sup>2</sup> main structure is scheduled to reopen as the National Convention Centre of China in 2009.

With this in mind, the design ensured that the facility could be retrofitted within a relatively short period of time without huge added expense. Post Games, the complex will accommodate the

Plenary Hall, the Convention & Exhibition Centre along with offices, retail, service apartments, a 5-star hotel and a business hotel.

Unlike many convention centres, the National Convention Centre's space has been designed to be highly utilised and a destination in its own right, with its office space, retail and hotels providing year-round interest in the area. The design reflects the Beijing government's plans for the ongoing regeneration of the north eastern part of the city of Beijing.

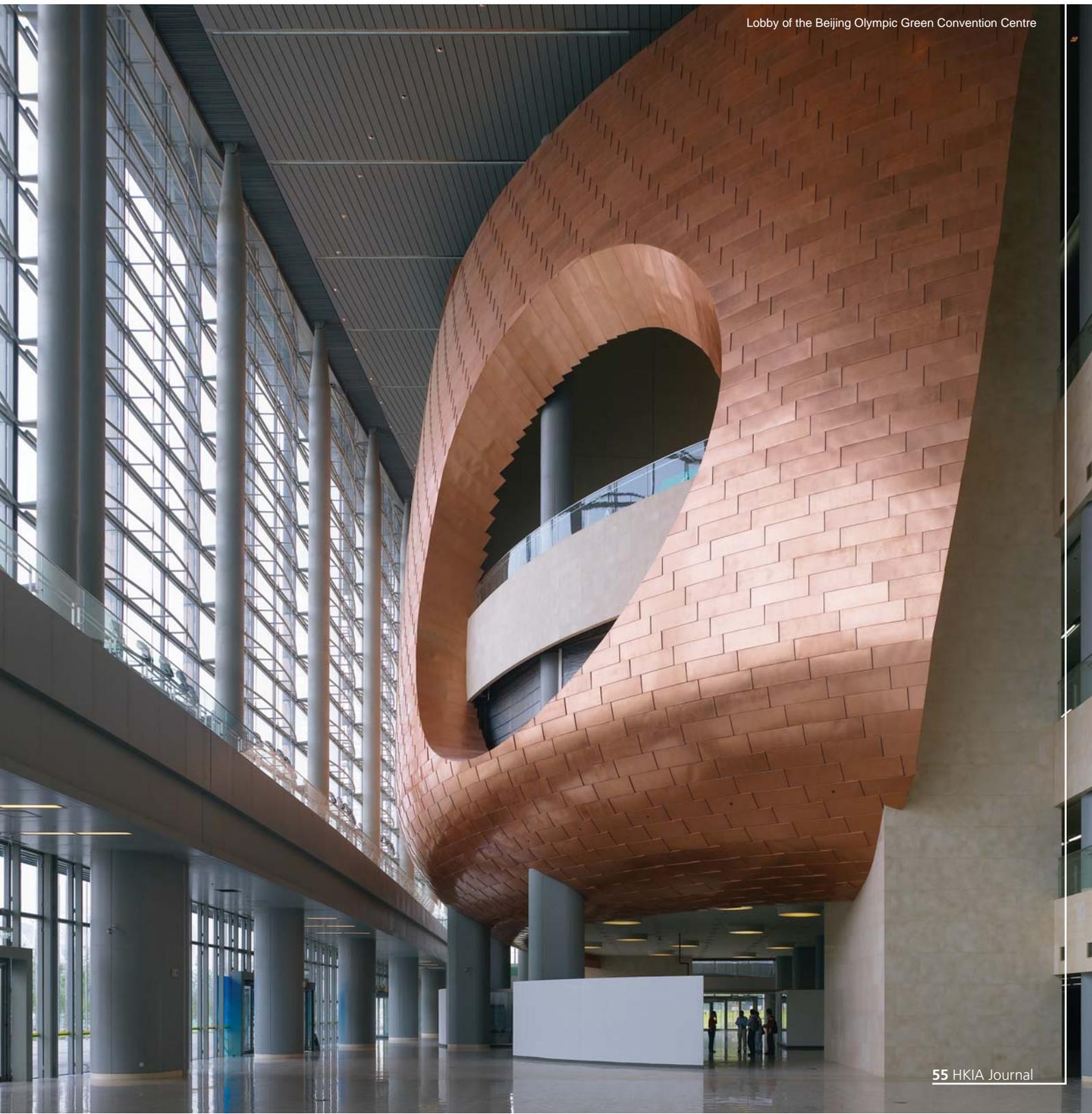
Name of Building	: Beijing Olympic Green Convention Centre (BOGCC) & Mixed Use Development
Location	: Beijing, China
Client	: North Star Beijing Group
Skills	: Architecture, masterplanning, landscape design
Site Area	: 122,000m <sup>2</sup>
GFA	: Convention Centre: 270,000m <sup>2</sup> Commercial: 260,000m <sup>2</sup>
Facilities	: Convention & exhibition, sporting facilities, retail, hotel & office
Building Height	: 42m



Looking out into the Olympic Boulevard



Façade detail of commercial building



Lobby of the Beijing Olympic Green Convention Centre