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# Urban Models for the 21st Century

## 21世纪的城市模式



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Stefan Krummeck is the principal director of TFP Farrells Hong Kong office. He has an in-depth knowledge of design, planning and integration of large complex, commercial and high-rise projects through all stages of procurement. Stefan has led the architectural design on a multitude of commercial related projects in Asia including the 441.8m KK100 tower in Shenzhen, the world's tallest tower completed in 2011; Vattanac Capital-1st high-rise in Cambodia; and BEA Financial Tower. He has spoken in various High-rise related conferences and written papers for CTBUH and New Civil Engineer.

Stefan在TFP Farrells香港办事处担任执行董事一职。他在大型综合体、商业和高层建筑项目的各个方面均具备丰富的设计、规划和整合知识。Stefan曾领导完成多个亚洲商务项目的建筑设计工作，包括：2011年竣工的全球最高建筑—高达441.8米的深圳京基100大厦、柬埔寨第一座高层建筑—安达大都汇大厦（Vattanac Capital）、以及东亚银行金融大厦。此外，他也曾多次在有关高层建筑会议上发言，并为CTBUH和英国工程杂志《New Civil Engineer》撰文。

### Abstract

Recently, Asia has witnessed an astonishing proliferation of high-rise buildings. Towers are growing in numbers and in height which presents enormous opportunities and great challenges. Buildings do not exist in isolation from their environment. This is particularly true of high-rises due to their intensive use of space. Their imposing physical presence can change the character of an area for better or worse. The increased density, which is a consequence of vertical development, can have a profound influence on the urban dynamics of the surrounding area. They can put more pressure on transport and infrastructure, but the increased commercial activity that takes place in high-rise developments can give a huge economic boost to an area. Tall buildings thus have a powerful role in shaping the development of modern cities. Therefore it is crucial to ensure that their influence is positive rather than negative.

**Keywords: Transportation, Integrated Development, Place-Making, Multi-Modal**

### 摘要

最近，亚洲的高楼大厦如雨后春笋般不断涌现。高楼愈来愈多的层数和不断增加的高度带来巨大的机遇和挑战。建筑物从不孤立于其周边环境，尤其是密集式使用空间的高层建筑更是如此。不论变好或是变差，巍然耸立的高层建筑都会改变一个区域的风貌。垂直开发所导致的密集状况会对周边区域的城市动态造成深远影响。它们会给交通和基础设施带来更大的压力。但高层建筑内更为频密的商业活动更会大大推动该区域的发展。所以说，高楼大厦在推动现代城市发展的过程中扮演着举足轻重的角色。因此，确保高层建筑带来积极而非消极影响对我们尤为重要。

**关键词：综合用途、交通、整合、开发、场所营造、多模式**

### New Status Of High-Rise

The skylines of modern cities demonstrate the ever increasing prevalence of tall buildings. From their beginnings as high-status corporate beacons, towers have expanded their range of functions and now help fulfill the residential, industrial, leisure and commercial requirements of cities in response to the high cost and limited availability of land. High-rises are no longer the sole preserve of the rich and powerful, but are part of the everyday urban experience for a large number of city dwellers worldwide.

The British experience of this new form of urbanism is still scarred by tower blocks that were characterized by standalone semi high-rises surrounded by large, undefined open spaces and segregated traffic. These schemes were particularly unpopular for social housing where the occupancy type and subsequent poor management combined to drive them to failure. A lack of transport connections, poor definition of ground level planning and the creation of single tenancy type residential blocks reduced the quality of urban fabric and sealed their fate as unsuccessful neighborhoods.

More recent examples of high-rise buildings in Hong Kong and China uncover new insights

### 高层建筑现状

现代城市的天际线充分展现高层建筑正日益盛行。最初，摩天大楼仅是显赫大型企业的象征，但时至今日，高层建筑为了回应土地的高成本和有限性，已逐渐具备更多功能，满足城市对住宅、产业、休闲和商业的需求。高楼大厦已不再为财富和权势群体所独占，对于全世界众多城市居民而言，摩天大楼已成为日常城市体验的一部分。

在这种新式的城市化发展方面，多座半高层的独立大楼，被规划模糊的开阔空间及不便捷交通网络等特征围绕，令英国人至今仍心有余悸。就社区住房而言，此类方案尤其不受欢迎，全因租住模式，加上乏善管理导致开发失败。地区交通不便，又欠缺规划，加上单一租住模式，降低了城市肌理质量，注定不能成功打造社区的命运。

然而，现今香港和中国内地的新建高层建筑却揭示了为何综合用途高层大楼可被视作实现21世纪城市化有效途径的崭新观点。

目前中国拥有全球最多已竣工的高层大楼，其多个城市现正不断地被重塑为高楼耸立的区域，这往往被错误地与欧洲战后再建房屋计划相提并论——两者均是为了在较短时间内吸纳大量涌入区内谋生的人群而设。尽管如此，通过效法香港的建筑

into why the mixed-use high-rise model has started to be seen as a valid way towards 21st Century urbanization.

China currently has the largest number of built high-rise towers. The growing redevelopment of Chinese city centers into high-rise districts is often incorrectly compared to the post-war re-housing schemes in Europe: Both examples were planned to house vast populations relocating to the city in search of employment in relatively short time spans. However, China has now reached another stage of development by utilizing the Hong Kong model, popular with investors in the Mainland, of high-rise, high-density, mixed-use development integrated with a transportation hub.

### Hong Kong - The Model Of Infrastructure Oriented Developments

Hong Kong is famous for its skyline. It is one of the densest cities in the world. In contrast to western cities, towers do not merely sprout up in selected parts of the centre. These have proliferated in all urban areas. Many form part of a mixed-use development integrated with multi-modal transport infrastructure.

Due to its topography, this dense urban fabric is aligned along the waterfront and on the valley floors. When available land became saturated with development, parts of the harbor were reclaimed to provide for taller more modern buildings along with new infrastructure. This was repeated several times on both sides of the harbor until the people of Hong Kong became wary of reducing its size any further. It was time to define the final shape of the harbor and to determine its public face.

The linear city which developed along the waterfront has given Hong Kong phenomenal advantages. The dense city centers are productive and efficient with unprecedented benefits for public transport and infrastructure. Metro systems were integrated with these linear settlements. This efficient system with excellent coverage led to over 90% of daily journeys being done on public transport, making it the highest rate in the world<sup>1</sup>. This also translates to low car ownership which makes Hong Kong a city with the lowest transport carbon footprint worldwide. In addition, the intensity of urban development means that 60% of Hong Kong is designated country park while three quarters remains undeveloped.

The local metro operator MTR has been responsible for creating a symbiosis between public transport and built fabric in many parts of Hong Kong. By granting air rights above railway stations, the construction and operation of new lines was achieved with limited public funding. To this day MTR remains a profitable public transport operator.

### Kowloon Station, Hong Kong

(Plot ratio: 1:10 / GFA: 1,232,391 sqm / Site Area: 13.5 ha)

In 1989, Hong Kong had the opportunity to plan a new airport that allowed the development of integrated railway and road networks. TFP Farrells was commissioned to produce the master plan for Kowloon Station, the largest station on the new airport railway line. The resulting scheme integrates an air-rights property development above the station, using the revenue generated from the air-rights property development to support the funding of the whole railway line. This

模式，中国已经进入另一个开发阶段。这种集集交通枢纽、高层建筑、高密度和综合用途开发项目于一处的模式，也颇受大陆投资者欢迎。

### 香港 — 以基础设施为本的开发模式

香港是全世界最为密集的城市之一，以其天际线闻名于世。相较于西方城市，香港的高楼不仅耸立于市中心的特定区域，且在市区随处可见。其中许多是带多式联运基础设施的综合用途开发项目。

基于地势的考虑，稠密的城市肌理沿海港和山麓发展。当开发令土地饱和之际，部分海港区域被填埋，为更高、更现代的建筑连同崭新基础设施提供场地。这种进程在海港两岸重复了若干次，直至香港市民对不断缩窄的港湾感到忧虑才终止。相信该是时候确立海港最终形态和其公共面貌了。

沿海港发展起来的线型城市给予香港显着优势。密集的城市中心富有生产力且高效，前所未有地推动公共交通和基础设施发展。地铁系统陆续建成，贯穿于线型城区之中。这一高效系统具备卓越的覆盖率，其每天往返各区班次占公共交通网络的90%，其速度之快，冠绝全球<sup>1</sup>，随之大大减低汽车持有量，使香港成为全球拥有最低碳足迹交通系统的城市。另外，如此集中的开发方式也意味着占香港60%土地的划定郊野园地得以保存，当中四分之一的土地仍未被开发。

香港的地铁营运商港铁（MTR）一直以来负责在公共交通系统和多个市区肌理之间建立一种共生关系。尽管公共资金有限，在获政府授予地铁站上盖空间发展权限的情况下，港铁依然能够成功开发并运营新线路。至今，港铁仍是获利的公共交通营运商。

### 香港九龙地铁站

(容积率: 1:10, 总建筑面积: 123.2391万平方米, 场地面积: 13.5公顷)

1989年，香港迎来了规划新机场的良机，当中包括整合铁路和公路网络。TFP Farrells 受委托制定新机场快线的最大型车站——九龙站——制定总体规划。最终方案整合了车站上盖物业，并利用由此而来的收益兴建整个铁路线路。事实证明，该方案取得了巨大成功，且成为香港未来地铁站开发的典范。

TFP在九龙站打造了一个垂直城市。在此三维设计之内，基础设施分别安置于交通换乘上方不同楼层。整个项目包括公寓、办公室、社区设施、酒店和服务式公寓，分别于裙楼内以多条空调购物街和公共场所相连，及在裙楼上以花园、广场、车辆和行人流线互通。（见图1）

设计方案创建了一个完备且又和谐的城区。九龙站开发规划的核心为一座高达484米的地标建筑——环球贸易广场，现为全港最高的建筑。大厦是该项总体规划的标记，象征九龙站在机场快线上举足轻重的地位。在九龙，高层建筑是场所营造的重要元素，能为城区确立全新焦点，提升城区以满足现代商业的要求，有助于界定并巩固以特定活动为中心的城市聚居地（见图2）。

目前，九龙站项目内的居住及工作人口估计约有四万人。相较于伦敦或巴黎的大型城区，我们不难发现，若要容纳同样人口，我们要么需要更大面积的土地，要么就建造一个垂直生活区。内城区模式可形成极之密集的场地，同时其可持续性、便捷程度及效率也更高。九龙站开发项目一应俱全的整合设计给住户和访客带来了极大便利，加快了生活步伐，方便了人们出行，也提高了效率。这种便利正是城市化的关键所在。

<sup>1</sup> Lam, William H.K. [2003] (2003). *Advanced Modeling for Transit Operations and Service Planning*. Elsevier publishing. ISBN 0080442064

<sup>1</sup> 《Advanced Modeling for Transit Operations and Service Planning》(2003年)，林兴强著。Elsevier publishing 出版。ISBN 0080442064

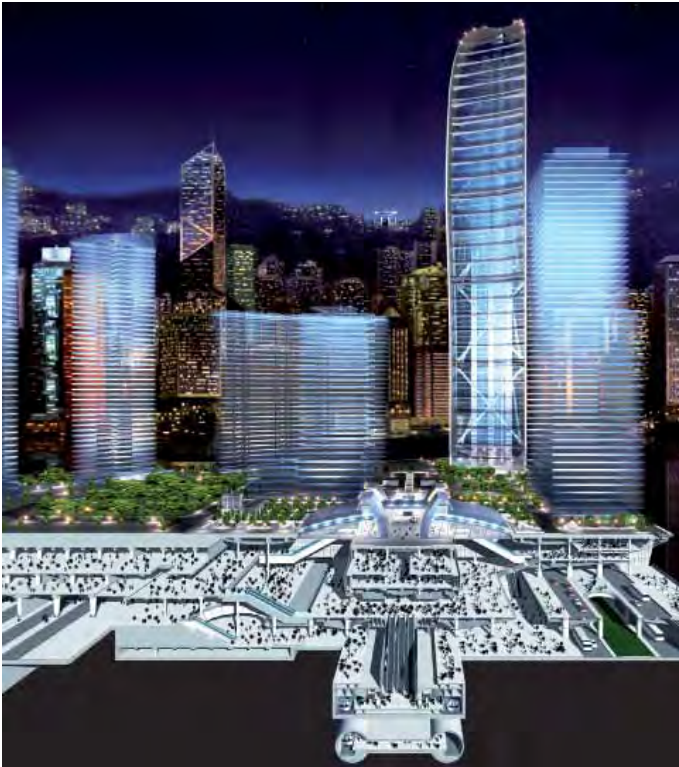


Figure 1. Sectional Drawing of Kowloon Station Development showing the integration of multi-modal transportation, forming a 24-hr live-work mini-city (Source: TFP Farrells).  
图1. 九龙站开发项目的剖面图，展示多联交通整合和24小时不间断地生活及工作的微型城市（出自：TFP Farrells）

proved to be hugely successful and became the prototype for future Hong Kong station developments.

At Kowloon Station, TFP have created a vertical city: a three dimensional design in which the infrastructure is organized in layers above the transport interchange. The development consists of flats, offices, community facilities, hotels and service apartments linked together by air-conditioned shopping streets and public places in the podium levels, and by gardens, squares and vehicle and pedestrian circulation routes on the podium above (see Figure 1).

The design forms an integrated balanced urban district. At the heart of the Kowloon Station Development Plan is a landmark tower, the 484m International Commerce Centre – the tallest building in Hong Kong. This tower is the signature statement of the master plan scheme, marking the importance of Kowloon Station on the Airport Railway. At Kowloon, tall buildings are an important device for placemaking, establishing a new urban focus, and assisting urban quarters in meeting the requirements of modern commerce, and help to define and strengthen urban localities that are centered on particular activities (see Figure 2).

An estimated 40,000 people live and work in the Kowloon Station Development and when compared with major urban areas in London or Paris, one can see that in order to accommodate the same amount of people it would require either a large area of land or a vertical Living Zone. The inner city model can have an extremely dense footprint and be more sustainable, efficient and well connected. The compact composition of Kowloon Station Development offers great convenience, speed, accessibility, and efficiency to occupiers who live or visit here – essentially this convenience is what urbanism is all about.



Figure 2. Completion of Kowloon Station Development with the iconic ICC tower as the beacon of the master plan (Source: TFP Farrells).  
图2. 九龙站开发项目和其地标“环球贸易广场”竣工，后者是总体规划的焦点（出自：TFP Farrells）

### 金丝雀码头——单一用途规划的典范

（容积率：1:5，总建筑面积150万平方米，场地面积：29公顷）

在伦敦，金丝雀码头可说是规模媲美九龙站的同类开发项目。两者的建成面积均在110万-130万平方米之间，并且包括超过18座塔楼。九龙站开发项目所容纳人口约为五万人，而金丝雀码头工作人口也多达九万人。金丝雀码头于1988年落成之际，大家都预期它会成为伦敦全新商务区。可惜，在金丝雀码头在1991年开业前，伦敦房地产市场已经崩溃，而金丝雀码头的业主在1992年也申请破产。

然而，房地产市场的崩溃并非是金丝雀码头失败的唯一导因。尽管伦敦码头区轻轨 (Docklands Light Railway) 和伦敦地铁 (London Underground) 计划为配合金丝雀码头而兴建，但当该区投入使用时，两条铁路仍未竣工。由于码头缺乏基础设施配合，加上项目用途单一，导致区租住率甚低。为此，多座大楼空置多年，开发项目二度破产。直至千禧年庆祝项目之一且一再推迟的朱比利线 (Jubilee Line) 开始动工，金丝雀码头才起死回生。随着交通网络陆续建成和综合用途项目投入营运，金丝雀码头终于迎来其应有的蓬勃发展，成为现时欧洲最大、最成功的金融中心之一（见图3）。金丝雀码头的案例说明了整合基础设施同时涵盖综合用途开发项目的重要性。由此可见，当一个开发项目充份配备娱乐、办公、零售空间和交通系统时，它可对其它新项目大有裨益，且成为活化城市的催化剂。

### 京基100——位处城市核心地段的综合用途重新开发项目

（容积率：1:15，总建筑面积55万平方米，场地面积：3.6公顷）

有别于金丝雀码头，京基100是一个别开生面的高密度项目，采用了全新方式营造城市，具有开发、活化的效果。项目选址深圳古旧金融区，同时又为目前中国最成功的经济区内开辟出独特新天地，为同类型项目开创先河（见图4）。

项目场地占地3.6公顷，前身为稠密的住宅区“蔡屋围”。开发商独具慧眼，与原村民共同成立一家新公司，开启了在深圳进行



Figure 3. Canary Wharf Night view, "Photo by DAVID ILIFF. License: CC-BY-SA 3.0" (Source: [http://en.wikipedia.org/wiki/File:Stave\\_Hill\\_and\\_Canary\\_Wharf,\\_London\\_-\\_March\\_2008.jpg](http://en.wikipedia.org/wiki/File:Stave_Hill_and_Canary_Wharf,_London_-_March_2008.jpg)).  
图3. 金丝雀码头景观，“摄影师：DAVID ILIFF，相片编号：CC-BY-SA 3.0”（出自：[http://en.wikipedia.org/wiki/File:Stave\\_Hill\\_and\\_Canary\\_Wharf,\\_London\\_-\\_March\\_2008.jpg](http://en.wikipedia.org/wiki/File:Stave_Hill_and_Canary_Wharf,_London_-_March_2008.jpg)）

### Canary Wharf – A Lesson On Single Use Planning

(Plot ratio:1:5 / GFA:1,500,000 sqm / Site area:29 ha)

A similar development scale as Kowloon Station in London is the Canary Wharf. Both developments have around 1,100,000 m<sup>2</sup> to 1,300,000 m<sup>2</sup> of built area and more than eighteen towers. The population of Kowloon Station Development is approximately 50,000 people while Canary Wharf has around 90,000 people working in the district. When constructed in 1988, Canary Wharf was planned to be a new business district for London. Unfortunately, upon its opening in 1991, the commercial property market in London had collapsed, and the owner of the Canary Wharf filed for bankruptcy in 1992.

The collapse of the property market was not the only pitfall for the Canary Wharf. Although stations of Docklands Light Railway and the London Underground were planned for Canary Wharf, none of them were ready when the district was opened. The lack of integration with metropolitan infrastructure in addition to the singular usage of the development was the main cause for the low occupancy in the area. Towers were vacant for many years, and the development went bankrupt twice. The recovery of Canary Wharf did not happen until the much-delayed start of work on the Jubilee Line, which the government wanted ready for the Millennium celebrations. With the completion of its transportation network and the introduction of mixed-use development, Canary Wharf has finally had the chance to flourish as it was meant to be and has become one of the biggest and most successful financial centers in Europe (see Figure 3). The case of Canary Wharf has shown us the importance of an infrastructure-integrated development that also incorporates mixed-use planning. It demonstrates that when a development is fully integrated with recreational, office, retail spaces and transportation systems; it can be beneficial to the new development and be an urban catalyst for regeneration that will ensure success.

### KK100 - A Mixed-Use Redevelopment In City Core

(Plot ratio:1:15 / GFA:550,000 sqm / Site area:3.6 ha)

In contrast to the Canary Wharf, KK100 is an innovative high-density project that takes an entirely new approach to city making, development and regeneration. It forms part of Shenzhen's old financial district and creates a new precedent for creating a distinctive new destination within China's most successful economic zone (see Figure 4).



Figure 4. KK100 Development as the new existing city backdrop for the famous urban Litchi Park of Shenzhen (Source: TFP Farrells).  
图4. 京基100开发项目，深圳著名荔枝公园的新城市背景（出自：TFP Farrells）

场所营造的全新模式，为21世纪全球城市变革树立了典范。原有多座建筑已破旧不堪，而村内生活条件也见恶劣。作为实行转型战略的初步策略，开发商制定了共同开发计划，让原村民成为股东。每位户主除获得新物业外，更可获得利润不绝的新住宅。这维持了世代相承的社区关系。该项总体规划包括提供原村民的五座住宅楼和两座办公楼，以及为开发商而建的八万平方米零售商场和一座超高层大厦。

在延续区内社会和文化之余，京基100也整合了深圳的都会交通网络。总体规划各个组成部分在不同楼层之间的连通性是项目关键：塔楼在多个楼层与裙楼相连。较低楼层的零售区和公共空间则与地铁系统互通。整项规划也精心考虑周界面。尽管是超高层建筑，塔楼低层和地下的功能都充分融入周边社区的肌理，不仅营造了生机勃勃、富有地方特色的社区，还使之成为深圳经济发展和繁荣昌盛的焦点。（见图5和图6）

#### 塔楼

这一综合用途塔楼由甲级办公室、交易区、会议和商务设施、一间健身中心和一家六星级酒店组成，酒店附设如大教堂般的玻璃空中花园和各式各样的餐饮选择。楼顶并未设置发电机，反以弧形玻璃幕墙配合钢结构打造了顶层。塔楼也不采用典型的方形造型，东西立面造型纤细且略向外伸延，令办公楼层空间略大，而南北两面，即朝向香港和米铺沼泽两个立面，则稍宽阔。纤细的立面设计迎来更大挑战，最显著的难题在于倾斜或摇摆的角度、塔楼的稳固性，以及发挥主要建筑元素的所长。（见图7）

#### 京基100的可持续性策略

随着深圳人口不断增加，交通系统堵塞不畅，可用开发地块长期不足，与日俱增的人口密度已经成为城市的主要问题。有见及此，能够容纳大量人口的细小地块开发项目对现今环境更为有利，既不会对绿色空间和当地交通设施造成过多压力，又能避免城市向郊区发展。这种综合用途项目有助建立社区，实践在同一地方一起生活和工作的概念，从而减少对汽车的依赖、能源损耗和污染（见图8）。

The 3.6-hectare site was previously occupied by a dense residential quarter, Caiwuwei Village. The developer had the creative vision to form a company with the villagers, initiating an entirely new approach to the art of placemaking in Shenzhen. This serves as a model for 21st century for urban change all over the world. Existing buildings were run down and living conditions were poor. As part of the strategy initiating this transformation, a Joint Development Initiative was formed in which villagers became stakeholders. Each owner was offered a new property as well as a second home that serves as an income generating asset. This meant the preservation of community links that are built over generations. The master plan incorporates five residential towers and two office buildings to cater for the villagers and an 80,000m<sup>2</sup> retail mall and a super high-rise tower provided for the developer.

While providing social and cultural continuity, KK100 is integrated with the metropolitan transport network. The connectivity between the various components of the master plan on various levels was critical; the tower is integrated with the podium on various levels. Retail and public uses at lower levels are integrated with the Metro system. The interface with the surrounding urban context has been carefully considered. Despite the tower's height, lower and ground levels uses are integrated successfully with the fabric of the surrounding neighborhoods to create a vibrant community with a strong sense of place as well as a major focus for economic growth and prosperity within Shenzhen (see Figure 5 and Figure 6).

### The Tower

The mixed-use tower complex containing grade-A offices, trading areas, conference and business facilities, a fitness centre, and a 6-star hotel complete with a cathedral-like glazed sky-garden containing numerous dining options. Instead of putting generators on top of the building, the roof is constituted by a curved smooth glazed curtain wall and steel structure. It does not use the typical square foot print; the East / West façades being more slender and flare slightly so office floor plates are slightly bigger and the South / North façades that face Hong Kong and the Maipo marshes are wider. The slenderness brings certain challenges; most notably the swing or drift ratio and the robustness of the tower and performance of key elements (see Figure 7).

### Sustainable strategies of KK100

With Shenzhen's growing population, clogged transport systems and shortage of affordable land for development, the increased population density has become a major issue. A development that accommodates large numbers of people into such a small footprint is better for the environment, as it puts less pressure on green spaces and local transport infrastructure while reducing suburban sprawl. The mixed-use development creates communities and the idea of living and working in the same place, which diminishes the reliance on car usage as an energy consuming and polluting force (see Figure 8).

### Beijing Chaoyang Cbd

(Plot ratio: 1:6.7 / GFA: 2,000,000 sqm / Site area: 30 ha)

Demand for financial centers has gradually increased in recent years in China. Beijing's Chaoyang district is drafted as an extension of the existing CBD due to this rise of demand. A financial district similar to the scale of Canary Wharf is envisioned with careful consideration being given to the master plan so as to avoid the kind of problems that faced by Canary Wharf. Shortcomings of Canary Wharf such as single use of buildings, lack of positive connection to the metro and between buildings, are addressed. TFP's vision of a sustainable development is to incorporate mixed-use and interconnected buildings, an active streetscape and positive links to the metro system.

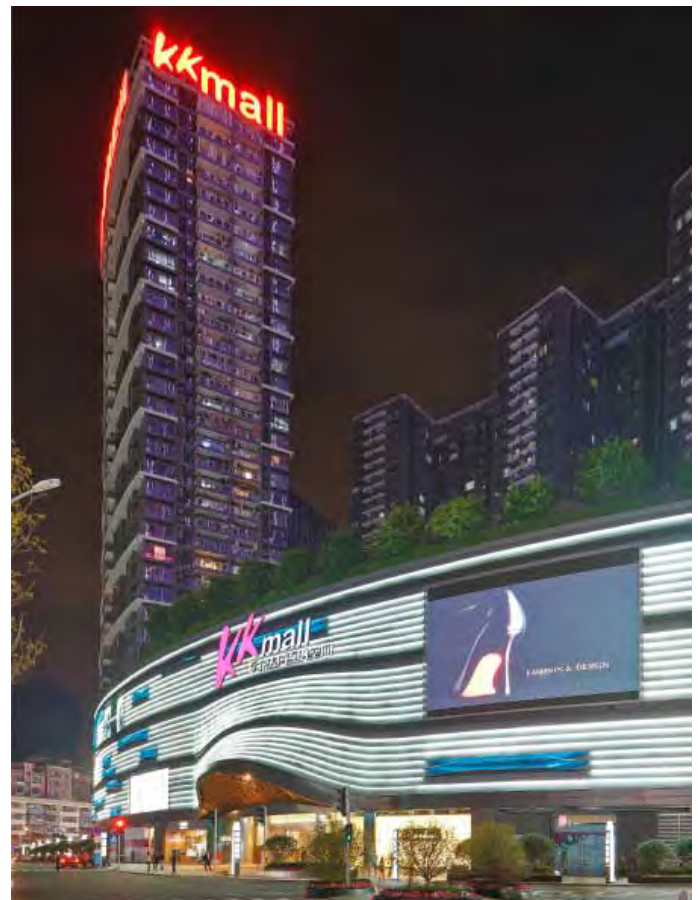


Figure 5. Night view of the KK Mall which is located with the podium of KK100 Development and is connected to the existing metro system at the basement level (Source: TFP Farrells).

图5. 京基百纳空间夜景，商场位于京基100开发项目裙楼，与地下地铁系统相通（出自：TFP Farrells）



Figure 6. The interior of KK Mall (Source: TFP Farrells).

图6. 京基百纳空间内部设计（出自：TFP Farrells）



Figure 7. The 100-story, 441.8m high KK100 Tower (Source: TFP Farrells).  
图7. 高100层、441.8米高的京基100大楼（出自：TFP Farrells）

TFP's 30 hectare mixed-use master plan for the Chaoyang area creates a vibrant new district in the heart of Beijing's new CBD. It incorporates 2,000,000m<sup>2</sup> of office space, a range of hotels, luxury serviced apartments and high-end retail. This results in the creation of a "mini-city" which, unlike many CBDs, will not be just a place of work but a 24-hour living environment with a positive influence on the lives of all who live and work there and in neighboring areas (see Figure 9).

Located on a "green spine" of open space running through the CBD extension, the master plan responds to this concept by creating a long public park that aligns with the "green spine". This provides a refreshing slice of nature for the occupants of the site and enhances pedestrian routes through the CBD.

In the centre of the "green spine" is the Z15 Tower, giving it a prominent position with no adjacent buildings on the North or South side. In order for this spine to continue right through the building, the ground floor atrium is designed as public space, acting as a connector rather than a barrier to pedestrian movement. This also allows for greater public enjoyment of the building (see Figure 10).

#### Tower

Designed by TFP, the new 'Z15' Tower in this new Chaoyang CBD will be the city's tallest building. An icon of the city and an emblem of China's economic success, the tower will be the focal point and will be well integrated into its surroundings as part of a unified urban design.

Z15's distinctive "hourglass" shape takes inspiration from ancient Chinese zun wine vessels. The tower's smooth vertical curve gives it an elegant, contemporary form, which is more dynamic than traditional rectilinear towers, and has a perceived "lengthening" effect. This allows Z15 to stand out from its surroundings in a way that is befitting for the city's tallest tower. Its instantly recognizable form will allow it to become an icon of Beijing. The layout of paths in the park south of the

#### 北京朝阳CBD

(容积率: 1:6.7, 总建筑面积2,000,000平方米, 场地面积: 30公顷)

近年来, 中国对金融中心的需求日益殷切。有见及此, 北京朝阳区被规划为现有CBD的延伸。整个金融区开发项目与金丝雀码头规模相约, 但各部份都经过周详考虑, 以免重蹈覆辙。所有金丝雀码头项目的弊端, 如建筑功能单一, 缺乏建筑与地铁之间的有效连接等, 都是规划顾及范畴。TFP计划打造一个具有可持续性的开发项目, 其中融会了综合用途和相互连通的建筑, 热闹繁华的街道建筑和与地铁系统有效的连接。

TFP为朝阳区所制定的30公顷综合用途整体规划, 在北京核心商务区打造出充满活力的新区, 融会200万平方米办公空间、一系列酒店、豪华服务式公寓和高端零售商, 最终形成一个“微型城市”, 有别于其它CBD。它不仅提供工作场所, 也有24小时不间断的生活环境, 造福所有在其中以及周边地区生活和工作的人



Figure 8. KK100 Development in its urban context (Source: TFP Farrells).  
图8. 城市文脉中的京基100大楼开发项目（出自：TFP Farrells）



Figure 9. Overview of the mixed-use Beijing Chaoyang District CBD and the Z15 Tower (Source: TFP Farrells).

图9. 综合用途的北京朝阳CBD和Z15塔楼概览（出自：TFP Farrells）

tower subtly reflects the tower's shape. This further unifies Z15 with its surroundings by creating a harmony between the long horizontal shape of the park and the long vertical shape of the tower (see Figure 11).

As an iconic high-profile building, the tower forms a crucial element of a large scale urban design. The tower is integrated with its surroundings in many ways. It has excellent connectivity with the existing metro station and with a new monorail system that will take passengers around the whole CBD. The tower is linked to the metro station by an underground walkway, while the monorail station is situated adjacent to the tower. The excellent transport connectivity means that up to 75% of people who work in the new district will arrive by metro or by other public transportation rather than by car.

A key element of the master plan was the creation of good pedestrian routes around the whole site, making it easy to walk between buildings and providing links to wider pedestrian networks. This is particularly important in the context of Beijing, where the grid of large roads, which can be up to 12 lanes wide, forms a barrier to pedestrian movement. In order to counter the marginalization of pedestrians, the master plan attempts to implement a strong pedestrian bias through the use of shared surfaces, natural crossings, speed restriction techniques, differing road surfaces and the reduction of through traffic. The centerpiece of this pedestrian network is the long park in front of the tower. It encourages walking and provides a refreshing slice of nature in the heart of the development. This park also represents a portion of the "green spine" which runs through the whole CBD, meaning that it not only acts as a connector within the TFP's master plan, but is also part of a much larger pedestrian network. The master plan also incorporates two other pedestrian routes on either side of the central axis, in the form of two commercial galleries that link all of the buildings in the site. The wealth of pedestrian routes around the site will encourage ground level activity, which will give the area a strong sense of place (see Figure 12).

As well as having excellent connectivity with public transport and pedestrian routes, the Z15 tower will also be linked to a network of underground streets proposed as part of TFP's master plan. These subterranean streets will link all the buildings on the site with each other and with the metro station, and will also provide access to the other side of the Third Ring Road to the east, where the existing CBD is located.

One challenge faced by designers of landmark buildings is how to make the building distinctive and individual, whilst still ensuring its relation to its surroundings in a meaningful way. Z15 successfully resolves this contradiction by being part of a comprehensive master plan that establishes the tower as an icon while simultaneously making it an indispensable element of a comprehensive urban whole. Z15 is integrated with its surroundings through its transport connectivity, mixed-use planning, and repeated motif at the tops of the towers resembling kongming lanterns, which subtly unifies the buildings in a way that does not constrict their individual styles.

## Conclusion

Learning from such different places and projects is crucial to effectively work at the micro as well as the macro scale and it has provided an understanding of rapid internationalization, technological change and the environmental challenges that we now all face. It also provides a wealth of insights into the key debates and leads to challenge many of



Figure 10. View of Z15 Tower as the focal point of the green spine in the master plan (Source: TFP Farrells).

图1. 总平图中以绿化带为焦点的Z15塔楼视图（出自：TFP Farrells）

士。（见图9）

项目坐落于贯穿CBD延伸区的开放“绿带”之上，为了与之呼应，总体规划设计了一个沿“绿带”而建的长型公园。公园为住户和用户营造一片心旷神怡之地，提升步行路线的质量。

“绿带”的中心是Z15塔楼，塔楼位置优越，南北两侧都没有其它相邻建筑。为了使“绿带”继续延伸，塔楼的首层中庭设计成为公共空间，连接行人流线，避免了中途的障碍。不仅如此，公众也能够在大楼中获得更多乐趣。（见图10）

## 塔楼

新朝阳中央商务区CBD的Z15大楼由TFP设计，将成为城中最高建筑。该大厦会成为北京的地标，也是标识和中国经济成功的象征。它将成为焦点，并作为综合城市设计的一部分，融入周边环境之中。

Z15独特的“沙漏”外型设计灵感源自于中国古代酒器“尊”。塔楼顺畅的垂直弧形外观赋予其优雅、现代的美态，比传统的直线型大楼更具动感，又见“修长”效果。这使得Z15傲然孑立，成为城市最高建筑的最佳代表。它清晰可辨的外形使之成为北京的地标。塔楼南侧公园中路径的设计巧妙地辉映塔楼外观。通过在绵延的公园和高耸的塔楼之间建立起和谐关系，使Z15浑然融入环境。（见图11）

作为备受瞩目的地标建筑，塔楼是大型城市设计中的重要元素。塔楼以各种方式融入其周边环境。它既与现有地铁站相连，也环绕整个CBD的全新单轨系统接通，都十分方便。塔楼地下层直通地铁站，旁边则为单轨系统车站。四通八达的交通网络意味着在新区工作的75%人口会利用地铁或其它公共交通抵达此处，而非汽车。

整项总体规划的关键之一，是要在场地四周建造良好的步行路线，方便人们来往建筑之间，并连通更大的步行网络。这在北京





Figure 11. The ancient Chinese vessels inspired Z15 Tower features a distinctive “hour-glass” shape and is reflected in the paths of the southern park to creating a harmony link from the landscape to the tower (Source: TFP Farrells).

图1. 以中国古代酒器为灵感的Z15大楼，因其与众不同的沙漏造型而独具特色，同时也反映在南侧公园中，从而在塔楼的景观中建立起和谐的关系（出自：TFP Farrells）

the preconceptions that are widely held in this profession such as the idea that tall buildings are unsustainable.

The towers of the twenty-first century can, with proper planning, be a positive solution to the needs of a growing and maturing economy and society. Well planned high-rise developments offer flexibility, convenience and accessibility—each of these elements presents a very efficient and sustainable way of integrating increasingly complex requirements into one place. The desirable typology promotes efficient integration of infrastructure, activated streetscape, and maximizing the use of air rights. It is important to retain the streetscape regardless of the scale of development, and to create positive connections between towers and their surroundings. Dense development can improve the quality of life by saving commuting time, making cities more carbon efficient, preventing suburban sprawl and allowing more green space to be retained, thus increasing cities’ competitiveness.

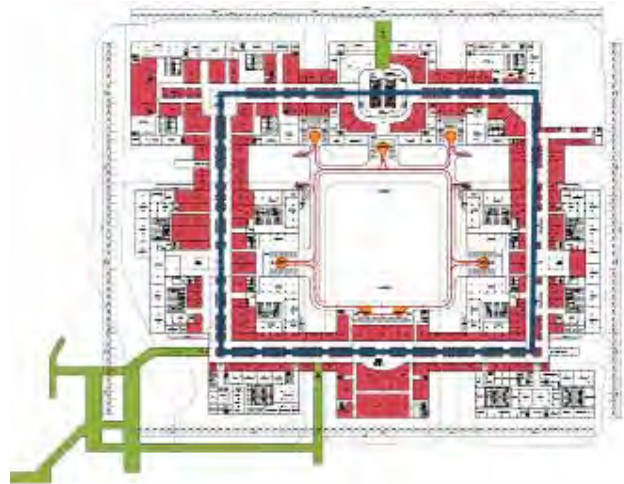


Figure 12. Good pedestrian routes are created around the whole site to ensure positive connection between buildings to reduce barrier to pedestrian movement (Source: TFP Farrells).

图12. 良好的行人路线建立在场地四周以保证建筑之间积极有效的连接，从而降低对步行移动的障碍（出自：TFP Farrells）

尤为重要，因为北京车辆路网宽阔，部份可达12条车道之广，往往对行人造成障碍。为了保证步行流线能渗透城区，总体规划尝试通过共享路面、自然交汇处、车速限制技术、不同路面设计和减少过境交通灯方法，打造强大的步行网络。在塔楼前的长形公园将成为步行网络的中心，鼓励人们多多走动，在项目的心脏地区营造一片宜人的天地。同时，公园也是贯穿于整个CBD的“绿轴”的一部分，代表着它不仅在TFP制定的总体规划中充当连接桥梁的角色，还是大路网的一部分。总体规划中还包括中轴两侧的两条步行路线，它们就像两条商业艺廊，贯穿场地内所有建筑。场地周边发达的步行路线会带动许多活动，同时令该区独当一面。（见图12）

除了和公共交通及步行路线之间有优越的连通性之外，Z15也接通TFP总体规划所拟建的地下街道网络。这些地下街道将场地内所有建筑和地铁站彼此连接起来，并通向东边三环路的另一侧，而原有的CBD正是位于另一侧。

地标建筑的设计者往往面临的挑战是：如何使建筑卓尔不群、拥有个性，同时别具深意的方式确保其与周边环境的关系。Z15顺利地处理了这种矛盾关系，它既是以塔楼为标识的综合总体规划中的一部分，又是综合城市整体中一个不可或缺的成员。通过交通连通性、综合用途规划和塔楼楼顶象征孔明灯的重复造型，Z15与周边环境成为一体，巧妙地将建筑统一起来而又不掩盖其各自风格。

## 结论

向各种地方和不同项目学习，对于在微观和宏观层面积极有效地开展工作非常重要，有助于理解快速的国际化进程、技术变更和我们所有人目前所面临的环境挑战。学习能够让我们对各种重要辩论有更深入的了解，随之对业内所公认的成见发起挑战，例如所有高层建筑都是不可持续的。

在 21 世纪，规划得当的塔楼可为不断发展的经济和社会提供解决方案。规划周详的高层开发项目带来的是灵活性、便利性和可达性 — 每个方面都以高效、可持续的方式将日益复杂的要求整合在一个场所之中。满意的造型更加高效地将基础设施、生气勃勃的街景和上盖空间的最大程度开发充分结合起来。无论项目规模如何，保留街景是非常重要的，在塔楼和周边环境之间建立积极的连接关系也是如此。通过节省通勤时间、降低城市碳排放量、避免向郊区延伸并保留更多绿地，密集的开发项目会改善人们的生活质量，进而提升城市的竞争力。