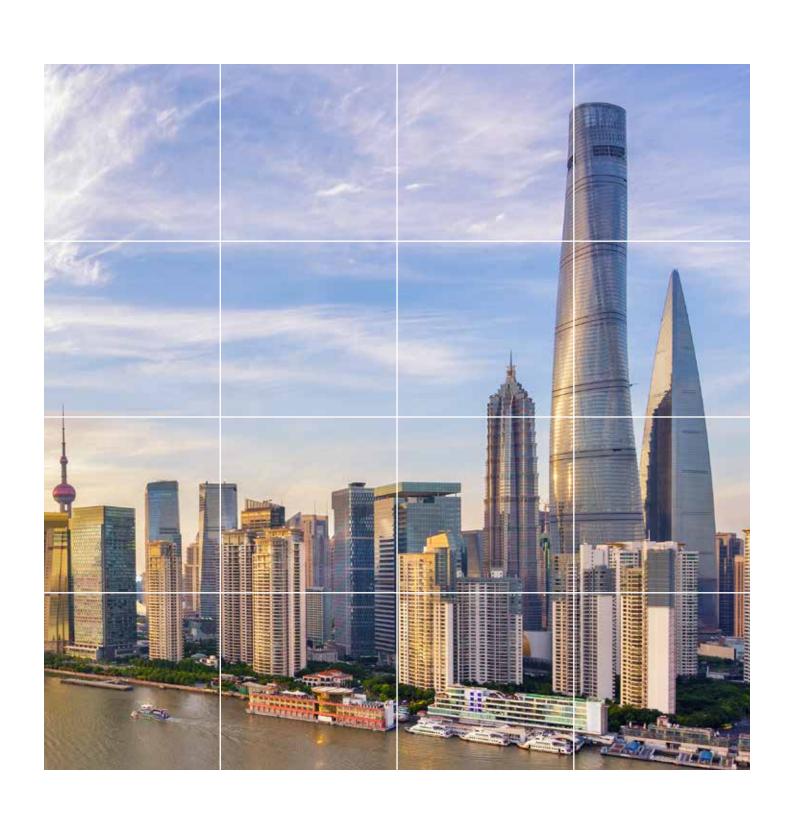
# Mixed use tall buildings — The challenges and benefits of vertical urbanization 综合性高层建筑——垂直城市的挑战和机遇

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# Introduction

China is the global epicenter of mankind's mass urbanization and the exploding growth of global cities. China is the unrivalled leader in the development of tall buildings in terms of their number, geographic distribution and sheer size. This phenomenon is rapidly and dramatically changing the scale of cities in China, and the purpose, function and operation of the buildings of which they are comprised.

The creation of diverse vertical communities, the social, operational and economic challenges they impose, yet with the promise of significant benefits to the health and well-being of the community and other stakeholders, is driving the adoption of new paradigms for the ownership and management of mixed-use tall buildings.

This paper will outline the emergence of mixed use tall buildings in China's cities which support diverse uses and functions. It will explore the economic necessity to incorporate mixed uses and their evolution as a new class of property investment vehicle.

It will present the evolution of ownership and management models and provide insight into the future of the creation, nurturing, sustainment and management of communications in vast vertical urban communities.

In addition to the increase in the size and number of China's tall buildings, the locations are also changing, with development clusters appearing inland from the economically advanced coastal areas of the Pearl River Delta (PRD) and Yangtze River Delta (YRD), within tier two and three cities.

It is well known that the pace of urbanization in China has driven the national housing boom. Yet, that increase in urban population is being incorporated into a larger economic system, from which demand is generated several steps further down the line for commercial use.

The current stock of buildings have been developed in tier one cities within CBD or commercial zones, where there is the demand for commercial mixed use. With the crop of new building locations in tier two and three cities, the mixed use themes are continuing, with the difference being that these developments include residential elements. Development decisions to incorporate residential components do stem from ever growing housing demand, but more so from the need of the developers to generate sales and quick capital returns.

# 引言

中国是全球大规模城市化和城市爆发式增长的中心。在高层建筑的数量、体量和地理分布方面,中国是当之无愧的领头羊,其高层建筑的开发规模史无前例。这些正在快速改变中国的城市规模,以及高层建筑的用途、功能和运营状况。

各种垂直社区的建立,垂直社区给社会、运营和经济方面带来的挑战,以及垂直社区对居民健康等方面以及其他利益相关方可能带来的重大好处,正推动人们在拥有和管理综合性高层建筑时采取新的模式。

本白皮书将简要介绍中国各大城市中拥有各种不同用途和功能的综合性高层建筑的情况,并分析此类高层建筑在不同用途下的经济必要性,以及综合性高层建筑作为一种全新房地产投资工具的发展过程。

本白皮书还将阐释高层建筑的所有权和管理模式的演变过程,并分析未来大型城市垂直社区的建立、培育、维持和管理等问题。

在中国高层建筑数量和体量不断加大的同时,高层建筑的开发地点 也在不断变化,其开发热潮从以往经济发达的珠三角地区和长三角 地区,开始转向内陆二三线城市。

众所周知,中国的快速城镇化进程带动了中国房地产市场的繁荣发展。新增的城镇人口会不断融入一个更大的经济体系之中,并最终带动市场对商业房地产的需求。

目前一线城市的高层建筑主要集中在中央商务区或商业区,在这些地方,市场对综合性商业房地产的需求巨大。随着二三线城市新建高层建筑的崛起,综合性高层建筑的概念也开始流行,它的特别之处在于这些综合性高层建筑也包括住宅部分。将住宅部分纳入综合性高层建筑,一部分原因在于人们对住宅不断增长的需求,但更多是因为开发商希望提高销售额、快速回收资本。

# Community

Once, the cities within North America competed for the race to the sky. But in the 21st century, this race is led by China and the Middle East, both of which have soared ahead.

Chinese cities continue to dominate in the urbanization of the global population. Between 1990 and 2000, more than 150 million people (the equivalent population of Russia) moved to urban life in Chinese cities, with a further 200 million people (the equivalent population of Brazil) added between 2000 and 2010. The urban population is expected to rise further by approximately 190 million this decade (2010-2020).

This unrelenting population transition to cities is challenging China's property developers, owners, investors and designers to provide practical solutions to maximise space utilization and built form efficiency. However, in the design process, the principles of architectural form, efficiency and feasibility remain vital, permeating down into context, which means relating to the city, to the local community, to the building's occupants and, of course, the objectives of the developers and owners.

So, urbanization's primary function is to bring rural residents into cities and incorporate them into the city economy. They become more productive, enhancing the economies of the cities where they reside, and create economic activity that fuels demand for additional services and, of course, multiple forms of real estate.

To date, the current stock of completed tall or supertall buildings in China has not included large elements of residential use. It is obvious that the current stock of buildings have been delivered in a time and in locations where there is a demand for mixed use commercial space. The new crop of buildings in tier two, three and four cities will have to follow different strategies. Strategies to alleviate pressure for financial return and residential demand within locations where the commercial demand will not be sufficient. The under construction, Zhong Nan Center, Suzhou has a small amount of residential units which will be sold for private dwellings.

Vertical stratification - multiple ownership (residential) and sharing the services between public and private use, is a vital factor in the design and management through the operational life of the building. In order to fully extract the social, environmental, community and operational efficiencies, dedicated lobbies and drop-off areas, shared amenity areas, sky gardens and sky lobbies will act as functional spaces which allow the building's and surrounding population, to co-exist. These areas and floors also afford the opportunity to create amenities and meeting spaces while separating the different uses. Largely, these are the principles which drive the thought process in designing these buildings in China.

In China, tradition and beliefs permeate through and shape life. This is not lost in building design and management. The traditions of Feng Shui "wind – water" are often reflected in designs and practice - positioning of objects or structures so as to harmonize with spiritual forces. It is based on a belief in patterns of Yin and Yang and the flow of energies (Chi) that have positive and negative effects. The practice commonly influences orientation, placement, or arrangement. Indeed, masters practicing Feng Shui are consulted in interior and exterior design and finishes, the positioning and orientation of the building itself within the development site, the placing of traditional artwork, water features and sculptures within the building and its surrounding site.

# 社区

个世纪,摩天大楼竞相"攀高"的情况主要出现在北美地区的各大城市。进入21世纪,中国和中东地区的各大城市开始引领这股"攀高"热潮。

在全球的城镇化进程中,中国的各大城市持续占据榜首位置。1990-2000年期间,中国城市的新增人口超过1.5亿(相当于俄罗斯的总人口数);2000-2010年期间,这一数字达到2亿(相当于巴西的总人口数)。预计在这个十年(2010-2020年)期间,中国城市人口将新增大约1.9亿。

城市人口的持续快速增长,使得中国的房地产开发商、业主、投资者和设计单位面临巨大的挑战:要提供切实可行的解决方案,最大限度利用空间,提高建筑利用效率。不过,在建筑设计过程中,建筑形态、利用效率和经济可行性原则依然至关重要,同时要考虑到城市、当地社区、建筑用户的需求以及开发商和业主目标等各种因素。

因此,城镇化的主要功能之一是将农村人口转移到城镇地区,并将其纳入城市经济体中。这些农村人口将进一步提高城市生产力,推动其所在城市经济的发展,创建有助于催生包括房地产在内的各种需求的经济活动。

迄今为止,中国已建成的高层或超高层建筑存量并未包含 大量住宅元素。但显而易见,现有高层建筑的供应时间和 地点恰逢市场对综合性商业空间存在巨大需求之际。二三 四线城市中新建的高层建筑必须遵循不同的策略,即在那 些商业需求不足的地方采取减轻财务回报压力和刺激住宅 需求的方法。例如,目前在建的苏州中心广场就拥有少量 住宅单元,将作为私人住宅对外出售。

在建筑物的运营生命周期内,垂直分层结构——即多个所有权(住宅)以及公共和私人用途共享服务——是建筑物设计和管理过程中一个至关重要的因素。为了充分挖掘建筑物的社会、环境、社区和运营效率功能,各种专用门厅和下客区、共享便利设施、空中花园和空中大厅将作为相关的功能空间,使建筑物内的用户能够与周边人群和谐共存。这些区域和楼层在隔离各种不同用途的同时,还可创建各种便利设施和聚会空间。总体而言,这是中国高层建筑设计过程中着重考虑的因素。



# **Urban Oasis**

Philippine Transmarine Carriers Tower has 8 sky gardens reflecting the 8 main regions of the Philippines incorporated into the design of PTC's mixed use, 400m tower in Manila. The landscaping and plants differ in each garden reflecting these geographic areas, thereby creating a vertical jungle from around the Philippines.

#### 城市绿洲

菲律宾远洋运输大厦(Philippine Transmarine Carriers Tower)是一座地处马尼拉、高400米的超高层综合性建筑,共有8个空中花园,将菲律宾8个主要地区的特点融入了该大厦的设计之中。每个空中花园的景观和植物都各不相同,体现了8个地区的各自特点,创建出一个彰显菲律宾各地特色的垂直森林。



# **Community & Cultural**

Shanghai Tower has incorporated some unique thinking and strategies to engage the building population, the Shanghai community and visitors to the building. A commercial museum has been included on the 27th floor not just to instill and promote culture but to offer exhibition and sales space to private owners of arts and artifacts. The design of the museum is in the style of a traditional Chinese Suzhou garden.

#### 社区和文化

上海中心大厦采用独特的理念和策略,吸引建筑用户、上海市民和游客前来此地。它在第27层修建了一个商业博物馆,一方面用来宣传当地的文化,另一方面用来为各种私人艺术品藏家提供展览空间。该博物馆的设计风格为传统的苏州园林式风格。



#### Feng Shui examples:

- The tradition of placing Chinese coins into the foundations of buildings as representing stability and wealth.
- Ancient stone pieces brought in from provinces around China and placed in locations and positions within the building to promote Qi – positive energy and forces.
- Incorporating the Five Elements or Forces (wu xing) which in China are metal, earth, fire, water, and wood - in essence, rather than in actual substance.

#### 风水

- 将中国硬币放入建筑物地基,象征稳定和财富;
- 将来自中国各地的古代石料放入建筑物所在的位置,以提升阳气;
- 纳入"五行"——金木水火土,并非是人类生活中必不可少的实际物质。

# **Economic feasibility**

China's city skylines are being dominated by tall buildings which are becoming taller with more ambitious and unique designs. As well as providing a practical solution to maximise space utilization in China's ever expanding and densely populated cities, these tall buildings are a way for the cities to project their wealth and ambitions for the future.

Tall buildings have moved from being institutional investment vehicles to trophy statements whose value is determined by parameters other than simple return on investment. The incorporation of mixed use reduces risk through diversification, as well as offering the opportunity to pre-sell where there is a residential component and to attract equity from different groups for different components.

Looking purely at the building form itself then the floor space inefficiencies, higher construction costs and longer time frame for development of buildings over say 80+ storeys, are rarely justified by the real estate value in a typical free market economy. Usually, investors would value the property at the entry NOI cap rate of 4% for the commercial office portion and probably at a rate of 5% for the hotel portion (depending on the performance of the hotel). Given the prime location and the absence of land supply in such areas, it's believed the interest level would be quite high for such trophy assets.

However, being "supertall" doesn't seem to measure up to the typical financial metrics, unless the value created for a larger development area (eg Downtown in Dubai for Burj Khalifa, KLCC for the Petronas Towers, North Jeddah for Kingdom Tower, WTC in New York) can be captured. In these examples the tall building is the catalyst for the creation of a community of mixed use development around it.

The incorporation of tourism facilities, and particularly observation decks, provides an essential plank to underpin the financial viability of most mixed use tall buildings. Anecdotally, the revenue generated from Shanghai World Financial Center commercial and public observation desks is close to the rental revenue generated within the building. This revenue forms part of the evaluation of the buildings net operating income and eventual valuation.

It could be argued that the traditional thinking on how to value buildings should not apply to buildings such as Shanghai Tower. How should we view the efficiency of such buildings when, by definition, their DNA and design must deviate from the standard to set new boundaries and instill new concepts around social cohesion and place making? In short, the traditional view surrounding efficiencies should change when thinking about these buildings. The amenity areas should not be viewed as common areas and as such excluded totally in these calculations. These exist like parks and gardens in normal city planning to promote and create better life. This is sharing of space within the building to promote interaction and social cohesion. In the case of Shanghai Tower, the design team sought to mirror the original gardens and parks in traditional cityscape and planning, albeit now reflected into the vertical city to replicate original thinking and retain traditional city planning paradigms – the city re-imaged!

# 经济活力

目前,高层建筑主导了中国的城市天际线,这些规模宏大的高层建筑不断刷新高度纪录,设计也更加独特。除了在人口不断增多的中国城市中提供一个最大限度利用空间的实用解决方案外,这些高层建筑也是这些城市显示其未来财富和雄心的方式之一。

高层建筑已从此前的机构投资工具转变为彰显身价的"炫耀性"资产——炫耀性资产的价值是由各种参数而非投资回报来决定的。综合性用途建筑可通过多元化经营降低风险,预售住宅部分,同时吸引不同群体参与到对不同建筑部分的投资。

在一个典型的自由市场经济体中,如果仅仅看建筑形态本身,那么开发低效利用楼层空间、有更高的施工成本和更长的开发期的80层以上超高层建筑物,很少取决于其房地产价值。投资者通常按照4%的净运营收入资本化率来估算商业办公楼部分的价值,按照5%的净运营收入资本化率来估算酒店部分的价值(基于酒店的绩效)。鉴于此类地区通常地段优越且土地供应匮乏,投资者对此类炫耀性资产的关注度将很高。

不过,除非可以为更大面积的开发区(如哈利法塔之于迪 拜市中心区;双子塔之于吉隆坡市中心;国王塔之于吉达 北区;世贸中心之于纽约市)创造价值,否则超高层建筑 并不能达到典型的财务指标要求。在上述这些地区,高层 建筑成为了促进周边地区创建综合性社区的催化剂。

将旅游设施,特别是观景台纳入其中,可以支撑绝大多数综合性高层建筑尽可能达到财务平衡。据传,上海环球金融中心商用公共观景台所创造的收入接近大楼的租金收入。该项收入构成了建筑物净运营收入估值和最终估值的一个重要组成部分。

有人认为,传统的建筑物估值思维已不适用于上海中心大 厦等高层建筑。那么,我们应该如何看待这些高层建筑的 使用效率呢?特别是按照定义,这些高层建筑的基因和设 计必须区别于传统标准,应确立新的标准,并注入会融 合和地方营造等全新理念。简而言之,在分析这些高层建 筑的使用效率时,不能再套用传统思维。不应将便利设施 区视为公共区,在计算公共区时应完全将其排除。为提倡 和创建更为优质的生活,城市规划中通常都会有公园和花园等建设规划。比如,上海中心大厦的设计团队当初就寻 求传统城市景观和规划中的公园和花园设计,不过现在已 将这种理念融入到垂直城市中,在复制最初理念的城市规划范式,从而使得整个垂直城市的面 貌焕然一新。



# Property management in partnerships

Whilst the traditional aspects of property management are vitally important to daily operation, other less traditional and even more complex challenges present themselves when designing the management regime and operating a mixed use vertical village or town and its surrounding development.

The population of the property depends on the property manager for access to workspace, shopping, entertainment, leisure, culture, public services and transportation. In China, with first State Owned Enterprises ownership the building or development will act as a focal point for government and public administration, hubs of infrastructure and natural locations for gatherings as well as trade and commerce - it is therefore difficult to overstate their importance. In a very real sense, they are everyone's neighbourhood and their management is central to the prosperity and well-being of whole communities.

Going forward, the need for effective and specialist management will be demonstrated by urban flows to Chinese cities. The Government's commitment to mixed use development policy is encouraging SOEs, the private sector, property owners, the community and the local Government to develop collective management initiatives.

The task in-hand is to co-ordinate pro-active initiatives designed to ensure desirable and attractive places. To achieve this, property management partnerships are formed between the key stakeholders of owners, occupiers and a property manager thereby bringing together a wide-range of key interests. These interests being to promote the vitality and viability of the development and establish and maintain its key role as the lifeblood of its community.

With senior representation from the key stakeholders, the management initiatives develop, or support the development of, a widely-adopted vision and strategy. Successful strategies are broadranging in approach, typically covering the development of what is on offer to attract people and investment, better environment, wellbeing, quality and security.

What makes the management partnership effective is that it plays a key role in delivering the strategic objectives. Action plans identify how the strategy is to be delivered and the partnership acts as the driving force in ensuring that delivery takes place. The combination of vision, strategy and action plan, the wide-ranging partnerships and the effective support and involvement of key interests through the cooperative groups means that development can:

- · create multiple use environments that are clean and safe
- provide efficient transport, parking, orientation and accessibility for multiple uses
- vitality through proactive marketing and events programmes
- · create and develop branding
- celebrate local heritage through tourism and destination management
- expand opportunities in the local community through developing training and employment programmes
- increase choice and diversity by promoting and integrating new amenities, residential development and a 24/7 economy
- enhance quality through public art and creation of public realm spaces
- ensure that the development is welcoming to all and offers an experience worth having

# 合作开展物业管理

在设计综合性的垂直村落、垂直城镇及其周边开发项目的管理体系和实际开展运营时,物业管理中的传统要素对于建筑物的日常运营来说至关重要;与此同时,其他非传统和更为错综复杂的要素也给这些高层建筑的物业管理带来挑战。

通常,高层建筑的用户通过物业管理方出入工作地点、购物娱乐、休闲文化以及公共服务和交通等空间设施。在中国,如果高层建筑归国有企业所有,建筑或开发项目将作为政府和公共管理部门的活动地点、基础设施中心以及聚会和商贸活动的不二之选。因此,高层建筑物业管理的重要性不言而喻。事实上,高层建筑是属于所有人的社区,其管理水平对于整个社区的繁荣发展至关重要。

展望今后,随着中国城市人口的增加,要求高层建筑必须 开展更有效的专业化服务管理。政府对综合性开发项目的 支持政策,会推动国有企业、私营部门、物业业主、社区 和当地政府共同制定出针对高层建筑的合作管理计划。

他们的另外一项任务是协调各种不同的物业管理计划,确保这些建筑成为受人欢迎的场所。要实现这种物业管理方式,物业业主、租户和物业管理方等主要利益相关方必须开展合作,从而协调各主要利益,推动开发项目的繁荣发展,并使之在社区的发展中发挥关键作用。

物业管理公司由来自关键利益相关方的高级代表组成,负 责制定物业管理的目标和策略,并提供相关支持。成功的 物业管理策略涉及各种管理方法,通常包括如何吸引人员 和投资、改善环境、福利和安全状况等各种行动方案。

合作管理伙伴关系之所以有效,是因为它能在实现物业管理的战略目标方面发挥关键作用。"行动计划"旨在确保物业管理策略的实施。物业管理合作伙伴关系将作为确保物业管理策略得以顺利实施的驱动力。物业管理目标、策略和行动计划、广泛的合作伙伴关系以及关键相关利益方的有效支持和参与,将推动开发项目实现以下目标:

- 创建一个整洁、安全的多用途环境
- 为不同用户提供有效的运输、停车、定位和出入支持
- 通过积极主动的营销和活动计划为物业的发展带来活力
- 开展品牌推广
- 通过旅游和目的地管理, 为当地创建遗产
- 通过建立培训和就业计划,为当地社区创造更多的就业机会
- 通过推广和整合新的便利设施、住宅开发项目和全天候 经济,增加选择性和多样性
- 通过公共艺术和创建公共空间,提升居民生活质量
- 确保开发项目受到所有人的青睐,并获得物有所值的体验

# Social Cohesion through placemaking

Placemaking is not a new idea - the thinking behind "placemaking" gained traction in the 1960s, with groundbreaking ideas about designing cities for people, not just cars and shopping centers.

Placemaking inspires people to collectively imagine and invent public spaces as the heart of every community. Strengthening the connection between people and the places they share. Placemaking refers to a collaborative process by which we can shape our public and private realms in order to maximize shared value.

Tall and supertall buildings in China will be organic places attracting people to work, visit and live within its rapidly growing cities. Planning and investment at an early stage is needed to send a strong and clear message to the market of a place where employees and residential investors will enjoy working, socializing and living.

Social interaction will need to be purposefully planned for, and encouraged through the design of the project, choice and placement of amenities, and programming. The thought process must be careful to avoid creating amenities without interest. In Shanghai Tower and Ping An FC the plan is to experience and use large civic spaces or plazas, sky lobbies including medical facilities / learning centres / kindergartens and learning facilities with activated public spaces encouraging pedestrian and surrounding area engagement; lots of plazas, amenities, open spaces promoting events and activities, entertainment, social interaction, events and art.

More is achieved by working together – by pooling skills and ideas and by working towards influencing and achieving positive outcomes. The management partnership shares two key goals:

- to ensure the development is appealing and a vibrant destination to live in, work in and visit, and
- to ensure the continuing development and management of those qualities that make it interesting, fun and different from other places.

More than just promoting operational effectiveness, the management partnership should create a blend of form, function, of utility and livability. People-friendly spaces with civic spaces paying particular attention to the physical, cultural, and social identities that define the building and its surrounding space and support its ongoing evolution.

With community-based participation at its center, an effective management process will capitalize on the building community's assets, inspiration, and potential, resulting in the creation of quality public spaces that contribute to its population's health, happiness, and well-being.

Placemaking within the tall building will show its population just how powerful the collective vision can be. To imagine everyday spaces within a confinement of its structure, and to see the thought and vision of the designers and operators in recreating amenity areas such as parks, meeting areas and plazas, neighborhoods and retail in a vertical environment.



# 通过场所营造促进社会融合

场所营造(Placemaking)并非一个新概念——这一思路早在上世纪六十年代就备受瞩目,它创造性地提出了"城市设计是为了人、而非为了车辆和购物中心"的理念。

场所营造激发人们以群体的方式把公共空间想象并打造成 每个社区的核心。场所营造加深了人与公共场所的联系, 是指一种协作的流程,人们可以据此塑造公共领域,最大 限度实现共享价值。

在中国迅猛发展的城市中,高层和超高层建筑将成为吸引人 们前来工作、参观和生活的有机体。这些高层建筑必须在早 期开展有效的规划和投资,向市场明确传达上述信息。

在项目的设计、便利设施的选择、部署以及计划的安排方面,必须明确规划和鼓励社交互动,必须按照规划精心开展行动,避免便利设施无人问津。比如,上海中心大厦和深圳平安金融中心就计划开发和利用大型的广场、空中大厅、医疗中心/学习中心/幼儿园、拥有公共活动空间的学习设施,鼓励行人和周边社区的居民来利用这些公共空间,参与各种娱乐、社交、展览和艺术活动等。

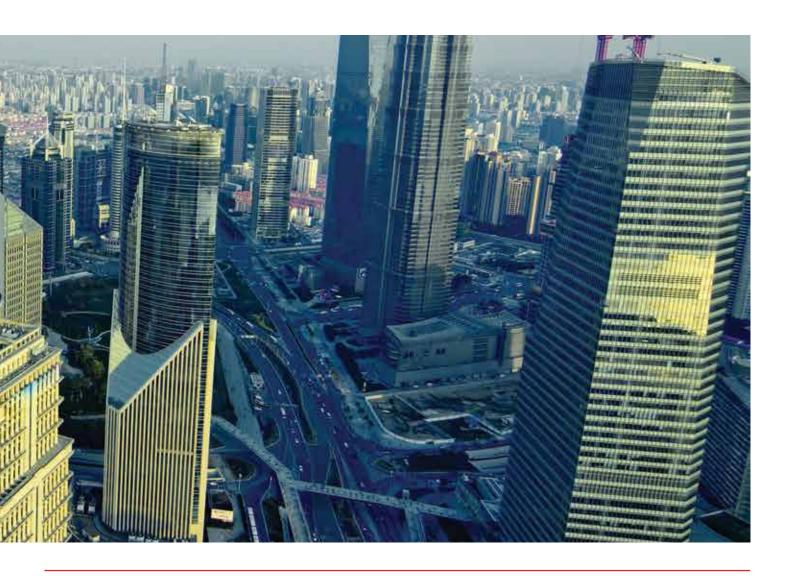
通过开展合作,采集各方的技能和创意,创造各种积极的成果。合作管理伙伴计划包括两大目标:

- 确保开发项目富有吸引力,成为人们愿意生活、工作和 参观的目的地;
- 确保这些优质设施不断被开发和管理,使之成为有别于其它地方的富有乐趣之地。

合作管理伙伴关系除了提高高层建筑运营的效率外,还应将建筑形态、功能、实用性和宜居性融为一体。公共空间应以人为本,应特别关注决定建筑物及其周边社区的实体、文化和社会认同等因素,为其不断繁荣发展提供支持。

以社区互动为核心组成部分,一个有效的物业管理流程将 利用高层建筑的社区资产、灵感和潜力,创建一个优质的 公共空间,促进用户和当地人口的健康发展。

高层建筑内的场所营造将向用户展示一个共享目标可以发挥的巨大作用。设计单位和运营商在一个垂直的受限制的建筑结构内设计出各种日常工作和生活空间,并创建出公园、会议室、广场、社区和零售空间等各种便利设施。





#### Conclusion

In China, property management continues to evolve and respond to the new challenges of the economic forces, urbanization and fastpaced expansion of its cities and their development of supertall and mixed use developments with multiple owners.

The challenge is to keep up with, and ensure the skills and know-how is in place to enable these developments to achieve the expectations placed on them by the Government, its owners and population.

Management initiatives created by key stakeholders are bringing about real change in the way properties are managed, owned and valued. At one level we are seeing an improvement in environmental quality with sustainable thinking and accreditation, planting, greening, cleansing and community initiative schemes, and this is making these places attractive places to visit or in which to work and trade. The more strategic initiatives are playing a key role in attracting substantial investment into the cities; in helping to resolve the pressures of urbanisation, transport and access deficiencies; in making places people want to live and visit; alongside creating vibrant trading and business environments.

# 结论

在中国,由于在各种经济因素、城镇化、城市以及多业主的 超高层建筑和综合性开发项目的快速发展等方面面临诸多全 新挑战,高层建筑的物业管理方式也必须随之不断演变。

要使这些综合性高层建筑项目实现政府、业主和用户的期望目标,必须确保物业管理方拥有必要的技能和专业知识。

由关键利益相关方共同建立的合作管理计划,正使高层建筑的物业管理、持有和估值方式发生巨大的变化。一方面,我们看到,在可持续发展和认证、绿化、保洁和社区计划的推动下,高层建筑的环境质量已得到改善,使得这些高层建筑成为人们乐于去工作、生活或参观之地。另一方面,许多更具战略意义的高层建筑管理计划正发挥重要作用,其作用包括:吸引大量的投资到各城市;帮助减轻城镇化的压力、应对交通运输方面的不足;创建具有活力的商贸环境等。

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