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# A 21st Century Vision for Chinese Cities

## 21世纪中国城市发展展望



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Philip Enquist leads the global city design practice of Skidmore, Owings & Merrill LLP (SOM), the world's most highly awarded urban planning group. Phil and his studios have improved the quality and efficiency of city living on five continents by creating location-unique strategic designs that integrate nature and urban density within a framework of future-focused public infrastructure. The scale of his design perspective continues to expand from innovating sustainable urban forms to rapidly changing urban clusters within regional ecosystems like North America's Great Lakes basin and China's Bohai Rim.

Philip Enquist先生领导着世界上广受赞誉的SOM城市规划团队，在世界各地不断开拓城市规划设计。Phil先生及其设计团队，在设计中，根据当地独特的地理位置，着眼于未来公共基础设施，兼顾自然和城市密度，提高了五大洲多个城市的生活质量和效率。Phil先生将注重尺度的设计理念从创新可持续性发展的城市形态扩展至地区性生态系统内快速变化的城市组团，例如北美的五大湖区域以及中国环渤海区域。

### Abstract

This overview of contemporary city planning in China will address a range of challenges facing urban areas today: rapid urbanization, energy demands, air pollution, water shortages, traffic congestion, real estate dynamics, and declines in local identity and quality of life. A series of planning strategies—illustrated through recent urban design case studies—provide smarter ways to approach the design of China's next generation of urban development

**Keywords: China, Urban Design, City Planning, SOM**

### 摘要

当代中国的城市规划面临着许多挑战，其中包括：快速的城市化进程、能源需求、空气污染、水资源短缺、交通堵塞、房地产不稳定、以及地方特色衰减与生活品质下降等，本文通过最近完成的城市设计案例所阐明的一系列规划策略，概述了中国当代城市规划如何应对这些今天城市面临的挑战，并提出更为优化的中国城市下一阶段发展的设计方法。

**关键词：中国，城市设计，城市规划，SOM设计事务所**

### The Century Of Cities: Big City Planning

What is big city planning and how is it relevant to the global community?

There are trends that point to the essential need to take a broader view of urban patterns and urban designs. Big City is maybe the wrong title, as it implies an isolated view of the city as an object, when in fact cities are all interconnected and their impact upon the earth is substantial.

The design community is thoroughly aware that over half of the world's population is living in cities, with perhaps the most powerful trend being that by 2050, 70 percent of the world's population will be living in cities. In 2050, the world will be home to somewhere between 8 and 10 billion people, with 5 to 7 billion of those people living in urban centers. Chinese cities are expecting an influx of around 400 million people, while India estimates a migration of 200 million people to its developing cities.

Understandably, there is a lot riding on cities. They must perform as:

- Economic engines
- Intellectual capital centers
- Educational centers

### 21世纪的城市：大城市的规划

什么是大城市的规划？它又是如何同全球社会相关联的？

着眼于更广泛地审视城市模式和城市设计需求，是当前规划设计的趋势。在这里，大城市也许并不是一个恰当的标题，因为它暗示了将城市作为一个孤立的实体看待，而事实上，城市间都是相互关联的，而且每一个城市对于我们所居住的地球都具有非常重要的影响。

设计师们非常清楚地意识到全球一半以上的人口都生活在城市中。而到2050年，这一趋势将会显得更为显著，到那时全球大约百分之七十的人口都将生活在城市中。到2050年，全球的人口总数预计将会达到80亿到100亿之间，其中有50亿到70亿的人口生活在城市中心地带。届时中国的人口预计将会比现在增加大约4亿。而印度估计将会有2亿人口迁移至发展中的城市。可以理解的是，有许多因素推进了城市化的进程，主要包括：

- 经济引擎
- 知识资本中心
- 教育中心
- 创新性思想中心
- 提供高品质、且经济可行的生活环境

- Centers of innovative thought
- Environments that offer quality, yet affordability

Cities are also where 75 percent of carbon dioxide emissions originate, which makes them our best bet for solving the environmental dilemmas facing our world.

The design community is becoming aware of the importance of looking bigger. A few years ago, when organizing the Venice Biennale, Aaron Betsky said, "Urban planning is dead." Nelda Rodger wrote: "How far out of fashion big picture planning has fallen is reflected in the fact that it was not included at all in the Venice Biennale which was entitled 'Out There: Architecture Beyond Building.'" However, in the last few years, with the realization that climate change is real, and that energy production and water use has to change, what we do with our waste and how we use our resources needs to be rethought. There is a new energy around the subject of thinking bigger.

### The Endless City

In 2010, Mark Magazine, published a two page article and graphic map called "The Endless City". The feature summarizes the dynamic sprawling growth of many urban regions around the world, and how they are starting to merge into each other. This growth thereby creates one, continuous urban settlement across the northern hemisphere of the globe, from the European core, across Asia, thru a tunnel link from Siberia to Alaska, and across the United States and Canada. One continuous urban stretch across the Northern Hemisphere is a daunting prospect.

The UN-Habitat report State of the World Cities claims that the phenomenon of the so called "Endless City" could be one of the most significant challenges for the way people live and economies operate in the next 50 years. Will cities or urban regions be more important than national governments? Will cities be capable of addressing the major problems facing us in terms of emissions, natural resources, climate change? Are cities really a major part of our solution? Coincidentally China, announced that the Pearl River Delta could be merged as one metropolis, one city out of many that would equate to over 40 million people. Urban designers are also seeing that, due to the high speed rail, Northern Chinese cities like Beijing, Tianjin and the Port areas are now linked and working as one diverse economy in the Bohai region.

### The Design Of The World

There is no master plan at the scale of the World. There is no global transportation plan, no global energy plan, and no global plan of how to manage, nurture and use our natural resources. Our challenge today, as Bruce Mau says, is "not about the world of design, it's about the design of the world. ... There is only one city, the global city, and we all live in it. It is time to scale design to the scale of ecology."

The Mark article notes, "The Endless City is the result of a myriad of minds, and it impacts people of all cultures. Planning becomes evident only at connection points between systems: at spots where dissimilar track gauges have to be bridged. The more the Endless City expands, the greater our awareness of the as yet unaffected parts." In other words, what is left of the pre-urban past, the areas yet unaffected by the human race? What areas will be affected and how does the World survive this growth? As city planners, how do we get in sync with the world, as it continues to expand? From the rapid fire growth of China's

同时城市也产生了大约75%的二氧化碳排放物。因此，解决世界面临的环境问题的最佳切入点正是城市本身。

设计师们也逐步意识到了整体性思考的重要性。几年前，在组织威尼斯建筑双年展时，Aaron Betsky指出“城市规划已经死亡”。Nelda Rodger则写道：“总体规划已经过时，在名为‘超越：建筑不仅仅是楼房’的威尼斯建筑双年展中”就具体体现出这样一种状况。但是，在过去几年中，人们日益意识到气候的变化，能源的产生及水资源利用方面发生的变化，我们需要重新思考考虑废物处理的方式，以及未来资源利用的方式。因此，整体性思考中加入新能源的考虑成为新的课题。

### 无尽的都市

2010年，《Mark杂志》刊登了一篇两页的文章，以及名为“无边界的都市”的地图。该特辑简要描述了世界各地众多城市化地区不断扩张与蔓延的现象，以及这些城市如何开始彼此融合，这种发展态势创造了一个绵延整个北半球、连续不断的城市群体。它从欧洲核心地带开始，穿过整个亚洲，通过海峡由西伯利亚到达阿拉斯加，然后穿越了整个美国和加拿大。这一穿越整个北半球的连绵不断的城市延伸体向世人呈现出一个令人望之生畏的浩大工程。

联合国人居署在其报告《世界城市现状报告》中声称，所谓“无尽的城市”的现象，可能是今后五十年中，对于人类生存方式和经济运行体制最为重大的挑战之一。城市或城市化区域是否会比国家政府更为重要呢？城市是否能够应对我们在排放物、自然资源、气候变化等方面所面临的重大问题？城市是否真的是我们解决方案中的主要部分？无独有偶，中国宣布珠江三角洲地区将合并为一个大都市，一个包含许多超4000万人口城市的超级都市。城市设计师们也清楚地意识到，由于高铁的发展，中国北方城市（例如北京、天津以及港口地区等）目前已经被连接在一起，并环绕渤海区域形成了一个多元化的经济体。

### 世界范围的设计

目前并没有涵盖整个世界范围的总体规划，也没有世界范围的交通规划、能源计划，及任何关于如何管理、生产和使用我们的自然资源的全球性计划。正如Bruce Mau所说，我们目前所面临的挑战“并非是设计世界，而是着眼于世界范围的设计...只有一座城市，即世界之城，我们都生活在其中。是应该把设计的范围扩大到整个生态环境范畴的时候了。”

《Mark杂志》的文章中指出，“无尽的城市是各种思想的结晶，并对不同文化背景的人群产生了深远的影响。规划只有在不同系统的衔接处才明显：在这里不同的轨距连接在一起。无尽的城市越扩展，我们对目前尚未受影响部分的了解也越多”。换言之，那些在城市建立前未受人类影响的区域都有什么呢？哪些区域会受到影响？世界又将如何在这一发展过程中生存？作为城市规划师，当世界不断扩展时，我们如何同其与时俱进？从中国环太平洋城市的快速发展，到中东城市的起步与停滞，美国众多城市的挣扎、衰退与萎缩，以及欧洲城市的精细填补，这一复杂的课题与我们的生活息息相关。

### 超级都市群的趋势

《Mark杂志》的文章是基于联合国的数据及其他资料来源（包括2050年美国）而撰写的，认为，世界正演变为全球五座超级都市群和超过三十座大城市群。

这五座超级都市群包括：

Pacific Rim Cities, to the starts and stops of Middle Eastern Cities, to the struggles, and in many cases, decline and shrinkage of American Cities and the surgical infill of European Cities, we all are living and breathing this complicated subject.

## The Super Megalopolis Trend

The Mark article, based on United Nations data and other sources, including America 2050, states that the world is seeing the evolution of five super-megalopolises and over 30 smaller megalopolises across the globe.

The five include:

**Gangetic Plain.** The largest urban region is what is referred to as the Gangetic Plain. This 250,000,000 population region stretches from Pakistan through the northern districts of India to Bangladesh and butts up against Myanmar.

**Bohai Rim.** The second is the Bohai Rim, made up of over 200,000,000 people. Following the east coast of China, it stretches from north of Beijing and Dalian to just north of Shanghai.

**Yangtze River Valley.** The third, almost the same in size, 200,000,000 people, follows the Yangtze River and stretches from Shanghai inland to Chengdu and Chongqing.

**European Core.** The fourth is the European core, dropping to about 100,000,000 people and stretching from the United Kingdom, through Europe to northern Italy.

**The Great Lakes.** Surprisingly, the fifth is North America's Great Lakes corridor, home to 60,000,000 people in both Canada and the US. Liberally going from Minneapolis across the Great Lakes and grabbing many post industrial cities along the way, until it reaches Quebec and the St. Lawrence River.

The advantage of these mega urban places, according to the UN, is that they cover a tiny fraction of the planet's habitable surface while accounting for 66 percent of all economic activity and about 85 percent of all technological and scientific innovation. These places are the centers of innovative thought; they are global universities for invention and likely the source of our solutions to these global challenges.

## The Century Of Cities

What are some of the biggest issues we are facing in this Century of Cities?

### Rapid Growth of Asia and Africa

Today, more than 70 per cent of the populations of Europe, North America and Latin America are already urban. However, Asia and Africa are around 40 percent urban today and will rapidly get up to 70 percent in this century. In the last two decades, the urban population of the developing world has grown by an average of 3 million people per week. China will be 70 percent urban by 2050. India will be 55 percent urban by 2050. Africa will be 50 per cent urban by 2050.

### Shrinking Cities

The population of 46 countries, including Germany, Italy, Japan, and most former-Soviet states are expected to be smaller in 2050 than today. In the past 30 years, more cities in the developed world shrank than grew. In the United States, 39 cities have endured population loss. How are urban designers prepared to address the issues associated with city shrinkage? If not for immigration, the U.S. would see cities decline in population. Detroit is a great example of this dilemma.

**恒河平原。**全球最大的城市区域为恒河平原区域。该区域拥有2亿5千万人口，其范围从巴基斯坦开始，通过印度北部区域一直延伸到孟加拉国，直到与缅甸连接。

**环渤海区域。**第二大城市区域是环渤海区域，包含了超过2亿的人口。该区域在中国东部海岸，从北京北部和大连延伸到了上海以北。

**长江流域。**第三大城市区域也具有2亿的人口，该区域沿着长江沿岸，从上海内陆延伸到成都和重庆。

**欧洲核心区。**第四大城市区域为欧洲核心区，人口大约有1亿。从英国开始，通过欧洲大陆延伸到了意大利北部。

**大湖区。**出人意料的是，第五大城市区域为北美的五大湖地带，区内容纳了加拿大及美国的6千万人口。从明尼阿波利斯开始，穿过整个大湖区域，包含沿途众多后工业城市，直至魁北克和圣劳伦斯河。

根据联合国的资料，该类特大城市区域的优点在于，它们只覆盖了地球居住环境表面的很小一部分，却又同时占大约所有经济活动的66%，以及大约85%的科学与技术创新项目。这些区域是创新思想的中心，也是为应对全球化挑战提供创新方法和资源的全球性大学。

## 本世纪的城市

在本世纪的城市里，哪些是我们所面临的最严重问题？

### 亚洲与非洲的快速成长

如今，70%以上的欧洲、北美和拉丁美洲人口已经居住在城市中。但是，亚洲和非洲目前只有大约40%的人口居住在城市中，并且会在本世纪内迅速增加到70%。在过去二十年中，发展中国家的城市人口以平均每周三百万人口的水平在增长。至2050年，中国的城市化人口将达到70%；印度将达到55%，而非洲将会达到50%。

### 城市的萎缩

预计到2050年，有46个国家的人口（包括德国、意大利、日本和大多数前苏联国家）将会少于目前的人口数量。在过去30年中，在发达国家里，越来越多的城市开始萎缩而不是增长。在美国，有39座城市出现了人口流失的情况。城市设计师们将会如何应对与城市萎缩相关的各种问题？如果没有移民，美国还会有更多的城市出现人口下降的情况。底特律就是这一问题的突出案例。

### 贫困

“在发展中国家，三分之一的城市人口都居住在贫民窟内。”  
- 摘自联合国人居署的报告。

这些地区存在以下问题：

- 洁净水缺乏
- 卫生设施缺乏
- 教育缺乏
- 经济适用房缺乏
- 居住面积不足
- 安全
- 健康
- 新鲜食物获取

由于这些以及其他日益严重日常生活中的问题，这些城市挣扎于本土化与健康威胁的环境问题。这些城市

处于“褐色议程”，根本没有能力采纳绿色倡议保护环境活动进程（即“绿色议程”）并预期未来的发展机遇。



## Poverty

“One out of every three people living in cities of the developing world lives in a slum.” - UN-Habitat

Issues include:

- Lack of access to clean water
- Lack of access to sanitation
- Lack of education
- Lack of affordable housing
- Insufficient living areas
- Security
- Health
- Access to fresh food

Because of these and other critical day to day issues, Cities struggle with localized and health threatening environmental issues. They seemingly subscribe to a “brown agenda”, rather than having the ability to adopt a “green agenda” and anticipate future opportunities.

## Climate Change and Coastal Cities

“The low elevation coastal zone, the continuous area along coastlines that is less than 10 meters above sea level, represents 10 percent of the world’s population.” - UN-Habitat

This statistic translates into 600,000,000 people living at risk to rising sea level. Without going into much detail, it is clear that, after watching the devastation of New Orleans and the Gulf Coast during the Katrina hurricane, the globe is in for a volatile century. New developments, especially in places like Vietnam, Bangladesh, Florida, Louisiana and other low lying regions, must anticipate this threat.

## Cities, Carbon Emissions and Water

Urban areas translate into higher quality lifestyles and larger centers of industry, thereby producing higher levels of energy consumption and water usage. North America, Europe, Russia, China and India now contribute most of the global emissions. In 2007, China surpassed the United States in greenhouse gas emissions. Access to fresh water will continue to be a challenge to most urban regions.

## An Aging World

Even though the world’s population will increase by roughly 1/3rd over the next 40 years, from 6 to 9 billion, it is a very different mix of people than ever before. It is driven, not by birth rates, which are significantly down, but by an increase in the number of elderly people. The global population of children under 5 is expected to fall by 49 million as of mid century, while the number of people over 60 will grow by 1.2 billion. This is somewhat tied to technological advancements in health care but also tied to trends such as urbanized people having fewer children, expanded work opportunities for women, and benefits for retirement that don’t require large families to support the elderly.

## Forward Thinking Principles

### Staying Compact and Connected

Robert Lucas, Nobel Laureate, recently stated, “If we postulate only the usual list of economic forces, cities should fly apart. The theory of production contains nothing to hold a city together. A city is simply a collection of factors of production: capital, people and land, and land is always far cheaper outside cities than inside. What can people be paying Manhattan or downtown Chicago rents for, if not being near other people?”

## 气候变化与沿海城市

“全世界10%的人口，居住在低海拔沿海区域，以及海拔10米以下的沿海岸线的区域。” - 摘自联合国人居署的报道。

该项统计数据意味着，有6亿人口居住在海平面上升的危险区域内。不需太多详细的说明我们就可以很清楚地看出，在卡特里娜飓风造成新奥尔良市和墨西哥湾沿岸的灾难之后，全球进入了一个气候多变的世纪。新的开发项目，尤其是在越南、孟加拉国、佛罗里达、路易斯安那以及其它低势地区的开发项目，必须预见这一威胁。

## 城市、碳排放与水资源

城市转变成高品质生活区域和较大的产业中心，导致了更大程度的能源和用水量的需求。北美、欧洲、俄罗斯、中国和印度是目前全球最大的温室气体排放国。2007年，中国在温室气体排放量方面超过了美国，淡水资源仍将是大多数城市区域所面临的一项严峻挑战。

## 世界人口老龄化

尽管在今后40年内，世界人口将会增长大约1/3，即从60亿增加到90亿，但是人口的组成却与以往大相

径庭，这并非是由于出生率显著下降，而是由于老年人口数量不断增加的原因所造成的。到本世纪中叶，

预计全球5岁以下儿童的人口数量将会减少4900万，而60岁以上人口数量则会增加12亿。从某种程度上，这一情况同医疗保健体系的科技进步有关，但是也与以下因素相关联，诸如：城市居民拥有较少的子

女，妇女拥有更多的就业机会，良好的退休福利无需大家庭来赡养老人。

## 前瞻性的思考原则

### 保持紧凑和联系

诺贝尔奖获得者，Robert Lucas最近指出，“如果我们仅依靠一般的经济力量，那么城市将不会存在。生产论并不能维护城市的整体性。城市是各种生产要素如资金、人与土地等的集合，而城市外的土地通常都要比城市内的土地便宜的多，如果人们不是为了与其他人更加靠近，那么他们为什么要支付在曼哈顿或芝加哥市中心的昂贵租金呢？”

要想显著降低碳排放量、改善人们的日常生活环境、并为家庭成员提供更好的教育和成长环境，其中一种方法是使城市保持紧凑型发展。提供替代汽车的交通方式、沿公交线布置建筑群、在城市区域设置步行和自行车道都是非常重要的理念。如今，年轻一代并不希望每天在通勤交通上花两个小时的时间--他们开始回迁到美国的城市中心。

### 建立绿色环保框架不动摇，引导城市的发展

考虑环境系统是非常重要的，而且必须要优先于以利润为导向的城市发展。路易斯安那州的灾情充分证明，湿地的损失人类所无法承受的。这些城市的未来正面临严重的威胁，因为自古以来一直保护他们的湿地消失了。我们应该在地图上明确标注出所有森林、重要的自然动物及生物的栖息地、肥沃的农田、以及富饶的湖滨地区，作为未来城市发展必须考虑的重要指导性因素。例如，葡萄牙拥有一个杰出的环保部门，他们已经根据环境质量情况绘制了全国的环境地图，并且确定了可开发与不可开发地区，以更好地保护脆弱的环境。

### 新一代更智能化的基础设施

中国近年来在建设高质量的机场与高铁项目的资金投入是令人惊讶的。相比之下美国似乎难以承受高铁的巨额开支，但是如果能够通过高铁将各个城市紧密连接在一起的话，那么全球经济将因此而更趋强大。

One way to significantly reduce carbon emissions, improve one's everyday environment, and possibly contribute to better education and strength of the family unit, is to keep cities compact. Offering alternatives to the automobile, building along transit corridors, making urban regions walkable and bicycle friendly are very important concepts. Today's young generation does not want to spend two hours a day commuting in a car and, consequently, they are clustering back into American city centers.

### Establishing an unwavering Green Framework to guide growth

Understanding environmental systems is critical and must be at the forefront over development for profit. Loss of wetlands is unacceptable, as proven by the state of Louisiana. Their very future is at risk due to the loss of significant wetlands that historically protected them. Forests, important habitats, quality agricultural lands, and rich waterfronts must all be identified and mapped in ways that influence and guide future growth. For example, the Country of Portugal has the most impressive environmental division. It has mapped the country for environmental quality and determined where one can build and where one cannot build in order to protect fragile environments.

### A New Generation of Smarter Infrastructure

China's investment in better airports and high speed rail is breathtaking. While high speed rail may seem like an unaffordable expense in the United States, global economies strengthen when cities are linked by high speed rail.

Smarter infrastructure can change urban patterns. The simple invention of the air conditioner enabled the southwest deserts and southeastern United States to become desirable places to live. New infrastructure can point to resource conservation and may also point to changing urban patterns.

### Creative Cities and Quality of Life

As Jane Jacobs said, "Cities mix different people together, and the resulting interactions are a fertile ground for the creation of all kinds of new work. This new work helps to drive economic growth, not just in the City, but in the larger world as well!" This statement is quantified by the fact that the 100 largest U.S. cities account for 78 percent of patents issued, 81 percent of research and development jobs and 9 percent of all venture capital investments. (Metropolitan Policy Program 200)

Cities must be welcoming gateways, encouraging bright, young minds to come and settle. The link between educational and cultural institutions, sports facilities, and recreational amenities all add up to desirable places to live and work. Furthermore, urban regions tend to offer higher quality education opportunities and make education more accessible. This translates to higher per capita income, and better reading, communication and problem solving skills. Higher quality education attracts youth and encourages a migration to the city.

## Case Studies: Recent Projects In The New China

### The Beijing-Tianjin Bohai Corridor

Between Beijing and Tanggu, a high-speed train links northeastern China's major cities, creating an accessible network of transit from the capital to the Bohai Gulf shore and creating a powerful corridor for advanced economic development (see Figure 1).

**Beijing Bohai Innovation City.** This project represents a new model of compact, environmentally enhanced urban design for the rapid development of satellite cities along China's high speed rail corridors. The Beijing Bohai Innovation City master plan (see Figures 2 & 3) leverages the economic and lifestyle assets of the Beijing-Tianjin

更智能化的基础设施可以改变城市类型。举例来说，空调装置虽然只是一项简单的发明，但它的发明却使美国西南部的沙漠地区和东南部变成了理想的居住地。新型基础设施将有利于资源保护，并改变城市类型。

### 创造性城市与生活品质

正如简·雅各布斯所说，“城市将不同的人群融合在一起，并相互交流，从而成为创造各种新事业的富饶土壤。这种新的事业有助于推进城市乃至整个世界的经济发展。”以下数据充分证明了这一陈述：

美国前100座大城市就占有发明专利的78%，研究与发展工作的81%，风险资本投资的9%。（摘自都市政策计划200）。

城市必须成为海纳百川之地，鼓励充满智慧与活力的思想到这里生根发芽。教育与文化机构、体育设施、以及娱乐设施之间的联系将使这座城市成为更有吸引力的生活与工作场所。此外，城市区域往往能够提供高质量的教育机会，使得接受教育变得更容易，从而实现了更高的城市人均收入，并进一步提高了人们阅读、沟通和解决问题的能力。高质量的教育吸引了年轻人，并促使人口往城市中迁移。

## 案例研究：新中国的近期项目

### 北京 - 天津渤海湾

在北京和塘沽之间，一条高速铁路将中国东北部的主要城市连接在了一起，创造了一条从首都到渤海湾的交通可达性网络，也为发达的经济发展创建了一条强有力的走廊（见图1）。

**北京环渤海创新城。**该项目创建了一个新的紧凑的、提升环境的城市设计的新模型，以适应中国高铁沿线各个卫星城市的快速发展。北京环渤海创新城的总体规划（见图2与图3）充分利用了北京-天津走廊的经济与生活资产，将重点集中在高铁首站的1473公顷多功能新开发项目上，该项目将首都与蓬勃发展的环渤海区域连接在一起，该区的GDP值目前超过全国GDP的四分之一。



Figure 1: The Beijing-Tianjin-Tanggu High Speed Rail Corridor (Source: SOM)  
图1：北京-天津-塘沽高铁廊道（源自：SOM）

**北京中央商务区东扩。**具有绿色环保可持续发展战略构想的北京中央商务区规划设计在国际设计竞赛招标中脱颖而出，它重新界定了市政基础设施和高性能建筑的创新性（见图4与图5）。该方案将区内的能源使用量降低了50%，用水量降低了48%，垃圾填埋废物量减少了80%，从而使碳排放量减少了50%——每年仅从办公大楼的二氧化碳排放量可减少215,000吨，相当于种植了1400万棵成年树木（见图6）。





Figure 2: Beijing Bohai Innovation City Anchored on High Speed Rail (Source: SOM)  
图2：位于高铁沿线的北京渤海创新城（源自：SOM）



Figure 3: High Speed Rail Station at Beijing Bohai Innovation City (Source: SOM)  
图3：北京渤海创新城的高铁站（源自：SOM）

corridor by centering the new 1,473-hectare mixed-use development on the first high-speed-rail station linking the national capital to the dynamically growing Bohai Rim region that already accounts for more than a quarter of China's GDP.

**Beijing CBD Eastern Expansion.** This international competition-winning design for the green growth of Beijing's central business district redefines innovations in municipal infrastructure and high performance design buildings (see Figures 4 & 5). The plan will reduce energy consumption within the district by 50%, reduce water consumption by 48%, reduce landfill waste by 80%, and result in a 50% reduction in carbon emissions – eliminating from office buildings alone 215,000 tons of CO2 per year, which is the equivalent of planting 14 million adult trees (see Figure 6).

**Tianjin Tanggu CBD Conceptual Plan.** Now being built southeast of central Tianjin City—strategically located near the confluence of the Hai He River and the Bohai Gulf—the Tanggu New Area Master Plan sustainably redevelops a 2,500-hectare industrial zone that was once the old port of Beijing into a new center of commerce (see Figure 7). A comprehensive road and rail system will permeate the 9,000,000 m2 mixed-use district of high-rises, historic neighborhoods, and open spaces (see Figure 8).

**The Yujiapu Financial District.** Climbing rapidly skyward, the Yujiapu Financial District in the heart of the Tanggu central business district creates an advanced, globally competitive financial services center where old factories recently stood. This high-density, mixed-use international business district is transit-served and state-of-the-art (see Figures 9 and 10).

**Tianjin Cultural Center.** A new Cultural Park on Tianjin's south side elevates the city's cultural offerings and creates a catalyst for the development of a world-class urban district (see Figure 11).



Figure 4: Great Parks and Green Boulevards in Beijing CBD (Source: SOM)  
图4：北京中央商务区内的公园及林荫大道（源自：SOM）



Figure 5: Improved Access and Mobility- Beijing CBD East Expansion (Source: SOM)  
图5：北京中央商务区东扩-提高了通达性和流动性（源自：SOM）

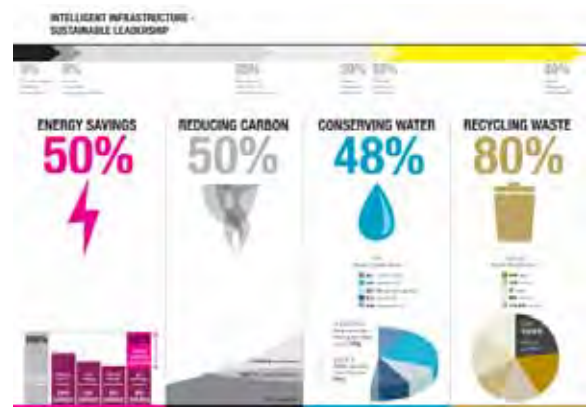


Figure 6: Intelligent Infrastructure- Reducing Waste and Emissions, Beijing CBD (Source: SOM)

图6：智能化基础设施-减少废物和排放，北京中央商务区（源自：SOM）

**天津塘沽中央商务区概念性规划。**该项目位于天津中心城区东南方，地处海河与渤海湾交汇附近的战略要地，塘沽新区总体规划以可持续发展的设计策略将这座占地2500公顷、曾经是北京旧港口的工业区转型成全新的商业中心（见图7）。区内将设有完善的道路和铁路及轻轨系统，覆盖了总面积为9百万平方米的包含了高层建筑群、历史社区和开放空间的混合型社区（见图8）。





Figure 7: A New Functional Heart for the New Financial Center of the Yujiapu Peninsula (Source: SOM)

图7：于家堡半岛新金融中心的新功能中心（源自：SOM）

SOM's master plan for the 241-hectare surrounding area provides a sustainable framework for the redevelopment of an aging urban area into a modern urban center, offering 6,500,000m<sup>2</sup> of world-class office space, housing and community facilities, in immediate proximity to the grand park (see Figure 12).

### Looking To A Circular Rather Than Linear Urban Metabolism

Cities are centers of intellectual life and attract creative cultures. They are a significant part of the urban age solution if they can reinvent themselves and solve their "bad habits" of emissions, waste, poor living conditions, etc.

Cities must be centers for innovation and minimize their environmental impact by focusing on recycling, rather than harvesting and consuming. Today, cities are very linear. They need energy, hard goods and food; they ingest these

and what is left over is waste. In the future, cities will be recycling food, water and hard goods and depending far more on renewable energy sources. Some of the solutions will concern:

- The use of alternative energy and the minimization of fossil fuels
- The recycling of gray water
- The reduction of impervious urban surfaces
- The reinvention of storm water and sanitary sewage treatment strategies
- The green engineering of our cities to provide native habitats



Figure 8: A Public Riverfront Unites Diverse Districts and Unique Neighborhoods (Source: SOM)

图8：将不同区域和独特小区融合在一起的公共滨河区（源自：SOM）



Figure 9: Maximize High-Density and Mixed-Use Development around the Transit Hub (Source: SOM)

图9：在交通枢纽周边的最大程度提高密度和混合程度（源自：SOM）

**于家堡金融区。**位于塘沽中央商务区心脏地带的于家堡金融区拔地而起，将不久前还是旧工厂的区域，改造成一个领衔的、并在全球范围内具有竞争力的金融服务中心。这一高密度、多功能的国际商务社区拥有完善的公交服务体系和先进的科技设施（见图9和见图10）。

**天津文化中心。**一个位于天津南部的新文化公园将提升全市的文化设施，同时成为促进该地区成为世界级城市地区的动力（见图11）。SOM设计事务所的总体规划将为文化中心周边241公顷的区域提供一个可持续发展的框架，使旧城区改造成为一个现代城市中心，为紧邻大公园的区域提供6,500,000平方米的世界级的办公空间、住宅及社区设施（见图12）。

### 寻求循环的而线性的城市循环与更新

城市是智力资源积聚的中心，可以吸引创意文化。如果能够重新进行城市的自我改造，解决废气排放、废



Figure 10: Construction Well Underway, 2012 (Source: SOM)

图10：施工顺利进行中，2012（源自：SOM）





Figure 11. Tianjin Cultural Center Master Plan (Source: SOM)  
图12. 天津文化中心总体规划 (源自: SOM)

- The ability to stay compact and mixed use and avoid sprawling patterns
- The ability to maintain diversified rather than singular economies
- The goal of offering higher education to all, not just to select elite
- Growing food locally and within urban areas
- Smart planning for growth and for contraction

Cities can be sources for solutions that can achieve great things, including advancing the prosperity of their urban inhabitants, achieving social, economic and racial equity, and fostering sustainable use of natural resources.

Smarter cities can be the way we address the global challenges of equity and sustainability.



Figure 12. Tianjin Cultural Center (Source: SOM)  
图12. 天津文化中心 (源自: SOM)

物、生活条件差等“不利因素”，它们就可以成为解决城市老化问题的要素。

城市必须成为创新的中心，其重点在于通过回收而非索取和消耗来减小它对环境的影响。今天城市的发展是线性的，它们在使用能源、日用品和食品之后只留下了废弃物。将来的城市将会对食品、水和日用品进

行回收利用，并且会更加依赖于可再生能源。以下是其中一些解决方案：

- 使用替代能源，并且尽量减少使用化石燃料
- 利用中水系统
- 减少城市中无法渗水的地面铺砌
- 雨水的再利用与生活污水的处理策略
- 对城市进行绿色工程，以提供原生态栖息地
- 保持紧凑、多功能态势，并避免不受控制的扩张蔓延模式
- 保持多样化经济，而不是单一经济
- 为所有人提供高等教育，而不仅是精英教育
- 在城市区域内生产本地所需食物
- 为城市成长和收缩提供智能化规划

城市是为完成伟大事业提供解决方法的源头，包括促进城市居民的繁荣生活、实现社会、经济与民族平等，并促进自然资源的可持续利用。

更具智能化的城市可使我们有效应对平衡与可持续性发展的全球性挑战。

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