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本期特稿: 21 世纪城市发展与规划 Focus: Urban Development and Planning in the Twenty-First Century

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广州国际城市创新研究会
Guangzhou Institute for Urban Innovation

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要让市民成为创新 21 世纪城市梦想的主体

Making Citizens the Subjects of Urban Innovation Dreams in the Twenty-First Century

梁桂全 广州国际城市创新研究会会长

Liang Guiquan, President of the Guangzhou Institute for Urban Innovation

第二届广州国际城市创新奖（简称“广州奖”）评奖活动于 2014 年 11 月隆重举行，在推选出 15 个入围城市项目基础上，评选出了五个获奖城市：英国布里斯托尔、哥伦比亚安蒂奥基亚、新西兰基督城、中国杭州和塞内加尔达喀尔。此次评奖，还有一个创新点，即在专家评选的同时，推行三项开放式评奖，增设了 3 个公众嘉奖城市，中国杭州、英国布里斯托尔和哥伦比亚安蒂奥基亚分别获得“网络人气城市”“媒体关注城市”和“公众推荐城市”奖。

广州奖以城市创新服务于民、造福于民为主旨，涉及如公共服务、公共部门组织与管理、各方合作与公共参与、智慧城市、可持续城市等主题。这次的评选以及入选城市、获奖城市项目有几个显而易见的特点：一是突出以人为本，城市居民是城市创新的受惠者；二是突出公共治理导向，注

The final adjudication of the winning cities for the 2nd Guangzhou International Award for Urban Innovation was held in November 2014. Based on the 15 shortlisted cities, the Jury decided on five winning cities: Bristol of the United Kingdom, Antioquia of Colombia, Christchurch of New Zealand, Hangzhou of China, and Dakar of Senegal. One innovative aspect of this process was that three specially recognized cities were selected in parallel with the main assessment. Hangzhou won the "Online-Popular City", Bristol, the "Media-Focused City", and Antioquia, the "Public-Recommended City".

The Guangzhou Award aims to benefit people through encouraging urban innovation. Its thematic fields include public service, the organization and management of public sectors, multilateral cooperation and public engagement, "smart city" development and sustainable urbanism. The assessment team and the participant cities share a number of considerations in common: the first is a human-oriented belief that citizens should be the beneficiaries



重城市中的政府、私人、企业、市民共同参与，共创共建共享，特别是让市民成为城市创新的主体；三是坚持城市发展的可持续性，不断提升城市发展的弹性或适应性；四是坚持通过创新寻找难题突破的解决方案与路径；五是IT技术、智慧技术体系正在成为城市创新的重要技术支撑。2014年11月29日晚颁奖晚会上的精湛绝伦、令人耳目一新的文艺表演把人文主题、精湛艺术与高科技结合起来，集中表现了第二届广州奖的灵魂与特点。无疑，这一切都在努力体现城市创新中的“市民主体”理念和国际城市创新奖的主题：“我的城市我的梦”。

21世纪将是人类城市文明巨变的世纪。我们的城市正在和将面临一系列可持续发展重大挑战；同时，也面临一系列城市创新重大突破的历史机遇。推动我们的城市创新，不断实现我们21世纪的城市梦想，创造我们幸福的城市新生活，其出发点、归宿点和实践过程，都体现为人类追求美好幸福生活的意志，市民是城市创新共建共享的主体。这场变革的主调将会使我们的城市更加人道化、更加生态化、更加智慧化，并成为太空文明的出发点。

21世纪城市发展新趋势也体现在新兴国家的城市化转型升级上。如在中国，社会的变革正在推动形成新的城市文明浪潮。如果把前工业文明城市，

of urban innovation. The second consideration is an emphasis on the public governance of urban development processes that highlights the joint participation of governments, enterprises and especially citizens. The third is an insistence on the importance of sustainability and the continuous strengthening of urban resilience and adaptability. The fourth is the view that solutions to difficulties should be sought through innovation. The fifth is that information technologies and smart technologies are coming to provide important technical support-platforms for urban innovation.

The Award ceremony on the evening of 29 November 2014 was fantastic. The cultural performance at the ceremony was expressive of the virtues of human-orientation, exquisite art and advanced technology—exemplifying the soul of the 2nd Guangzhou Award. All effort was made to embody the concern for "citizen ownership" in urban innovation, and to connect to the theme of the Guangzhou International Urban Innovation Conference: "My City, My Dream".

The twenty-first century will be a century of huge change for urban civilization. Our cities are facing, or will encounter, a series of major challenges in sustainable development. At the same time, they have the opportunity to embrace a series of unprecedented opportunities embedded in urban innovation. The will to pursue a happy life for all citizens is demonstrated in the motivation, purpose, and process of promoting urban innovation and gradually realizing our "dream cities". Citizens are the subjects of urban innovation. The momentum of this reform will make our cities more humane, more eco-friendly, and smarter—the starting point for a flourishing civilization beyond the present.

The new tendency towards urban innovation in the twenty-first century can also be detected in the urban transformations and upgrading of cities in emerging countries. For example, social reform in China is leading to a new wave of urban civilization. If pre-industrial cities—that is, cities in the agricultural society—are

即农业社会的城市称为 0.0 版城市，那么改革开放以来，中国形成了 1.0 版传统工业文明城市。进入 21 世纪，中国开始了以生态恢复和重建为主要特征的二次城市化，形成 2.0 版新工业文明城市。金融危机后，中国的城市特别是沿海城市和中心城市正在出现新的以创新型城市为特征、超越传统工业文明的 3.0 版城市化新浪潮，新的城市文明形态正在如梦幻般诞生：上海浦东新区特别是张江科技城的崛起，广东南沙新区、横琴新区、前海新区的开发，成都科技城的横空出世，天津滨海新区的兴起等等，蕴涵着人们对 21 世纪未来城市的新梦想。可以预见，21 世纪中国的崛起，必定是新城市文明的崛起，并与各国城市创新汇合为 21 世纪世界城市文明新浪潮。新浪潮的彼岸将是我们美丽的城市梦想的实现。

21 世纪人类城市文明的变革将越来越源于由人类本质决定的思想、理念、追求的持续变革，它不断突破人类思维的局限性，展现人类文明发展的无限前景。这一伟大变革需要我们重新认识人类本质及其在宇宙进化中的位置，需要新的文明哲学引领。同时，通过各国城市的文明创新、相互融汇，用我们的智慧和行动开辟我们的梦想之路。这一切，都在我们脚下，都在各国城市每年的创新、进步中。属于大家的广州奖则荣幸地成为这一进程的先锋视角。

regarded as version 1.0, then after processes of reform and opening, China formed classical industrialized cities of version 2.0. In the early twenty-first century, China, embarked on the third urbanization stage, characterized by ecological restoration and rebuilding to form the new industrialized cities of version 3.0. Now, after the financial crisis, Chinese cities, especially the coastal and central cities, are remaking themselves into version 4.0, typified by urban innovation. A new urban civilization is taking shape: the flourishing of Pudong New District of Shanghai, especially the building of Zhang Jiang High Tech Park; the development of Nansha District, Hengqin District and Qianhai District of Guangdong; the emergence of the Science and Technology Park in Chengdu; and the establishment of Binhai New Area in Tianjin, etc. All these newly developed areas carry people's dreams of the coming shape of cities in the twenty-first century. From this point, it is assumed that the rise of China across the century must be built upon new urban innovation and be integrated with urban innovation in other cities worldwide as a new wave of global urban civilization surges across the twenty-first century. This wave is the realization of our beautiful urban dream.

The reform of urban civilization in the twenty-first century involves a reform of our thinking, including our fundamental concepts, and a pursuit of innovation determined by the essence of being human. This will push the limits of human thinking and gradually unveil the limitless future of human civilization. This great reform requires our reflection on the nature of the human essence and its position in cosmic evolution. It calls for the guidance of new philosophies of civilization. More practically, it demands innovation in different cities and their integrative planning, as well as our wisdom and actions to realize our dream. All these are within our grasp, including the progress of each city's urban innovation. By involving the people as the subjects of innovation, the Guangzhou Award has the honour to become a pioneer in such a course.

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Cover (Photo) : Vancouver Cityscape



中国动态

《京津冀协同发展规划纲要》获通过

4月30日，中共中央政治局会议审议通过的《京津冀协同发展规划纲要》指出，推动京津冀协同发展是一个重大国家战略，核心是有序疏解北京非首都功能。

会议指出，推动京津冀协同发展是一个重大国家战略。战略的核心是有序疏解北京非首都功能，调整经济结构和空间结构，走出一条内涵集约发展的新路子，探索出一种人口经济密集地区优化开发的模式，促进区域协调发展，形成新增长极。

会议强调，要坚持协同发展、重点突破、深化改革、有序推进。要严控增量、疏解存量、疏堵结合调控北京市人口规模。要在京津冀交通一体化、生态环境保护、产业升级转移等重点领域率先取得突破。要大力促进创新驱动发展，增强资源能源保障能力，统筹社会事业发展，扩大对内对外开放。要加快破除体制机制障碍，推动要素市场一体化，构建京津冀协同发展的体制机制，加快公共服务一体化改革。要抓紧开展试点示范，打造若干先行先试平台。

(来源：人民网)

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Approval on the Coordinated Development Plan of Beijing-Tianjin-Hebei Region

On 30th April, the plenary meeting of Political Bureau of the CPC Central Committee discussed and approved the *Coordinated Development Plan of Beijing-Tianjin-Hebei Region* which pointed out that promoting the coordinated development of Beijing, Tianjin and Hebei is a key national strategy to orderly transfer some non-capital functions there from Beijing.

The essence of promoting the coordinated development of Beijing, Tianjin and Hebei is to transfer some non-capital functions from Beijing, to adjust the economic and spatial structures conducive to a new path of intensive development, and to organize a new mode of optimized development in the densely populated areas. By doing so, it aims to enhance the regional coordinated development and formulate new growth poles.

The meeting emphasized that efforts should be made to achieve joint development, make collaborative breakthroughs in key fields, deepen reform, and conduct orderly promotion. The process must strictly control the increment, transfer the stock, regulate, and control the population in Beijing by means of transfer and prevention. Priorities include dominant fields as traffic integration of Beijing-Tianjin-Hebei region, eco-environmental preservation, industrial upgrading and transfer, etc. This calls for strong efforts to enhance the innovation-driven development, strengthen the support capability of resources and energy, integrate into the development of social sectors, and expand the domestic and foreign exchange. The process also needs to speed up the eradication of the obstacles, stimulate market integration, establish a system of coordinated development for the region, and accelerate integrated reform of the public service. It should spare no efforts to implement pioneering projects and establish several demonstrative platforms.

(From People's Daily Online)

中国 64 个新型城镇化试点地区公布

2月4日，国家发改委、中央编办等11个部委联合印发《国家新型城镇化综合试点方案》（以下简称《方案》），安徽、江苏两省和宁波等62个城市（镇）及2个建制镇被列为国家新型城镇化综合试点地区。

此番试点的主要任务包括：建立农业转移人口市民化成本分担机制；建立多元化可持续的城镇化投融资机制；改革完善农村宅基地制度；探索建立行政管理创新和行政成本降低的新型管理模式；综合推进体制机制改革创新。

(来源：东方早报)

Announcement on the 64 Pilot Areas of New Urbanization in China

On 4th February, 11 ministries and commissions including National Development and Reform Commission and State Commission Office of Public Sectors Reform, etc. jointly issued the *National Comprehensive Pilot Plan of New Urbanization* (abbreviated as the Plan) which set Anhui Province, Jiangsu Province, 62 cities (towns) and 2 town-level areas as national pilot areas of new urbanization.

The major tasks of this pilot program include the following: formulating a mechanism to carry the cost of transferring the rural residents to citizens; establishing a diversified and sustainable mechanism for investment and financing in urbanization; reforming and improving the rural residential land-system; seeking to establish a new management mode to innovate administration and reduce the administrative cost; and comprehensively promoting reform and innovation in system and administrative mechanisms.

(From *Dongfang Daily*)

中国环保部：161个城市中仅有16个城市空气质量达标

6月4日，环境保护部向媒体通报了《2014中国环境状况公报》。公报指出，2014年，在党中央、国务院的高度重视下，生态文明建设和生态环境领域改革取得积极进展，大气、水、土壤污染防治迈出新步伐，主要污染物总量减排年度任务顺利完成，环境保护优化发展的综合作用继续显现，环境法制建设、执法监管和环境风险管理更加有力，生态环境保护稳步推进，核与辐射安全可控。

全国开展空气质量新标准监测的161个地级及以上城市中，仅舟山、福州、深圳、珠海、惠州、海口、昆明、拉萨、泉州、湛江、汕尾、云浮、北海、三亚、曲靖和玉溪共16个城市空气质量达标（好于国家二级标准），占9.9%；145个城市空气质量超标，占90.1%。

（来源：中国城市网）

Ministry of Environmental Protection of PRC: Only 16 out of 161 Cities Met the Air Quality Standards

On 4th June, Ministry of Environmental Protection released the *2014 Report on the Environmental Status of China*. The report pointed out that in 2014, under the close attention from the CPC Central Committee and the State Council, China achieved great progress in ecological civilization construction and ecological environment reform. New measures were taken to prevent and combat the pollution in air, water and soil. The annual task to reduce the gross pollutants was also accomplished. The synthetic effect of the optimized environmental protection continues to work. Much more strength was witnessed in the legal system establishment, the law enforcement and supervision and the environmental risk management. The ecological and environmental protection is under steady progress and the nuclear and radiation are under safety control.

In total, 161 cities nationwide were investigated by the new air quality standards. Only 16 cities, namely Zhoushan, Fuzhou, Shenzhen, Zhuhai, Huizhou, Haikou, Kunming, Lhasa, Quanzhou, Zhanjiang, Shanwei, Yunfu, Beihai, Sanya, Qujing and Yuxi, were qualified (above the national level 2), accounting for 9.9 per cent; 145 cities didn't meet the standards, accounting for 90.1 per cent.

（From Urban China Network）

2015年中国城市竞争力报告发布

5月，中国社会科学院举行2015年城市竞争力蓝皮书《中国城市竞争力报告No.13——巨手 托起城市中国新版图》发布会。报告指出，在去年的中国城市综合竞争力排名中，深圳首超香港拔得头筹，排名前十的城市依次是：深圳、香港、上海、台北、广州、天津、苏州、北京、澳门、无锡。这些城市主要集中在珠三角、长三角、环渤海和港澳台地区。

该报告副主编王雨飞表示，从中国综合经济竞争力的分布示意图可以看出，“主要的经济竞争力比较强的区域还是在沿海地区。从区域来看，港澳台地区和东南地区、环渤海地区这三个地区的整体水平是高于全国的均值水平的”。

（综合报道）

Release of Chinese Urban Competitiveness Report 2015

In May, the Chinese Academy of Social Sciences held a conference to launch the 2015 Blue Book of Urban Competitiveness *Giant Hands: Holding Up the New Map of Chinese Cities, Chinese Urban Competitiveness Report, No. 13*. The report recorded that in the Chinese urban competitiveness ranking last year, Shenzhen surpassed Hong Kong and won the championship. The top ten cities were Shenzhen, Hongkong, Shanghai, Taipei, Guangzhou, Tianjin, Suzhou, Beijing, Macao and Wuxi. All these cities are located in the Pearl River Delta, Yangtze River Delta, Bohai rim and Hongkong-Macao-Taiwan region.

The report's subeditor Mr Wang Yufei pointed out that the distribution sketch of comprehensive economic competitiveness showed that "-the main regions with strong economic competitiveness are the coastal areas. From a regional perspective, the overall strength of Hongkong-Macao-Taiwan region, the southeastern region and the Bohai rim are higher than the national average."

中国（广东）自由贸易试验区正式挂牌

4月21日，中国（广东）自由贸易试验区挂牌仪式在广州南沙举行。省委书记胡春华为中国（广东）自由贸易试验区揭牌。香港特区政府行政长官梁振英出席挂牌仪式。省长朱小丹在挂牌仪式上致辞，为广东自由贸易试验区工作办公室和自由贸易试验区各片区管委会

揭牌。

中国（广东）自由贸易试验区总面积达到116.2平方公里，包括南沙新区、前海蛇口片区以及珠海横琴新区。中国（广东）自由贸易试验区挂牌，标志着中国（广东）自由贸易试验区正式启动建设。

在4月20日中国国务院新闻办举行的发布会上，广东省常务副省长徐少华表示，中国（广东）自由贸易试验区将划分三大片区实现错位发展，依托港澳、服务内地、面向世界，将中国（广东）自由贸易试验区建设成为粤港澳深度合作

示范区、21世纪海上丝绸之路重要枢纽和全国新一轮改革开放先行地，一是着力建设与国际通行规则相对接的营商环境；二是着力建设权责一致的行政管理体制；三是着力促进内地与港澳经济深度合作；四是着力促进三个片区错位发展。

作为自贸试验区扩围的一大亮点，国务院办公厅日前发布统一适用于4个自贸试验区的外商投资清单，对于外商投资的限制措施由上海自贸区2014版负面清单的139条缩减至122条。

（综合报道）

Official Establishment of China (Guangdong) Pilot Free Trade Zone

On 21st April, the unveiling ceremony of China (Guangdong) Pilot Free Trade Zone was held in Nansha, Guangzhou. The Secretary of Guangdong CPC Committee Mr. Hu Chunhua unveiled the nameplate. Mr. Liang Zhenying, Chief Executive of Hongkong, attended the ceremony. Governor Zhu Xiaodan addressed the ceremony

and unveiled the nameplates for the general office and the regional administrative committees of Guangdong Pilot Free Trade Zone.

The pilot free-trade zone covers an area of 116.2 km², including Nansha district, Qianhai-Shekou region and Zhuhai Hengqin district. The unveiling ceremony marked the official launch of China (Guangdong) Pilot Free Trade Zone.

During the press conference held by the Information Office of the State Council on 21st April, Mr Xu Shaohua, the Executive Vice Governor of Guangdong Province, said that the Pilot Free Trade Zone would be divided into three regions for separate development. It will be reliant on Hong Kong and Macao, serve the Chinese mainland, and open to the world. The goal is to develop the pilot zone as a demonstrative area for profound Guangdong-Hong Kong-Macao cooperation, and as a key hub of the Maritime Silk Road in the twenty-first century. It will be a pioneering area for new national reform and external engagement. There are four major measures needed. The first is to create a business environment that accords with the international rules; the second is to establish an administrative system which balances authority and responsibility; the third is to deepen economic cooperation between the inland cities and Hong Kong and Macao; and the fourth is to enhance the dislocation development of the three regions of the pilot zone.

One highlight of the process was the foreign investment list, released by the general office of the State Council recently. It applies to the four pilot zones. The restriction on foreign investment stated in the 2014 Negative List of Shanghai Pilot Free Trade Zone is now reduced from 139 items to 122 items.

（From News Roundup）

广东率先对接“一带一路”

6月3日，广东省政府召开新闻发布会，通报《广东省参与建设“一带一路”的实施方案》（下称《实施方案》）。根据《实施方案》，广东省打造成为“一带一路”的战略枢纽、经贸合作中心和重要引擎，此定位已得到国家认可。广东省成为全国第一个完成与国家“一带一路”战略规划衔接的省份。

广东已经制定《广东省参与“一带一路”建设重点工作方案（2015—2017年）》，共40项工作，同时梳理形成《广东省参与“一带一路”建设实施方案优先推进项目清单》，共68个项目，总投资达554亿美元，涵盖基础设施建设、能源资源、农业、渔业、制造业、服务业六个领域。

《实施方案》提出了九方面的合作设想，即九项重点任务，涉及重要基础设施互联互通、提升对外贸易合作水平、产业投资、海洋领域合作、能源合作、金融业务合作、旅游合作、人文交流和健全外事交流机制九项内容。

（来源：21世纪网）

Guangdong Took the Lead to Construct "One Belt and One Road"

On 3rd June, Guangdong Provincial Government held a press conference and released the *General Plan of Guangdong to Participate in the Construction of "One Belt and One Road"* (abbreviated as General Plan). According to the General Plan, Guangdong aims to become the strategic pivot, the economic cooperation center and impetus for "One Belt and One Road". This vision has been recognized by the central government, and Guangdong will become the first province to completely engage in the national strategic plan of "One Belt and One Road".



Guangdong has made the *Major Work Plan of Participating in the "One Belt and One Road" Construction (2015-2017)*, with a total of 40 items of work. It has a list of 68 prioritized projects with an investment of US\$55.4 billion, mainly in six fields: infrastructure, energy and resources, agriculture, fishery, manufacturing industry and services.

In the General Plan, there are nine proposals of cooperation, or key tasks, involving such aspects as interconnection among critical infrastructures, improvement of foreign-trade cooperation, industrial investment, and cooperation in marine business, energy, finance, tourism, and cultural exchange, as well as improvement of foreign-exchange mechanisms.

（From Twenty-First Century Business Herald）

武汉投入百亿元建设“海绵城市”

近年来因排水不畅导致城市渍水、内涝突出，常被调侃为城内“看海”的武汉市，计划未来三年投入102亿元，建设透水、蓄水、排水功能完善的“海绵城市”，统筹解决城市内涝、雨水资源化利用等问题。

据武汉市水务局介绍，武汉水资源丰富，“优于水也忧于水”，长期面临汛涝同期、抽排能力不足、大量雨污水入河湖、水质恶化等问题。经系统申报评审，武汉市近日顺利跻身全国首批“海绵城市”建设试点城市，探索城市从“工程治水”向“生态治水”的转变。

未来三年，武汉市将投入102亿元用于“海绵城市”建设试点。先期安排青山区选取23平方公里作为旧城改造试点区，打造“山水园林湖”的生命共同体；汉阳四新选取15平方公里作为新区建设示范区，依托现状水系构建排水、慢行交通、生态景观有机融合的多功能海绵体。

武汉市水务局副局长张斐说，河湖众多、水网发达的武汉，可为海绵城市提供充足的调蓄空间和良好骨架；作为深受内涝渍水影响的大型城市，其也为试点提供典型的示范样本，在城市建设中真正从源头变“水害”为“水利”。

(来源：新华网)

Wuhan Invested About Ten Billion in Constructing the "Sponge City"

In recent years, Wuhan has suffered from waterlogging and flood due to poor drainage. It is often said mockingly that an ocean exists in the city. To tackle the flooding and properly utilize rain on an comprehensive scale, Wuhan now plans to invest RMB 10.2 billion over the next three years to build itself as a "Sponge City" with a well-developed capacity for absorbing, retaining and draining water.

According to Wuhan Water Affairs Bureau, this city has rich water resources, which is an advantage yet also a misery. For a rather long time, Wuhan has been exposed to such problems as floods, weak drainage-capacity, polluted rivers and lakes, deteriorating water quality, etc. After a systematic assessment, Wuhan has successfully joined the first batch of cities in the Sponge City pilot program, and sought to transform the nature of water control from an "engineering mode" to an "ecological mode".

In the coming three years, Wuhan will invest RMB 10.2 billion in a pilot project, constructing a Sponge City. At the initial stage, the Qingshan District will focus on an area of 23 km². It will be a pilot area of transformation to create a common community with "mountains, water, parks, forests and lakes". Hanyang District will set an area of 15 km² as a demonstrative area with various functions based on its organic integration of drainage, slow-moving traffic and ecological landscape.

The Deputy Director General Zhang Fei of Wuhan Water Affairs Bureau, has stated that the numerous rivers and lakes in Wuhan form a favorable network and can provide sufficient storage space for water. In addition, as a large city suffering from waterlogging and flood, Wuhan could also serve as an exemplary case demonstrating how a city can change at the very source and "benefit" instead of "suffering" from water.

(From Xinhua Net)

贵阳：推进“蓝天”“碧水”“绿地”保护计划

贵州省贵阳市近日先后印发《蓝天保护计划（2014—2017年）》《碧水保护计划（2014—2017年）》《绿地保护计划（2014—2017年）》，确立了该市空气、水源、森林保护的基本原则、工作目标、主要任务及保障措施。

“三大保护计划”明确到2017年，贵阳市要确保空气质量优良率保持在80%以上，8个市区集中式饮用水源地水质稳定在Ⅲ类，森林覆盖率达到47.5%，并将任务分解到具体单位，责任到人。

据统计，贵阳市近两年来累计完成2232辆公交大巴车的清洁能源改造，先后建成总面积16平方公里的3个城市湿地公园和7.2平方公里的16个山体公园，红枫湖、百花湖、阿哈水库水质也从治理前的五类、劣五类提

升到现在的二类、三类。

通过一系列举措，贵阳市不仅保持了经济的快速增长，也使得蓝天常在、碧水流长。2014年，该市环境空气质量优良天数达314天，集中式饮用水源地水质达标率为100%，森林覆盖率提高到45%。今年1月23日，贵阳还顺利通过了创建国家环境保护模范城市国家考核验收。

(来源：经济日报)

Guangzhou: Promoting the Conservation Plan of "Blue Sky", "Clean Water" and "Green Land"

Recently, Guiyang of Guizhou Province successively issued the *Blue Sky Protection Plan (2014-2017)*, *Clean Water Protection Plan (2014-2017)* and *Green Land Protection Plan (2014-2017)*, which established the basic principles, goals, major tasks and safeguards of protecting air, water and forest.

The three protection plans clarify that, by 2017, air quality will be maintained at over 80% clarity, the source quality of eight centralized sites of drinking water will keep at Level 3 and the percentage of forest coverage will reach 47.5 per cent. The tasks are designed specifically for each relevant department and responsibilities are allocated to individuals.

According to statistics, in the past two years Guiyang has accomplished the clean-

energy transformation of 2,232 buses, constructed three wetland parks covering 16 km², and 16 mountainous parks covering 7.2 km². The three protection plans have improved the water quality of Hongfeng Lake, Baihua Lake, A'ha Reservoir from Levels 5 and Inferior 5 to Levels 2 and 3.

Due to a series of measures, Guiyang

now not only maintains a rapid economic growth but also preserves the blue sky and clean water. In 2014, there were 314 days with good air quality; the source-quality of centralized drinking water sites was improved by up to 100 per cent; and the percentage of forest coverage reached 45 per cent. On 23rd January this year, Guiyang successfully passed the assessment process and attained acceptance as a national demonstration city of environmental protection.

(From *Economic Daily*)

国际动态

★ 国际

各城市利用 WhatsApp 应对气候变化问题

火遍全球的智能手机信息应用软件 WhatsApp 不仅可以与家人和朋友联系，还能够实现多种功能，比如反腐、救人、传播新闻等等。现在，C40 城市气候领袖群通过 WhatsApp 将城市网络连接起来，利用手机应用解决气候变化问题。在印度尼西亚举行的废物环保会议上，C40 城市集团首次利用 WhatsApp 与各城市官员联系。自 2014 年 6 月新的气候领袖群组成以来，来自达累斯萨拉姆、德里、达卡、雅加达、约翰内斯堡、内罗比、里约热内卢的城市官员一直通过 WhatsApp 共享垃圾管理问题的相关信息，包括道路清扫、垃圾填埋场整治、垃圾处理设施等。

★ INTERNATIONAL

Cities Use WhatsApp to Fight Climate Change

The popular smart phone messaging service WhatsApp is no longer just being used to keep in touch with family or friends—it has become a tool to battle corruption, save lives, spread news and now, combat climate change. The C40 Cities Climate Leadership Group is using the mobile app to connect its city networks. C40 first started using WhatsApp to engage with city officials during a waste conference in Indonesia. Since the new leader group was launched in June 2014, city officials from Dar es Salaam, Delhi, Dhaka, Jakarta, Johannesburg, Nairobi, and Rio de Janeiro have been sharing challenges around waste-management issues, from road sweeping and landfill site remediation to transfer centres, disposal facilities, etc.



★ 美国

纽约成为“最青春城市”

纽约以微弱的优势打败伦敦和柏林，成为 2015 年“最青春城市”。

该评选首次尝试将城市对 15—29 岁年轻人的吸引力量化，进行评比。评选过程中参考了 100 多项城市指标（包括交通、音乐、电影、就业、体育等），全球 55 个城市榜上有名。

“青春城市”榜联合创始人罗伯特·巴纳德告诉《今日城市》记者：“这不仅仅是一个评选而已。我们的目标是提供深度的比较数据，推动年轻人发挥自身优势，投身到世界大城市的发展当中。这个评选活动对城市和年轻人来说都是非常重要的。”

“各城市开始重视起来。”巴纳德说道，“2014 年末，基多成为首个与‘青春城市’直接合作的都市。年轻人——还有老一辈人——对城市有着不同的看法。其他城市榜重点关注某一特定领域，如经济、环境等。我们的‘青春城市’则以 20 个围绕生活、工作、娱乐的城市指标为基础。”

★ UNITED STATES

New York Named Most Youthful City



New York has been named the 2015 "Most Youthful City of the Year", narrowly beating London and Berlin to take the top position.

The index is the first attempt to quantify the appeal of cities to their young people aged 15 to 29. It ranks 55 cities from across the world using over 100 urban attributes like transport,

music, film, employment and sports.

"This is not just another index", Robert Barnard, co-founder of Youthful Cities, told *Cities Today*. "The aim is to provide deep and useful comparative data that will accelerate youth to drive urban regeneration in the world's biggest cities. It is designed to be valuable to municipalities and youth." "Cities are starting to listen", said Barnard. "In late 2014 Quito became the first municipality to work directly with Youthful Cities. Youth—and older generations alike—have a multidimensional view of cities. Other indexes focus on specifics like economic or environmental performance, but ours looks at 20 different urban attributes around living, working and playing in cities."

★ 美国

波士顿实施综合性公共安全计划

在波士顿基金会的支持下，波士顿市长马丁·沃尔什宣布正式实施战略性和综合性的全市公共安全计划。该计划以波士顿青年及家庭中心(BCYF)暴力行为干预项目和波士顿基金会下的道路安全创新项目为基础。波士顿基金会为这个三年期计划投入了310万美元，希望将道路安全项目与全市青少年暴力犯罪项目相结合，并与波士顿警察部门和市长公共安全创新项目建立合作关系。在此框架下，波士顿将制定综合性战略，范围覆盖整个城市，重点整治45个突出的犯罪团伙。

★ UNITED STATES

Boston Launches Comprehensive Public Safety Plan

Martin Walsh, Mayor of Boston, with the support of the Boston Foundation, has announced the launch of a strategic and comprehensive citywide public safety plan that builds upon the Boston Centers for Youth and Families' (BCYF) Violence Interrupters programme and the Boston Foundation's innovative Street Safe Boston Initiative. The Boston Foundation has pledged US\$3.1 million in funding for this effort over three years, which will allow for the integration of the Street Safe programme into a citywide expansion of on-the-ground outreach to youth at risk of violent crime, in coordination with the Boston Police Department and the Mayor's Public Safety Initiative. Under the plan, the city will create an integrated strategy that applies to all neighbourhoods, with a focus on the most troublesome 45 gangs.

★ 英国

新保健计划要求伦敦公共场所禁止吸烟

如果伦敦健康委员会的提案最终获得通过，伦敦的标志性公共场所（如特拉法加广场、摄政公园等）将实行全面禁烟。

癌症外科医生暨前卫生部长阿诺·达兹向伦敦市长鲍里斯·约翰逊提交了他的保健计划——“更健康的伦敦”。该计划希望在10年内把伦敦打造成最健康的全球性都市。

“就好像吸烟者的肺部被污染了一样，我们城市的肺部——公园和植被——也被吸烟者污染了。”阿诺·达兹说道，“伦敦应该成为英国的榜样，而伦敦市长应该起带头作用，行动起来，为市民创造无烟的公共环境。”

★ UNITED KINGDOM

New Health Plan Calls for Smoking Ban in London's Public places

Iconic London places like Trafalgar Square and Regent's Park could become smoke free if new recommendations from the London Health Commission are implemented.

Lord Ara Darzi, a cancer surgeon and former health minister, handed in his health plan "Better Health for London", to Boris Johnson, Mayor of London. The recommendations aim to make London the healthiest major global city within 10 years.



"Just as smokers' lungs are polluted, the lungs of our city—our parks and green spaces—are polluted by smoking," Lord Darzi said. "London should lead the way for Britain, and the mayor should lead the way for London by acting to make our public spaces smoke-free."

★ 美国

为低收入和残疾人士提供进一步的住房保障

为防止残疾人士过多滞留在收容机构，或变得无家可归，美国住房与城市发展部宣布为威斯康星州提供超过250万美元的租金援助。相应地，威斯康星州住房和经济发展局必须为300户低收入残疾家庭提供长期性的廉租房和援助性服务；现在，这些家庭大部分都滞留在收容机构。该项目面向收入低于地区收入中位数30%的残疾人，让他们住在廉租房里。州住房管理局和州医疗卫生和人力服务合作机构将负责残疾群体的认定和援助工作，为他们提供社区内长期的关怀服务，协助他们独立生活。

★ UNITED STATES

Low-income and Disabled People to Receive Further Housing Support

To prevent thousands of people with disabilities from being unnecessarily institutionalised or becoming homeless, the US Department of Housing and Urban Development has announced that it is awarding over US\$2.5 million in rental assistance to the state of Wisconsin. In turn, the Wisconsin Housing and Economic Development Authority will provide permanent affordable rental housing and supportive services to 300 households with low-income people with disabilities, many of whom are transitioning out of institutional settings. The programme will enable people with disabilities who earn less than 30 per cent of their area's median income to live in integrated and affordable housing. State housing agencies and their state Medicaid and Health and Human Service partner agencies will identify, refer, and support target populations of people with disabilities who require community-based, long-term care services to live independently.

★巴西**雷西腓通过“绿色屋顶法”**

雷西腓通过了一项“绿色屋顶法”。该法律规定，凡超过四层的建筑必须在屋顶种植原生植被。该项法律同样适用于任何面积超过400平方米的商业大楼。托尔·查尔斯·达尔文大楼是第一栋建设绿色屋顶的建筑，这栋大楼位于市中心，还在施工当中，共有35层楼，楼顶植被面积为26万平方米，还配有水槽收集雨水，用于支持空调系统的运转。雷西腓46%的面积被绿色植物覆盖，其中60%的植物受环境法律的保护。雷西腓的城市造林计划旨在保护和发展独特的绿色环境。

★ BRAZIL**Recife Approves Green Roof Law**

The Municipal Council of Recife has approved a "Green Roof Law". The law requires buildings with more than four floors to have their roofs covered with native vegetation. The law also applies to any commercial building with more than 400m². The first example of a building with a green roof in Recife will be the



Torre Charles Darwin, a 35-storey building under construction in the centre of the city. The building will have a cover crop of 260,000m², along with a tank to capture rainwater, which will be used to power the air conditioning system. As much as 46 per cent of Recife's total area is green, 60 per cent of which is protected under conservation laws. An urban afforestation plan aims at preserving and developing this unique environment.

★西班牙**马德里中心城区禁止汽车通行**

为了给市民创造更加宜居的环境，马德里宣布实施交通新规，禁止车辆进入中心城区。该规定是城市可持续交通计划的一部分，希望在2020年前将私家车每日的交通量从29%减至23%。可持续交通计划是重要的一步，能有助于把中心城区变得更加人性化，减少污染，增加市民的活动场所。马德里四大中心社区不在本次限行范围内，需要进入当地贸易区的运输货车则只能在规定时段内进入中心城区。本次限行规定非常重要，因为在高峰时段，马德里中心商业区75%的人都选择开私家车上班，但平均每台私家车只乘坐了1.1个人。

★ SPAIN**Madrid to Ban Cars from City Centre**

In a bid to create a more liveable environment for its citizens, Madrid has brought in a new rule banning cars from circulating in the city centre. The measure is part of the city's sustainable mobility plan, which is projected to reduce the share of daily trips by private vehicles from 29 per cent to 23 per cent by 2020. The ambitious plan is a major step towards making the city centre more people-oriented, with less pollution and more freedom for people to move about safely. Drivers in Madrid's four most central neighbourhoods are excluded from the ban, and delivery trucks to local commerce may



only enter at certain times. The restriction is particularly important given that during peak hours, 75 per cent of commuters travelling to work in Madrid's central business areas use private vehicles, and on average, each private vehicle carries only 1.1 persons.

★国际**世界7大智能社区出炉**

智能社区论坛(ICF)公布了2015年7大智能社区名单。来自5个不同国家和地区的城市和城镇榜上有名：美国阿灵顿郡；美国哥伦布；澳大利亚伊普斯威奇；美国米切尔；中国台湾新北市；巴西里约热内卢；加拿大萨里。“这7个城市能够脱颖而出，是因为他们在第6项指标‘革新性社区’中表现出色，”ICF联合创始人路易斯·扎克瑞拉如是说。“革新性指的是社区能够用多种方式规划未来，并认识到数字经济对未来成功的关键作用，同时注意提高市民对城市的自豪感和认同感，积累社会性资本。”

★ INTERNATIONAL**Top Seven Intelligent Communities Announced**

The Intelligent Community Forum (ICF) has announced the top seven Intelligent Communities of 2015. The list includes cities and towns from five different nations and regions: Arlington County, USA; Columbus, USA; Ipswich, Australia; Mitchell, USA; New Taipei City, Taiwan (China); Rio de Janeiro, Brazil; and Surrey, Canada. "What sets these seven cities apart is how they excelled against our sixth indicator, or criteria, which we call the Revolutionary Community," said Louis Zacharilla, ICF co-founder. "The revolutionary aspect is the communities' planning for the future in multiple ways, each with an acknowledgement that the digital economy will be a key to their success but also with an eye on the restoration of civic pride and what is commonly called social capital."



★ 法国

法国政府为每户提供至多 1 万欧元推广电动汽车

法国政府将为车主补贴至多 1 万欧元，鼓励他们将柴油汽车换成电动汽车。法国生态、可持续发展和能源部长塞格林·罗雅尔宣布新政策将于 2015 年 4 月 1 日开始实施。旧的柴油汽车车龄必须为 13 年以上，才能享受补贴。若将旧车换成电动汽车，可享受 500 欧元至 1 万欧元的补贴；若换成混合动力汽车，可享受至多 6500 欧元的补贴。为进一步鼓励法国市民使用电动汽车，罗雅尔还表示，将于 2030 年前建设 700 万个标准化电动汽车充电站。考虑到电池电量有限，法国将每隔 60 公里内就建造一个充电站，覆盖火车站、超市和机场等地的公共和私人停车场。

★ FRANCE

French Government Offering up to €10,000 to promote Electric cars

The French government will offer incentives of up to €10,000 to motorists who consider switching their diesel cars to electric vehicles. The French Minister for Ecology, Sustainable Development and Energy, Ségolène Royal, announced that the measure will be taken effect from 1st April, 2015. The new incentive will only be available to drivers who want to replace vehicles older than 13 years. Bonuses will range from €500 to €10,000 for the swap, while up to €6,500 will be available for those wishing to change to a hybrid vehicle. In a further bid to encourage French citizens to choose electric vehicles, Royal also said that 7 million standardized electric charging stations will be installed in France by 2030. The stations, ideally located within 60 kilometres of each other because of the limited ranges of batteries, will become mandatory in private and public car parks at train stations, supermarkets and airports.



★ 美国

波特兰成为美国首个把水资源变成可再生能源的城市

波特兰水务和透明能源局负责为城市提供可再生智能水资源基础设施，该局已经将市内一条主要水管改造成可再生能源管道。

“透明管道动力系统”利用市属管道内水流随重力运动的原理，推动 4 个 1 米涡轮，从而为波特兰通用电气公司的用户供电。这套系统也有助于可再生能源的发展。

这个系统并不是由水务局和波特兰市出资建设。它是美国首个通过市内水管水力发电，并制订了 20 年期的可再生电力购买协议 (PPA) 的项目。

“水务局非常高兴看到我们能够创造性地利用波特兰管道，在输送水的同时还能发电，”水务局主管大卫·沙夫如是说，“水和电能息息相关。透明管道系统让水务局也参与到发电过程当中，通过清洁、低成本、可再生的方式，为社区居民提供电能。”

这套系统将在 2015 年 4 月份完全投入使用，在 20 年期内能创造价值约 200 万美元的可再生电能，足够为超过 150 个家庭供电。波特兰水务局和 Harbourtion 公司（为透明能源项目投资的公司）将共同分享收益。20 年期后，该系统及其生产的能源将全部归水务局所有。

透明能源系统主席暨 CEO 格雷格·萨米拉说：“水务公司希望能找到提高能源效率的方法，能源公司要找更多的可再生资源，投资者在智能水资源和能源基础设施中不断寻找机会。整个产业都以波特兰为例子，看看各方如何合作，利用管道水力发电获得利润，同时降低饮用水运输成本。”

★ UNITED STATES

Portland Is the First City in the US to Use Water for Renewable Energy

The Portland Water Bureau and Lucid Energy, a provider of renewable smart water infrastructure, have turned one of the city's major water pipelines into a generator of renewable energy.

The LucidPipe Power System uses the gravity-fed flow of water inside the city-owned pipeline to spin four 1-metre turbines that are now producing electricity for Portland General Electric customers, helping promote renewable power development.

The system, which was installed at no cost to the water bureau or the City of Portland, is the first project in the US to secure a 20-year power purchase agreement (PPA) for renewable energy produced by in-pipe hydropower in a municipal water pipeline.

"The Water Bureau welcomed the opportunity to explore the innovative use of a Portland pipe delivering water to create hydroelectric power as well," said David Shaff, Water Bureau Administrator. "Water and energy are closely linked. The Lucid pipe system provides a way for the Water Bureau to contribute to generating electricity for our community in a clean, low-cost and renewable way."

The system will begin full energy production by April and will generate approximately US\$2 million worth of renewable energy capacity over the 20-year PPA period, enough electricity for more than 150 homes. The Portland Water Bureau and Harbourtion (that financed the project through Lucid Energy) will share in the revenue.



After 20 years, the Water Bureau will have the right to own the system and all the energy it produces.

"Water agencies are looking for ways to be more energy-efficient, energy utilities are seeking more renewable sources of energy and investors are seeking opportunities in smart water and energy infrastructure," said Gregg Semler, President and CEO of Lucid Energy. "The industry is looking to Portland as an example of how all of these entities can partner to take advantage of in-pipe hydropower to generate investment returns and reduce the cost of delivering clean and safe drinking water."

★拉丁美洲

世界首个水资源评级机构成立

新的水资源评级系统旨在通过综合性、公平、可信地评估设备性能及管理水平，为人们提供评价水资源和卫生服务的国际标准。由泛美开发银行开发的“水评估”将取得国际水协会颁发的资格证，建立首个针对水资源和卫生服务供应商的评级机构。“水评估”将根据三项标准进行评级：绩效指标，最佳实践和信息质量。评级系统将围绕8个领域，112个小项给出具体的评估数据，通过独立审计过程确认信息的真实性，提高透明度和可信度。作为一项国际标准，“水评估”为整个水资源产业提供了自我监察和提升的底线。

★ LATIN AMERICA

World's First Rating Agency for Water Sector Launched

A new water-rating system will aim to provide international standards for assessing water and sanitation services provision by offering a comprehensive, impartial and credible evaluation of utilities' performance and best management practices. Developed by the Inter-American Development Bank, AquaRating will be licensed to the International Water Association to set up the first rating agency for water and sanitation services providers. AquaRating will assess providers according to three dimensions: performance indicators, best practices and information quality. The rating system gives a detailed evaluation of 112 elements across eight key areas and validates information through an independent auditing process, enhancing accountability and transparency. As a standard, AquaRating sets the baseline for utilities to monitor their performance and plan for improvements.

★德国

汉堡居民利用防小便油漆对付随地小便者

在汉堡夜店圣保利附近，居民利用疏水性油漆来对付夜晚在公共建筑随地小便的狂欢者们，这种油漆能将小便反弹回去，让作恶者瞬间清醒。据路透社报道，汉堡居民已经在一部分建筑上涂上了这种油漆，不过这种油漆价值不菲，刷6平方米需要500欧元。“这种油漆能直截了当地告诉那些小便的人，他们不受欢迎。”圣保利社区居民委员会的朱莉亚·斯塔隆对路透社记者说，“油漆能保护建筑物和附近居民，更重要的是，它发出一种信息：这种行为不被接受。”

partyers urinating on public buildings with a hydrophobic paint that sends the spray directly back at the perpetrators. Reuters reported that residents have painted a handful of buildings, although the paint is rather expensive, costing about €500 to paint an area of six square metres. "This paint job sends a direct message back to perpetrators that their wild urinating on this wall is not welcome", said Julia Staron of the St. Pauli's Community of Interest group to Reuters. "The paint protects the buildings and the residents and most importantly it sends a signal that this behaviour is not on."

★ GERMANY

Hamburg Residents Fight Back Against Public Urination with Urine-Repellent Paint

In Hamburg's nightclub area, St Pauli, residents are fighting back against late-night



交流
Exchange

广州国际城市创新研究会与斯里兰卡地方政府协会交换合作备忘录

4月5日，广州国际城市创新研究会与斯里兰卡地方政府协会双方代表在斯里兰卡地方政府协会总部办公室交换了《广州国际城市创新研究会与斯里兰卡地方政府协会建立战略合作伙伴关系备忘录》文本，双方约定以备忘录为开端，加强双方友好交流与合作，务实推动双边关系向纵深发展，共同推动广州国际城市创新奖可持续发展，助力全球城市锐意创新与和谐共进。

A Memorandum of Understanding with FSLGA to Achieve Win-win Collaboration

On 5th April, 2015, a delegation from Guangzhou visited the headquarter of the Federation of Sri Lankan Local Government Authorities (FSLGA). Talks were held with National Coordinator and CEO Hemanthi Goonasekera about personnel training and exchange programs. The Guangzhou Institute for Urban Innovation (GIUI) signed a Memorandum of Understanding with FSLGA. Both parties consider the MOU to be the beginning of a strong strategic partnership. It will strengthen communication and cooperation of the two parties and further



the bilateral relationship in various ways, including through jointly promoting the sustainable development of the Guangzhou International Award for Urban Innovation (Guangzhou Award), and encouraging urban innovation and harmonious development worldwide.

广州国际城市创新研究会与倡导地区可持续发展国际理事会签署并交换合作备忘录

4月11日，在韩国首尔举行的倡导地区可持续发展国际理事会（ICLEI）2015世界大会期间，广州国际城市创新研究会与倡导地区可持续发展国际理事会双方代表签署并交换《倡导地区可持续发展国际理事会与广州国际城市创新研究会合作备忘录》，并就广州进一步扩展多边合作网络、参与国际事务等话题交换了意见。

倡导地区可持续发展国际理事会（ICLEI）于1990年成立，其成员来自全球84个国家和地区，致力于推动地方政府的可持续发展。

A Memorandum of Understanding with ICLEI Marks the Beginning of Promising Relations

On 11th April, 2015, during the ICLEI World Congress in Seoul, the Guangzhou delegation met with ICLEI Secretary General Gino Van Begin. Mr Van Begin expressed his appreciation that the delegation were taking an active part in the Congress and making a significant contribution. The parties exchanged views on the

means to expand global networks and play a more active role in international affairs, both as city authorities and non-governmental organizations. A formal ceremony was held during the Congress to facilitate the signing of the Memorandum of Understanding between ICLEI and Guangzhou Institute for Urban Innovation (GIUI). The MOU marks the beginning of a promising collaborative relationships between ICLEI, the world's leading network of over 1,000 cities, towns and metropolises, and GIUI, a Guangzhou-based major research body that aims at developing the concepts, tools and methodologies of urban innovation.





城市创新研讨会在布宜诺斯艾利斯成功举办

5月21日，主题为“政府间跨部门协作与城市治理”的城市创新研讨会在布宜诺斯艾利斯成功举办。该活动由广州国际城市创新研究会（简称“研究会”）、城地组织（UCLG）城市创新专业委员会、广州国际城市创新奖（简称“广州奖”）办公室和布宜诺斯艾利斯市政府共同主办。在研讨会上，与会人员主要就第二届广州奖提名项目“创新及创造力合作委员会”进行评述和展开圆桌讨论。此项目鼓励高级官员之间进行对话，激发高级官员采取有想象力和创造力的行动，使他们可以脱离自己的日常工作进行思考，跳出固有思维模式，更具有创造力和创新精神。该项目对世界城市管理创新具有积极的借鉴意义。

A Workshop on Urban Innovation Successfully Held in Buenos Aires

On 21st May 2015 in Buenos Aires a workshop on "Urban

Innovation: Interdepartmental Collaboration and Urban Governance" achieved great success. The workshop was co-hosted by Guangzhou Institute for Urban Innovation (GIUI), UCLG Community on Urban Innovation, the Secretariat of Guangzhou International Award for Urban Innovation, and the Buenos Aires City Council. Before the workshop, a delegation led by Guangzhou CPPCC conducted a field tour of the initiative of the Collaborative Roundtables for Innovation and Creativity, one of the short-listed initiatives for the second Guangzhou Award. During the workshop, experts further analyzed and discussed the case. This initiative enables an open dialogue between senior officials, stimulates their innovative and imaginative actions, and urges them to think beyond routine work, break the stereotypes and adopt a creative spirit. The initiative offers lessons for enhancing innovative global city management.

广州市代表团赴巴西里约热内卢调研第二届广州奖提名项目

应里约热内卢市政府的邀请，广州市代表团于5月17日至18日赴巴西里约热内卢调研第二届广州国际城市创新奖（简称“广州奖”）提名项目——里约热内卢紧急控制中心，里约市政府国际关系主任劳德玛·阿吉尔会见代表团一行，里约市政府国际关系顾问利亚娜·鲁兹就项目实施情况向代表团进行专题介绍，控制中心运行团队与代表团进行圆桌会议，详细介绍项目开展情况。代表团还实地考察了控制中心下设控制大厅。

里约热内卢市长代表会见广州市代表团一行，双方就共同推进两市友好交往交换意见。



In Rio De Janeiro, Brazil, a Guangzhou Delegation Investigates a Short-listed Initiative of the Second Guangzhou Award

At the invitation of Rio de Janeiro City Council, a Guangzhou delegation visited Rio on 17–18th May and toured its world-leading Emergency Control Center, one of the short-listed initiatives of the second Guangzhou Award. Mr Laudemar Aguilar, head of International Relations for Rio, met with the delegation. Ms Liana Luz, Rio's Adviser on International

Relations, introduced the Control Center's operations, and the delegation had a roundtable discussion with the Center team to identify salient details about the initiative. The delegation also visited the control room and media room of the control center. The representative of Mayor of Rio de Janeiro met with the delegation and discussed the promotion of friendly exchanges between two cities.



广州市代表团出席城地组织（UCLG）执行局会议

2015年6月11日至12日，受广州市市长、世界城市和地方政府组织（UCLG，简称“城地组织”）联合主席陈建华委托，市人大常委会副主任凌伟宪率团出席了在巴西阿雷格里港市举行的城地组织（UCLG）执行局会议，代表城地组织（UCLG）城市创新委员会在会议上致辞，介绍第二届广州奖评选情况、城地组织（UCLG）城市创新专业委员会有关工作进展和下一阶段工作计划，邀请广大会员积极参与有关活动。代表团与城地组织（UCLG）主席团、秘书处、各分会及重点会员城市进行了工作交流与沟通，并代表联合主席出席了组织财政事务委员会会议和法定事务委员会会议。

A Guangzhou Delegation Joined Others in Porto Alegre for the 2015 Executive Bureau of UCLG

On 11–12th June, 2015, commissioned by Mr Chen Jianhua, Mayor of Guangzhou and Co-President of UCLG, a delegation from Guangzhou joined others in Porto Alegre, Brazil, for the 2015 Executive Bureau of UCLG. Mr Ling Weixian, Vice Chairman of People's Congress of Guangzhou Municipality, led the delegation. He gave a detailed report during the Executive Bureau Business Session on the outcomes of the second Guangzhou International Award for Urban Innovation and Urban Innovation Community's

work plan for the year of 2015. Mr Ling sent out invitations to members and partners of the Community as well as to other delegates who were also present at the session, encouraging them to take active parts in the series of field-studies to 15 cities whose initiatives had been shortlisted in the second Guangzhou Award. The delegation also met with members from UCLG Presidency, World Secretariat, Sections and Committees, and was involved in other sessions such as the Financial Management Committee and the Committee on Statutory Affairs.



活动预览
Upcoming
Events

●国际城市创新领导力研讨班

日期：2015年11月2日—6日

地点：中国广州

在世界城市和地方政府组织（UCLG）、世界大都市协会以及中国人民对外友好协会的大力支持下，首期“国际城市创新领导力研讨班”将于2015年11月2日至6日在中国广州举办。研讨班围绕“变迁中的城市与城市创新领导力”主题，以“聚焦城市议题，促成创新对话；共享全球知识，深化中国实践”为宗旨。研讨班选择城市创新与城市治理方面的重点问题，紧密结合参会城市实践与广州奖参评案例开展研讨。

我们诚邀全球城市领导者，尤其是在城市创新和城市治理方面面临挑战或已积累丰富经验的决策者和管理者们参加研讨班，加强在城市创新方面的学习分享和能力建设，构建一个基于城市创新议题的全球网络。

● Workshop for Thought Leaders: Learning from Urban Innovation

Date: 2-6th November, 2015

Location: Guangzhou, China

Urban leadership plays a vital role in facilitating urban transformation and innovation. The megatrends of globalization, urbanization and climate change are compelling local governments to search for more effective policies, strategies and governance models to make their cities more liveable, prosperous and environmentally sustainable. The Workshop for Thought Leaders is designed to facilitate the learning of policy and decision-makers can learn from outstanding innovations in urban resilience, prosperity and sustainability. This workshop provides a unique opportunity for city leaders to engage with leading experts, practitioners and urban leaders in learning from best practices in solving urban challenges and in making cities work for their citizens.

城市发展

- 巴西城市科技会议, 2015年9月30日—10月2日, 巴西, 里约热内卢
- 生态城市世界峰会, 2015年10月11日—13日, 阿拉伯联合酋长国, 阿布扎比

Urban Development

- UrbanTec Brasil, 30 September-2 October, 2015, Rio de Janeiro, Brazil
- Ecocity World Summit, 11-13 October, 2015, Abu Dhabi, UAE

能源

- 非洲电力会议, 2015年9月30日—10月2日, 南非, 约翰内斯堡

Energy

- Africa Electricity, 30 September-2 October, 2015, Johannesburg, South Africa

交通

- 生态交通运输节, 2015年9月1日—30日, 南非, 约翰内斯堡
- 第22届法国(波尔多)智能交通系统展, 2015年10月5日—9日, 法国, 波尔多
- 21世纪步行大会(维也纳): 迈进, 2015年10月20日—23日, 奥地利, 维也纳

Transport

- EcoMobility Festival, 1-30 September, 2015, Johannesburg, South Africa
- 22nd ITS World Congress, 5-9 October, 2015, Bordeaux, France
- Walk21 Vienna: Stepping Ahead, 20-23 October, 2015, Vienna, Austria

城市规划

- 中东可持续能源博览会, 2015年10月28日—29日, 阿拉伯联合酋长国, 迪拜
- 专业照明设计师大会, 2015年10月28日—31日, 意大利, 罗马
- 第八届国际城市规划大会, 2015年11月16日—18日, 澳大利亚, 布里斯班、墨尔本

Urban Planning

- Sustainable Utilities Middle East Expo, 28-29 October, 2015, Dubai, United Arab Emirates
- Professional Lighting Design Convention, 28-31 October, 2015, Rome, Italy
- The 8th International Urban Design Conference, 16-18 November, 2015, Brisbane & Melbourne, Australia

水资源

- 阿姆斯特丹国际水周展, 2015年11月2日—6日, 荷兰, 阿姆斯特丹

Water

- Amsterdam International Water Week, 2-6 November, 2015, Amsterdam, The Netherlands

废弃物

- 国际固废弃协会世界联合会议, 2015年9月7日—9日, 比利时, 安特卫普
- 伯明翰国际废弃物管理及资源回收利用展, 2015年9月15日—17日, 英国, 伯明翰

Waste

- ISWA World Congress, 7-9 September, 2015, Antwerp, Belgium
- RWM Birmingham, 15-17 September, 2015, Birmingham, the UK

第二届广州奖优秀参评案例调研计划表

序号	调研路线	调研时间	调研案例名称
1	阿根廷 布宜诺斯艾利斯 – 巴西 里约热内卢	5月	1.创新及创造力合作委员会; 2.里约操作中心——用智能系统整合数据、监控公共设施
2	新西兰 基督城 – 澳大利亚 墨尔本	7月	1.我们的发展型城市; 2.降温 4 摄氏度——通过绿色基建打造具有气候弹性和繁荣经济的城市
3	美国 波士顿 – 哥伦比亚 安蒂奥基亚省	8月	1.青年引领变革——波士顿参与式预算; 2.教育学园——创新教育系统
4	英国 布里斯托尔 – 德国 汉堡 – 瑞典 林雪平	10月	1.智慧城市; 2.汉堡国际建筑展及“可再生威廉斯堡”气候保护理念; 3.2025 碳中和计划
5	土耳其 埃斯基谢希尔 – 阿联酋 阿布扎比 – 塞内加尔 达喀尔	11月	1.城市记忆博物馆; 2.可持续发展; 3.市财政计划

注：时间和行程可能会根据实际情况进行调整。

The Guangzhou Award Study Tours Plan for 2015

No.	Route	Time	Name of the Initiatives
1	Argentina(Buenos Aires)- Brazil(Rio de Janeiro)	May	1.Buenos Aires City's Collaborative Roundtable for Innovation and Creativity 2.Rio Operations Center: Integrating Data and Monitoring Utilities in a Truly Intelligent System
2	New Zealand(Christchurch)- Australia(Melbourne)	July	1.Christchurch: Our Ever Evolving City 2. 4°C Cooler—Using Green Infrastructure to Build a Climate Resilient and Prosperous Melbourne
3	United States(Boston)- Columbia(Antioquia)	August	1.Youth Lead the Change: Participatory Budgeting Boston 2.Educational Parks: Innovating the Educational System in Antioquia
4	United Kingdom(Bristol)- Germany(Hamburg)- Sweden(Linkoping)	October	1.Smart City Bristol 2.The International Building Exhibition IBA Hamburg and its Climate Protection Concept "Renewable Wilhelmsburg" 3.Linköping—Carbon Neutral 2025—Where Ideas Come to Life
5	Turkey(Eskişehir)- United Arab Emirates (Abu Dhabi)- Senegal(Dakar)	November	1.Cherish the Memory of the City—Eskişehir City Memory Museum 2.Estimada—Sustainable Development 3.Darkar Municipal Finance program: Accessing the Power of Capital Markets to Improve the Quality of Life for the Urban Poor

Note: The schedule is subject to change in need.

“智慧城市”对城市发展的意义

Making Sense of "Smart City" Approaches to Urban Development

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引言

关于解决城市发展问题的文章中经常提到“智慧城市”和“大数据”等热门做法，本文将要分析这些做法在实际操作中的成功案例。这些案例都经历了广州国际城市创新奖（简称“广州奖”）专家评委评审认可。广州奖每两年一届，是由广州市和世界城市和地方政府组织（UCLG，简称“城地组织”）和世界大都市协会联合设立，致力于发现有利于城市可持续发展的优秀创意的国际性奖项。本文谈到的解决方案来自不同的地区和背景，希望能就智能城市能带给城市和居民的好处以及智能城市有效运作所需的环境作出一些有用的结论。

Introduction

Literature abounds with references to "smart city" and "big data" approaches to solve urban problems. The purpose of this article is to analyse these approaches by looking at recent "best practices" in the implementation of "smart city" solutions. These peer-reviewed practices are drawn from the Guangzhou International Award for Urban Innovation—a biennial award co-sponsored by UCLG and Metropolis devoted to recognising outstanding initiatives in striving for urban sustainability.^[1] More specifically, the solutions reviewed in this paper originate from different regions and contexts in the hopes of drawing some useful observations regarding what smart city approaches can do for a city and its inhabitants and what are the ideal conditions for such approaches to work effectively.

Making resilience work for everyone

Rio de Janeiro, Brazil is a city of more than 6.5 million people with a complex geography and strong social and demographic pressures. Lying in the tropical storm belt, Rio de Janeiro has been hit hard by repeated Atlantic storms imperilling the city. This especially affects the mostly low-income settlements commonly referred to as favelas that are located on the high slopes surrounding the metropolis and are prone to devastating landslides.

[1] To date there have been two cycles of the Guangzhou Award resulting in more than 400 submissions from more than 60 countries and regions. The cases reviewed in this paper are from the shortlist of 15 outstanding initiatives selected by an independent Technical Committee. See www.guangzhouaward.org

为每个人效劳

巴西里约热内卢共有人口 650 万，地理位置复杂，社会压力和人口压力巨大。因位于热带风暴区域，里约热内卢饱受来自大西洋的风暴袭击。最遭殃的就是大多数的低收入居民，尤其是居住在贫民窟的居民。这些贫民窟在都市周边的高坡上，风暴来袭时很容易造成灾难性的山体滑坡。在 2010 年的特大风暴雨后，里约热内卢市长集结了一支特遣部队，他们的任务只有一个，就是保证在山体滑坡中无人员死亡。于是，一个应急中心应运而生，方便收集信息和各部门分享信息，而在此之前这些部门间是毫无合作关系的。这些信息包括规划、气象、地底分析和绘图、房产、健康、人口分布和密度等等。现在这个中心一天 24 小时都在运作。中心员工是来自 30 个城市部门的公务员，他们的任务是不断地分享数据信息和向公民征求意见。这个中心已经成为一个很好的国际性的榜样，展示着城市各部门合作、互相分享信息带来的好处。自从设备正常运作，应用了最新的信息交流技术和天气预报系统后，就没有任何人员因山体滑坡死亡。这个中心还为城市的日常管理带来许多好处。交通紧急事件大量减少，因为市民对于交通拥堵和交通事故都有警觉，会改道去没那么拥挤的道路。通过中心收集数据信息，能发现登革热高发社区，从而使健康中心能及时实施一些防御措施。在规划这些设施的时候，里约热内卢的官员拜访了马德里、首尔和纽约的警报中心，还与约翰内斯堡达成合作，因其也计划设计一个类似的系统。

合作寻求缓和气候变化的方法

韩国光州采取了一个极富创意的缓和气候变化的方法。这个计划始于 5 年前，倡导市民自觉加入到减少碳消耗的行动中。

Following a vicious storm in 2010, the mayor of Rio de Janeiro convened a task force with one single objective: no more death from landslides. This led to the establishment of an emergency centre that brought together, for the first time, data gathering and information sharing between departments that heretofore never worked together. Examples include departments for planning, meteorology, sub-soil analysis and mapping, housing, health, population distribution and density, etc. Today the centre operates 24 hours a day. It is staffed by officials from 30 municipal departments that continuously share data and information and solicit information from citizens. This centre has become a global model showing the benefits that can be derived from collaboration, alignment and data sharing across city divisions. Since the facility went online, employing some of the latest information communication technology and weather forecasting systems, there have been no death caused by landslides. The model has had many other benefits for the day-to-day management of the city. Traffic emergency time response has been reduced significantly with citizens alerted about traffic snarl ups and accidents and redirected to the least congested routes. Data gathered for the centre also enables the identification of neighbourhoods with higher dengue fever infection rates, allowing for health services to implement preventative measures in a timely manner. In planning the facility, Rio officials visited alert centres in Madrid, Seoul and New York, and have since forged cooperation with Johannesburg as it plans a similar system.

Partnership approach to the climate change mitigation

The City of **Gwangju**, Korea has taken a highly innovative approach to climate change mitigation. It initiated five years ago a program to engage citizens in voluntary carbon-saving steps. Gwangju's Carbon Bank System currently involves 330,000 households, representing 62 per cent of the city's population of 1.48 million. The Carbon Bank System calculates reduced amounts of carbon dioxide through voluntary energy-saving efforts by households and turns them into points. The Carbon Bank involves the active participation of the Korea Electric Power Corporation, the Gwangju Metropolitan Waterworks Authority and Hae Yang City Gas. All three provide data to the system based on participating households' consumption. Gwangju City calculates the reduction in greenhouse gas emissions and turns the amount into points. These points are then credited to the electricity, gas, and water bills of the participating households.

This innovation has two effects: it provides citizens with a tangible means of seeing their actions reflected in terms of CO₂ reductions (the common

已有 33 万户家庭加入光州的碳银行系统，占了全城总人口 148 万的 62%。碳银行体系是计算家庭通过节能行动而减少的二氧化碳，然后把它们转化成分值。碳银行还与韩国电力企业、光州水利局和城市燃气公司积极合作。这三大机构为其提供每户家庭的一些消耗数据。光州计算温室气体排放的减少量然后转化成分值。这些分值可以抵消参与住户的一部分电费、燃气费和水费。

这个创新机制有两个好处：一是使得市民能够真切地体会到他们的减少二氧化碳排放（共同利益）的行动和他们账单（个人利益）的联系，二是使公共政策因为水利电力燃气紧密合作的关系迈进了一大步。连接这几个机构是低碳城市管理和发展中的一大难关。通过这个完整的体系，城市可以分析和评估不同地区的不同活动如何影响温室气体的排放以及哪些区域需要重点关注来减少碳排放。这个计划在 2008 年启动后，温室气体的排放就逐年减少，目前为止共减少了 13.5 万吨。

成为环境目标的入世的商业模范

2005 年，德国汉堡决定采用一个社会大众都接纳的方法使城市零排放发展。为了重新发展威廉斯堡，一个试验性的计划由此提出，那就是主办国际建筑和国际花园展（IBA）。IBA 合作关系的建立使私企和当地社区更加融合。围绕 3 个主题，包括城市和气候变化，有 70 个项目已经发展起来。

威廉斯堡有 5.5 万的居民住在易北河的岛上，这片区域很容易受到洪水的侵袭。同时这个地方人种多样，居民收入较低，自然环境又受到工业和交通设施的影响。这个项目计划在最大化地利用本土能源资源（比如节约能源、高效利用能源和利用

good）and on their utility bills (personal benefit). It also represents a major step in terms of public policy by tying together water, electricity and gas. This bridging of "silos" is perhaps one of the most important hurdles to be overcome when striving for low-carbon urban management and development. Through such an integrated system, the city can analyze and evaluate how different actions in different areas affect the total equation of GHG emissions and what areas need greater focus to continue to progress towards lowering the carbon footprint of the city. Since inception of the program in 2008 GHG emissions have decreased each year, most recently by 135,000 tons.

Socially inclusive business model for attaining environmental goals

In 2005 the City of **Hamburg**, Germany decided to embark on a socially-inclusive approach to zero-carbon urban development. A pilot project was established for the redevelopment of the Wilhelmsburg neighbourhood of the City by hosting the International Building and the International Garden Show (IBA). An "IBA Partnership" was established which brought together private companies and the local community. As a result, over 70 projects were developed around 3 themes including cities and climate change.

Wilhelmsburg has 55,000 inhabitants living on an island in the Elbe. It is particularly vulnerable to flooding. It is also an ethnically diverse and low income community with a physical environment affected by industrial and transport infrastructure. The projects are based on maximizing the use of local energy resources such as energy savings and energy efficiency and using the technological opportunity as a means of strengthening local economy development. The aim is 100 per cent local renewal supply by 2025 and 100 per cent renewable heat by 2050, making the Elbe island carbon neutral. The IBA is also a unique in its governance structure as it is incorporated as a limited liability company. It thus has a certain amount of independence from classic administrative hierarchies and can act more like a private enterprise. Additionally, IBA organized an official "IBA-partnership" with about 150 companies and institutions being members and included the inhabitants by numerous workshops and fora. Less bureaucracy and political interference allowed the IBA to set ambitious targets and to mobilize partners. Already scheduled projects will ensure that 54 per cent of heat production and 14 per cent of the overall energy demand will be renewably produced by the end of 2015. The IBA Hamburg Model and the Climate Protection Renewable Wilhelmsburg's strategy have made the City of Hamburg one of the frontrunners when it comes to socially inclusive and

科技元素)的基础上来提高当地经济发展水平。目标是到2025年达到100%的本地供应,到2050年有100%可再生的热能,使易北岛能够达到碳平衡。IBA的特别之处在于它的公司管理结构,它是股份有限公司。因此它在行政等级制度中有一定的自主权力,有点像私企。另外,IBA组织了一个官方的“IBA合作伙伴”,已有150家公司和机构参与到其中,还包括许多工作室和论坛。较少官僚和政治的干涉使IBA能制定宏伟的目标和有效地动员成员。现在已经规划好的项目会确保到2015年底能生产54%的热能和可持续生产14%的总能源。这个IBA汉堡案例和威廉斯堡气候保护可持续战略使汉堡在有利于社会和环境的城市发展策略上成为领跑者。此外,IBA还与其他伙伴城市分享信息资源,逐步增大威廉斯堡试验区,运用到城市其他地区。

赋予人民权利

英国“智慧城市布里斯托尔”是一个由城市部门、企业和社区共同合作的项目,主要目的是用智能技术来达成这个拥有43万居民的城市的宏伟计划,到2020年减少40%的二氧化碳排放量(以2005年为基准)以及实现其他一些社会经济目标。

这个项目从2011年开始,主要围绕着智能化能源,智能化交通运输和智能数据。它包括许多实验性的项目,比如智能测量、智能系统网格、电动汽车、开放数据,还有一些长久性的提议,比如建立交通控制中心和货物拼集中心。“智慧城市布里斯托尔”很独特的一点在于它融合了微电子、环境技术以及和借助社区力量发展智能化的创新型数字化公司合作。举个例子,布里斯托尔在诺尔斯西部的应用创新实验室召集了积极创新的人才,评估各项他们日后会用到的技术。

这个项目的开展是以布里斯托尔为背

environmentally sound urban development. Additionally the IBA is sharing the knowledge generated with other partner cities and is currently scaling up the Wilhelmsburg pilot to other parts of the city.

Empowering people

Smart City Bristol, U.K. is a collaborative program between the public sector, business and community. The main aim is to use smart technologies to help meet the ambitious city target to reduce CO₂ emissions by 40 per cent by 2020 from a 2005 baseline, as well as other social and economic objectives for its more than 430,000 inhabitants.

The program was launched in 2011 focusing on Smart Energy, Smart Transport and Smart Data. It includes pilot projects such as smart metering, smart grid, electric vehicles, open data alongside permanent initiatives such as a Traffic Control Centre and a Freight Consolidation Centre. A distinctive trait of Smart Bristol lies in collaboration with micro-electronic, environmental technology and creative/digital companies who are working with communities to make them smart. One such example Bristol's Living Lab in Knowles West which groups people who are actively involved in the creation and evaluation of technologies which they will ultimately use.

The projects are applied within a Bristol context using their own approach to smart cities. Smart City Bristol is about putting its more than 430,000 people at the heart of a smart city rather than technology. It is how people interact with technology that helps inform behaviour change and help the City achieve its aims. Smart City Bristol is also evolutionary, in that it builds upon the lessons learned from previous projects to inform new ones.

The current accomplishments include

- Securing an additional £7m in funding for Green Capital activity.
- Becoming one of the inaugural 100 Resilient Cities, a pioneering initiative funded by the Rockefeller Foundation.
- Achieving the target of 20 per cent energy reduction.
- Decrease in energy consumption by schools and council offices as part of the "smart spaces" project.
- Increased awareness and engagement with climate change issues via smart city projects in general.

Bristol is already the most energy-and waste-efficient one in major British cities, and it is planning to meet future needs by managing resources even more



景的，他们都有自己的一套创建智能城市的方法。“智慧城市布里斯托尔”这个项目的核心是43万居民而不是科技。关键在于人们如何运用科技来改变自己的行为从而达成城市目标。这个项目是升级版，因为它吸取了之前项目的教训并做出改善。

现阶段取得的成就

- 额外获得700万英镑的资金来开展“绿色首都”活动。
- 成为正式的一百座“韧性城市”之一，这个开创性的倡议是由洛克菲勒基金会资助的。
- 实现了减少20%能源消耗的目标。
- 将减少学校和议会办事处的能源消耗作为“智能空间”项目的一部分。
- 通过参与智慧城市这个项目，更积极地关注并参与气候变化问题。

布里斯托尔已经是英国能源利用率和废物利用率最高的一个城市，而且正计划着在未来能够更有效地利用资源。“智慧城市布里斯托尔”这个项目为布里斯托尔塑造了一个创新中心和智能地解决城市问

efficiently. Smart City Bristol has contributed to the image of Bristol as a centre for innovation and a leader in adoption of "smart" solutions to city-level problems.

According to the Mayor of Bristol, the key to Bristol's success lies in the empowerment of its citizens. Citizens played a major role in choosing the technological solutions according to their priorities. This requires first and foremost a commitment to "educate" the public so that they are properly informed of the issues and their policy implications. It also requires that the city administration empower its citizens and trust its citizens to make important but nonetheless informed decisions.

Some concluding observations

New technology and new ways to collect and analyse data can contribute significantly to making our urban infrastructure and services more effective and efficient. For the first time in history, we can begin to envisage city planning and management as a truly holistic endeavour by using data and information from a myriad of sources and across departments and jurisdictions for problem identification and solving. What transpires, however, from the above case studies is that the key ingredients to a successful smart city are people, partnerships and participation.

The emergency centre in Rio de Janeiro almost looks like something out of a sci-fi movie as a whole wall of screens display real time information and their analysis from hundreds of sources. But what makes this centre an unparalleled success is its DNA, namely a single objective of saving lives. The centre now deals with dozens of day-to-day operations of the city, but it has

题的先驱的形象。

布里斯托尔市长说，布里斯托尔成功的关键在于市民的支持，市民根据他们的当务之急选择有科技含量的解决方法。第一点也是最重要的一点是“教育”大众，这样大众才能通过正确的渠道获得相关信息和政策的实施情况。此外，还需要城市行政部门给予市民一些权利，信任自己的市民能够一起做出重要的明智的决定。

总结观察

新兴科技和新的收集分析数据的方式可以为城市的基础设施带来极大的好处以及使服务更加高效。这是我们有史以来第一次开始设想城市的规划和管理并且尝试真正的全员合作，从无数的渠道收集数据信息，跨部门和管辖区域来识别问题解决问题。从上面几个案例可以发现，智能城市项目的成功在于人民的合作与参与。

里约热内卢的应急中心就像科幻片里的场景那样，整面墙一样大的屏幕显示实时信息，分析上百条资讯。但让这个中心无比成功的却是它的本质，那就是它的单一目的——救人。这个中心现在要处理城市中的许多日常问题，但它仍坚持以人为本，用户至上。

在**布里斯托尔**的案例中，政府努力地使市民能够参与到决策中来，让他们选择哪些解决问题的办法和科技能够满足他们现阶段和未来的需求。这比仅仅告知民众或是邀请民众到市政厅发表自己的意见要好太多，这等于是让民众坐上了驾驶座。

合作伙伴是成功的另一个重要因素。在**汉堡**和**光州**的案例中，城市行政部门为公私合作关系赋予了新的定义。两个案例都跳脱了传统的监管和控制职能。在**光州**的案例中，城市的燃气、电力、水利部门各自独立运作，一个商业银行代表这三大部门来开账单。这样一来消费者通过账单

remained people-centred and user-focused.

In the case of Bristol the city has gone out of its way to empower its citizens and enabling them to make decisions regarding which solutions and technologies are best suited to meet their current and future needs. This goes beyond just informing citizens or inviting them to voice their opinions in town hall meetings and the like—it is putting citizens in the driver's seat.

Partnerships are another strong factor of success. In the cases of Hamburg and Gwangju the city administrations are giving new meaning to the concept of public-private partnerships. Both cases represent a radical departure from conventional regulatory and control functions. In the case of Gwangju while the three utilities (gas, electricity and water) still operate independently of each other, a commercial bank acts on their behalf to provide a unified approach to billing. The bank helps the three utilities present their bills in such a way that the consumer can see the collective impact on CO₂ emissions of their individual and household efforts to save water, gas and electricity. This effort is, in turn, translated into a personal benefit in terms of reduced monthly utility bills.

The City of Hamburg also provides a new approach to public-private partnership with the establishment of a limited liability company to plan, design and implement an urban regeneration project for an entire district which is home to a sizeable low-income population. This business model is far from being the outsourcing of planning and design or providing development rights for a real-estate operation; it represents an integrated approach to fiscal planning, land use planning, housing, infrastructure and services. The set-up not only leverages resources from public, private and civil society sectors, it also ensures policy continuity over several electoral periods.

These and other examples that are becoming more present in professional circles and literature show us that a "smart city" is made up of three basic components: human intelligence through an empowered user or consumer; collective intelligence through new forms of collaboration and partnerships that help break down traditional silos; and digital or machine intelligence through the use of new information-intensive technologies and applications. The challenge for many emerging economy cities lies first and foremost in removing the barriers that prevent "smart city" approaches from becoming reality.

The first barrier is to put people at the centre of problem identification and solving. This implies engaging citizens in all aspects of project planning, design and implementation. The "smart city" requires first and foremost a well-informed and engaged citizenry.

就能看到他们个人和家庭的节约水、燃气、电的行为对城市二氧化碳排放量的影响。节约水电能够给个人带来好处是水电费的减少。

汉堡这个城市也诠释了新的公私合作的方式，通过成立了一家股份有限公司来为低收入群体社区规划、设计和实施城市更新项目。这个商业模式绝不是外包给别人规划设计或为房地产提供发展机会，而是有着一套完整的方案，包括财务规划、土地规划、房屋、基础设施和服务。它的建立不仅平衡了公共、私人和城市安全部门的资源，还确保了政策在几个选举阶段的连续性。

这几个和其他的一些例子在一些专业领域和文学作品中越来越常见，向我们展示了“智慧城市”的构建需要三个要素：借助人民智慧并赋予他们权利；集思广益，建立新型合作关系，打破传统体系；数码或机器智能，新的信息密集技术的运用。对于许多新兴经济城市而言，实现“智慧城市”，首先要在以下三个方面突破：

第一是把人民放在鉴别问题和解决问题的核心。这意味着让市民参与所有的项目规划、设计与实施。“智慧城市”计划首先需要见多识广的积极参与的市民。

第二是释放企业的潜能去创造新的方式，使基础设施与服务能够更高效。这意味着当地政府给予更多的管理空间使网络用户和因特网服务提供商能自由地不受阻碍地接触到信息和数据从而想出一些原创解决方案。世界上许多移除信息交流障碍和放松监管体系的城市都见证了人们使用和提供公共服务的方式的改变，管理交通流动性，提高安全度，激发能量，减少一切来自水、电、燃气和污水治理的交易成本。

最后就是优化政府治理，它使地方政府行政部门官僚机构和民众、企业独立开来，阻碍了新兴商业模式、新的方式以及新的合作伙伴关系的形成。这说明政府必



The second barrier is to unleash the potential of entrepreneurs to create new applications that will render the use of infrastructure and services more effective and more efficient. This implies that local government creates the regulatory space in which networks of users and service providers have free and unhindered access to information and data and are allowed to come up with original solutions. Dozens of cities around the world which have removed the barriers of access to information and eased regulatory regimes have witnessed the quasi-spontaneous development of applications that change the way people use and provide public services, manage traffic and mobility, improve safety and security, generate their own energy, and reduce the transaction costs for everything from water, electricity, gas, and waste management.

The last barrier is the governance barrier that separates local government administration and bureaucracy from both its citizens and from businesses that prevent new business models from emerging, new ways of doing old things and new forms of partnerships. This implies that local government must review its own role and responsibilities and graduate from a command and control and monopolistic service provider to a true facilitator that enables people and businesses to find innovative ways of improving quality of life and livelihoods.

须重新审视自己的角色和责任，从一个指挥官、操纵者、独断的服务提供者转变成一个真正的引导者，引导人民和企业寻求创新方式来提高生活质量。

政府和社会资本合作项目建设： 城市问题的万灵药？

Public-private Partnerships in China: A Panacea for Cities?

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中国地方政府现正面临着一个严峻的问题。中央政府主张继续推进城市化进程，促进工业化经济向消费者经济转型；另一方面，这些城市获得的经济支持有所减少。这使地方政府陷入了两难的处境。

过去 10 年间采用的非可持续性土地转型模式已经呈现出弊端。2013 年 6 月，地方政府已负债 18 万亿人民币（约合 3 万亿美元），怎样偿还这些债务成为了令地方政府头疼的问题。现在，货币政策需要做出谨慎的调整，减少地方政府无法偿还债

Chinese local authorities today are facing a paradox. On the one hand, the central government requires them to continue with an urbanisation process that will facilitate a change from an industrial production economy towards a consumer economy. On the other hand, it keeps on cutting the financial resources which these cities had access to in the past.

The unsustainable land-transfer model that has been used for more than a decade is now exhausted. As of June 2013, it has indebted local governments by more than RMB 18 trillion (US\$3 trillion), posing many questions on how this debt will be repaid by local governments. Similarly, the economic stimulus package that the central government put in place as a response to the global financial crisis has also created a dependency of local authorities on cheap and easy credit conditions from government-owned banks. Now, these ultra-loose monetary conditions need to be unwound carefully, reducing the risk of local governments defaulting on these loans and, at the same time, to continue investing to ensure the economy grows above the 7 per cent benchmark fixed by Beijing.

Over the past three years, I have been participating in many workshops and conferences about financial innovation to replace existing mechanisms with new ones that would continue to finance the pace of urbanisation. Bonds, Asset Backed Securitisation (ABS), Funds, Social Capital and, of course, Public-Private Partnerships (PPPs) have been on the table as if they were growing on trees waiting to be ripe for picking.

The reality, however, is turning out to be more complex. Bonds are regulated by the National Development and Reform Commission (NDRC), and only selected provinces and cities with provincial government status will be able to issue these bonds under the strict control of the national

务的风险，同时继续投资，确保经济增长速度能够达到国家规定的 7% 以上。

在过去 3 年间，我参加了许多经济创新方面的研讨和会议，希望找到新的机制，以保证城市发展的资金来源。债券，资产证券化 (ABS)，基金，社会资本还有政府和社会资本合作项目建设模式 (PPP) 都在我们的讨论范围内，它们就像是树上的果实，只是在等待成熟。

然而，现实正变得越来越复杂。债券由国家发展与改革委员会负责监管，只有具备省级地位的省和城市才能在国家政府的严格控制下获得资格发行。而且这些省和城市是否具备足够的信誉度，其资产负债表是否公开透明，能够通过发行债券获得较大利润，这些都是仍待解决的问题。

中国财政部计划限制银行收缴抵押品，至少要限制从政府机构中借贷。所以，现在地方政府需要利用私人领域投资（又叫“社会资本”）。

但是政府和社会资本合作项目建设模式 (PPP) 真的是理想的金融机制吗？在中国，哪些私人投资者能够作出如此大额的投资？单靠 PPP 能为中国城市提供继续发展所需的资金吗？财政部现正努力推进 PPP 模式和 PPP 项目的发展。虽然一部分人认为 PPP 模式能够解决目前问题，但仍然有很多人持怀疑态度。实际上，很多人对 PPP 模式还不甚了解。

什么是 PPP ?

很多人都认为 PPP 不仅仅是个金融机制，尽管金融领域的 PPP 模式十分常见，但并不是必须的模式。已经投入使用的基础设施就是其中一个例子，如果这种做法卓有成效的话，这些基础设施未来可能会公开招标，由私人企业管理运营。

另一方面，人们认为通过私企吸引资

政府。It is yet to be proven if these provinces and cities have enough credit worthiness and clean and transparent balance sheets to sell those bonds at attractive interest rates.

Funds and ABS are happening but mostly in the shadow banking system which in China could account for up to 25 per cent of the financial market. However, these are expensive financial mechanisms that, with restrictions to providing collateral from land, will turn out to be more expensive. The Ministry of Finance is set to put restrictions on banks on their request for collateral, at least on loans from government institutions. So local governments are being cornered to use private sector investment, or "social capital", as it is often translated from Chinese.

But are PPPs really financial mechanisms as many people think? Who are the potential private investors able to carry out these investments in China? Can PPPs alone provide the resources that the Chinese cities need to continue growing? The Ministry of Finance is pushing hard to develop this formula to find PPP projects to be executed. While some people think that PPP is the answer to their problems, many others are against it; but the reality is that most don't really understand what PPPs are about.

What are PPPs?

It is widely recognised that PPPs are many other things than a financial mechanism. Financing is something that comes along with many PPPs, but it is not essential. An example would be infrastructure already in operation that may be tendered to be operated by the private sector—if it is wise to do so.

It is also recognised that the private sector will always bring more expensive financial resources than public authorities, so if the reason to engage with the private sector is only about financing, public officials choosing this modality are probably not making the right choice.

These two notions are the ones that CDIA always battles against at the beginning of discussing public-private partnerships in our sessions with local authorities. The principle that the private sector needs to bring to the table, something more than financing, is the key element to understanding the abstract concept of value for money.

In China, where the public sector has dominated the economy across all possible sectors it is difficult to sell the idea that the private sector may provide more expertise, because there is very little private sector involvement in infrastructure development and operation, if any.

金来源的成本比政府要高，因此如果仅仅因为经济利益而吸引私企投资，那么政府的决策未必正确。

在亚洲城市发展中心与各地方政府展开关于政府和社会资本合作项目建设讨论的初期，我们经常对这两种做法有争议。私企必须放到桌面上讨论，并且不局限于金融领域，这对我们理解金钱价值的抽象概念非常关键。

现在，国企进入市场经济，无法像以前一样依赖政府生存；但是直到现在，大部分国企的发展道路尚不明确，既无法继续依赖政府，也无法完全独立。

中央政府正要求这些国企，特别是城市投资公司，能够完全独立运营。这对于中国来说是巨大的进步，由于现在地方政府仍然是主要股东，中国改革的空间仍然很大。

国企作为 PPP 项目的潜在赞助者，是处于改革的前沿的，即使他们无法提供大量的专业知识。由 PPP 项目竞标所带来的竞争优势也不会明显，因为国企在过去并不习惯竞争。

但是，PPP 对于国企来说确实是个真正进入市场经济的好机会，前提是保证一个公平竞争的环境。各级政府必须坚持市场原则，不对陷入困难的国企伸出援手。然而，这些企业如继续保持固有的商业模式，这会导致严重的问题，甚至某些项目会因此而失败。因此，这些失败的企业不大可能作出 PPP 所期待的投资，也无法实施优秀的运营。

即使国够能够克服困难完成任务，政府和民众也可能对他们寄予了过高的期望，PPP 未必能如大家所愿。PPP 不可能解决每一个问题。在中国，即使企业掌握着大量的闲置资金，也只有一小部分能用于 PPP 项目。要高效利用资金，就必须有良好的项目准备和高素质企业来实施项目。但即使这两个问题得以解决，并且中国也能比其他国家做得更



亚洲城市发展中心为超过 15 个国家近 100 个城市提供援助，动员了超过 70 亿美元的投资用于城市基础设施建设，其中援助中国的建设资金占了三分之一。CDIA has assisted nearly 100 cities in over 15 countries, mobilising more than US\$7 billion in urban infrastructure investments, out of which one third were in China.

But State-Owned-Enterprises (SOEs) are now being pushed to work "under market conditions", and to be less dependent on the governments that created them, but most of them, up to now, are run by public officials or former public officials, so this independence is unclear and is not working well in both directions.

The central government is calling for the total independence of these SOEs, in particular the City Investment Companies or "Chengtous", by eliminating government officials from these companies. This is indeed a big leap as the shareholders are still the local governments, so the room for interference in a country like China is ample.

Regardless of their independence, these SOEs are on the frontline as potential sponsors of PPP projects in China even if they do not provide a great deal of expertise. The benefits derived from competition in PPP project bidding processes may also not be present since these SOEs are not used to competing.

PPPs could, however, be a real opportunity for SOEs to start working in a real market economy, as long as they operate on a level playing field. All levels of government must also take a firm determination not to bail out companies in trouble. Nevertheless, the inertia of these companies is strong, and many may continue "business as usual" leading to serious problems and causing some projects to fail. So, it is unlikely that these companies will be able to bring the necessary investment and operations as desired by the



亚洲城市发展中心与财政部及国家发展与改革委员会通力合作，为城市的政府工作人员提供协助，以更好地开发公私合作的发展潜力。CDIA offers support on capacity development on PPPs for city officials in collaboration with the Ministry of Finance and the National Development and Reform Commission.

快更好，我们也很难相信 PPP 基础设施投资能占中国基础设施的 20% 以上。

总的来说，能成功开展 PPP 项目的国家都能充分理解这系统的概念和规则，并能创造合适的环境。这些国家的 PPP 约占总基础设施投资的 15% 至 20%。相比较之下，中国通过 PPP 项目获得的投资显得很少。如果中国的 PPP 投资额能占总投资的 5%，折算出来就是每年 2850 亿人民币（约 450 亿美元）。

虽然 PPP 项目在中国仍然面对众多挑战，但是项目实施能带来许多机遇。第一个挑战就是涉及国有企业的大型 PPP 项目在实施过程中潜在的问题。首先，我们可以针对 PPP 项目国企相互竞争制定清晰的法规，而这种竞争需要建立在国企与私企都公平竞争的基础上。这种方法能够提高国企的工作效率，有助于他们真正地进入市场经济，为将来参加国际竞争做好准备。

第二个挑战是政府官员和私营企业（还有银行、国企及其他）必须做好准备，理解 PPP 运作背后的原理和机制。有了充分的准备，政府官员将更加专业，私营企业也能参与额外机制（包括金融和法律机制）的设计和修改环节，有助于 PPP 的进

principles of PPP.

Even if the SOEs were able to carry out this task, the expectations of the central government or the people in general, may be too high for what this mechanism can offer. PPP is not always the solution to every predicament. In China, even when there is a lot of idle money in private hands, only a small fraction of it can be mobilised for this purpose. Mobilisation of this capital requires good project preparation and capable companies to carry out the investments. But assuming that this is solved, and China can do things faster and better than other countries with many years of experience working on this modality, it is difficult to believe that PPP infrastructure investment will ever represent more than 20 per cent of the whole infrastructure investment.

In general, countries that have "mastered" PPP procurement are countries that have understood the concepts and principles of this system, and have enabled the environment to flourish. In those countries, PPPs represent around 15 per cent to 20 per cent of total infrastructure investments. By comparison, investments done through PPP arrangements in China are still insignificant. If PPP investments in China were to be a modest 5 per cent of total investments, this would represent RMB 285 billion per year, or US\$45 billion.

In spite of all these challenges, the implementation of a PPP programme in China provides great opportunities. The first one lies in recognising the weaknesses and pitfalls that potentially exist in the development of a large-scale PPP programme through SOEs. Establishing clear rules with SOEs on competing against each other for PPP projects would be a beginning. This competition needs to be done on an equal footing with any truly private company that may wish to participate in the tenders. This will be a means to improve the efficiency of these SOEs and their transition to a real market economy, which may prepare them to compete outside of China in the near future.

The second challenge lies in the necessary preparation that government officials and the private sector (banks, SOEs and others) will require to understand the principles and mechanism behind the operation of PPPs. This preparation will provide better-equipped and more professional public officials and a private sector that will participate in the design and modification of the additional mechanisms (financial and legal) that PPPs require for full development. These mechanisms will help to provide more transparency and accountability in the processes, as well as additional services in the financial sector—like project finance—that will benefit the whole Chinese economy.

一步发展。这些机制能够使整个过程更加透明和可靠，还能提供金融领域的额外服务——例如项目融资——促进整个中国经济的发展。

充分了解，求真务实，温和稳健

在 CDIA 的培训课程中，我们经常说 PPP 项目成功的秘密之一便是充分理解 PPP 的基础原理以及背后的原因。CDIA 为政府官员提供了 PPP 的基础课程，当然其他有名的机构也会开设培训项目。另一方面就是要在项目实施期间保持务实的态度，从较简单的项目开始。政府应当积极推进国企和经验丰富的企业之间的合作，以确保项目成功。

做到上述两点有助于打开市场，获得额外投资和专业技术。但是在面对“这个项目能为中国基础设施市场带来什么”的问题时，我们还要保持温和稳健的态度，期望不要过高。我们需要实实在在的项目，而不是纸上谈兵。PPP 项目不会止于实践阶段，后续还有很长一段路要走。

只要 PPP 项目方向正确，不仅是基础设施市场和城市化进程能从中受惠，整个中国经济也能借此加快发展速度。

重要引述

私企必须放到桌面上讨论，并且不局限于金融领域，这对我们理解金钱价值的抽象概念非常关键。

CDIA 为政府官员提供了 PPP 的基础课程，当然其他有名的机构也会开设培训项目。

CDIA 已对超过 15 个国家的近 100 个城市实施援助，在城市基础设施领域投资超过 70 亿美元，其中三分之一的投资在中国。

CDIA 与财政部和国家发展与改革委员会建立合作关系，为城市政府的 PPP 项目提供能力发展方面的援助。

Be informed, pragmatic and moderate

In CDIA's training courses we always say that one of the secrets of a successful PPP programme is to learn the basics and fundamentals of PPPs and the reasons behind them. CDIA offers basic courses in PPPs to public officials but there are many other training programmes provided by reputable institutions. Another is to be pragmatic in the approach to projects starting with less complex projects. Authorities should promote the collaboration of SOEs with more experienced companies to assure success.

This will help to open the market and promote additional investment and expertise. But we must be moderate in the expectation of what this programme can bring to the Chinese infrastructure market. Pushing the bar too high on expectations of volume can be dangerous and disappointing. And we need real projects under real circumstances, beyond the "demonstration" projects. PPP projects do not end at the implementation stage and there is a long way ahead.

With a well-orientated PPP programme, not only will the infrastructure market and urbanisation benefit but the whole Chinese economy.

PULL QUOTES

The principle that the private sector needs to bring to the table something more than financing is the key element to understanding the abstract concept of value for money.

CDIA offers basic courses in PPPs to public officials but there are many other training programmes provided by reputable institutions.

CDIA has assisted nearly 100 cities in over 15 countries, mobilising more than US\$7 billion in urban infrastructure investments, out of which one third were in China.

CDIA offers support on capacity development on PPPs for city officials in collaboration with the Ministry of Finance and the National Development and Reform Commission.

特稿 Focus

21世纪城市发展与规划

Urban Development and Planning in the Twenty-First Century

21世纪是属于城市的世纪。伴随着快速的城市化进程，我们的城市也正面临着一系列的问题和挑战。如何通过合理科学、富有远见的城市规划和设计，实现城市的可持续发展，是每一个城市所必须对待的重大课题。2014年，中国出台《国家新型城镇化规划（2014—2020年）》，明确了中国未来城镇化的发展路径、主要目标和战略任务。而在全球范围，尤其是发达国家，对城市的规划的关注更是由来已久，“智慧城市”“低碳城市”“韧性城市”……这些城市发展的先进理念深入人心。21世纪，市民需要什么样的城市，城市需要怎样的规划？

适逢“2015城市发展与规划大会”在广州召开，本期特稿以“21世纪城市发展与规划”为主题，邀请国际国内研究者和实践者，立足国际视野进行深度解构，以期为城市规划与发展提供有益启示。

The twenty-first century is a century of cities. As the trend of urbanization moves forward at a fast pace, our cities are also facing a series of problems and challenges. Then how to achieve sustainable development of cities through scientific and insightful urban planning and design is a subject of critical importance for every city. In 2014, the State Council officially issued the *National Plan on New Urbanization (2014–2020)*, which explicitly clarifies the development paths, major goals and strategic tasks concerning China's future urbanization. Globally and for developed countries in particular, great stress has long been laid on the planning of cities, especially on the development of smart cities, low-carbon cities and resilient cities etc. These advanced concepts for urban development have taken roots in people's hearts. What kind of cities do citizens need in the twenty-first century? What sort of planning is needed for cities in the twenty-first century?

In celebration of 2015 Conference on Urban Development and Planning in Guangzhou, this special edition, themed on "Development and Planning of Cities in the Twenty-First Century" is published. We hereby invite international and domestic researchers and practitioners for an in-depth exchange of views on related topics from an international perspective, hoping that the discussions can spark inspiration for thought on urban planning and development.

策划 / 本刊编辑部

Designed and Planned by the Editorial Department

“深度城镇化”——“十三五”期间增强 我国经济活力和可持续发展能力的重要策略

In-depth Urbanization: The Key Strategy for Enhancing
China's Economic Vitality and Sustainability during the
13th Five-Year Period

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经历了三十多年快速城镇化，我国已经正式进入了前所未有的“城市时代”，不仅80%以上的国民收入、财政税收、就业岗位和科技创新成果产生于城市，而且空气和水体污染、交通拥堵、贫富分化、地震飓风灾害等也发端于城市。“深度城镇化”的立意不仅是为缓解“城市病”、开拓有效投资的新领域、补偿前三十年“速度、广度城镇化”所带来的“欠账”，更为重要的是着眼于城镇化内在的规律，使我国城镇转向“内涵式”发展道路，顺利进入绿色发展新阶段，避免先行国家城市

After over 30 years of rapid urbanization, China has officially entered into an unprecedented "Era of the City". More than 80 per cent of China's national income, fiscal revenue, jobs, and scientific innovation comes from cities. However, cities are also associated with air-and-water pollution, traffic congestion, polarization between the rich and the poor, as well as disasters associated with earthquakes and hurricanes. "In-depth urbanization" is not only put forward for the relief of these "urban diseases", but also for developing new areas for efficient investment—making up for the debt owed by "urbanization in speed and scale" in the previous 30 years. In-depth urbanization is a way of channeling China's urbanization into intensive development by focusing on the internal rules of urbanization. In that way, China's urbanization will ideally arrive smoothly at a new stage of green development, and avoid difficult problems of all kinds showing up in other countries' urbanization. The aim is to give impetus to the realization of the China Dream.

1. "New Normals" in Urbanization during the 13th Five-Year Period

I. China's Urbanization will Slow Down

China, as historically a typical traditional agricultural country, is different from the North America where urbanization mainly depends on migration.

化的各种刚性缺陷，最终为实现“中国梦”增添动力。

一、“十三五”期间城镇化的若干“新常态”

1. 城镇化速度将明显放缓

由于我国历史上属于典型的传统农业大国，与主要依靠移民来推进城市化的“新大陆”国家相比，其城市化速度的拐点肯定要提早许多（有研究指出我国城镇化峰值可能发生在65%左右，而不是新大陆国家的85%以上）。可以简单推测：“十三五”期间，我国年均城镇化平均速度可能在0.7%—0.8%之间，比“十一五”“十二五”期间年均城镇化速度1.3%将低0.5个百分点左右。这意味着与前几个五年计划期间相比，“十三五”期间从农村进城人口将每年减少700万—800万。

2. 机动化将强化郊区化趋势

据初步测算，“十三五”期间我国每百人平均拥有车辆将从20.6辆提高到26.0辆。与此同时，高速铁路里程将从2.2万公里增加到3.4万公里。高速公路总里程数也将从12.0万公里增加到16.2万公里。再加上城市空气污染、高房价等问题在短期内难以缓解。这些因素都将增强城市居民沿着高铁、高速公路、地铁延伸线逐步迁居到城市郊区的意愿。这种趋势一方面会助推郊区化现象，使耕地保护的难度加大，另一方面会由于城市人口密度下降，而使交通能耗和建筑能耗快速上升并呈现刚性增加的态势。

3. 城市人口老龄化快速来临

由于长期坚持“一对夫妻一个孩子”的政策，我国人口老龄化速度比西方大国来得更快。据有关部门统计，2013年全国60周岁以上的老年人口已达2亿多人，预计到2035年老年人口将达4.5亿。值得指出的是，随着全球化和经济转型的深入，

China will cross an inflection point in its urbanization speed earlier than North America (that is, where the country's growth rate reaches its historical maximum rate). According to some researchers, the peak value of China's urbanization may be around 65 per cent—significantly less than the 85 per cent urbanization of North America. It can be simply estimated as follows: during the 13th Five-Year period, the average annual rate of China's urbanization will probably stand between 0.7 per cent and 0.8 per cent, about 0.5 per cent lower than that of 1.3 per cent during the 11th and 12th Five-Year periods. That means the 13th Five-Year period will witness rural migration to the city down by 7 million to 8 million annually from the level of previous five-year periods.

II. Motorization will Strengthen the Trend towards Suburbanization

According to preliminary estimates, car ownership in China per 100 people will increase during the 13th Five-Year period from 20.6 to 26.0. At the same time, the length of China's high-speed railway system will increase from 22,000 km to 34,000 km, and the total length of the super-highway system will increase from 120,000 km to 162,000 km. Coupled with short-term intractable problems such as air pollution and high urban-housing prices, these factors, along the high-speed railway, super highway and the extended subway line, will add to city dwellers' willingness to gradually move to the suburbs. This trend, on the one hand, will facilitate suburbanization and make arable land protection much more difficult, and on the other hand, due to the decrease in urban population density, will accelerate the energy consumption of transportation and construction, leading to a trend of rigid growth.

III. Aging of the Urban Population will Accelerate

Because of long-term commitment to the policy of "One Couple, One Child", China's aging population increases faster than that of major Western countries. According to statistics released by related departments, China's aged population over 60 years old in 2013 was 200 million. It is estimated that by the year of 2035 there will be 450 million people in the aged cohort. It is worthy mentioning that as globalization and economic transformation deepen, most countries in transition have seen two notable trends: outflow of labor and population decline. The main reasons behind the global trends are as follows: less appropriate job opportunities, polarization between the rich and the poor, young people's unwillingness to have children in the numbers of a generation ago, the migration of entrepreneurs and educated people for overseas development and so forth. Besides that, in China, issues concerning air population, food safety, asset hedging, and the education of children, have

绝大多数转型国家都出现了劳动力外流和人口减少的明显趋势。主要原因不外乎是适合的就业岗位减少、贫富分化、青年人不愿生育、企业家和知识分子移居海外谋发展等等。除此之外，我国外流人口加剧还多了逃避空气污染、食品安全、资产保值、子女教育等等其他原因。这引发了少数专家发出“警惕中国人口断崖式下跌”的呼声。除此之外，基于我国大多数地区

“家族村落聚居”特点和“乡村记忆”的恢复，“十三五”期间，“回家养老”将会推动城乡人口双向流动，这与人多地少、农耕文明历史悠久的国家（如日本、法国、荷兰等国）城市化中后期趋势有相似之处。

4. 住房需求将持续减少

我国目前人均住房面积约35平方米，已接近日本、法国等高人口密度国家的水平。更为重要的是，随着近二十年快速城镇化的进程，我国每年新建的住宅和建筑面积高达全球的40%以上。但随着城镇化速率进入拐点期和全国城市住宅空置率的持续上升，住房刚性需求将呈明显下降趋势。这一方面会引发房地产及其相关行业的衰退，另一方面也无可避免地会加剧房地产泡沫风险和经济长期通缩的压力。

5. 碳排放国际压力空前加大

前几个五年计划期间，我国消耗了全球约40%的水泥和35%的钢铁，近两年我国排出的温室气体总量约已达美国和欧盟的总和，人均排放也早已跨越世界平均线。我国已宣布碳排放峰值约在2030年才可能“封顶”。“十三五”期间是国际社会要求我国降低碳排放压力最大的时期。从国际经验来看，实施产业的低碳化、绿色化战略的主角一般是企业家，政府只负责提供外部激励与碳交易市场。而交通与建筑低碳措施却需要政府有预见性规划和有力的组织实施方能奏效。

6. 能源和水资源结构性短缺将持续加剧

从能源结构来看，我国人均拥有的煤、

also added to the reasons behind the outflow of Chinese population. Thus, some experts suggest, "Chinese population may be on the precipice of decline". In addition, based on the attractiveness of living in a compact community as an extended family or a village, and the restoration of "rural memory", the Government will promote the bi-directional flow of both rural and urban population to "live out in retirement". This has some similarities with the trend of countries with more people and less land and a long history of agricultural civilization (for example, Japan, France, and the Netherlands) in their middle-late stages of urbanization.

IV. Demand for Housing will Continue to Fall

Currently, China's per capita living space is about 35 square metres, close to that of countries of high population density, such as Japan and France. More importantly, with China's long-term accelerated urbanization, the annual newly built floor-space of residential buildings and constructions now accounts for over 40 per cent of the world's total. This process is now slowing, and with the urbanization rate now entering a period of inflection, there is an increase in urban housing-vacancy rate, with housing demand dropping notably. This will not only lead to the decline in real estate market and related industries, but also will inevitably increase the risk of bubbles in the real estate market and the pressure of long-term economic deflation.

V. International Pressure on China's Carbon Emissions will Significantly Increase

During the previous five-year periods, China consumed about 40 per cent of the world's cement and 35 per cent of the world's steel. In recent two years, the total volume of greenhouse gases produced by China has equaled that of the United States and the European Union combined, and China's per capita emissions are higher than the world average. China has announced that the peak volume of carbon emission may come in the year 2030. During the 13th Five-Year Period, the pressure put by the international community on China's carbon emission reduction is at all-time high. In light of international practice, entrepreneurs have to play the major role in implementing the strategy of low-carbon activity and going green, while the government is responsible for primarily in giving external impetus and providing a carbon trading market. In particular, a forward-looking plan and systematic organization by the government will be important for measures on the carbon-emission reduction of transportation and constructions to take effect.

VI. The Structural Shortage of Energy and Water Resources Will

石油和天然气储量仅为世界平均水平的60%、7.7%、7.1%。以煤代气代油将是“十三五”期间乃至将来都必须坚持的基本策略。而且由于治理空气污染的迫切需要，各地区在进行能源结构的调整，即需要大量的天然气来取代传统的生活、工业、取暖的燃煤，这无疑会大大加剧原本就短缺的天然气供求关系。由于“十三五”期间机动车数量仍处于上升期，我国石油进口依存度还将持续攀升。

从水资源来看，我国人均占有量约为1700立方米（据2011年数据），低于世界平均水平，空间分布也十分不均。从国际城市化经验来看，我国城市用水量已趋于稳定，不可能大幅上升。但由于我国正处于水污染的高发期，再加上水生态修复周期漫长，水污染“局部好转、整体恶化”的基本态势在“十三五”期间也难以根本扭转。再加上气候变化引发的极端干旱、极端降雨也将会持续加剧。突发性污染引发的水安全事件、水质性缺水和极端气候引发的短期结构性缺水将会成为影响我国城市运行的大概率事件。

二、“十三五”期间城镇化要解决的主要问题

1. 城市空气、水和土壤污染

从国际经验来看，先行国家在经历城市化中后期时，都不约而同地出现了空前严重的空气、水和土壤污染，不少先行国家民众至今仍然饱受这三大污染之痛。由于我国长期坚持城市人口的紧凑式发展和工业化引领城镇化，这三种污染再加上日益严重的“垃圾围城”现象，对城市人居条件、投资环境和民众健康负面影响会更大。除此之外，由于早期对农村建设用地控制政策摇摆不定、法制观念薄弱，造成了不少城郊“小产权房”盛行，“以租代征”占用了城郊大量耕地。

Continue to Intensify

From the perspective of energy mix, China's per capita average of coal, oil and natural gas resources are only about 60 per cent, 7.7 per cent, and 7.1 per cent of the world average respectively. Coal is replacing natural gas and oil to be the main energy consumed in China. It should be a basic strategy for the 13th five-year Period and even the future. Due to the pressing need to respond to air population, the energy mix has been adjusted in many regions. It requires a large amount of natural gas to replace coal, traditionally used in households, industry, and for heating. Undoubtedly, this will further intensify the shortage of natural gas supply. As the number of motor vehicles has risen during the 13th five-year Period, China will depend much more on petroleum imports.

In terms of water resources, China's per-capita share of water resources is about 1,700 cubic metres (according to the data released in 2011), lower than the world average, with uneven distribution. According to international experience in urbanization, China's urban water consumption has begun to stabilize, with no possibility of going up. However, China is now in a period of high-incident water pollution. And it takes a long time for water eco-systems to restore. Therefore, the basic situation of "partial improvement yet overall deterioration" in water pollution will be hard to change fundamentally. Extreme drought and rainfall trends caused by climate change will continue to get worse. Incidents concerning water safety in the wake of accidental pollution, quality-induced water shortage, and short-term structural water shortage brought by extreme climate, will have a higher level of probability, and will affect the way city operates in China.

2. Major Urbanization Problems to be Solved during the 13th Five-Year Period

I. Pollution of Urban Air, Water and Soil

According to international experience, Western countries in the middle-to-late stage of urbanization invariably witnessed severe air, water, and soil pollution, with their citizens still struggling with its consequences. With China's long-term commitment to compact urban development led by industrialization, to population of the three kinds, and to responding to the increasingly difficult predicament of "cities besieged by garbage", mitigating negative effects on urban living condition, investment environment and people's health remains difficult. In addition, because of loose control on rural land for construction in the early days and weak law awareness, houses with limited property rights prevail in the suburbs and much arable land has been occupied through "land-renting instead of expropriating".

2. 小城镇人居环境退化、人口流失

从最近一次人口普查结果分析，我国居住在小城镇的人口比率比十年前下降了10个百分点，约有1亿人口从小城镇迁往大城市。调查表明，人口流动的主要原因按次序有以下几种：让子女接受良好教育、工作机会与收入、资产（主要是房产）保值、医疗水平等等。发达国家人居环境最优的往往是小城镇，而我国小城镇则普遍存在环境污染、管理不善、人居环境退化、就业机会不足等方面的问题。如果这些问题不能在“十三五”期间有所缓解，可能会引发更严重的大城市人口膨胀问题，而作为农业社会化服务基地的小城镇的衰退也会影响我国农业现代化进程。

3. 城市交通拥堵严重

由于人均拥有小轿车数量的快速增加（已从“十一五”期末5938万辆增加到“十二五”期末15000万辆），我国城市交通拥堵正在全面爆发。严重拥堵已从沿海城市向中西部城市蔓延，从早晚高峰转向全天候，从超大城市向中等城市扩散。随着车辆保有量持续增加，城市道路面积又由于空间结构的限制难以同步增加，“十三五”期间预计会出现更为严重的城市交通拥堵问题，低车速还将进一步加剧城市空气污染和影响城市的正常运行和应急通行能力。

4. 城镇特色和历史风貌丧失

与发达国家历史遗存和传统风貌保存良好的情况相比，我国多数历史文化名城、名镇正在丧失自己特有的建筑风格和整体风貌。城市空间肌理趋向平庸和“千城一面”。大批“大、洋、怪”的公共建筑以高能耗、高投入、低使用效率浪费了宝贵的公共资源，并侵蚀了这些城市昔日独特的传统形象，割断了历史文脉的传承。

除此之外，“城乡一律化”的新农村建设模式与错误的“建设用地增减挂钩”政策，正在快速毁坏承担乡土文化传承的传统村落，这不仅会明显损害我国的文化

II. Deterioration of Living Conditions and Labour Loss in Small Cities and Towns

According to the latest demographic census, the ratio of people living in small cities and towns is down by 10 per cent from that of ten years ago. Over the decade about 100 million people moved from small cities and towns to metropolises. A survey shows that population mobility is driven by the following reasons (in priority order): better education for children; job opportunities and income; assets and asset-hedging (mainly in housing property); and medical care services, etc. In developed countries, small cities and towns often have the best living conditions. However, in China, small cities and towns are disturbed by problems including environmental pollution, poor management, deterioration of living conditions, and lack of jobs. These problems, if not alleviated during the 13th Five-Year Period, will lead to more severe population explosion in metropolises. Because they are the service base for agricultural zones, the deterioration of small cities and towns will have a negative effect on China's agricultural modernization.

III. Serious Traffic Congestion in Cities

With the rapid increase of per capita car ownership (totaling 150 million cars by the end of the 12th Five-Year Period, up from 59.38 million cars at the end of the 11th Five-Year Period), urban traffic congestion will become heavier in China. The phenomenon of the traffic jams has already found its way from coastal areas to cities in the middle and west part of China. Traffic congestion is lasting all the day instead of being confined to morning and evening rush hours, and it is spreading from mega-cities to medium-sized cities. Due to spatial limitations, the road area cannot be increased to keep up with the continued growth of car ownership, it is estimated that the 13th Five-Year Period will witness more traffic congestion. Alongside this issue, low vehicle-speed will further aggravate urban air pollution and affect cities' normal operations and emergency traffic capacities.

IV. Loss of Unique and Historical Features in Cities and Towns

By comparison with the well-preserved historical heritage and traditional features evident in some cities of the West, many of China's famous historic and cultural cities and towns are losing their heritage quality and unique architectural styles. With the texture of urban space becoming modernized, cities are becoming the culturally flattened. In many cities, a large number of "huge, exotic, and strange" public buildings—characterized by energy-extensive consumption and a high-input, low-utilization rate—have wasted precious local resources, destroyed traditional streetscapes, and broken with their historical culture.

软实力，也会毁坏发展乡村旅游的不可再生的宝贵资源。

5. 保障性住房积压与住房投机过盛并存

“十二五”期间我国每年投入大量的财政资金建设各类保障房和推行棚户区改造。解决了大量低收入群体的住房问题，也消除了积累多年的城市“脏、乱、差”问题。但随着这种“从上到下布置任务式”的建设模式积累运行，其弊端也日益显现：一方面部分基层政府为了完成任务或增加投资，将保障房项目安排在缺乏配套设施的远郊区；另一方面由于随着地方政府配套资金的日益短缺，本该同步建设的配套设施迟迟上不了马。更为重要的是由于低收入者往往缺乏“空间自由移动的能力”，必须紧靠工作岗位安置居住。与此同时，由于缺失财产税、空置税、多套住房消费税等工具，我国城市住房占有悬殊和投机、投资比重一直居高不下。其结果是一方面不少低收入家庭住不起房，另一方面却有大量房屋空置积压。更为重要的是，由于一些地方政府错误的政绩观和投资模式，部分地区大规模的空城、鬼城正在呈现，而且有越演越烈之势。

6. 城市防灾减灾能力明显不足

随着人口向城镇集中，大城市（特别是城市群）所面临的风险也在同步增加。实践证明，城市难以有效规避各种不确定性因素，而且风险发生时，城市所遭受的社会经济损失往往也随着城市规模等级的扩大而增大。我国更是如此，随着前几个五年规划的实施，我国城市普遍长了“块头”，但防灾、减灾能力却减弱了。这一方面与我国城市主要领导干部任职过短、考核机制不科学导致只注重地面不注重地下工程有关，另一方面也与城市“摊大饼式扩大”造成空间集中度过高和防灾减灾投资体制过散、条条分割有关。尽管国家有关部委今年启动了“海绵城市”“综合管廊防灾减灾和地下空间综合”示范城市

As another layer of the process of modernization, building a new socialist countryside by forcing the countryside to become unified with the city and the erroneous policy of "increasing and decreasing connections of urban and rural construction land" are rapidly destroying traditional villages and local cultures. This will not only notably undermine China's soft power, but also damage non-renewable resources for developing rural tourism.

V. Overstocking of Housing together with Speculative Investment in Property

During the 12th Five-Year Period, China invested annually large sums of money to build all kinds of affordable housing and promote the renovation of shanty towns. This had the effect of making houses available to the low-income people and changing the "dirty, disorderly and bad" city environments that had existed for years. However, as this model of top-down job assignment has proceeded, the disadvantages have become increasingly prominent. On one hand, in order to fulfill tasks or increase investment, local governments now choose to build affordable housing in the outer suburbs where there are not sufficient supporting services. On the other hand, because of the growing shortage in funding, the support-facilities that ought to be constructed synchronously have been delayed again and again. More importantly, low-income people who lack the ability of free relocation, have to live near where their jobs are. At the same time, due to the lack of tools such as property tax, vacancy tax, and consumption tax for owning more than one house, China has frequently witnessed disparities in housing-ownership, speculation, and housing-investment. As a result, a number of low-income households cannot afford a house, while there are high levels of housing-vacancy and overstocking. What is more, the erroneous performance concepts and investment models of some local governments have resulted in massive empty towns and ghost towns in some regions—which is now getting worse.

VI. Lack of Disaster Prevention and Mitigation Capabilities

As the population concentrates in cities and towns, the risks facing metropolises (especially city-agglomeration) are increasing at the same time. Practice has proven that it is difficult for cities to avoid various uncertainties, and the larger the city grows, the more socio-economic loss it will suffer when the risk comes. This is particularly true in China. With the implementation of the previous several five-year plans, most of the cities in China have expanded in scale, though with disaster prevention and mitigation capabilities weakened. One reason is because with short-term office-use and flawed evaluation mechanisms, officials in cities tend to focus only on

等财政补贴项目，但城市防灾减灾仍然需要整体规划与建设，否则只能是“按下葫芦浮起瓢”。

三、“十三五”期间城镇化基本对策建议

1. 稳妥进行农村土地改革试点，防止助推郊区化

由于“十三五”期间是我国大城市郊区化活力最高的时期，为保证城市的紧凑式发展和节约耕地，首先必须正视和有效克服农村建设用地入市改革可能存在的负面效应，并使其服从于、服务于健康城镇化。建议总结推广浙江、上海等地的经验，对农村建设用地入市进行“总量控制”。其次，要依据城市总体规划，将城郊永久性农地和生态用地划定为“绿线”控制范围，并作为拟订的城市发展永久边界线，严格进行管理。再次，要及时修编《村镇规划建设管理条例》加强农房规划管理，切实防止我国城市低密度发展危及未来粮食和能源安全。

2. 以“韧性城市”为抓手整合资源，提高城市防灾减灾水平

国际韧性联盟（Resilience Alliance）将“韧性城市”定义为“城市或城市系统能够消化并吸收外界干扰（灾害），并保持原有主要特征、结构和关键功能的能力”。提高我国城市防灾减灾水平首先要科学编制增强城市韧性的防减灾规划，依次从建筑、社区、基础设施、城市、区域全面进行防减灾设计与建设。其次要整合现有的“海绵城市”（LID）、“生态城市”、共同沟示范城市、城市防洪、城市新能源、城市抗震和智慧城市等工程，一方面可防止相互冲突抵消“韧性”，另一方面，尽可能利用现代科学技术和通讯设施，以“非工程措施”结合必要的工程性修建来增强城市防减灾能力。再次，及时颁布《城市

ground building instead of underground construction. Another is related to high spatial concentration and a separate investment scheme for disaster prevention and mitigation. This year, relevant government departments have embarked on programs of fiscal subsidy, including "sponge city", and "disaster prevention and mitigation for pipe system and underground space" demonstrations. However, building urban disaster-prevention and mitigation capacities still requires overall planning and construction, otherwise, we will solve one problem only to find another cropping up.

3. Basic Policy Proposals for Urbanization in the Period of the 13th Five-Year Plan

I. Advance Rural Land Reform and Prevent Expanding Suburbanization

The period of the Thirteenth Five-Year Plan is the climax of suburbanization of big cities in China. The priority now is to realize and effectively overcome the negative effects of urbanizing rural land for construction—which should be subject to and serve healthy urbanization. Ensuring the compact development of the urban area and preserving farmland is now a dual necessity. First, the practice of Zhejiang and Shanghai to effect "total amount control" in the urbanization of rural land should be promoted. Second, permanent farmland and ecological land in suburban areas should be classified as part of the control scope of a "green line" under strict administration, conducted according to overall urban planning precepts and definitions of permanent boundaries to urban expansion. Third, regulations regarding the administration of rural planning and construction should be formulated to enhance the administration and planning of rural houses and to prevent low-density urban development from endangering the future safety of food and energy in China.

II. Consolidate Resources through "Resilient City" Development and Reduce the Consequences of Natural Disasters

The Resilience Alliance defines a "resilient city" as "the city or urban system which can absorb external disturbances (disasters) and is able to maintain its original major characteristics, structures and key functions". First, to improve the resilience of Chinese cities to natural disasters, processes of disaster prevention and reduction need to be scientifically developed and comprehensively instituted across the aspects of architecture, community, infrastructure, urban area and district. Second, such existing projects as "sponge city" (LID), ecological city, utility-tunnel demonstration city, urban flood-control, urban new energy, urban anti-shock and smart-city

地下空间利用管理法》，这不仅可有效增强城市“韧性”和节约土地，而且也能扩大有效投资、改善城市人居环境。

3. 大力发展绿色交通、树立正确的“机动化”观念

“十三五”期间，应不失时机地纠正以前各种错误，首先，要树立城市交通需求侧管理的理念，实施全面提高停车费、开征拥堵费、拍卖或限制小轿车车牌等措施。其次，是扩大城市步行区、全面推行步行日、党政领导干部带头倡导自行车（包括小排量电动自行车）出行、推行“可步行”城市、普及公共租用自行车等等；与此同时，要加快公共交通建设步伐，放宽城市地铁和轨道交通建设的限制条件，全面加速城际间轨道交通规划建设，推广各种公共交通的“无缝对接”和“双零换乘”，取消节假日高速公路免费通行等。

此外，我国轨道交通的投资潜力巨大，预计仅“十三五”期间就可达3万亿的投资额。从“大交通”的角度看，普通铁路和高铁运输比高速公路要节地、节能得多，比航空运输节能量更大。因此，人多地少、资源相对稀少的我国应大力发展高铁来替代高速公路或航空运输运力，此举应作为长期坚持的战略方针。

4. 改革保障房建设运营体制，降低房地产泡沫风险

自古以来，城市居民的幸福程度是由生活在城市底层的民众的居住状况来决定的。传统“从上而下”的建造模式积累了众多的问题，已经到了必须让市场机制发挥配置此类资源更大作用的时候了，这就首先需要改革保障房建设运行体制，学习欧盟各国动员低收入群体自发开展合作建房的经验。出台相关法规和扶持政策，变政府建、政府管为民众自己合作建、政府监管扶持的新模式。其次，在过渡期间可以成本价收购积压的商品房作为保障房源，并逐步转“补砖头”式修建保障房为“补

developments should be integrated. This will prevent any diminishing of resilience due to conflict, and improve the disaster-reduction ability of cities by using modern technologies and communication facilities through combining "non-engineering measures" and necessary engineering protocols. Third, "Administrative Law on the Use of Urban Underground Space" will be promulgated in time to strengthen the resilience of cities and save land, but also to expand effective investment and improve the urban living environment.

III. Develop Green Transport and Uphold Appropriate Conceptions of Car-Use

During the period of the 13th Five-Year Plan, all kinds of previous mistakes need to be rectified. First, demand-side management of urban transport will be established, using such measures as improving the parking-fee system, setting taxing congestion charges and auctioning or limiting plate numbers of sedan cars. Second, urban pedestrian areas will be expanded, and the concept of the "walkable" city" will be practiced with pedestrian days promoted. Bicycling, including using low-emission electric bicycles, will be advocated and pioneered by party and government leaders, and publicly available bicycles will be popularized. Meanwhile, the development of public transport will be speeded up, restrictions on the establishment of urban metro and rail transit will be relaxed, the establishment pace of intercity rail transit will be comprehensively increased, with a "seamless interface" and "double-zero transport transfer" of various public transport modes. Free tolls for expressways on holidays will be cancelled.

The investment potential of rail infrastructure in China is huge, which is expected to reach RMB 3000 billion in the period of the 13th Five-Year Plan. In relation to "macro transportation", ordinary railway and high-speed railway transportation are more land-saving and energy-saving than highway transportation, and are much more energy-saving than air transportation. Therefore, for China—a country with a large population, limited land availability and scarce resources—high-speed railway will be extensively developed to replace road expressways and air transportation. This measure will be a long-standing strategy.

IV. Reform the Housing Construction and Operation System to Enhance Social Security and Reduce the Risk of a Real Estate Bubble

The level of happiness of urban residents has depended since ancient times on the living condition of those at the bottom of urban society. The traditional "top-down" construction mode is beset with so many problems

人头”式补贴低收入者租房款。再次是扩大“棚户区改造”的范围至城市危旧小区、城中村等，对这些旧房进行抗震加固、改善配套的同时，应兼顾节能减排、雨水收集利用、中水回用等方面的改造。这方面改造既能起到扩大投资、节能减排、改善人居的多重效益的作用，也有利于从城市细胞——建筑层面增强“韧性”。除此之外，还要综合运用信贷和税收等工具逐步压缩部分城市的房地产泡沫。

5. 全面保护城镇历史街区、修复城镇历史文脉

城市历来被称之为“文化容器”，而作为城镇文化之根的历史街区更是“文化容器”的基色。修复城镇的历史街区，首先需要严格划定城市历史街区、重点文物保护单位的“紫线”范围，并设置界石接受民众监督，与此同时还要扩大“虚紫线”即建筑风貌协同区管制范围。其次是全面推行城市总规划师制度，形成行政首长与技术负责人的相互制约关系。并以专门法规的形式健全城市规划管理委员会制度，以少数服从多数的方式减少决策失误。再次，学习欧洲各国在快速城市化过程中的有益经验，全面强化现有的国家城市规划督察员制度。总之，这些制度的健全是防止行政官员“有权任性”自由处置不可再生的历史文化遗产所必须的制约措施。

6. 推行“美丽宜居乡村”建设，保护和修复农村传统村落

作为一个传统的农业大国，保护好传统村落具有不可替代的作用。首先，必须改革“城乡建设用地增减挂钩试点办法”，代之以城镇空间人口密度管制为主的耕地保护监控新模式。其次，要明确规定撤销合并村庄必须经由省级人民政府批准，除城镇近郊和草原、沙漠地区之外，其余地区严格禁止合并村庄。再次，除了完善传统村落保护规划之外，还必须由专门的学术委员会对传统村落的文化遗产、传统民

that it is time to allow the market to play a greater role in utilizing available resources. This requires reform of the housing construction and operation system. This reform can be guided through learning from the European Union experience of mobilizing low-income people to develop cooperative residential building programs. Relevant laws and regulations as well as supporting policies will be issued to transform the original mode of construction and management by government into the new one of cooperative construction by the people and supervision by government. During the transition period, the current overstocked commercial set of residential houses will be available for buying at cost for purchasers securing social security. Brick-adding-style construction of social housing will be transformed into the human-adding-style subsidization for the rent paid by those people with low incomes. The scope of shantytown transformation will be extended to include dilapidated urban community houses and urban villages. Old houses will be consolidated to mitigate shock to residents during the transition, and facilities will be improved, including retrofitting for energy conservation, emission reduction, rainwater collection and reuse of recycled water. Such renovations should not only bring multiple benefits such as expanding investment, saving energy and reducing pollution and improving human habitation, but also enhance the resilience of urban communities.

V. Comprehensively Protect and Restore Urban Heritage and Historical Precincts

The city has always been called "vessel of culture". The historical district is the base of such vessel of culture. To restore such precincts, the geographical space of urban historical districts will be defined through setting a "solid purple line" around key areas for protection. Beyond key precinct designation, the "dotted purple lines" that regulate the extent of architectural and landscaping collaborative areas will be expanded. The system of a urban chief planner will be implemented comprehensively to bring the government leader and technical principals into a strictly managed relation. In addition, the system of urban planning administration committees will be improved by legalization, with decision-making mistakes reduced in line with the principle of majority predominance. And we will seek to learn from the positive experiences that European countries have had in managing fast urbanization. We will comprehensively reinforce the existing national system of urban planning supervisor. Overall, the excellence of these systems is necessary to prevent administrative officials from willfully or arbitrarily handling historical cultural heritage.

VI. Build "Beautiful and Liveable Villages" and Protect and Restore

居、自然景观、特色农村产品、风俗节庆等方面的资源价值进行定期评估，对排名位次显著上升的村庄给予一定的奖励。更为重要的是，要在此基础上以“以奖代拨”为手段，促进地方政府广泛推行以保护和修复传统村落为重点的“美丽宜居乡村建设”活动，走出一条以乡村旅游结合“一村一品”培育的农村农业现代化新路子。

7. 研究编制城镇群协同发展规划，完善高密度城镇化地区的空间管治

“十三五”期间要研究出台城镇群协同发展规划编制与管理办法，主要解决：人力与物质资本共享、环境污染共治、基础设施共建、支撑产业共树、不可再生资源共保等协同发展课题。尤其值得指出的是，要尽快将“四线管制办法”扩大到整个高密度城镇化地区，切实有效地开展文化和自然遗产等不可再生资源的保护利用以及空气、水、土壤污染的共同治理等紧迫性的任务。

8. 对既有建筑进行节能、适老改造，加快推广绿色建筑

住宅商品化改革以来，我国人均住房面积快速增加，仅城镇住宅与公共建筑面积就高达200亿平方米，除了“十二五”期间在大中城市强制推广建筑节能之外，之前建成的建筑单位能耗都相当高（约为发达国家2—3倍）。据城镇化先行国家的经验，最终的建筑运行能耗将占全社会能耗的35%左右。而住宅节能改造之后，节能率可普遍提高至65%，据粗略统计每年可减少约5亿吨标煤以上的建筑能耗。

从应对老年化的角度来看，我国城区大部分的老年人生活将来还必须通过居家养老加社区服务来解决。但前阶段所建的多层住宅绝大多数缺乏电梯和老年生活所需的特殊卫生间等必备设施，个人无法进行节能和养老方面的改造，必须由地方政府牵头组织实施。我国尚有5000亿左右的住房公共维修基金沉淀在各级财政和房管

Traditional Rural Villages

For China, a traditional agricultural country, it is critical to protect traditional villages. First, the pilot measures taken on the Correlation of Increase and Decrease of Urban and Rural Construction Land will be reformed and replaced by the new pattern of farmland protection and monitoring, with urban population density-control as the cornerstone. Second, it will be clearly specified that the revocation or combination of villages must be approved by the provincial people's government, and that in any land but suburban areas, grassland and desert, it is forbidden to combine villages. Third, apart from improving the heritage protection of traditional villages, a special academic council will conduct routine evaluation of cultural heritage, traditional residences, natural scenery, unique rural products and customs and festivals. Awards will be granted to the exemplary villages. Importantly, based on such measures, "awards to replace appropriation" will be given to widely promote the building of beautiful livable villages. This protection and restoration of traditional villages will pave a new road of rural modernization, combining tourism with "one product for one village".

VII. Research and Formulate Urban Agglomeration Planning, and Improve the Spatial Governance of Intensively Urbanized Areas

The measures for the Formulation and Administration of Urban Agglomeration Collaborative Development Planning will be worked out during the period of the 13th Five-Year Plan. The measures will be directed to resolving such collaborative development issues as sharing of human power and material capital, co-treatment of environmental pollution, co-building of infrastructure, co-establishment of supporting industry and co-protection of unrecyclable resources. It should be specially noted that the four-line control measures will be quickly extended to all intensively urbanized areas. The protection of such basic resources as cultural and natural heritage as well as the co-treatment of air, water and soil pollution will be practically and effectively conducted.

VIII. Adapt Residential Buildings for Energy-Saving and for an Aging Population

Since the partial commercialization of residential building, the housing area per capita in China has increased dramatically, with the urban residential area and public architecture reaching 20 billion square meters. In spite of the compulsory promotion of energy conservation in medium and big cities during the 12th Five-Year Period, the energy consumption of the units built during that Period remains very high (approximately two to three times of

局账户中，应积极发挥作用。

与此同时还可以学习新加坡的成功经验，即对居住场所离年迈父母较近的子女给予一定额度的个人所得税优惠，再加上以我国传统中医和现代精准网络医疗诊断相结合的社区养老服务体系建设，就可以大大降低全社会的养老负担。

值得指出的是，加快发展绿色建筑对我国健康城镇化有着特殊意义。据欧盟建筑师协会统计，从建筑的全生命周期来看，绿色建筑能够比一般的节能建筑额外贡献高达50%节能率和30%节水率。“十三五”期间是我国绿色建筑全面推广的关键时期，需要绿色建筑知识在民众中的大普及和列入党政干部必备培训项目。除此之外，利用网络、大数据等现代科技手段助推绿色建筑的设计、建造和营运就成为当务之急了。

9. 对小城镇进行人居环境提升改造

从农业现代化的角度看，小城镇是为周边农村、农民、农业服务不可替代的总基地。中央和省财政可对每个镇进行“以奖代拨”形式补贴，未来五年可选择4000个重点镇进行节能减排和人居环境的改造。更为重要的是，许多在大城市难以推广的新能源汽车（农用车），“三网合一”新网络技术，风电、太阳能与小水电结合的新能源供电模式，大城市名牌医院、名校下乡将卫生院和中小学校改造成为高质量的分院、分校等新举措都可以在试点镇先行推广，从而形成“农村包围、融合城市”的新态势。发挥此类“绿色小城镇”示范作用，既能减少区域空气污染，又能在体制障碍较小的城镇中率先推广新技术和新模式。

10. 全面推进智慧城市建设

经过近十年的探索和实践，我国初步形成200个左右以格网式管理为基础的智慧城市发展模式。这一模式采取了互联网+绿色建筑、互联网+绿色社区、互联网+城市基础设施等形式，从搭建公共信息平

developed countries). The experience of countries that prioritize sustainable urbanization suggests that household energy consumption makes up around 35 per cent of the total social energy consumption. However, after energy-saving renovation of residential buildings, energy-saving efficiency can reach 65 per cent generally. Therefore, it is estimated that an energy equivalent to that produced by 0.5 billion tons of standard coal can be reduced each year through green architecture.

It is especially important to develop green architecture for the healthy urbanization of China. According to European Association of Architects statistics, green architecture can save 50 per cent more energy and 30 per cent more water than the ordinary energy-saving architecture. The period of the 13th Five-Year Plan is a crucial time for the universal promotion of green architecture in China. It requires popularization of knowledge of green architecture, together with compulsory training programs for party and government cadres. It requires advancements in the design, construction and operation of green architecture, drawing upon modern technologies like the Internet and big data.

With an aging population, the future living arrangements of most seniors in urban areas of China must be supported by home-based care and community service. However, since most of the multi-storey houses built earlier do not have elevators or facilities to support aged living, such as special toilets, and because most individuals cannot afford to renovation for energy conservation and aged provision, this process must be led by the local government. At present, there are in China, RMB 50 million of public maintenance funds for housing allocated to different government finance and housing authority accounts, for use in the coming period.

We can also learn from the successful experience of Singapore, where a certain percentage discount on individual income tax is granted to children who live near their aged parents. When combined with the establishment of community support for seniors and a health system integrating Chinese traditional medicine and modern diagnostic medicine, this will greatly reduce the burden of providing for the seniors.

IX. Improve the Living Environment of Small Cities

From the perspective of agricultural modernization, small cities are indispensable bases for surrounding villages, farmers and agricultural services. Funds from the central and provincial governments will subsidize through “awards to replace appropriation” renovation activities for energy conservation, emission reduction and improvements in the social environment for 4,000 key towns over the next five years. Measures, which are difficult



台入手，运用云计算、大数据和物联网等新技术来有效治理现有的各类城市病、提升政府社会管理效能、为“大众创业、万众创新”提供便利，并使各类“互联网+”模式融入城市经济社会组织，从而起到有效治理“城市病”、创新社会治理模式、增强城市活力和可持续发展动力等成效。推行智慧城市建设，是一场城市间相互学习、友好竞赛并逐步升级的活动。“十三五”期间，智慧城市建设将覆盖大部分城市和部分重点镇，至少可形成约5万亿的投资规模，并将对经济结构转型产生巨大的推动作用。

总之，未来五到十年是我国城镇化能否避开先行国家城市化弯路、超越“中等收入陷阱”、落实新型城镇化规划的关键阶段，也是治理前一阶段“广度、速度城镇化”所带来的各种“城市病”最有效的时期。除此之外，以上十个方面的策略如能贯彻实施，至少可以产生三十万亿的新增投资，与传统“铁、公、基”投资不同的是，这些新增投资具有良好的经济、生态和社会效益，将对增强国民经济活力、韧性和实现可持续发展起到不可替代的促进作用。

(本文有删节)

to initiate in big cities—such as new energy automobiles (including farm vehicles) and "three-in-one networked" technology, wind, solar and small hydro power, and transformations of existing rural health centers and primary and middle schools into branches of famous hospitals and schools—can be developed in pilot towns, hence creating the new trend of villages surrounding and merging with the city. Demonstration green towns will be used to not only reduce regional air pollution but also to promote new technologies and new modes in towns with less institutional barriers.

X. Comprehensively Promote the Building of Smart Cities

After ten years of exploration and practice, about 200 smart cities have been built based on grid management. This construction pattern includes the following "Internet plus" configurations: the Internet plus green architecture; the Internet plus green communities; and the Internet plus urban infrastructure. A public information platform has been built and new technologies like cloud computing, big data and the Internet of Things have been employed to treat effectively various existing "urban diseases", improve the social administration performance of government, bring convenience for "business startups and creation of a commons", and integrate various "Internet plus" modes into the urban structure. This will result in the effective treatment of urban diseases, innovation in social treatment modes, and improvements in urban dynamics and sustainable development. Mutual promotion of smart cities is the kind of activity through which friendship-cities can learn from each other, compete with each other and upgrade together. During the period of the 13th Five-Year Plan, the construction of smart cities will cover the majority of cities and some key towns. It will amount to RMB 5000 billion of investment, creating a huge impetus for the structural transformation of the economy.

In short, the next five to ten years is a critical stage for Chinese urbanization. We need to avoid the detours of prior national urbanization periods, surmount "median-income traps", implement new urbanization planning, and efficiently treat various "urban diseases" brought about by "extensive and speedy urbanization" in the previous stage. If implemented, the ten strategies discussed above can potentially generate new investment of at least RMB 30 trillion. Although different from traditional investment in "railways, highways and airports", it will bring sound economical, ecological and social benefits. Therefore, it will play an irreplaceable role in enhancing the dynamics and resilience of the national economy, as well as achieving sustainable development.

(slightly abridged and edited)

长江中游城市群建设 不能重走牺牲农业和耕地的老路

The Urban Cluster in the Middle Reaches of the Yangtze River should not be Developed in the Old Way that Sacrifices Agriculture and Farmland

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目前，发展长江经济带是国家三大战略之一，国家城市群规划即将出台，在此背景下，长江中游城市群建设无论从理论还是从实践的角度，都得到了社会的广泛关注。但长江中游地区作为国家粮食生产基地，关乎国家粮食安全问题。长江中游城市群建设也不能重走牺牲农业和耕地的老路。

一、三大城市群的快速崛起的 背后是农业和耕地的不断萎缩

改革开放以来，东部地区由于区位和政策的优势，经济获得了快速增长，尤其是长三角、珠三角和京津冀地区，经济快速增长推动这些地区城镇化水平不断攀升，形成中国人口最密集、城市体系最完备、经济最具竞争力的三大世界级城市群。2013年，长三角、珠三角、京津冀地区城镇化率分别为67.96%、67.76%和60.07%，分别超过全国平均水平14.23、14.03和6.34个百分点。2013年，长三角地区地级

As it stands today, developing the Yangtze River Economic Band constitutes one of China's national strategies, with the plan for the development of state-level urban clusters to be unveiled soon. Against this backdrop, observers have been paying keen attention to the theories and practices concerned with the urban development of the middle reaches of the Yangtze River. Nevertheless, as a national grain-producing base, the development of the region bears significantly on China's food safety. Therefore, the urban cluster in the middle reaches of the Yangtze River should not be developed in the old way that sacrifices agriculture and farmland.



1. Behind the rapid rise of the three city clusters lies the alarming fact of shrinking agriculture and farmland.

Since the policy of reform and opening was inaugurated, the eastern region of China has experienced robust economic growth, largely thanks to policy support in conjunction with the prominent geographical location of the region. In particular, the vibrant economic growth of the Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Economic Band has been

市以上城市 25 个、县级市 44 个，建成区面积达到 7208 平方公里，上海、江苏、浙江三省城市人口密度分别为 3809 人 / 平方公里、2016 人 / 平方公里和 1818 人 / 平方公里；珠三角地区地级市 21 个、县级市 23 个，建成区面积达到 5232 平方公里，广东省城市人口密度达到 3066 人 / 平方公里；京津冀地区地级以上城市 13 个、县级市 22 个，建成区面积达到 3840 平方公里，北京、天津和河北城市人口密度分别为 1498 人 / 平方公里、2843 人 / 平方公里和 2483 人 / 平方公里。

但是，三大城市群的快速崛起的背后是粮食产量和耕地面积的不断萎缩：

从粮食作物播种的面积来看，2014 年长三角、珠三角和京津冀地区分别为 6808 千公顷、2507 千公顷和 6798 千公顷，相比 1978 年分别减少了 3366 千公顷、3318 千公顷和 2314 千公顷。2014 年长三角、珠三角和京津冀粮食作物播种面积占全国的比重分别为 6.04%、2.22% 和 6.03%，相比 1978 年分别下降了 28.04%、53.72% 和 19.78%。

从粮食产量来看，2014 年，长三角、珠三角、京津冀地区粮食产量分别占全国粮食总产量的 7.18%、2.24% 和 5.93%，比 1978 年分别下降了 44.31%、58.09% 和 5.42%。从粮食产量的绝对值看，2014 年长三角地区为 4361 万吨，仅比 1978 年增加了 415 万吨；珠三角地区为 1357 万吨，则比 1978 年减少了 275 万吨；京津冀地区为 3600 万吨，比 1978 年增加 1682 万吨。而与粮食生产历史最好的 1984 年相比，经济发展水平较好的长三角和珠三角粮食产量都表现大幅度减产，分别减少了 1062 万吨和 615 万吨。

二、长江中游地区粮食生产关系到国家粮食安全

农业是长江中游地区的基础，湖北、

driving urbanization in these three regions, resulting in the formation of three world-class urban clusters with very competitive economies. In 2013, the rate of urbanization reached 67.96 per cent, 67.76 per cent and 60.07 per cent respectively in the Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Economic Band—that is, 14.23 per cent, 14.03 per cent and 6.34 per cent higher respectively than the national average. In 2013, the Yangtze River Delta was home to 25 municipal-level cities and 44 county-level cities, with the total built-up area reaching 7,208 km². Population density in Shanghai, Jiangsu Province and Zhejiang Province reached 3,809 persons/km², 2,016 persons/km² and 1,818 persons/km² respectively. In 2013, the Pearl River Delta was home to 21 municipal-level cities and 23 county-level cities, with the built-up area reaching 5,232 km². The population density of cities in Guangdong Province reached 3,066 persons/km². The Jing-Jin-Ji Economic Band was home to 13 municipal-level cities and 22 county-level cities, with the built-up area totaling 3,840 km². The population density of Beijing, Tianjin and Hebei Province reached 1,498 person/km², 2,843 persons/km² and 2,483 persons/km² respectively.

However, behind the rapid rise of the three urban clusters lies the alarming fact of shrinking agriculture and farmland. In 2014, the grain-production area in the Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Region was 6,808,000 hectares, 2,507,000 hectares and 6,798,000 hectares respectively, down by 3,366,000 hectares, 3,318,000 hectares and 2,314,000 hectares respectively as compared with that of 1978. The Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Region in 2014 respectively accounted for 6.04 per cent, 2.22 per cent and 6.03 per cent of the national grain production total—28.04 per cent, 53.72 per cent and 19.78 per cent lower than those in 1978.

In 2014, the grain output of the Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Region respectively accounted for 7.18 per cent, 2.24 per cent and 5.93 per cent of the national total, 44.31 per cent, 58.09 per cent and 5.42 per cent lower than those in 1978. The absolute grain-output value amounted to 43,610,000 tons in the Yangtze River Delta in 2014, only 4.15 million tons higher than that in 1978; grain-output value amounted to 13,570,000 tons in the Pearl River Delta in 2014, 2.75 million tons lower than that in 1978; grain-output value reached 36 million tons in the Jing-Jin-Ji Region in 2014, an increase of 16.82 million tons over 1978. Grain-output value in both the Yangtze River Delta and the Pearl River Delta (two economically advanced regions in China) experienced a drastic decrease in 2014 compared with 1984—a year with the highest grain-output value in China's history. It was down by 10.62 million tons and 6.15 million tons respectively.

湖南、江西、安徽四省都是农业大省，是国家重要的粮食生产基地。2014年，长江中游三省粮食播种面积为1304.3万公顷，如果包括安徽省，则达到1967.2万公顷，占全国粮食播种面积的17.45%，远远超过长三角、珠三角和京津冀4省3市粮食播种的总面积，接近东北三省粮食播种面积的总和；从粮食产量来看，2014年长江中游三省为7729万吨粮食，如果包括安徽则达到11145万吨粮食，占全国粮食总产量的18.36%，接近东北三省11529万吨的总产量。可见，长江中游地区粮食生产在国家粮食生产中占有重要的地位。

但是，近年来，长江中游地区粮食生产增长明显乏力。2014年，长江中游三省粮食产量比上年增长2.46%，包括安徽省在内，其增速为2.98%。近3年长江中游三省粮食生产平均增速为1.55%，包括安徽省在内为1.95%，而东北三省近3年的粮食生产平均增速为2.27%，相差近0.3个百分点。长江中游三省近3年粮食播种面积平均增速为1.02%，包括安徽仅为0.68%，而东北三省为1.22%。2014年长江中游三省粮食播种面积增速为1.22%，东北三省为1.79%，二者相差0.57个百分点。由此可见，如果未来在长江中游城市群建设过程中出现大面积侵占优质耕地的情况，长江中游地区粮食生产在全国的地位将进一步下降。从长远看，将直接影响国家粮食安全。

三、长江中游地区粮食生产面临的突出问题

一是种粮比较效益低。近年来，化肥、种子、农药、农膜、机耕、机收、人工价格等生产资料和生产费用持续上涨，个别品种价格翻番，导致农民种粮越来越不划算，突出表现在比较效益较低。一是种植粮食比种植经济作物的效益低。据农业部门调查，2013年稻谷产值为1283.7

2. Grain production in the middle reaches of the Yangtze River bears significantly on China's food security.

Agriculture constitutes the foundation for the development of the region along the middle reaches of the Yangtze River. As major grain-producing provinces, Hubei Province, Hunan Province, Jiangxi Province and Anhui Province are important grain-production bases of China. In 2014, the total grain-production area of Hubei Province, Hunan Province and Jiangxi Province (all located along the middle reaches of the Yangtze River) reached 13,043 hectares. If Anhui Province is included, then the total grain-production area of these four provinces would reach 19,762 hectares, accounting for 17.45 per cent of the national total. This exceeds the overall grain-production area of the Yangtze River Delta, the Pearl River Delta and the Jing-Jin-Ji Economic Band, and almost equals the total of the three provinces in Northeast China. The total grain output of Hubei Province, Hunan Province and Jiangxi Province amounted to 77.29 million tons in 2014, and if Anhui Province was included, then the total grain output would reach as much as 111.45 million tons. This would account for 18.36 per cent of China's total grain output in 2014 and almost equal the total grain output of Northeast China's three provinces. In this sense, it is fair to say that the region of the middle reaches of the Yangtze River plays a crucial role in securing China's grain security.

However, recent years have witnessed a feeble growth of the grain production capacity in the region of the middle reaches along the Yangtze River. In 2014, the three major grain-producing provinces in this region experienced only a 2.46 per cent increase in grain output. If Anhui Province is included, the growth in grain output of these four provinces would still reach only 2.98 per cent. Grain output of the three provinces in this region (excluding Anhui Province) grew by an annual average of 1.55 per cent over the past three years (the growth would still only reach 1.95 per cent if Anhui Province is included). Grain output of the three provinces in Northeast China experienced an annual average increase of 2.27 per cent over the past three years, 0.3 per cent higher than that of the four provinces in the middle reaches of the Yangtze River (with Anhui Province included). The grain-production area of the three provinces in the middle reaches of the Yangtze River increased by an average of 1.22 per cent annually over the past three years. If Anhui Province is included, then the increase would be down to an annual average of 0.68 per cent. Relative to the 1.79 per cent increase for the three provinces in Northeast China, there is a discrepancy of 0.57 per cent.

As it is shown above, should a large amount of fine arable land be

元/亩，扣除物资费用和人工成本，每亩纯收益仅为246.6元，而种植西瓜的纯收益为1444元/亩、辣椒的纯收益为1666.7元/亩。二是种粮比务工效益低。目前，农民进城打工平均工价约为150元/日，种植一亩双季稻的净收益，抵不上打几天工的收入，低效益影响了农民种粮积极性，因此农村壮劳力基本不以种田为主业，主要从事第二、三产业。由此可见，种粮比较效益低下的困境并未因粮价提高和种粮补贴增加而发生根本性改变，农民种粮积极性受到影响。

二是国家粮食补贴政策功能退化。目前的粮食直补等补贴政策功能退化，已经由过去支持提高农民种粮积极性，鼓励粮食生产，转变为单纯的农民收入支持措施，其生产支持功能基本终结。现行粮食直补基本上是按照计税面积进行补贴，“计税面积”是20世纪新中国建立初开征农业税的统计数字。“计税面积”与“实际耕地面积”“实际种粮面积”有出入是不争的事实，也就导致了粮食直补错位。具体地说就是部分耕地不在计税面积之中，这部分面积种了粮，也得不到补贴；还有部分土地虽在计税面积之中，但并未种粮，不种粮也拿到了粮食直补资金。出现了“种与不种一个样、种多种少一个样、种好种差一个样”的状况，粮食直补在现实中成为“农田”直补。调查发现，无论是流转还是撂荒，无论是种粮还是种植经济作物，粮食直补款仍由原承包者领取。粮食直补在事实上成为了普惠政策，没有起到激发种粮农民积极性的作用，导致了土地撂荒、农民兼业化、种粮劳动力老龄化、粗放经营等现象日益严重。

三是粮食生产的经济压力增大。粮食主产区粮食生产对地方财政增收的贡献率逐年下降，而粮食主产区担负的发展粮食生产投入不断增加。目前主要依靠中央和省级政府财政拨款所形成的单一且有限的

expropriated in the future due to accelerated urbanization in the middle reaches of the Yangtze River, then the position of this region as a key grain production base of China would be significantly downgraded. If the trend of shrinking arable land continues in this region, then China's grain security will be severely undermined.

3. The middle reaches of the Yangtze River face outstanding problems related to grain production.

The first problem lies in low return on grain production. Recent years have witnessed a continuous increase in the costs of production materials and processes, including fertilizers, seeds, pesticides, agricultural films, mechanized farming, mechanized harvesting and labor. The prices of certain agricultural breeds have doubled, which makes farming an increasingly unprofitable activity. The low return on grain production is indicated by the following considerations. First, grain production yields significantly lower economic returns than cash-crop production. According to a survey conducted by the Ministry of Agriculture, the value of rice production reached RMB 1,283.7 yuan/mu (one mu equals approximately 667 m²) in 2013, which meant that the net return was only RMB 246.6 yuan/mu with the cost of production materials and labor deducted. By comparison, the net return on watermelon production in that year amounted to RMB 1,444 yuan/mu, while the net return on pepper production reached RMB 1,666.7 yuan/mu. The second consideration is that grain production yields lower gains than working as an employee. Currently, a migrant worker in urban areas earns about RMB 150 yuan/day. At this rate, what a migrant worker earns in several days is even higher than the net returns yielded by one mu of double-cropping rice. Low economic return has, to a great extent, suppressed farmers' initiative and enthusiasm for grain production, which leads to a worrisome result: the majority of young adults in rural areas of China are now working as migrant workers in urban areas, engaged in the secondary and tertiary industries. In this sense, the increase in grain prices and grain-production subsidies has barely been able to reverse the trend of declining economic returns on grain production, which has greatly dampened farmers' enthusiasm for grain production.

The second problem is the diminishing effect of national grain-subsidy policies. Currently, the effect of direct subsidies for grain production and other subsidization policies has deteriorated. In the past, grain-subsidization policies were able to improve substantially farmers' initiative to grow grain crops. However, at present, these policies have been reduced to mere tools for increasing farmers' income and have thus lost their function of supporting

资金渠道，已经无法满足我国粮食主产区建设的需要。“产粮大省、财政穷省”“产粮大县、产业小县、财政穷县”是我国粮食主产区建设中体制性矛盾的生动写照，也是区际利益失衡的集中体现。此外，加入世界贸易组织以来，我国已成为世界上农产品关税水平最低、开放程度最高的国家之一。农业深度融入国际市场，不仅面临着现代化水平高的发达国家的竞争，也面临着资源丰富的发展中国家的竞争。比如说大米价格，我国平均在2元钱左右，而东南亚进口的只有1元多，差价达0.5元甚至1元，竞争压力非常大。

四是“弱者种地”问题严重。随着工业化和城镇化快速推进，非农产业缺乏大量的劳动力，外出务工农民收入较高，使得农村大量富余劳动力持续向城市转移，农业劳动力减少，农村呈空心化。根据2010年全国人口普查资料，13个粮食主产区（除辽宁省外）均是人口净迁出区。净迁出率较高的粮食主产省份依次为安徽省-17.7%，江西省-13.1%，湖南省-12.8%，湖北省-11.32%，河南省-10.84%。其中安徽省是净迁出率最高的省份。由于外出打工都是青壮年劳动力，留守在家的大部分是年龄偏大、文化程度偏低的人，他们缺乏接受新农业技术的水平，更没有改进农业技术的能力，完全靠传统的方式和经验种田，家庭经营也只满足于自给自足，导致需要精耕细作的粮食生产变成粗放型管理，农户水稻双季改单季倾向增多，甚至出现有田无人种的现象。此外，从事粮食生产的人员力量严重弱化，现在种田的主要是一些60岁以上的老人和妇女，男性壮劳力很少，绝大多数年轻人不屑学习耕作技术，技术型农民后继乏人。2013年，湖南省农业户籍人口3482万人，其中外出务工人员820万人，占全省农村人口的1/4；留守的农村人口2662万人，其中老人、儿童1830万人，占留守人口的2/3多，留守

grain production. Current direct grain subsidies are allocated based on taxable area, which is calculated based on data collected at the time of the founding of the PRC. It is undisputable that there is a great discrepancy between "taxable area" and "actual arable land area" and "actual grain growing area". Such a discrepancy is a direct cause of subsidy dislocation. Specifically, certain sections of arable land area are not recognized as taxable land areas, which means that farmers growing grain on these sections fail to receive direct grain subsidies. Other sections of arable land, though recognized as taxable areas, are not used to grow grain but still bring direct grain subsidies to farmers who claim land-use rights to these arable land sections. Given such a dislocation, direct grain subsidies are allocated to farmers whether they grow grain or not, whether they grow a large amount of grain or a small amount, and whether they grow good grain varieties or bad grain varieties. In this connection, it is fair to say that direct grain subsidies have been turned into "farmland subsidies". A survey conducted by the Ministry of Agriculture shows that direct grain subsidies are still claimed by the original contractors whether a piece of arable land is transferred, is left uncultivated or is used to grow grain or cash crops. In reality, direct grain subsidies have become a non-specific benefit policy, failing to ignite farmers' enthusiasm for grain production and giving rise to a series of grave problems, such as arable land being left uncultivated, and farmers being engaged in side-businesses and crude modes of farming.

The third problem is increasing economic pressure on grain production. Major grain-producing areas have been experiencing a year-by-year decline in their contribution to local fiscal revenue growth. Meanwhile, these areas have been incurring a constant increase in production input. Currently, the source of financial resources for grain production is singular and limited, with financial resources mainly appropriated and allocated by the Central Government and provincial governments. Such limited financial resources have failed to meet the growing needs of major grain-producing areas in China. "Major grain-producing provinces are poor financially" and "major grain-producing counties are backward in industrial development and poor financially". These sayings vividly capture the institutional problems plaguing China's major grain-producing areas, and are expressions of the imbalances of benefits between regions. Moreover, since its accession into the WTO, China has already become one of the most open economies, with the lowest level of tariffs in the world. China's agriculture has been fully integrated into the global market, facing fierce competition from both highly modernized countries and resource-rich countries. For instance, in the case of rice prices, rice is sold at an average of RMB 2 yuan/kilo compared to just over RMB 1 yuan/kilo for imported rice from Southeast Asia. The price difference is as

的农业从业人员 830 万人，仅占留守人口的 1/3 不到。

四、积极探索保护农业和耕地的长江中游城市群建设新路子

在中国未来的城镇化进程中，粮食是根本，城镇化是中国经济发展的必由之路。只有确保粮食安全，才能为城镇化解决后顾之忧。长江中游城市群建设必须处理好粮食生产与城镇化的关系，以保生态红线、保耕地红线、保粮食基本供给、保补充耕地质量来确定城镇化用地需求，同时应充分考虑粮食主产区地方政府的利益诉求，加强对城镇化路径的顶层设计，通过规划引导，逐步探索出一条保护农业和耕地的长江中游城市群建设新路。

1. 积极探索兼顾国家粮食安全和粮食主产区城镇化推进的制度安排。粮食作为一种公共产品，保证粮食安全，受益的是整个国家或社会。粮食主产区由于大量耕地用于粮食生产，对第二、三产业用地产生了一定的限制，从而制约了主产区经济社会的发展和政府财政收入的增加。可以说当前的粮食政策是以牺牲主产区及种粮农民利益来维持国家粮食安全的。中央应正视粮食主产区的利益诉求，优先安排粮食主产区基础设施建设和公共服务，缓解粮食主产区的财政压力，增加粮食主产区地方政府保卫粮食安全的积极性；提高居民生活水平、改善居住环境、满足精神文化需求，提高居民就地城镇化的热情。具体可包括村街建设、农田水利基础设施建设、中低产田改造工程、标准粮田建设工程、土地整治工程、村路硬化工程、农产品流通设施建设、农村信息化建设、农业机械化装备提高工程、标准化规模养殖场（基地）建设工程等等，以及农村教育培训事业、新型农村卫生合作医疗体系、农村社会保障体系的完善和农村文化和体育设施建设等。

much as RMB 0.5 yuan or even RMB 1 yuan, which indicates the intense pressure facing domestic grain producers.

The fourth problem is that most farmers in China are aged and physically weak. As the trend of industrialization and urbanization moves to greater depth in China, non-agricultural sectors face a shortage of labor. Because salaries are higher in the urban areas, the rural areas are experiencing an exodus of surplus workforce into the cities, which results in a sharp decline of labor-force capacity in the rural areas and the hollowing-out of villages. According to the 2010 national census, all thirteen major grain-producing provinces, except Liaoning Province, experienced an outflow of workforce. Topping the chart for workforce outflow were the following provinces: Anhui Province (-17.7 per cent), Jiangxi Province (-13.1 per cent), Hunan Province (-12.8 per cent), Hubei Province (-11.32 per cent) and Henan Province (-10.84 per cent). Most of the people moving from rural areas into urban areas are young adults in the prime of their life, and those left behind are aged and barely educated people. Those left behind are less capable of accepting and applying new agricultural technologies, let alone being able to improve on agricultural technologies. The aged and barely educated people are doing their farming work based on traditional methods and experience, and they are satisfied with growing just enough crops to provide for themselves, without any aspiration to expand the scale of their farming. As a result, grain production that requires intensive and meticulous management for a good harvest is managed crudely: double-cropping breeds are grown but harvested as single-cropping ones; a certain amount of arable land is left uncultivated. In addition, many of those involved in grain production are mostly physically weak and aged over 60. Most of the young adults in rural areas are unwilling to learn new farming techniques and technologies, while technically advanced farmers are finding it difficult to pass their farming techniques down to the younger generation. In 2013, Hunan Province was home to a rural-registered population of some 34.82 million people, one-quarter of whom (8.2 million) ended up moving into cities in search of work. Of the 26.62 million people left in the countryside of Hunan Province, some 18.3 million, or over two-thirds were old people and children. Less than one-third of these 26.62 million people, or 8.3 million were adults physically suitable for farming work.

4. Strenuous efforts should be made to blaze a new trail to protect agriculture and farmland in the city cluster in the middle reaches of the Yangtze River

Grain production is foundational for China's future urbanization, while

2. 建议启动实施“长江中游地区中低产田改造和粮食增产工程”。依靠科技进步和中低产田改造，确保粮食增产和农民增收。积极发展现代农业，加快农业结构调整，大力推进农业产业化经营，加强农村基础设施建设，提高农业综合生产能力。健全对粮食主产县(市)的利益补偿机制，在现有对产粮大县奖励政策基础上，中央财政根据粮食主产县(市)粮食产量、商品粮增加量和贡献率，每年给予一定的补助，使其人均财力达到全国平均水平。针对国家粮食供需结构中水稻供应偏紧的状况，要加大对长江中游地区农田水利基础设施投入，尽快提升水稻等粮食生产保障能力。以加强粮食生产基地建设为重点，推进粮食生产重大工程建设。

3. 大力提高长江中游地区农业机械化水平。在长江中游平原地区重点普及水稻育插秧机械化技术，加强对农业机械化的资金投入，加快推进水稻生产全程机械化，建立健全运行高效、服务到位、支撑有力、充满活力的农业机械化推广体系；推进机械化规模化生产、扶植农机合作组织和种养大户、科技大户、农机大户、致富大户和农村合作组织发展；按照“依法、自愿、有偿”原则，制定促进农民工分层次市民化的土地流转制度、户籍管理制度、公共服务制度；制定强化农业科技推广、提高良种覆盖率等促进粮食生产能力提高的政策，完善促进农业产业结构优化升级的订单农业、循环农业、设施农业、休闲观光农业等新兴农业模式出现的措施；在丘陵山区推广轻便、耐用、低耗中小型耕种收和植保机械，推进丘陵山区主要粮油作物和特色农产品生产机械化；加大灌排设备更新改造力度，加快节水灌溉和小型抗旱设备推广，提高灌排设备装备水平；结合阳光工程等各类农民培训项目大力培养农机作业和维修能手，支持建立农机和农艺科研单位协作攻关机制，提高农业机械化

urbanization is necessary for China further developing its economy. Only by ensuring grain security can China tackle all potential obstacles hindering its urbanization. It is imperative for the city cluster in the middle reaches of the Yangtze River to address properly the relationship between grain production and urbanization, and to plan and allocate land for urban development constrained by the principle of safeguarding the ecological red line and the farmland red line. We need to ensure a sufficient supply of grain and keep good quality supplementary farmland. Meanwhile, full consideration should be given to the interests of local governments in major grain-producing areas. Good design for urbanization pathways should be strengthened and proper planning and guidance should be implemented, so as to blaze a new trail to the protection of agriculture and farmland in the city cluster of the middle reaches of the Yangtze River.

First, efforts should be made to set up a fully fledged institutional system that balances national grain security in relation to urbanization in major grain-producing areas. With grain being a public commodity, grain security will surely benefit the entire nation. As a large amount of arable land is used for grain production in major grain-producing areas, space and land for the development of certain secondary and tertiary sectors are limited and restrained, constituting a major obstacle to the development of local economies and the increase of local government fiscal revenue. It is fair to say that the current grain policies are aimed at securing grain security at the expense of the interest of grain-growing farmers and grain-producing localities. In this sense, it is of critical importance that the Central Government should squarely consider the interests of major grain-producing localities, tilt the allocation of funds in favor of the development of infrastructure and public services in major grain-producing areas, alleviate the financial pressure on major grain-producing areas and increase the enthusiasm of grain-producing localities for protecting grain security. Moreover, it is necessary for the Central Government to improve the living standards, enhance the living environment, and satisfy the cultural and educational needs of the people in grain-producing areas, so that the enthusiasm of local residents for urbanization can be ignited. Specific measures include the following: village-level street construction, agricultural water-conservation projects, low and medium-yield farmland improvement, farmland standardization advancement, land improvement development, village-level sealed road construction, agro-product circulation facility development, rural information-technology development, mechanized agricultural equipment improvement, standardized breeding farm construction, rural educational program implementation, new rural public-health cooperative development,

技术集成和装备配套水平，满足农业生产需求。

4. 结合粮食主产区现实需求建立差异化的粮食直补政策。当前，粮食生产进入高成本阶段，应该进一步加大对粮食生产的支持和补贴力度，进一步增强政策的针对性和指向性。第一，改善种粮直接补贴方式。在种粮直接补贴政策以承包土地面积为标准的基础上，增加“按农民售粮数量进行补贴”的标准。根据种植规范要求对每亩实际用种量进行全额补贴，体现“谁种谁得、多种多得”的基本原则，改善“承包者得补贴、种粮者担风险”的现象，防止土地抛荒、“双改单”“粮改经”等现象，鼓励发展粮食生产，真正调动种粮者的积极性。第二，研究设计粮食专项补贴。如水稻专项补贴，采取差价补贴或价外加价补贴等办法，与已有的最低收购价、种粮补贴相配套，建立鼓励水稻生产的政策支持新机制。第三，探索采取项目申请的方式，对专业农户用于农田水利等基础设施建设自主投资，给予定额的直接投资补助，对商业化的种粮大户，给予信贷利息补贴或提供低息贷款。

rural social security improvement and rural cultural and sports facility construction.

Second, it is suggested that a program should be initiated and implemented to "transform low-and-medium yield farmland and increase grain production in the region along the middle reaches of the Yangtze River". Specific measures include: achieving a huge increase in grain production and farmers' income by transforming low and medium-yield farmland based on scientific and technological progress; developing modern agriculture, accelerating the restructuring of agriculture, advancing the industrialized management of agriculture, improving rural infrastructure and enhancing the overall agricultural productivity. Moreover, efforts should be made to improve the compensation mechanism for major grain-producing counties. The Central Government should give subsidies to major grain-producing counties in line with their grain output and commodity volume, so that these counties can reach the national average level in terms of per capita income. In response to a relative shortage of rice in China's national grain supply, more financial resources should be allocated for the construction of agricultural water conservation projects in the region along the middle reaches of the Yangtze River, so that this region can improve its rice productivity as soon as possible. Major grain-production projects should be advanced, with a focus placed on strengthening the development of grain-producing bases.

Third, agricultural mechanization in the region along the middle reaches of the Yangtze River should be greatly enhanced. The rice-seedling cultivation technology should be popularized extensively in the plain areas of the middle





reaches of the Yangtze River. More financial resources should be allocated to support agricultural mechanization and to speed up production of paddy rice. And an agricultural mechanization promotion system should be put in place, which is highly efficient, service-oriented, forcefully supportive and hugely vibrant. Plans should be formulated and implemented to achieve mechanized and large-scale production and to support the development of agricultural mechanization cooperatives, large grain producers, agro-tech titans, mechanized agricultural organizations, rich agriculture-based households and rural cooperative organizations. In line with the principles of "law abiding, voluntarism and reimbursement", fully fledged land-circulation systems, household-registration management systems and public service systems should be formulated to give migrant workers urban resident status. Policies in favor of boosting grain productivity shall be implemented, such as strengthening the promotion of agro-science and technology, and improving the coverage of good seedlings. Measures conducive to agricultural structural optimization and upgrading should be perfected to develop new forms of agriculture, including ordering-based agriculture, circular agriculture, facility-based agriculture and tourism-based agriculture. Small and medium-sized machines for plowing, planting, harvesting and maintenance, which are portable, durable

and low in energy consumption, should be promoted in hilly and mountainous areas. Mechanized technologies should be applied to produce grain and oil crops and special agricultural products in hilly and mountainous areas. Great efforts should be made to transform and upgrade irrigation and drainage devices and to expand the application of water-saving irrigation devices and small-sized anti-drought devices. The "Sunshine Project" and other farmer-oriented training programs should be advanced to improve farmers' abilities in operating and repairing agricultural machinery. Mechanisms should be set up to bring agricultural mechanization institutes and agricultural technical research institutes together for R&D and technological breakthroughs, so that agricultural mechanized technology integration can be improved and agricultural supplementary technologies and services can be enhanced to meet the needs for agricultural production.

Fourth, differentiated direct subsidy policies for grain production should be formulated to reflect the actual conditions and needs of major grain-producing areas. Currently, grain production has been going through a period of high production costs, and therefore, it is necessary to further increase support and subsidies for grain production and strengthen policy responsiveness and directness. Specifically, the following three measures should be taken: first, direct grain subsidization should be improved. Grain subsidies should be given based not just on the standard of contracted land area, but also on the standard of "the sales volume of grain by farmers". Full-amount subsidies should be given to farmers based on planting quantity per mu and in line with the principle of "whoever plants a higher amount of crops receives a higher amount of subsidies". In this way, the problem of land contractors receiving subsidies and crop growers incurring risks can be properly addressed, and the problem of arable land being left uncultivated can be avoided, as can the problem of double-cropping breeds being planted as single-cropping breeds and planting cash crops instead of grain crops. This measure can also serve to encourage grain production and boost farmers' enthusiasm for grain production. Second, feasibility studies should be conducted on the creation of special grain subsidies. For instance, a special rice subsidy system could be established, based on the methods of price differentiation subsidies and extra price subsidies, supplementing existing minimum-price procurement subsidies and grain-producing subsidies. Third, quota-based direct allowances should be distributed through a project application process to professional farming households who invest in water conservation facilities and other agro-infrastructure facilities with their own money. Interest subsidies or low-interest loans should be delivered to major commercialized grain-producing households.

城市应如何管理科技？

How Should Cities Manage Technology?

乔纳森·安德鲁斯 英国《今日城市》杂志助理编辑

Jonathan Andrews, Assistant Editor of Cities Today

从公司向政府泄露私人数据和信息到市民抱着无所谓的态度在智能手机上共享位置信息，人们关于数字革命及其潜在的危险的质疑声越来越大。

乔纳森·安德鲁斯向来自地方政府、产业界、学术界的专家组谈到了关于市政府如何管理科技应用的问题。

一、专家学者及新闻记者指责科技公司利用建设智慧城市的创意让市民失去增强民主和应对环境变化的权利，智慧城市真的象征着民主的终结吗？

克莱尔·穆克吉（都市生活、未来城市弹射器项目主管）：绝对不是这回事，智慧城市这一词语饱受争议是因为它是由产业领导的，正如 20 世纪美国福特制领导的公路建设一样。因为大型科技公司早期采用了这一说法，并发布出去，利用它在市内出售商品，这让人们感到非常不安。我们现在真正所需要做的是改变平衡，确保智慧城市为市民领导的运动，切实赋予市民享有与市政府一起积极广泛参与此活动的权利。

卡罗·拉蒂（麻省理工可感城市实验室主任）：数据保密和数据控制问题并不局限于城市，这是一个大的文化趋势。不管是脸谱网、谷歌邮箱、网络电话、信用卡还是手机，我们的日常交往都会在其中

From complicit action by companies revealing private data and information to governments, to citizens' own often blasé attitude to sharing locations on a smart phone, questions have been raised about the impact of the digital revolution and the hidden dangers involved. Jonathan Andrews spoke to a panel of experts from local government, industry and academia about how city governments should manage the application of technology.



1. Academics and journalists have railed against technology companies for using smart city innovations to force citizens to outsource democratic and environmental resilience. Are smart cities really the death knell for democracy?

Claire Mookerjee (Project Leader, Urbanism, Future Cities Catapult): That is absolutely not the case. Smart cities used as a phrase has suffered because it was industry led—just as in the twentieth century Fordism led the charge in building roads all over America. Because large technology companies adopted the phrase early on and went out and used it to sell goods in cities, it made people very uncomfortable. What we really need to do is shift the balance to ensure that it is a citizen-led movement and that it actually empowers people to increasingly engage in a broader way with each other and their city governments.

Carlo Ratti (Director of MIT Senseable City): The issue of data privacy and control is not confined to the city—it is a broader, cultural trend. All our daily interactions leave a digital trace, whether it is Facebook, Gmail, Skype, credit cards or cell phones. This does indeed raise new questions of the sort that our society and political system have

留下数据痕迹。这确实会引发一些新的问题，而我们的社会和政治体系还未能应付这些问题。即谁可以接触到那些数据？这些数据储存在哪里？还有一个更为哲学的问题：在当今社会，数据是不是有被遗忘的可能？

萨斯基雅·萨森（哥伦比亚大学社会学教授、全球思想委员会主席）：不完全是这样的，就当今社会的智慧城市而言，民主比技术体系更为复杂和难以捉摸。关于目前智慧城市的现状，我主要担心的是城市还不够智慧。我指的这个有着特别的意义：如果智慧城市不能够集思广益，征询市民的意见和解决方案，那么他们将错失了建设智慧城市、让城市更为民主化的重要一环。

马内尔·圣洛马（巴塞罗那市议会首席信息官）：即便承认智慧城市这一概念来源于科技领域，我不明白为什么人们竟不能正确地决定城市未来的科技应用。不得不说如果我们（我和我的同事）意识到自己正在终结民主，那么我们一定会放弃的。我并不相信什么大阴谋论，也不认为我们都是很愚蠢的人。

凯瑟琳·弗雷斯（IBM 公共部门首席技术官）：智慧城市技术旨在支撑城市发展，使城市领导人更高效更有效地保护市民，赋予市民权利。技术可以为市领导和市民提供更好的信息，促使共同决策的改善。在政府与广大民众展开交流时，技术也可以增强市民与政府的交流能力。这不仅仅对城市领导人和就业者有益。

吉奥吉奥·普林斯特（欧洲主要城市组织主席）：智慧城市是市民参与政策决策的城市。我认为一座城市如果没有市民的参与是称不上智慧城市的。智慧城市当然不能象征着民主的终结，但是如果非民主国家通过滥用私人信息控制公民的行为，那就真的是民主的终结。问题不在于技术，而在于如何让市民参与管理技术的实施。

not yet contended with: who has access to the data? Where is it stored? And even more philosophically: is it ever possible to forget in today's society?

Saskia Sassen (Professor of Sociology and Chair Committee on Global Thought, Columbia University): Not really. Democracy is far more complex and elusive than the technical systems for smart cities we have today. The main concern I have with the current status of smart cities is that they are not smart enough. And I mean this in a very specific sense: if the smart city does not mobilize the intelligence—the very diverse types of intelligence, and their diverse situations—of its residents, they are missing out on a key component of the working (and more democratic) smart city.

Manel Sanromà (Chief Information Officer, Barcelona City Council): Even admitting that the smart city concept originated in the technological arena, I don't see why people should not determine the application of technology to the future of cities, in the right way. I must say, that if we (my colleagues and I) were aware that we were working for the death of democracy we would definitely quit. I don't believe in big conspiracy theories either, or that we are particularly stupid people.

Katharine Frase (Chief Technology Officer, IBM Public Sector): Smarter city technologies are intended to support the operations of the city, that is, to enable city leaders to be more efficient and more effective in empowering protecting their citizens. Technology can provide both city leaders and citizens with better information and enable improved shared decision-making. It also increases the ability of citizens to communicate with their government while opening up communications with a broader segment of the population. This isn't just for the benefit of city leaders or employees.

Giorgio Prister (President, Major Cities of Europe): Smart cities are those where citizens are engaged in policy decisions. If a smart city is not engaging citizens I am not sure that I can call it a smart city. No, it is not the death knell of democracy, yet it might become the case if for some non-democratic countries they abuse this information to control citizen behaviour. The problem is not about technology, it is about how citizens are engaged in controlling the way that technology is implemented in their city. Technology is technology; it is a way to do things.

2. Do you think citizens think less about giving up their data to private companies than local governments?

Mookerjee (Future Cities Catapult): I think this is a huge and

技术就是技术，是处理事情的手段。

二、您认为公民在透露个人信息给私人公司时比透露给政府时的顾虑要少些吗？

克莱尔·穆克吉（都市生活、未来城市弹射器项目主管）：我认为这是一个很大很有趣的问题。就社会而言，我们需要不断地询问一些如我们想要什么之类的棘手的问题，而不是被一些程序或特定类型的技术牵着鼻子走，最终很难回头。城市和压力小组应当成为领头羊，开诚布公地讨论这些问题，这是很重要的。有趣的是，想想现在的青少年，他们在个人社交网络档案上泄露了多少私人信息。他们对隐私的理解与其上一代人截然不同。这本身也意味着我们的隐私标准会越来越低。

卡罗·拉蒂（麻省理工可感城市实验室主任）：我们认为我们有必要共同讨论谁应该储存数据，谁可以接触这些数据以及在什么情况下接触等问题。这次讨论在我看来将会是本时代决定性讨论之一。

马内尔·圣洛马（巴塞罗那市议会首席信息官）：我认为这是一个围绕数字革命所产生的社会影响的基本问题。任何一种技术，如何融入文化、社会化是关键，否则，技术会慢慢被遗忘。当然技术也会带来机遇和危险，看看汽车、核能、生物技术等等就知道了。从这个层面看，城市让我们立足，这是千载难逢的机会，但是我们所有人所有市民做好了如何应对它们的准备吗？正如汤马斯·佛里曼所说：“如果可以做到的一定会做到，问题是为你做的还是你做的？”

凯瑟琳·弗雷斯（IBM 公共部门首席技术官）：我确信，大体上人们更担心政府而非零售商或网站持有这些个人信息。但是我也相信，随着实际价值（不是罚款）的体现，人们的担心开始持平了。

interesting area. It is something as a society we need to constantly be interrogating and asking tricky questions of what we want rather than allowing processes or particular types of technologies to lead us down one route which would be very difficult to backtrack out of. It is important that cities and pressure groups take the lead and have those conversations out in the open. It's interesting to think about teenagers now and how much information they are willing to give up just on their social network profiles. Their understanding of privacy would be very different to just a generation ahead of them. That in and of itself suggests that we will move to lower standards of privacy.

Ratti (MIT Senseable City): I think that we need to discuss together—who should store our data, have access to it and under which terms. I think that the discussion on data will be one of the defining debates of our era. It goes well beyond the scope of cities.

Sanromà (Barcelona City Council): I agree that this is a basic issue around the social impact of the digital revolution. As with any technology, socialisation is the key on how it incorporates into culture, otherwise technologies fade away into oblivion. Of course it has opportunities and dangers—think of cars, nuclear power, biotechnology or any other example. Cities offer us unique opportunities in this sense for acting locally but are we—the people, the citizens—who are to decide how we face them? As Thomas Friedman said, "If it can be done it will be done; then it is whether it is done to you or by you".

Frase (IBM): I do believe that, in general, people are less worried about a retailer or a website having information rather than the government, but I believe as real value (rather than penalties) is demonstrated, this may start to balance out.

Prister (Major Cities of Europe): In general citizens might be arguing more with local governments than with private companies, on this I agree. They are very keen to give any sort of data without knowing what is the danger by giving it to a private company. This is about educating citizens on what it means.

3. Are city mayors and CIOs prepared to deal with the complexities of smart cities and the solutions that private companies are offering?

Mookerjee (Future Cities Catapult): Cities have caught onto the fact that most of them didn't have chief technology officers. Previously IT and digital technology were just the website and IT services. We live in an

吉奥吉奥·普林斯特（欧洲主要城市组织主席）：一般，市民与当地政府而非私企争吵得更多，这一点我是同意的。他们在对危险毫不知情的情况下热衷于把个人数据透露给私人公司。这就要涉及到引导市民熟知其中的危险的事情了。

三、市长和首席信息官做好了应对智慧城市复杂问题的准备吗？私营企业又将会提出什么样的方案呢？

克莱尔·穆克吉（都市生活、未来城市弹射器项目主管）：各城市已经认识到这样一个事实即它们大多数并没有首席技术官。此前，信息技术和数字仅限于网站和信息技术服务。如今我们生活在一个数字化飞速发展的时代，世界联系日益密切，城市不仅需要利用和保护自身，还要积极投身于公益事业。我们看到全球各城市近期聘请了一些首席数据科学家和首席技术官。我认为我们现在所在地英国，其政府数字服务就是一个有趣的例子。各城市正把设计驱动技术的流程由私人企业带到政府部门，看看市民是如何与政府互动的以及我们如何本着以人为本的观念更好地设计技术。

卡罗·拉蒂（麻省理工可感城市实验室主任）：我们生活在物理空间与虚拟空间界限逐步消失的混合空间里。许多事情都在变化，包括公共与私人观念。公共部门可以推广使用开发平台和标准，加快全球城市采用这些平台和标准的步伐（巴塞罗那城市协议的签署就是朝此方向迈出的一步）。然而最重要的是政府应当出资建立一个自下而上的创新生态系统适应智慧城市发展需要，如同美国正在发展的生态系统一样。政策决策者必须建立和形成管理框架，跨越传统的支持孵化器让创新蓬勃。考虑到如优步和空中食宿这样的

incredibly digitalised and connected world, and for a city to really not only capitalise and protect themselves and the public good they need to have strong components for that. We are seeing cities all over the world recently employ chief data scientists as well as chief technology officers. I think that the government digital services that we have here in the UK is a really interesting example. They are bringing design-led technology processes from the private sector into government and looking at how citizens interact with government and how we can design those in a better way with a people-centred view.

Ratti (MIT Senseable City): We live in a hybrid space where boundaries between the physical and virtual are disappearing. Many things are changing including the concepts of public and private. The public sector can also promote the use of open platforms and standards which would speed up their adoption in cities worldwide (Barcelona's City Protocol Initiative is a step in this direction). But, most importantly, governments should use their funds to develop a bottom-up innovation ecosystem geared towards smart cities, similar to the one that is growing in the US. Policymakers must go beyond supporting traditional incubators by producing and nurturing the regulatory frameworks that allow innovations to thrive. Considering the legal hurdles that continuously plague applications like Uber or Airbnb, this level of support is sorely needed. At the same time, governments should steer away from the temptation to play a more deterministic and top-down role. It is not their prerogative to decide what the next smart-city solution should be—or, worse, to use their citizens' money to bolster the position of the technology multinationals that are now marketing themselves in this field.

Sassen (Columbia University): Yes but—and it is a big but—the city side need not think it has to understand the technical aspects. The city leadership needs to know its city, and its needs and too often it doesn't. If it does, it can interrogate the technology companies and ask them to show how their city needs X, Y, Z, which then needs to be addressed by the technology companies. This turns the table around and rather than the city leadership being put in the situation of being the audience to "brilliant" technologists (or, frankly, salespeople) it is pushing the technology companies to figure out how they can help the city. This would also mean that some of the "techies", rather than just salespeople have to come to those meetings. The "need" of a city is a tricky matter, clearly but there are great examples that consist of minimal interventions that make all the difference.

Sanromà (Barcelona City Council): Politicians have a tough job. They are not supposed to be experts in all that they deal with but one of

应用程序会继续面临法律方面的障碍，这个层次的支持是当务之急。

萨斯基雅·萨森（哥伦比亚大学社会学教授、全球思想委员会主席）：是的，这确实是一个很大的问题，但是就城市层面而言，其不需要了解技术方面的问题。城市领导层需要了解的是城市本身，城市的需要，但是大多数情况下，他们并不了解。如果城市领导层想要了解，他们可以询问科技公司，要求他们展示城市所需，然后由科技公司满足所需。让科技公司也发挥作用，这并不是把城市领导层放在作为“聪明的”技术专家（或者坦白说是推销员）的观众的地位，而是促使技术公司设法协助城市。也可以说，一些技术专家而非推销员应参与市政府决策会议。了解一个城市的“所需”本身就是一个棘手的问题，但是很明显，也不乏小小的干预带来巨大改变的成功例子。

马内尔·圣洛马（巴塞罗那市议会首席信息官）：政治家的工作任务艰巨。他们不一定是所有他们接触领域的专家，但是他们的职责之一就是建设良好的团队，切实了解他们工作的方向。从这个层面来讲，对于政治家来说，增长处理与技术公司关系的知识才干所面临的挑战不再比他们在日常生活面临的其它挑战要复杂。就巴塞罗那市而言，我认为他们做到了，巴塞罗那市有较好的能力去处理与技术公司的关系，并要求他们按照我们的要求为建设未来城市的愿景做贡献。

凯瑟琳·弗雷斯（IBM 公共部门首席技术官）：我认为大多数首席信息官对新技术非常了解，但是他们不得不在寻找资金花时间完成新的任务的同时又被要求保持现行的体制运作，这给他们的工作增添了不少负担。在城市，首席信息官与市政府领导人存在着一种真正的伙伴关系，领导人包括但不限于市长，可完成的事情也很多。然而双方之间的对话往往聚焦技术，

their duties is to gather good teams that are able to understand in practical terms the vision they should be pushing forward. In this sense, securing the knowledge to deal with technology companies is not anymore complicated than the other challenges they face in their everyday dealings. In the case of Barcelona I would say that this has been accomplished and that the City of Barcelona is in a good position to deal with technology companies and asking them how we want them to contribute to our vision for the future of the city.

Fraser (IBM)：I think most CIOs are very aware of new technologies, but struggle with the requirements to keep existing systems functioning, while somehow finding the time and budget to do the new things too. In cities where there is a real partnership between the CIOs and city government leaders, including but not limited to the mayor, a lot can be accomplished. While the dialogue often focuses on the technology, the harder issues are often the changes to the city's processes, that is the human factors of how decisions get made, how communication within and across the city agencies happen—bluntly, how tasks get done. Alignment across city leadership is vital. The technology piece of creating smarter cities is much easier. Political will and clarity of purpose are needed to move a city towards being smarter.

Prister (Major Cities of Europe)：The answer is yes or no and it depends on the city. What I mean is that by introducing a significant innovation into a city you are not only dealing with solutions that might be very well designed or proved in other cities but is the city itself capable and ready? Some cities have built a significant vision about what they want to achieve, they have a strategy, they have studied the possible solutions and know how to evaluate the good and bad ones, so those cities are ready. But it's not the case everywhere. By speaking with my colleagues, I understand that CIOs are sometimes not in the right position within the city to influence decisions. A CIO is not the one who takes the policy decision, but he or she is the one who should be, together with the city manager and mayor, in the driving seat of such decisions. They need to evaluate, from a technology point of view, that the solution fits in with the city's IT and if their city is ready to implement it.

4. Who does the smart city concept ultimately serve: local government, citizens or technology companies?

Mookerjee (Future Cities Catapult)：I think it has the potential to serve all of those people but it is up to a whole range of stakeholders to be at the

更棘手的问题往往是城市程序带来的改变。坦率地讲，如何做决定，如何在市政府机构内或者跨市政府机构交流，以及如何完成任务都是人为因素决定的。跨城市领导层结盟是很重要的。建设智慧城市的技术问题容易解决。让城市变得更智慧需要一定的政治意愿和明确的目标。

吉奥吉奥·普林斯特（欧洲主要城市组织主席）：答案的肯定或否定取决于城市本身。我的意思是城市引进一项重要的创新不仅要处理已经设计好的或者在其他市已经验证的方案，还要考虑城市本身的能力以及是否准备好。一些城市对于他们所要取得的成就有着重要的愿景，有自己的策略，已研究出了可行方案，而且知道如何去评价其好与坏，这些城市可以说已经做好了准备。但不是所有城市都准备好了。在与我的同事交谈时，我了解到首席信息官们有时候并未站在恰当的立场来影响决策。首席信息官不是决策者，但是他们必须与城市管理者、市长共同推动决策完成。他们应当从技术层面评估这些方案是否符合城市信息产业需要以及城市是否已做好实施的准备。

四、智慧城市观念最终为谁服务：地方政府，市民还是技术公司？

克莱尔·穆克吉（都市生活、未来城市弹射器项目主管）：我认为都有可能服务到，但是取决于决策桌上的所有利益相关者来平衡各方利益。

卡罗·拉蒂（麻省理工可感城市实验室主任）：我极力认为城市里的技术是为市民服务的，这就是为什么我们倾向于用“感官城市”这一名称。“感官”一词有两层含义，一层是明智，另一层是能够感知。我认为它更好地诠释了我们的想法，以人为本而不是以技术为本。

马内尔·圣洛马（巴塞罗那市议会首

table to get the balance right between those interests.

Ratti (MIT Senseable City): I strongly believe in a city in which technologies are at the service of people, that's why we prefer to use the name Senseable Cities. The term senseable has a double implication, it means sensible and able to sense—as such I think it better explains our vision, which is focused on humans rather than on technology.

Sanromà (Barcelona City Council): It is about the future of cities, that successful invention of humans that dates back to the agricultural revolution and that was shaped by the industrial revolution. How is the digital revolution going to affect them? Therefore it should serve, and involve citizens, governments and industry.

Fraser (IBM): Smarter cities benefit the citizens, the city leaders and their employees.

Prister (Major Cities of Europe): I would say all of them, and from different points of view. Does it serve citizens? It must. Is the reality like that? Let's say that one of the key elements emerging is that it must be about engaging citizens and participating in policy decisions and implementation. The usual way, at least until recently the way policies were managed, was that the city would hold elections, politicians were elected and they decided what they thought were the priorities. Things are changing and citizens want to be engaged. It is open engagement and citizens in policy decisions are something that is felt more and more of a must yet is also something risky for city officials because what they propose could be rejected!

5. What needs to change?

Mookerjee (Future Cities Catapult): Many cities are trying to solve twenty-first century problems with nineteenth century institutional processes. With digital and with technology there are ways to add more layers to the process. The old paper processes are not fit for purpose today. What we need to help cities do is transferring the way they do that so that they can work in ways that fit our current circumstances and culture as well. In the UK, the company Spacehive has helped a number of cities and boroughs, including our mayor in London, set up a hive. A hive is a platform where citizens can put their proposed projects and gain support not just from other citizens but also from public funds, so the mayor can matchfund certain initiatives. Those things used to be very difficult involving tonnes of paperwork and was often only "the usual suspects" who were able to access that money, but now we are seeing a much more open and equitable approach through these platforms.

席信息官)：这事关城市的未来，人类成功的发明始于农业革命时期，转变于工业革命时期。数字革命又将带来什么样的影响呢？数字革命必须涉及并为市民、政府和产业服务。

凯瑟琳·弗雷斯(IBM公共部门首席技术官)：更智慧的城市既为市民，又为市领导人以及就业者谋福利。

吉奥吉奥·普林斯特(欧洲主要城市组织主席)：我想说所有这些都是从不同角度阐释的。智慧城市服务于市民吗？必须是。现实是这样的吗？其中一个新兴的关键因素就是必须让市民参与到政策决策和实施过程中。至少到目前，通常管理政策的方法是城市召开选举，选举政治家，由他们决定什么是当务之急。如今事情正在发生改变，市民希望能够参与其中。这是公开的参与，市民参与决策越来越成为必须，但也是市官员需要冒险为之的事，因为他们的提议很可能会被市民否决。

五、需要改变什么？

克莱尔·穆克吉(都市生活、未来城市弹射器项目主管)：许多城市正试图以19世纪的制度流程解决21世纪的问题。数字和技术可以为该流程添加更多层次。过去的纸笔程序已经无法满足今天的需要了。我们需要帮助城市做的就是转变他们的行事方式，使他们的工作模式适应当前状况和文化。在英国，Spacehive公司帮助许多城市和行政区包括我们伦敦市建立了一个蜂巢。蜂巢指的是市民提供建议方案，从中得到其他市民的支持，也可以得到一笔公共基金，市长对一些提议进行配款的平台。这些工作极为困难，因为涉及到大量的文书工作，过去通常只有那些“经常怀疑者”能够得到这笔资金，但是现在我们可以看到越来越开放与公平的方法正通过这些平台实施。

Ratti (MIT Senseable City): Technology is always a two-edge sword. That's why at our lab we want to focus on its positive and more humanistic aspects—such as citizen empowerment.

Sassen (Columbia University): I would recommend cities to know their city inch by inch, know the needs of neighbourhoods and think of what could improve the city's general management, and then interrogate the companies. It will mean that they (technology companies) will have to bring technologists rather than just salespeople to the table.

Sanromà (Barcelona City Council): Policies and vision are perquisites to any agreement or decision related to technology. Strategic decisions about smart cities must be taken at the political—democratic level—at the very least because we are talking about long-range projects which should not depend on who gets elected every four years. Therefore, there is no limit to what can be done except—and this is the last safeguard for that matter—with democratic control.

Frase (IBM): Technology implements the policy created by government, it does not create policy.

Prister (Major Cities of Europe): Inside city administrations it is not always clear if specific data sets are under the control of one department or organisation or even more than one. Cities have big concerns about this as many data is outside the control of one single IT department.

卡罗·拉蒂(麻省理工可感城市实验室主任)：技术是一把双刃剑。这也是为什么我们在实验室注重积极的影响和更为人性的一面，比如公民权利。

萨斯基雅·萨森(哥伦比亚大学社会学教授、全球思想委员会主席)：我建议城市一点一点了解城市本身，了解邻居城市的需求，想想应如何提升城市综合管理，然后向技术公司询问。这就意味着技术公司必须把技术而非推销员带到决策桌上。

马内尔·圣洛马(巴塞罗那市议会首席信息官)：政策和愿景是对任何与技术相关的协议与决定的额外补贴。智慧城市的战略决策必须至少做到在政治民主的基础上做出。我们谈论的大规模工程项目不应由每四年一选的市领导所决定。因此，这一点做到了，我们所能做的事情就畅通无阻了。这也是我们在民主管理下为此所做的最后一搏。

凯瑟琳·弗雷斯(IBM公共部门首席技术官)：技术使政府的策略生效，但政府政策不是由技术决定的。

吉奥吉奥·普林斯特(欧洲主要城市组织主席)：在城市管理内部，具体的数据包是在一个部门或者组织还是多个部门或组织管理下并不清楚。许多数据在单一的信息技术部掌控之外，各城市对此深表担忧。

对中国近期实施的经济适用房项目的思考

A Critical Reflection on China's New Programme for Affordable and Social Housing Delivery

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中国政府正在实施世界上最大规模的为低至中低收入城市居住群体提供的住房建设工程。从 2011 年到 2014 年 9 月，总计 3210 万间经济适用房开始筹建，并有 2060 万间已经建设完毕。在 2014 年前 9 个月中，就有 720 万间经济适用房开始筹建，并有 470 万间已经建设完毕，花费 1.07 万亿元人民币（约 1070 亿英镑）。

城市中的底层群体

有四个因素推动着经济适用房项目的实施。第一点也是最重要的一点，这是对百万计的城市困难家庭的回应与安抚。

1990 年前，大部分城市人口都分配有公租房，20 世纪 90 年代，配额由原先的国有主导变成市场主导，这就是住房改革。1994 年提出这个蓝图，1998 年完善，一个三层体系就形成了。第一层是住房由市场主导，给富裕群体。第二层销售经济适用房给收入不高的中产阶级。第三层是补贴提供公租房或社会住房，给底层阶层租住。

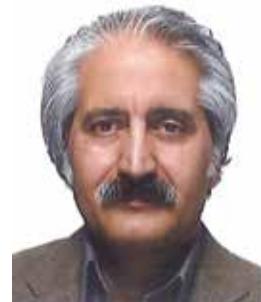
然而在 1998 年的住房配额市场化之后，并没有实现像蓝图中计划的那样，而

The Chinese government is carrying out the world's largest housebuilding programme for the country's low to lower-middle income urban households. From 2011 to September 2014, a total of 32.1 million units of affordable and social housing (ASH) were started, with 20.6 million units completed. In the first nine months of 2014, RMB1.07 trillion (£107bn) was spent, with 7.2 million units started and 4.7 million completed.

Urban poor

Four factors have powered this great drive in ASH provision. First and foremost, it was a response to the tens of millions of urban households in poor housing conditions.

Before the 1990s most urban population was provided with public rental housing but system experienced a transition from state-dominated to market-dominated provision in the 1990s, a process referred to as housing reforms. The blueprint, enacted in 1994 and refined in 1998, set a three-layer system. The first layer comprised market housing for the rich and well-off. The second was affordable housing for sale to the middle class with modest incomes. The third layer was subsidised public rental housing, or social housing, for the poor to rent.



是越来越少经济适用房可买，社会住房也建得越来越少。

从 2000 年开始，房价上涨迅速，一些大城市的房价太高让中等收入家庭望而止步。低收入和中低收入家庭的住房条件更是越来越差，引发人们普遍不满，这已成为一个社会问题。2006 年，中央政府探索着想要改变由高端市场主导的房屋供应的格局，在 2007 年允许大量的经济适用房进行销售和社会住房进行租借。

2006 年住房政策的变化使补助租房成为经济适用房体系的核心。重点推广的就是廉租房。经济适用房从 1994 年提出就占据着主导。流程需要房屋受益人买一个单元但是低收入家庭根本买不起，所以后来作为政府机构分给员工的住房福利。机制不完善使得富裕的群体也可以买这种房，导致中等收入家庭买到这种房的机会越来越少。

2007 年政策重新定义了经济适用房的概念，最大不超过 60 平方米，从而使富豪无兴趣购买。还允许当地政府提供限价房并以更少折扣售卖从而减少对买者的补助。

为了帮助买不起房的中等收入家庭，2010 年政府推出公租房，租期为三到五年，租金在可负担范围内。2014 年开始，限价房和公租房合并到一起管理。经济适住房迅速增多，出现剩余，迫使许多城市放松入境限制从而使城市底层居民的住房质量有所提高。

经济增长

过去五年的建房项目有部分原因是为了解决总体低迷的经济使其再度增长，而在 2010 年则主要为了振兴房地产市场。这是国家宏观调控限制住房需求导致的，随之而来的还有房价上涨。随着经济发展放缓，政府计划在 2013 年到 2017 年建一千万套重建房。

In the marketisation of housing provision after 1998, however, the blueprint was not adhered to, leading to low levels of affordable housing to buy and little social housing to rent being built.

From 2000, housing price inflation accelerated and even middle income households were priced out of the market in major cities. Low and lower-middle income households saw a relative decline of housing standards after 2000, which generated discontent and became a political issue. In 2006, the central government sought to change the structure of housing supply, which was biased to the high-end market, and in 2007 allowed large scale public provision of affordable housing to buy and social housing to rent.

The change in housing policy from 2006 has placed subsidised renting at the core of the ASH regime. Low rent housing (LRH), a form of social housing, was given priority. Previously, Economic and Comfortable Housing (ECH), first available from 1994, had dominated. The process required beneficiaries to buy the units but was beyond the reach of low income families, and often captured by government agencies as housing benefits to their employees. Corruption also led to well-off households accessing ECH, reducing its availability to middle income households.

The 2007 policy redefines ECH with a maximum size of 60m² to discourage wealthy buyers, and allow local governments to provide limited price housing (LPH) that are sold at much smaller discounts to reduce subsidy to buyers.

To help middle income households that are unable to buy, public rental housing was rolled out in 2010, at affordable rents for fixed terms of three to five years. From 2014, LRH and PRH have been merged to streamline management and remove the stigma attached to LRH. The rapid expansion of ASH stock creates surplus, forcing many cities to ease entry restrictions that contributes to rising housing standards for the urban poor.

Economic growth

The programme of building housing over the past five years was also, in part, designed to boost economic growth threatened by the general slowdown, and housing market especially for 2010. This was caused by macro control to curb housing demand and thus house price inflation. As the economy slowed further, the government tabled another programme to build 10 million units of redeveloped and improved housing (RIH) from 2013 to 2017.

Designed for families living in substandard accommodation but unable to improve their housing conditions, RIH becomes a vehicle in 2009 to

重建房是设计给无法改善住房条件的低标准住房家庭。2009年重建房成为一个住房重建与升级的结合品，之后开始成为经济适用房项目的主导。举个例子，从2011年1月到2014年9月，在新建的3210万套经济适用房中，重建房就占了1554万套。地方政府由于有中央政府的财政支持，开始了大规模的拆除危楼和不达标建筑行动。

清理计划包括并入城市对城市基础设施和服务缺乏贡献的城中村。由于缺乏正确规划和建筑限制，在房屋需求增多的情况下，业主为了获取更多利益而过度修建。这一类城中村是低标准住房的重点对象，许多低收入居民尤其低收入又买不起租不起商品房的移民都居住于此。这次的清理行动不可避免地会对这些居民造成极大的不便和不好的影响。尽管如此，他们还是为提高中国普通住房标准和居民生活质量做出了贡献。

城市化进程的加快

供应量的增加有利于打破流动人口申请经济适用房的限制。这种限制往往是由中国户籍制度和经济适用房的数量短缺所造成的。基于近乎所有符合条件的户籍家庭都已入住了经济适用房的情况，地方政府均开始为居住满一定年份且有工作的流动人口提供经济适用房。

例如，作为中国中部地区大城市的武汉，就已经为拥有合法工作（即签订了正式劳动雇佣合同）的流动人口提供了经济适用房。其他城市如北京、东莞、昆明以及其他城市都将流动工人纳入了可以申请最新经济适用房项目的目标群体。

然而，可供流动人口居住的经济适用房数量十分有限，并且许多农民工很难找到符合购房要求的合法工作。于是在2014年7月，政府出台了新的城市化政策，降低了中小城市对于流动人口申请户籍的准

combine housing redevelopment and upgrade, and has dominated the ASH regime since. For example, among the 32.1 million units of ASH new starts from January 2011 to September 2014, RIH accounts for 15.54 million. With financial support from central government, local governments conducted large scale clearance and rebuilding of dilapidated and substandard housing.

Clearance programmes have included urban villages that were incorporated into city boundaries without improvement to infrastructure and services. The lack of proper planning and building regulation control had led to overbuilding by owners who sought to benefit from the rising demand for home and shelter. Such villages became a concentration of substandard housing, which were home to many low income families, particularly migrants who normally take low-pay jobs and most are unable to rent or buy in the housing market. These clearance programmes inevitably have regressive social impacts of dislocation of settled communities. Nevertheless, they have also helped to greatly improve the general standard of housing in Chinese cities and raise the standard of living of their occupants.

Speeding up urbanisation

Increased supply is conducive to break the restriction on migrants' access to ASH, imposed by China's household registration system and reinforced by a shortage of ASH. With nearly all of the qualified registered households being accommodated by ASH, local governments in China have started to offer ASH to migrants who have been residents and employed for a number of years.

For example, Wuhan, a major city in central China, has provided PRH access to migrants with secured jobs, i.e. jobs with formal employment contracts. Other cities such as Beijing, Dongguan, Kunming and others also allow migrant workers in their latest PRH provision.

However, availability is still very limited and many rural migrants find it hard to obtain secure employment. In July 2014, the government tabled its new urbanisation policy, which includes lowering the threshold of household registration in small to medium cities to absorb migrants from the countryside. After becoming registered households, migrants are entitled to apply for ASH. Thus the rapid increase of supply of ASH in many small to medium cities can be used to accommodate rural migration to speed up urbanisation.

Efficiency concerns

The huge rise in ASH provision, however, raised concerns on efficiency

入门槛，从而吸纳更多的农民工成为城市居民。这些流动人口一旦拥有城市户籍，便可以申请经济适用房。因此，中小城市经济适用房供应量的快速增长可以为大量农民工提供居所，从而进一步加快城市化的进程。

效率上的担忧

同时，经济适用房供应量的大幅提升造成了资金、计划、设计、建设、分配和管理上的种种问题，引发了人们对于其效率和管理的担忧。

在我们近期的研究报告中，我们收集并验证了广州和武汉经济适用房项目的相关数据并深入调查。

我们发现缺乏一套可持续发展的筹资机制，使得其难以支持地区政府经济适用房项目建设，这直接导致了许多项目的资金不足。为了节约土地成本，许多经济适用房被建在较为偏远、交通不便的位置，其建设成本低，往往缺乏配套的公共基础设施。以上情况至少在早些年是存在的。这便是经济适用房入住率低的主要原因。

其次，为了完成上级施加给地方政府的执行目标，大量经济适用房被建设出来，其中大部分往往在偏远地区。由于低收入群体集中居住在交通不便的偏远地区，这给政府造成了很大的管理问题。而这些情况也容易给未来社会融合和完整造成潜在的威胁。

第三，经济适用房项目缺乏相应的法律和章程，政府没有将权力细化，从而导致地方获得的经济适用房项目管辖权力（物业管理权力）不完整、不充分。管理人员经常发现他们并没有足够的权力去执行他们的职责。

第四，除了某些项目，对外来流动人口（农民工）的排斥还广泛存在于中国各大城市的经济适用房项目。这使得某些经济适用房并没有人居住的同时，农民工依旧不

and management, with problems of funding, planning, design, construction, distribution and administration.

In our recent research *More Doesn't Mean Better: Inefficiencies in China's Affordable and Social Housing Sector*, we gathered and examined evidence of inefficiency and investigated its causes in Guangzhou and Wuhan.

We found the lack of a sustainable funding mechanism for the central government to support local governments for ASH construction results in under-financing of many projects, leading to housing being built at less favourable locations to economise on land costs, with low budgets for construction, and with a lack of public infrastructure, at least in early years. This is the main reason for empty units in ASH estates.

Second, pressure on delivery targets imposed on local governments has led to the development of large and often remote ASH estates to meet targets, creating significant management problems due to the concentration of low income households in remote locations that can also lead to potential future problems of social cohesion and integration.

Third, the lack of legislation and statutes on ASH and delineation of rights, a responsibility of the central government, leads to insufficient authority being given to local governments in ASH administration, with implications for estate management. Management often found they did not have sufficient authority to execute their duties.

Fourth, in spite of some progress, exclusion of migrant workers from ASH is still widespread in Chinese cities, leaving units vacant while migrants have to endure overcrowded housing conditions.

Fifth, there is a lack of management systems, such as credit checks, eviction and exit, in China's ASH management regime. It is very difficult to remove someone with anti-social behaviour and force income ineligible occupiers to leave.

Finally, the lack of competition and alternative ASH provision reduce choices and satisfaction among occupiers. Discussion with ASH residents found although they were happy with the new high-rise housing units, they would like to live closer to where they work or to socialise as they did in the past.

Some were not happy with the management style of their housing estate. We believe provision by a sector different from local governments and market operators will greatly enhance choices and competition among the ASH sector.

Future directions

Progress in reforms to raise efficiency has been observed. The development of large ASH estates is being replaced by small estates and mixed communities,

得不忍受着过度拥挤的居住环境。

第五，中国经济适用房管理缺乏一套合理的管理系统，例如信用核查、驱逐及房屋回收等。这使得政府很难驱逐做出反社会行为的住客以及很难强制没有达到收入资格标准的住客搬离经济适用房。

最后，经济适用房项目缺乏竞争和可选择性减少了其居住者的选择范围，降低了其满意度。经过和经济适用房居住者的讨论，我们发现他们对快速增长的经济适用房项目数量感到高兴，但也希望自己能住得离工作地点更近或像以往那样便于社交。

部分人不满意自己住房的管理系统。我们相信若有不是地区政府和市场运营机构提供的另一种经济适用房，定能加大经济适用房项目的竞争，提升其可选择性。

未来方向

为了提高有效性，经济适用房项目已经进行了各项改革。大型经济适用房的开发被小型混合型社区所取代，市场住房项目也不得不包含一定比例的经济适用房。

为了减少补贴的数量并防止非目标人口占据经济适用房，地方政府正尝试将共享产权住房作为一种新型经济适用房。一些地方政府例如武汉，将私人住宅的整体出租作为公共租赁住房，从而加快了房屋的交付，简化了管理。

利用闲置的房源，这项措施可以作为许多城市现正经历的房地产市场供过于求问题的解决方法。而许多地区政府发展的房屋建设、分配和管理信息系统则有利于提升经济适用房建设、分配和管理方面的有效性。

《城镇住房保障条例》，这一条由中央政府起草的国家性法规在2014年3月和4月征询了民意。尽管《城市住房保障条例》不能解决所有方面的低效性，但它

的颁布为中国的经济适用房项目提供了更加稳妥的法律依据。

我们的研究发现，广州、武汉和上海负责经济适用房供应和管理的官员和管理人员都十分开明，时刻准备接受变化和改革去提升效率。他们勤奋刻苦，为成为一个不谋私利的部门而奉献自我，迎难而上。这是中国经济适用房项目为达到为7亿新增城市人口中的20%提供住房保障的目标而不断成长、不断改善的积极信号。

with market housing projects obliged to include a percentage of ASH.

To reduce the amount of subsidy and to prevent capture by non-targeted population, local governments are experimenting shared ownership housing as a new form of affordable housing. Some local governments, such as Wuhan, carried out en bloc renting of private housing as PRH to speed up delivery and streamline management.

This practice may be a solution to the glut of market housing currently experienced by some cities, for it makes use of the vacant housing stock. The development of construction, distribution and management information systems by many local governments increase effectiveness of construction, distribution and management.

The Urban Housing Security Ordinance, a national statute drafted by the central government, was put in public consultation in March and April 2014. Although the Ordinance still falls short of addressing all the inefficiencies, its enactment provides a secure legal basis for ASH provision in China.

Our research found officials and managerial staff working on ASH provision and management in Guangzhou, Wuhan and Shanghai were open-minded, and ready to embrace change to increase efficiency. They were hard-working and dedicated against the odds of not being in a sector that generates profits. This is a promising sign for the Chinese ASH to grow and to improve to achieve the target of providing 20 per cent of the 700 million newly-increased urban population with housing security.

Further info: To download *More doesn't Mean Better: Inefficiencies in China's Affordable and Social Housing Sector*, Visit <http://bit.ly/13vgh5R>

青春 · 天赋 · 价值

Young, Gifted and Valued

理查德·福斯特 英国《今日城市》杂志主编

Richard Forster, Managing Editor of *Cities Today*

随着城市政府不断开展各种社会媒体活动以吸引更多年轻的选民，有一个地方政府阐明了年轻人真正的所想所需：在决策过程中发挥积极作用。理查德·福斯特对美国波士顿实施的参与式预算计划进行了考察，该计划允许年轻人推荐新项目，提出新观点，之后由城市政府作为代表加以实施。

2008 年金融危机中，青年就业情况令人非常担忧，美国波士顿城市政府已经采取根本性措施，提高年轻选民的投票参与度，不仅询问他们希望未来城市发生怎样的改变，而且为年轻人提供 100 万美元资金，让其投入自己信赖的资本项目中。

“许多人都很震惊，觉得年轻人竟然有能力做这样的事情，但这种想法本身就不是很对，”波士顿青年参与及就业部的执行理事莎丽·戴维斯说道，“通常，年轻人的贡献能力会被低估，而这样一个项目能让年轻人在世界舞台上展示自己的能力。”

戴维斯是新项目的制定者之一，该项目旨在吸纳年龄在 12—25 岁之间的青年参与地方政府的决策过程。波士顿首先汇集观点，而后由年轻人正式投票表决，通过这种方式已经选出七个项目，这些项目将由市长资助并代表年轻人加以实施（见表格）。

尽管 2009 年，芝加哥首次赋予公民决定政府财政支出的权力时，参与式预算的概念在美国就已存在，但是此次是首次

With national governments trying to woo more young voters with social media campaigns, one local government has demonstrated what young people really want: an active role in decision making. Richard Forster examines Boston's participatory budgeting programme, which allows youth to suggest projects and ideas, which the city government will then implement on their behalf.

With the financial crisis of 2008 having seen youth employment levels rise to alarming levels, the City Government of Boston in the US has taken a radical approach to youth engagement not only asking young people what they want to happen in the city but providing US\$1 million for them to put towards capital projects which they believe in.

"It is astounding for many that young people are capable of doing something like this, and that is a little bit of what the problem is," says Shari Davis, Executive Director of the Department of Youth Engagement and Employment in Boston. "Often their ability to contribute is undervalued and a project like this really blows this up for the world to see."

Davis has been one of the architects of a new programme designed to bring youth aged 12-25 into the decision-making process of local government. Through a process of idea collection followed by a formal vote by young people, Boston has selected seven projects, which will be funded by the mayor and brought to fruition on their behalf (see box).

While the concept of participatory budgeting has existed since 2009 in the US when Chicago first granted citizens the right to decide on how government money was spent, this is the first time that it has been extended to the young members of a city's population.

"It is really difficult to ask people to become engaged and be civically minded but then not give them real ways to do that," comments Davis. "This is one of those ways of engaging young people, which is powerful for them and

将权力赋予给城市的年轻人。

“要人们积极参与并且心系公众，随后却又不为他们提供实际的方法去实践，这真的很难，”戴维斯说道，“而这个项目就是促使年轻人参与的一种实际方法，这种方法对年轻人、对社区其他人来说都影响甚大。”

此计划来源于已故的前波士顿市长汤玛斯·曼尼诺，他于1994年成立市长青年委员会，以此倡导青年的作用，戴维斯起初便在此任职。现任市长马蒂·沃尔什于2011年上任并继续推进年轻人参与工作，制定青年引领变革计划并为此计划提供资金支持，希望培育年轻一代，成为城市未来的领袖。

“我发现，通过吸纳年轻人参与决策过程，我们正在开启新一轮对话，让年轻人对未来有了发言权。”沃尔什说道。

计划第一步是成立一个由60人组成的指导委员会，60人分别来自波士顿各青年组织。2014年1月初，各青年组织推举了两名人选担任指导委员会领导。两人的职能是确定程序规则，决定推广重点和能够进行投票表决的人选。

1月底，委员会在各大社区中心和学校举行观点汇集大会以收集反馈，了解年轻人希望城市启动什么样的项目。观点汇集大会共收集了约450条项目意见。

“在汇集观点之后，我们请变革代理人一起推行这些提案，变革代理人同样也是年轻人，他们自愿去不同的下属委员会审查提出的方案，也自愿与专家合作寻找可行之策，发现社区所需”，戴维斯说。

16岁的波士顿青年斯蒂芬·拉夫么就是这样一名变革代理人。在此之前他未曾见过任何城市官员。

“我看到各种观点经过提议，投票表决，最终真正呈现并得以实现。你是真真切切地参与到政府工作中，这感觉真是太棒了，”拉夫么说道，“你不再是无能为力，

powerful for the rest of the community.”

The origins of the programme go back to the late Thomas Menino, former Mayor of Boston, who championed the role of youth by setting up a Mayor's Youth Council in 1994 on which Davis first served. The incumbent mayor, Marty Walsh, who came into office in 2011, took forward the participation of young people by setting up the Youth Lead the Change programme and providing funding for it with a vision of empowering youth to be future leaders for the city.

"I have found that by making young people a part of the process we are opening up a dialogue that allows young people to have a say in their own future here," says Walsh.

The first steps involved setting up a Steering Committee of 60 people representing youth groups from across the city. At the beginning of January 2014, youth organisations were asked to nominate two youth leaders to serve on the Steering Committee. Their role was to determine the rules of the process, decide what the focus of the outreach focus would be, and who would be able to vote.

At the end of January, there were ideas collection assemblies set up across community centres and schools to collate feedback on what sort of projects young people wanted to kickstart in the city. Around 450 project ideas were generated by the ideas collection process.

"After the ideas collection we had Change Agents come together to develop our proposals who were young people that volunteered to go on different sub committees to vet the proposals that came in and to work with the experts to



如今在波士顿，12—25岁的年轻人亦有权投票表决政府的财政支出项目。Young people aged between 12—25 years old can now vote in Boston on how government money is spent.

现在有权做出改变了。”

拉夫么的职责是与包括城市政府代表在内的成年人协作，对已经提出的各种观点进行评估，看其是否能够入围最后的投票表决。变革代理人还需将资本投资有关参数考虑在内，并且确定项目的成本，看其是否在预算范围之内。各项目成本至少为2.5万美元，且项目需有五年的合格期限。

“我认为参与式预算让我更加自信，我可以自信地作为一名政府官员工作，在从前我可能会想‘我该从哪儿干起？’”拉夫么补充说。

指导委员会成员在投票表决前要进行为期十个月的服务工作，而变革代理人则要与成年人以及城市代表们密切合作，进行为期十周的项目评估。

城市政府拨出10万美金用于实施青年引领变革计划，其中大部分预算用于非营利性咨询公司参与式预算项目，公司受邀进行项目管理并提供培训材料。另外，资金还用于打印选票，设计及制作宣传材料，为青年团体提供薪资，协助进行投票等。

为未来投票

波士顿计划列出14个合格项目，然后在各大社区中心和学校里进行一次投票，让年轻人能够选择城市政府应该推行哪些项目。许多年轻人是第一次体验投票表决。特别地，指导委员会做出了极大努力来吸纳缺乏服务的社区选民，包括增强无家可归青年及叛逆青年的参与意识。

“社交媒体是我们进行推广的重要手段，我们利用Ins和推特进行推广，委员会全体成员都对外联络，吸引人们参与我们的活动，”2015届指导委员会成员玛吉·沙利文说，“而且我们也做T恤、拉横幅、印传单，我们的人员到各新闻中心和体育队里传播消息，让大家知道此次投票开始了。”

目前委员会已与移动共享(Mobile Commons)合作建立起手机和短信平台，在

figure out what was feasible and what the community needs were,” explains Davis.

Stephen Lafume, a 16-year-old Bostonian was one such Change Agent. He had never met a city official before.

“I have seen ideas that have been proposed, been voted on and actually appear and happen and it has been awesome as you are actually involved in your government,” says Lafume. “Instead of not being able to change something, now you can.”

Lafume's role was to work with adults including city government representatives to evaluate whether the ideas proposed could and should be shortlisted for the final vote. Change Agents had to take into account the parameters around capital investment and determine a cost for the project to see if it was within the budget range with projects needing to cost at least US\$25,000 and to have a life span of five years to be eligible.

“I think working on the participatory budgeting process has made me more confident that I could work as a government official whereas before I would have probably thought, ‘Where would I start?’” adds Lafume.

The Steering Committee members serve for a ten-month process leading up to the vote whereas Change Agents are actively involved for a ten-week tenure working closely with adults and city representatives in project evaluation.

A US\$100,000 budget was set aside by the city government to implement Youth Leads The Change with much of the budget being used to hire the not-for-profit consultancy Participatory Budgeting Project, which was brought in to project manage and provide training materials. In addition, funds were used to print ballot papers, design and produce promotional materials, and provide



莎丽·戴维斯，波士顿青年参与和就业部门的执行理事。Shari Davis, Executive Director of Youth Engagement, Boston.

波士顿青年选出的项目 The projects chosen by Boston youth

2014年6月，沃尔什市长宣布以下项目将获得城市资助

In June 2014, Mayor Walsh announced that the following projects would receive funding from the city

★富兰克林公园游乐场及野餐区升级项目

本项目将对美国退伍军人协会野餐公园游乐场的基础设施进行升级改造，以便更好地为残疾儿童提供服务。

★波士顿艺术墙

本项目将为当地涂鸦画家及其他视觉艺术家提供指定的自由墙面，供其展示作品。志愿者和当地青年组织将协助指定额外的自由墙面并提供长期维护。

★波士顿东部、南波士顿及查尔斯敦各中学笔记本电脑供应

本项目将为东波士顿高中、查尔斯敦高中和艾克赛尔高中的学生提供近30台Chromebook笔记本电脑。项目为学生提供最新科技，令他们便捷获取学习所需的信息，以提高学生成绩。

★滑板公园可行性分析

本项目将在多彻斯特、南波士顿及东波士顿附近进行一次可行性分析，寻找建设滑板公园的最佳设计方案以及持续维护方法。

★洛希博士家庭公园安全摄像头

本项目将在洛希博士家庭公园及其周边建筑中安装15—20个监控摄像头，以提高社区内的安保系数。

★巴黎街游乐场改头换面

本项目将在巴黎街游乐场再修建一处新的创意水景，同时修建USB公园长椅和残疾人无障碍基础设施。

★新公园新路面

本项目将在波士顿新近整修的豪斯游乐场和芒特普林森公园两处周边地段进行路面及照明设施整修改善。

Franklin Park playground and picnic area upgrade

This project will include infrastructure upgrades and repairs for the American Legion Picnic Grove playground to better serve children with disabilities.

Boston art walls

Designated Free Wall Space will be provided for local graffiti writers and other visual artists to show their artworks. Volunteers and local youth organisations will help designate additional free wall spaces, as well as provide ongoing maintenance.

Chromebooks for high schools in east Boston, South Boston, and Charlestown

The students of East Boston High School, Charlestown High School, and Excel High School will receive approximately 30 Chromebook laptops. This will enhance students' performance by providing them with the latest technology, allowing them to easily acquire information for academic assignments.

Skate park feasibility study

A feasibility study will be conducted in the Dorchester, South Boston, and East Boston neighbourhoods to explore the most sustainable methods of design and ongoing care for implementation of a skateboard park.

Security cameras for Dr. Loesch Family Park

Dr Loesch Family Park and surrounding premises will receive 15 to 20 surveillance cameras to increase security within the community.

Paris Street playground extreme makeover

Paris Street Playground will receive additional, new creative water features, as well as USB park benches and handicap accessible infrastructures.

New pavements for new parks

Boston's newly-renovated Howes Playground and Mount Pleasant Park will receive pavement and light improvements around the perimeter of two areas.



项目的任何阶段，年轻人都可以表达意见，获悉活动信息及项目最新进展。

第一次投票于 2014 年 6 月进行，如戴维斯预期，共有 1500 名青年参与投票。选民可以在四个大类下选择项目，即街道与安全、公园/娱乐/卫生、社区与文化、教育。

尽管汇集观点时听取了广泛民众——包括非 12—25 岁市民——的意见，但是只有年轻人可以投票表决如何利用财政预算。

“我们联系了各个学校，并且制作一个投票工具包，任何人都可以在自己的学校里运行这个工具包，这也是我们的一个试验，看看学校会不会协助传播信息，”戴维斯说，“看到大多数参与进来的年轻人都是年龄在 15—20 岁的青少年，我们感到很自豪，我们之前还有点紧张，担心大量大学生会参与进来，这样就不能真正代表社区或者城市。”

戴维斯说在第一期计划里，紧张的进度安排对大家来说是种挑战。“我们 2015 年的建议中有一项就是延长观点汇集的时间，尤其是延长提案开发时间，因为提案开发是选民参与最广泛的阶段，同时也是年轻人受益最大的阶段。”

波士顿也在寻求更广泛的线上参与。
“我正在思考如何创造一种更好的网络互

payments to youth groups to assist with signage for the voting.

Voting for their future

The idea was to produce a list of 14 eligible projects for which a ballot would then take place at community centres and schools across the city with young people able to vote on which projects should be implemented by the city government. The vote itself was the first time that many young people had voted and in particular the Steering Committee sought to bring in voters from underserved communities including raising awareness among homeless and disaffected youth.

"Social media is a huge part of our outreach with Instagram and Twitter and all our committee members reach out and get people to come to our events," says Maggie Sullivan, a member of the 2015 Steering Committee. "Also we have T-shirts being made, banners being hung, flyers being printed and people reaching out to news centres and sports teams to get the message out that this vote is taking place."

A mobile and text messaging platform was set up in partnership with Mobile Commons so that at any phase of the project, young people could voice opinions and receive information on events and updates on the initiative.

For the first ballot, which took place in June 2014, 1,500 young people voted, which was in line with Davis's expectations. Voters could select projects in four categories: streets and safety; parks/environment/health; community and culture; and education.

Although the ideas had been collected from a broad range of citizens, including those outside the 12-25 age group, only youth could vote on how

动形式，寻找汇集线上观点的方法和可行的短信参与方式，思考怎样利用 Skype 或者谷歌视频群聊，这么一来人们不必出行就可以聚到一起，”戴维斯说道，“我们在汇集观点的时候不要忘了这是在波士顿，而且是在冬天。”

此方案不仅让年轻人对城市规划和预算程序有所了解，而且提高了其职业技能。

“通过参与市政厅的工作，我学到了很多东西，比如说基本工程项目是什么，参与式预算是怎样运行的，如何表达自己的观点，如何与他人沟通获得别人的意见，还有如何与记者说话，做宣传等等。这对我来说真是一次弥足珍贵的经历。”玛吉·沙利文说道。

然而最重要的是，波士顿项目展示了政府如何在民众中——即使是对政府最不满的民众中——建立起信任。波士顿项目也成为 2014 广州国际城市创新奖 15 个入围项目之一。

“这种透明而有效的程序让他们（年轻人）可以共同支配并打造自己的社区，用独特的方式了解政府并增强对政府的信任，”戴维斯说，“社区为我们提供几乎是无偿的咨询，而且，能够与大家一起，打造共同属于我们的未来，这本身也是件美妙的事情。”

the budget would be spent.

"We reached out to schools and packaged a voting toolkit so anyone could implement it at their school and so this was another area we were piloting to see if schools would sign on," says Davis. "We are proud that the bulk of the young people who participated were in the teenage range between 15 and 20 because we were a little nervous that a really high number of college students would participate which would not really represent the community or the city."

Davis says the condensed timelines were a challenge in the first round of the programme. "One of our recommendations (for 2015) is around having an extended timeline for ideas collection, especially around proposal development where the deepest engagement happened and that is where young people experienced the most benefit from participation."

The city is also looking at more online engagement. "I am looking at creating a better web presence and some online idea collection solutions and possible text message solutions and Skype or Google Hangout opportunities so folks can get together and not have to travel," says Davis. "It is Boston and it is winter time when we are doing idea collections!"

The scheme has led to young people not only learning about city planning and the budget process but also it has developed their professional skills.

"I have learnt so much from navigating my way through city hall, to what a capital project is, how participatory budgeting works, to voice my opinion and how to speak to others to take other opinions and speak to journalists and get the word out. It has been a really great experience for me." says Maggie Sullivan.

Above all, the Boston initiative has demonstrated how governments can build trust even with the most disaffected group of citizens. It was one of the fifteen shortlisted initiatives of the 2014 Guangzhou International Awards for Urban Innovation.

"This is a transparent and effective process which allows them (young people) to own and shape what their community looks like in a collaborative way and they get to learn and trust government in a unique way," says Davis. "Also we are almost getting consulting pro bono from our own community and it is fantastic to be able to work together to implement what is a vision for everyone involved."

以完善的机制推动更好的城市治理

Integrative Mechanisms for Better Urban Governance

何艳玲 中山大学政治与公共事务管理学院教授

He Yanling, Professor of the School of Government, Sun Yat-sen University



治理的重要本质是调节好两个关系。一是政府与市场的关系。1978年以来，中国改革的主轴一直是努力处理好政府与市场的关系，花费了很多心血、时间和精力。二是政府与社会的关系。当经济发展到一定程度，政府和社会各自扮演的角色、双方互动的机制将成为突出的问题，因为市场经济的发展必然带来社会多元化。过去的中国处在计划经济之下，人与人之间的差异性很少。但引入市场经济必然带来竞争，而竞争又必然产生差异，以致人与人之间的利益诉求也开始产生差异，公民形成不同的群体和组织，对政府改革造成倒逼。改革开放的前20年，发展的主要压力来自市场；近年来，来自社会的压力越来越大，人们有更多的利益诉求，他们渴望表达的机会，渴望自己作主。实质上，这也是经济发展的自然规律，人解决了发展

For good governance it is critical to strike a balance across two sets of relationships: firstly between the government and the market; and secondly between the government and civil society. Since 1978, China has been expending a lot of efforts and time on the first relationship between the government and the market. When the economy develops to a certain level, the changing roles of government and society, and the mechanisms of bilateral interaction, become prominent issues, a market economy inevitably brings about social diversity. In the past, when China was a planned economy, there were few differences between people economically. But the introduction of a market economy brings about competition, which in turn inevitably produces differences between people and differences in their demands and interests. Under such circumstances, different civic organizations emerge calling for government reform. In the first 20 years of reform and opening up, the major development pressure came from the market. In recent years, more and more pressure is coming from the community and civil society. People have more demands and call for the opportunity to express their desires and make decisions. In essence, this is a natural law of economic development: when people have met their basic needs they will turn to higher demands in other areas. This change is reflected in new phenomena, such as the expression of collective interests, the emergence of public opinion leaders and the establishment of various organizations.

It is difficult for the original social governance structure to adapt to these developments. As the society becomes more complex, governments face increasing pressure. Governments have limited and insufficient resources and capacity to respond to changing social needs. Therefore the government seeks help and needs partners. This means the end of the era when the government is the sole player on the stage; good social governance calls for more players. The essence of modern governance is pluralistic cooperation among different players.

基本问题后自然会有更高的诉求。一些具体的现象，如集体性利益表达、民意领袖涌现、各种组织成立等等，从本质上讲表征着社会发生的新变化。

对政府而言，原来的社会治理方式和治理结构已经不能适应发展。社会越来越复杂，政府面临的压力越来越严峻，以政府有限的资源和能力并不足以应对各种社会需求，因此需要寻求帮助，需要合作伙伴。这就意味着，政府唱独角戏的时代已经终结，社会治理呼唤更多的行动主体。由此可见，现代社会治理的真正意义是多元行动主体的合作。

在这种背景下，我们呼吁更好的城市治理（Good Governance），这就关系到社会该做什么，应该构建怎样的社会机制，以实现政府、市场和社会三种机制的并存和匹配，使社会成为政府进行治理的良好合作伙伴，形成更好的城市治理格局。这需要几个方面的努力。

第一，要有明确的概念和意识。实际上，公共权力具有社会属性且为第一属性。从公共权力的角度来看，让人民帮助政府决策本是应有之义，因为权力来自人民。人民委托政府行使公共权力，政府却关起门来决策，如何保证权力的社会属性？一旦缺乏好的社会机制，公共权力就有被私有化的危险，成为私人利益服务的工具。政府往往把社会参与看成一种技术层面的工作；但按照公共权力的本质，不管民意是否科学、是否有利于决策，都应该倾听民意，都应该让市民参与。必须重新树立让公共权力回归社会本位的意识。

第二，要构建便利的表达渠道。要实现良好的社会环境，关键在于构建利益表达的各种渠道。只有社会的意见得到表达，才能让政府和决策者听得见民意。包括中国城市在内的现代城市，表达渠道其实已经很丰富，但表达渠道的便利性是必须考虑的另一因素。网络问政很热门，但是不



It is in this context that we call for better urban governance. This relates to what civil society can do and what kind of mechanisms should be built for the collaborative co-existence of different constituencies: namely the government, the market and civil society. Civil society can be a good partner for better urban governance. This requires efforts in several areas.

First, we need to have a clear concept and consciousness of public power. In fact, public authorities already have this primary social attribute to some extent. People should help the government with decision-making because power comes from the people. When people entrust the government to exercise power but the government makes decisions behind closed doors, the social attributes of public power cannot be ensured. When there is a lack of a good social system, public power is in danger of being privatized and a tool of private interests. Governments tend to view citizen participation as a technical aspect, but the very nature of public power lies in the participation of citizens. Public opinion should be listened to even though it may not be scientific or directly relevant to the decision-making. There needs to be the awareness that public authority should go back to the society.

Second, there needs to be easy ways of expressing civic views. A good social environment needs a variety of ways to express public interest. Only when the views of the community are presented can the governments and policy-makers hear public opinion. In modern cities (including Chinese cities), the channels of expression are very rich, but access is a factor that must be considered. Voicing opinion on the Internet is quite popular, but how can the computer-illiterate old people get an equal opportunity to express their views? Responding to this issue involves equality of access. It is not difficult to open up channels for expressing opinions, however, the key is to let different groups have their own relevant places for public expression. Particular attention needs to be paid to vulnerable groups.

懂电脑的老人怎样才能得到同样平等的表达机会？这是意见表达均质化的问题。开拓意见表达渠道并非大问题，关键是让不同的群体都有自己便利的表达渠道，尤其要注意相对弱势群体的表达渠道。

第三，要设计有效的机制。这个机制主要是协商、对话和沟通，也就是实现表达渠道以后的双向互动机制，是让社会力量运作起来的一套制度性安排。机制的价值在于让制度运转起来。我们城市的很多规定和制度其实很完善，但没有形成完善的具体机制。比如，按照权力属于人民的理念，所有人都有权见到市长，但市长公务繁忙，这就需要一套机制安排：市民遇到什么问题，反映给谁，通过什么方式，如何反馈等等，这涉及到很多行动链条的设置和衔接。我们研究城市时，不能轻易对制度安排进行优劣比较，因为往往更重要的问题是相应制度下的机制设计。机制一旦过于粗糙，再完美的制度都将无法有效运行。

近年来，中国城市已经进行了不少努力尝试，如设立社区议事厅、人民代表定期见面、设立公众咨询委员会等，但是机制在精细化、经常化和便利性方面还需要更多的思考。机制不完善会让市民与政府之间的距离变得非常漫长，这导致两个后果：一是真实的民意被层层过滤，决策层听不到市民的真正需求引发决策偏差；二是市民对政府的不信任感增加，哪怕一些出于良好初衷的决策也会备受质疑。发达国家在城市治理方面遇到的问题相比发展中国家一点都不少，但社会秩序相对稳定，原因就在于有良好的机制实现各方的让步和容忍。好的社会不是没有错误的社会，而是当出现分歧、差异、冲突时仍可以相互容忍的社会。

此外，是否形成良好的机制也会影响政府本身的运行秩序。由于机制不完善，城市官员将忙于回应市民的各种诉求，占

Third, effective mechanisms need to be designed. These mechanisms involve consultation, dialogue and communication. In the future, mechanisms for two-way interaction will enable the facilitation of social forces. The value of such mechanisms is to make the system work. In our cities we have perfect rules and regulations, but integrative mechanisms are not well formed. For example, as power belongs to the people, everyone is entitled to see the mayor. But the mayor is very busy and facilitating interaction calls for a set of institutional arrangements. When citizens have problems, who should they speak to, where can they voice their concerns, and how can they get responsive feedback? Responding to these issues involves a lot of actions and settings. When we study the city, we cannot easily compare the merits of institutional regulations because the integrative mechanisms are often more important. If such mechanisms are rough, even perfect regulations will not work.

In recent years, Chinese cities have made considerable efforts to establish community consultation halls, appoint people's representatives (who meet regularly), and institute public consultation committees. But the various integrative mechanisms need to be finer, more regular and more convenient. Ineffective mechanisms extend the distance between the people and the government. And this leads to two consequences: first, public opinion goes through layers of filtration and the decision-makers cannot hear it, thus making decisions with bias. Second, there is increasing distrust of government—even decisions made with good intentions will be questioned. In developed countries, the number of issues in urban governance is no less, but there is a relatively stable civic order. This is based upon good mechanisms to achieve compromise and tolerance. Good society is not a society without error or tension; it is one where people can still tolerate each other when differences and conflicts occur.

Moreover, the formation of good integrative mechanisms will facilitate





据了大量的时间和精力，无法专注于日常工作。良好的机制应是既能搭建好市民与政府沟通的桥梁，同时强调政府工作的专业化和专职化，实现各司其位、各守其职。

第四，要加强能力建设。一是政府能力建设，二是公民能力建设。对政府而言，甄别民意很重要，但是如何科学甄别，这就是专业性问题。一些城市政府希望能让所有人都满意，可是政府能做的却只是满足大部分人的基本需求。因此，政府要做的不是让满意的人群最大化，而是让不满意的人群最小化。此外，加强政府能力还需要专业的政策工具。对待一个社会问题，是用较强硬还是较柔手段予以解决，这是一个政策工具的优化组合，要有科学的方法和思路。城市管理者需要认真学习和使用政策工具。

而对公民而言，要强化公民参与城市治理的知识准备；培养公民的公共精神，让公民把城市的事情当成自己的事情。可以参考一些国家建设市民学校和社区大学进行免费培训的做法，让公民更好地了解政府的一些做法和行为；要将公民培训纳入教育体系。没有具备治理能力的政府和具有良好素养的公民，政府和社会之间的磨合成本就会增加，城市治理水平便难以提升。

the ordered operation of government. If the mechanism is not perfect, city officials will be busy responding to the various demands of the people and have little time to focus on their daily work. Good mechanisms ensure good communication between the public and the government, and highlight the government's work in being professional. Ultimately it allows everybody to fulfill their own jobs.

Fourth, we must strengthen the means of capacity building. Both the government and the citizenry need to improve themselves. For the government, public screening is important and scientific screening is a professional issue. Some city governments want to make everyone happy, but the government can only meet the expressed needs of most of the people. Therefore, the Government should not aim to maximize the number of satisfied citizens, but rather to minimize the number of dissatisfied. In addition, the strengthening of government capacity calls for professional policy tools. The Government needs to decide whether a tougher or softer approach needs to be taken to tackle each relevant social issue. Good governance is an optimal combination of policy instruments and scientific approach and thinking. City managers need to study the use of policy instruments.

As for citizens, they need to strengthen their knowledge and public spirit to enable participation in urban governance. Public issues should matter to them in everyday life. Examples can be found in other countries such as public schools and community colleges that provide free training and allow citizens to better understand some of the practices and behaviour of government. Citizenship training should be included in the education system. If the government is inept and citizens are not qualified, the costs for striking a social balance will increase and urban governance will be hard to improve.

对拉美城市交通项目社会影响的评估

Assessing Social Impacts of Urban Transport Projects in Latin America

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过去 50 年，拉丁美洲和加勒比海城市城市化飞速发展，远超城市交通基础设施实施步伐。城镇人口由 1950 年的 6900 万增加到 2011 年的 4.72 亿，到 2050 年有望增加到 6.5 亿，城市化率由 1950 年的 41.5% 增加到 2011 年的 79.1%，截至 2050 年有望增加到 86.6%（经济社会事务部，2011）。这也是城市交通项目面临的一项重要挑战。事实上，大多数拉美及加勒比海城市因缺乏足够的交通基础设施而很难维持发展，相比国际同类城市，这些地区的部分大城市发展急速下滑。尽管各城市交通基础设施匮乏状况不尽相同，但其中不乏一些共同原因。这其中包括缺乏一体化城市交通规划和管理，或者一体化规划管理不良，城市化进程加快以及缺乏缓解基础设施发展导致的负面影响的预防措施。结果导致许多城市交通堵塞，经济生产力下降，人民生活质量降低（麦肯锡全球研究所，2011）。

随着城市化的发展，对基础设施可持续性要求越来越高，进一步整合城市交通项目与城市发展其他方面工作仍面临诸多压力。城市交通项目融合城市发展综合治理策略给人们带来积极影响，譬如缩短旅

Latin American and Caribbean (LAC) cities have urbanized rapidly over the last fifty years, far outpacing the implementation of urban transportation infrastructure. The urban population has risen from 69 million to 472 million between 1950 and 2011, and is expected to grow to 650 million by 2050, representing an urbanization rate that has increased from 41.5 per cent, to 79.1 per cent, and is forecasted to reach 86.6 per cent. (Department of Economic and Social Affairs, 2011). This context presents an important challenge to urban transport projects. In fact, most LAC cities lack sufficient transportation infrastructure to sustain growth, and some of the largest cities have already seen a sharp slowdown in growth compared to cities of similar size internationally. Although the urban transportation infrastructure deficit varies from city to city there are common reasons for the deficit. These include lack of or poorly integrated urban-transport planning and management; rapid and poorly planned urban growth; and absence of preventative measures to mitigate negative impacts associated with infrastructure development. As a result, many cities are suffering from debilitating traffic congestion, decreasing economic productivity, and a reduction in quality of life (McKinsey Global Institute, 2011).

As requirements increase to make infrastructure more sustainable, there is also more pressure to better integrate urban transport projects with other aspects of urban development. Urban transportation projects combined with integrated approaches to urban development can deliver a set of positive impacts for the population including reduced travel times and increased productivity, decreased pollution, improved mobility and accessibility. However, with these positive aspects also come a series of negative impacts

行时间，提高生产力，减少污染，增强流动性，提高可及性。然而城市交通一体化项目带来积极影响的同时应当缓解一系列负面影响。拉美及加勒比海城市在分析城市交通项目环境影响（比如大气污染、水污染）及经济影响（比如生产力）等方面做了相当不错的工作，但是并未对社会影响进行深入分析，比如可及性、支付能力、乡绅化以及性别。社会影响如同此项目涉及的群体一样广泛而独特。其中一个问题就是这些地区对有些影响并未完全理解，而且对未来的城市交通项目缺乏研究与考究，从而限制了对未来项目的设计与改造。

譬如有些交通体系的设计旨在提高流动性而非可及性，以就业为例，尤其体现在低收入家庭中。即使考虑可及性，低收入居民仍因支付能力不足，无法充分使用这套交通体系。而他们在拉美及加勒比海城市人口中占很大比例。另一个经常被忽视的不良影响是可及性的增强会增加土地价值，导致乡绅化，很可能给低收入家庭带来不利影响。通常情况下，如若缺乏交通与住房综合治理方法，城市贫困人口将很难就业或获得其他经济发展机会，也很难享受基本服务。此外，女性对于交通设施有着独特的需求，这一点与男性截然不同。交通体系的设计与管理应把性别因素纳入考虑范围内。结合女性的交通选择，对提高女性在社会中的流动性、安全性以及生产力起着关键作用。

在辨别、评价和缓解诸如可及性、支付能力、乡绅化及性别等社会影响时至少要从三个方面着手，即分布、时间和空间。社会影响极少均匀分布于整个市区，不同时空、年龄组以及性别所受影响不同（琼斯和卢卡斯，2012）。从社会人口统计学来看，城市交通规划若不能与公共空间进行良好的融合，势必会对一些群体造成重大影响，尤其是低收入人群、残疾人、老人、妇女及少数民族。从空间上看，第一英里

that must be mitigated. Cities in the LAC region have done a fairly good job of including analysis of environmental (e.g. air and water pollution) and economic impacts (e.g. productivity) for urban transportation projects. They have not however been as thorough with social impacts, for example, accessibility, affordability, gentrification, and gender. Social impacts are as diverse and unique as the communities affected by the projects. Part of the problem is that some of these impacts are not yet totally understood in the region and there is limited research and evidence to help better design and shape future projects.

For example, some transportation systems are being designed to improve mobility but not necessarily accessibility, to job for example, especially by low-income households. In other cases even when accessibility is taken into account, affordability for low-income residents, who often make up a significant percentage of LAC urban populations, becomes a barrier that prevents them from making adequate use of the transportation system. Yet another negative impact that is often overlooked or not planned for is the impact of improved access on land and property values causing gentrification that potentially affects poor households. The lack of integrated approaches to transport and housing has, in many cases, resulted in the urban poor being pushed further away from access to jobs and other economic opportunities and from access to basic services. Finally, women often have a distinct and unique set of transportation needs that differ significantly from that of men. The lack of gender-sensitive design and management of transport systems and their integration with how women use urban space is critical to improving mobility, safety and productivity of women in society.

In terms of identifying, assessing and mitigating social impacts such as accessibility, affordability, gentrification and gender, there are at least three dimensions that need to be considered: distribution, time and space. Social impacts rarely fall homogenously across an urban area and their effects are often distributed inequitably in space, time and across the different age groups and according to gender (Jones & Lucas, 2012). In social-demographic terms, the lack of integration of urban transportation planning with public space can significantly impact some populations more than others, typically low-income groups, the physically disabled, the elderly, women and minority groups. In spatial terms, first and last mile accessibility is critical to accessibility for those that are physically handicapped and the elderly. The social impact of urban transportation projects also differ temporally as they usually provide different levels of service during different hours of the day, days of the week, and seasons of the year. A user who works weekends or nights will not likely receive the same level of bus service as one who works typical weekday hours.

Accessibility is "the degree to which people can reach the goods and

和最后一英里的交通可达性对于残疾人和老人来说至关重要。从时间上看，城市交通项目无时无刻不存在，服务层次参差不齐，社会影响也因此不同。

可及性指人们享用社会日常生活中所必需的商品和服务的程度，强调的是享用的潜力或能力而非实实在在的行为（琼斯和卢卡斯，2012）。社会上的商品及服务不计其数，但仅仅只有一些普遍认为是必需品，比如就业、教育、医疗、食品店、社会、文化及体育活动（社会排斥部，2003）。交通基础设施仅仅是人们获得这些商品与服务的手段。可及性包括四个方面：移动性（比如交通），近距离（比如土地使用），暂时性以及个体性（Geurs 和 Van Wee, 2004）。提高可及性不是简单地改善四部分的总和，而是各部分的一种更为复杂的共生关系。

从传统上看，拉美城市和世界其他城市一样，规划建设交通项目旨在调高流动性而非试图最大限度地实现可及性（Levine, Grengs, Shen 和 Shen, 2012）。表面上看这似乎可以理解，因为我们往往以流动性和交通体系效率（比如沿着某一特定走廊缩短旅行时间）来评价一个交通项目成功与否。单一强调流动性带来的长期影响在美国尤为显著，1950年以后，交通流动性尤其是私家车的使用成为许多美国城市发展的突出原则（卡梅伦，莱昂斯和肯沃斯，2004）。在这些城市，许多必需品和服务只允许通过私家车获得。这一举措给社会、人口、经济和环境造成了深远的负面影响。

流动性和近距离性的一体化规划，或者说城市土地利用和交通规划一体化尤为重要。土地密集混合利用的市区为商品和服务运输提供了便利，流动性需求减少。城市土地利用和交通规划一体化可以根据不同需求促进相应的交通设施的实施。譬如中等密集用地至高等密集用地地区，土地利用多样化，重点放在运输方式上，可

services that society considers necessary for them to live their daily lives, but with an emphasis on potential/capability rather than actual behavior" (Jones & Lucas, 2012). There are an infinite number of goods and services, but only a few are universally deemed necessary: employment; education; healthcare; food shops; and social, cultural and sporting activities (Social Exclusion Unit, 2003). Transportation infrastructure merely provides a means to access these necessary goods and services. Accessibility consists of four components: mobility (i.e. transportation), proximity (i.e. land-use), temporality, and individuality (Geurs & Van Wee, 2004). Improving accessibility is not simply the sum of improvements to each of these four components, but a more complex symbiosis of all components.

Traditionally, Latin American cities, as well as much of the world, have planned and built urban transportation projects to improve mobility instead of attempting to achieve maximization of accessibility (Levine, Grengs, Shen, Shen, 2012). On the surface, this is understandable since we tend to measure the success of transportation projects in terms of mobility and system efficiency (e.g. travel time improvements along a given corridor). The long term effects of a singular focus on mobility is best observed in the United States, where mobility, particularly by private vehicle, was the preeminent principle used in developing many American cities post 1950 (Cameron, Lyons, Kenworthy, 2004). Many American cities are planned such that many of the necessary goods and services are only accessible by private vehicles. This has far-reaching negative social, demographic, economic and environmental impacts.

Of particular importance is the integrated planning of mobility and proximity—in other words the integration of land use and transportation planning. A dense, mixed land use urban area will provide ease of access to goods and services and thus require less mobility. Integrating land use and transportation planning also promotes better matching of different types of transportation with different needs. For instance, areas with moderate to high densities and a diversity of land uses will focus on transportation modes that can move high volumes of passengers over moderate distances and allow for adequate pedestrian traffic (Suzuki, Cervero, Iuchi, 2013). Correspondingly, low density areas would be served by low volume, high mobility systems such as private vehicles or traditional bus service.

Transportation infrastructure has to be designed to be accessible by all those who want to use it. A system that doesn't tailor its service to its potential users does not provide them access. The physically disabled and the elderly often require infrastructure such as elevators, ramps and hand rails that other users may not require. If a public transportation system doesn't cater to

促进适度距离范围内大批乘客流动，允许充足的行人交通存在（铃木，塞维罗和井内，2013）。相反，低等密集用地地区交通体系容量低，流动性高，譬如私家车和传统的公交服务。

实施交通基础设施应当保证所有需要它们的人能够享用。未能迎合潜在居民需求的交通体系不能为他们提供方便。残疾人以及老人往往需要诸如电梯、专用道、扶手这类交通设施，而其他人可能不需要。如果一个公共交通体系无法满足这些特别需求，最终结果就是有意将这一部分人口排除在外。

无法支付交通费用就如同交通设施不存在。支付能力指的是一个家庭支付工作、上学、就医及其他社会服务所需交通费用的能力以及在不缩减其他必须活动的情况下支付拜访家庭成员或处理其他紧急事情所需交通费用的经济能力与成本（卡拉瑟斯，迪克和萨卡尔，2005）。

公共交通支付能力取决于三个因素：交通服务成本（支出），负担不起的交通费用占收入的比重，支付能力最弱的群体。支付能力并不仅仅由实际运输费用决定，同样由满足必要出行需求所承担的一系列出行费用成本决定。交通习惯及支出依收入而定，低收入人群进行长途旅行时往往选择公共交通，无论何时出行，必须权衡交通费用与其他必需品费用，譬如食物、子女上学、医疗的费用等等。低收入个体往往选择步行、骑车出行，而鲜有乘坐公共交通出行。他们通常舍弃一些必要出行，把钱花在其他必需品上，把交通费用支出控制在可承担水平以下（卡拉瑟斯，迪克和萨卡尔，2005）。当一些必要的出行费用超过家庭收入的10%则被视为无法负担的（Estupiñán, Gómez-Lobo, Muñoz-Raskin 和 Serebrisky, 2007）。也有一些研究建议降低可支付交通费用的上限至占家庭收入的6%，还有的提出上限应高达15%（Estupiñán, Gómez-Lobo, Muñoz-

these special needs, the end result is that a portion of the population is being deliberately excluded.

Unaffordable access is also the equivalent of no access at all. Affordability is the financial effort or cost to a household to make "necessary journeys to work, school, health and other social services, and make visits to other family members or other urgent journeys without having to curtail other essential activities" (Carruthers, Dick & Sarukar, 2005). Put more simply it is the percentage of household income spent on mobility to achieve "necessary" access.

Affordability of public transportation is determined by three factors: the cost of accessing transportation services (expenditure), the percentage of income spent on transportation that is considered unaffordable, and the sector of the population that is most susceptible to issues of affordability.

Affordability is not determined only by the actual transportation expenditures but also by the cost to undertake the number of trips to that are required meet necessary access requirements. Transportation habits and expenditures vary widely by income. A low income often means that a person is dependent on public transportation for longer trips, and whenever they take these trips, the cost is being weighed against other essentials, such as food, sending children to school, or paying for medicines. A low income individual may often walk, bicycle, take a limited number of public transportation trips, and often forgo necessary trips to divert expenditures to other critical needs, thus suppressing his or her transportation expenditures below sufficient levels (Carruthers, Dick & Sarukar, 2005). Necessary journeys are deemed unaffordable when they amount to more than 10 per cent of a household's income (Estupiñán, Gómez-Lobo, Muñoz-Raskin & Serebrisky, 2007) (Banerjee, et al., 2009). Other studies suggest maximum affordable transportation expenditures as low as 6 per cent of household income and as high as 15 per cent (Estupiñán, Gómez-Lobo, Muñoz-Raskin & Serebrisky, 2007). Latin America is generally acknowledged as the most unequal region of the world. This inequality is magnified as cities; intense centers of economic activity and wealth attract the rural poor creating an "urbanization of poverty" (Corporacion Andino de Fomento, 2011, p. 16). The low income due to their poverty settle on the lowest value land (i.e. most affordable), which often has the lowest level of access to transportation and other services. Their homes are, as a consequence, often the furthest from the heart of economic activity, leading low income residents to pay more in time and money to gain access to necessary destinations (Carruthers, Dick & Sarukar, 2005).

Transportation improvements tend to increase access to surrounding land. Typically, increased access is valued by society and manifests as an increase in land valuation, potentially gentrifying the area or making it unaffordable for the low income groups. Gentrification is best defined as, "the transition of property markets from relatively low value platforms to higher value platforms

Raskin 和 Serebrisky, 2007)。拉美是公认的世界上最不平等的地区。这种不平等随着城市、经济活动中心和财富的不断涌现而扩大，导致了“贫困人口城市化”的现象 (Corporacion Andino de Fomento, 2011, P.16)。因为贫困，收入低，他们只能选择价值最低的土地（大部分负担得起的），因而享受的交通设施及其他服务也最有限。低收入人群住的地方往往是离经济中心最远的地方，这也使得他们必须花费更多的时间金钱应付必要的出行。

改善交通往往是增加去往周边地区的途径。通常情况下，增加途径是由社会评估，体现在土地估值的增值上面，很可能导致乡绅化，使低收入人群无法负担。乡绅化最好的定义就是“由于再开发和高收入人群的涌入，原住居民的搬迁，以及随之产生的居民区人口、社会、文化结构的相关转变，房地产市场由相对低的价值平台向高价值平台转变”（托伦斯和那拉氏，2007）。总之，土地估值的增加以及乡绅化现象在极大程度上决定了交通项目的受益群体。

据调查，在哥伦比亚波哥大，快速公交 BRT 车站 500 米以内的住宅区土地价格高于市内其他可比地区 5.8 至 17 个百分点。快速公交 BRT 车站附近的商品房价格高于其他地区 3 倍以上，而只有 40 处已使用（佩尔多莫 - 卡尔沃，门多萨 - 阿尔瓦雷斯，门迭塔 - 洛佩斯和巴吉罗 - 鲁伊斯，2007）。

交通途径增加并不经常意味着土地价值增加。事实上，通常情况下，交通渠道促进土地增值是毫无争议的，但是这种增值会被众多的决定整个土地价值的可变因素抵消，比如每况愈下的大气和噪声污染，社会隔离，对新交通设施的支付能力等等。另一项研究表明，在波哥大，在 5 到 10 分钟的干线路程内，因为快速公交 BRT 车站的存在，低收入地区的住房价格可享受 9.2 折优惠，中等收入地区享受 3.1% 至 14.9% 的溢价，高收入地区享受 14.9% 的折扣 (Munoz-Raskin,

under the influence of redevelopment and influx of higher-income residents, often with spatial displacement of original residents and an associated shift in the demographic, social, and cultural fabric of neighborhoods under its influence" (Torrens & Nara, 2007). Overall, increased land valuation and gentrification strongly determines who benefits from a transportation project.

In Bogota, Colombia, residential values were found to be 5.8 per cent to 17 per cent higher than comparable properties elsewhere in the city when located within 500 meters of a TransMilenio BRT station. Commercial properties located near the TransMilenio were found to be more than three times higher than elsewhere, though a small sample size of 40 was used (Perdomo-Calvo, Mendoza-Alvarez, Mendieta-Lopez, Baquero-Ruiz, 2007).

Land value doesn't always increase when there is improved access. The fact that access adds value to the land is generally not disputed, however it can be offset by the numerous variables that determine overall land values, such as increased air and noise pollution, social segregation, or affordability of the improved access, to name a few. A different study found that Bogota's TransMilenio BRT system created within a five to ten minute walk of trunk-line stations an 8 per cent value discount in residential properties in low income areas, a 3.1 per cent to 14.9 per cent premium in middle-income areas, and a 14.9 per cent value discount in high income areas (Munoz-Raskin, 2010). Furthermore, a survey on studies of land value effects by transit stops found that for every two studies that showed an increase in land values due to proximity to a transit station, one paper found the opposite (Cervero, 2004). These studies show the need to study the effects of gentrification in the Latin American context.

Gentrification is notably difficult to combat and there is great disagreement about what can and should be done. A solution that is theoretically simple but complex to implement is to keep housing affordable in high access areas through schemes like rent control, affordable housing mandates, or strong development controls.

Women use transportation infrastructure differently than men. Men's trips are usually few and long to a "productive" (i.e. work) destination in a centrally located employment area in the morning, returning home in the evening. Women's trips are often "domestic" in nature, to numerous destinations throughout the metropolitan area, taking children to school or the medical clinic or shopping for groceries (Kunieda & Gauthier, 2007). If a woman is employed, she is more likely than a man to have informal employment located outside of the typical central employment area. Overall, women take on average more trips, for more purposes, to more geographically diverse locations and at more varied hours of the day. To many instances, she will trip chain, accomplishing more than one purpose at

2010）。此外，根据调查显示，在关于公共交通停车站对土地价值的影响的所有研究中，每两项研究表明，因为靠近停车站，土地价值会增加，而另一篇论文则持相反观点（赛维罗，2004）。这些研究表明有必要研究拉美地区的乡绅化带来的影响。

乡绅化问题尤为难解决，在如何解决方面也存在着巨大争议。一个从理论上看简单而实际实施起来较为复杂的方法就是，通过租金控制，保障性住房指令，或者强有力的开发控制，使交通设施流动性高的地区的房价控制在可支付范围内。

女性对交通设施的选择不同于男性。男性出行次数少，时间长，上午去就业中心的一个“多产”地方（比如工作的地方），晚上回到家里。女性的出行，去往繁华区域的每个角落，接送孩子上学，就医看病，购物（Kunieda 和 Gauthier, 2007）。如果是职业女性，相比男性更有可能在传统的就业中心区域外围非正规就业。总之，女性平均出行较男性多，出行目的、出行目的地以及出行频率较之男性也更多。这种例子举不胜举，她们一行多得，一次出行可以去不同的地方办好几件事（Kunieda 和 Gauthier, 2007）。因此，女性拥有不同于男性的出行模式，多次出行多个地方。

目前许多城市配有公共交通设施，但并不能满足女性的交通需求（Kunieda & Gauthier, 2007）。目前的公共交通体系往往不能灵活地满足女性的出行要求，比如频繁出行以及去往不同地区。

如若拉美及加勒比海城市实施的城市交通项目不注重可及性、可支付性、乡绅化带来的影响以及女性交通需求，那么从长期来看，这些不可持续的项目还会继续实施。评估和缓解这些影响将会通过提出一个全面的都市生活规划得到最优化的管理，此项规划使城市规划的方方面面齐头并进，基于交通的城市开发在其中起着最根本的作用。

more than one destination on the same trip (Kunieda & Gauthier, 2007). All this leads women to have a distinct travel pattern from that of men, more trips to more places at more times.

Public transportation as it is currently configured in most cities, does not meet women's access needs (Kunieda & Gauthier, 2007). Current public transportation systems tend not to supply the flexibility needed by women for their varied times of travel and geographically diverse destinations.

If LAC cities fail to execute urban transportation projects with a focus on accessibility, affordability, the effects of gentrification, and inclusion of women, they will continue implementing transportation projects that are not sustainable in the long run. The assessment and mitigation of those impacts will be best managed by creating an overarching urbanism plan that synchronizes all facets of urban planning and in which transport based development plays a fundamental role.

Works Cited

- Banerjee, S., Wodon, Q., Diallo, A., Pushak, T., Uddin, H., Tsipomo, C., et al. (2009). Access, Affordability, and Alternatives: Modern Infrastructure Services in Africa. Washington, D.C.: The World Bank.
- Cameron, I., Lyons, T., & Kenworthy, J. Trends in Vehicle Kilometers of Travel in World Cities, 1960-1990: Underlying Drivers and Policy Responses. Transport Policy, 2004. 287-298.
- Carruthers, R., Dick, M., & Sarukar, A. (2005). Affordability of Public Transport in Developing Countries. Washington, D.C.: The World Bank Group.
- Cervero, R. (2004). The property value case for transit. Developing Around Transit, 2005. 31-51.
- Corporacion Andino de Fomento. (2011). Desarrollo Urbano y Movilidad en America Latina. Panama.
- Department of Economic and Social Affairs. (2011). World Urbanization Prospects: The 2011 Revision. New York: United Nations.
- Estupiñán, N., Gómez-Lobo, A., Muñoz-Raskin, R., & Serebrisky, T. (2007). Affordability and Subsidies in Public Urban Transport: What Do We Mean, What Can Be Done? Washington, D.C.: The World Bank.
- Geurs, K. T., & van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: review and research directions. Journal of Transport Geography, 127-140.
- Jones, P., & Lucas, K. (2012). The social consequences of transport decision-making: clarifying concepts, synthesising knowledge and assessing implications. Journal of Transport Geography, 4-16.
- Kunieda, M., & Gauthier, A. (2007). Gender and Urban Transport: Smart and Affordable Module 7a. In GTZ, Sustainable Transport: A Sourcebook for Policy-makers in Developing Citi
- Levine, J., Grengs, J., Shen, Q., & Shen, Q. (2012). Does Accessibility Require Density or Speed?: A Comparison of Fast Versus Close in Getting Where you Want to Go in U.S. Metropolitan Regions. Journal of the American Planning Association, 157-172.
- McKinsey Global Institute. (2011). Building globally competitive cities: The key to Latin American Growth. McKinsey&Company.
- Munoz-Raskin, R. (2010). Walking accessibility to bus rapid transit: Does it affect property values? Transport Policy, 72-84.
- Perdomo-Calvo, J. A., Mendoza-Alvarez, C. A., Mendieta-Lopez, J. C., & Baquero-Ruiz, A. F. (2007). Study of the Effect of the TransMilenio Mass Transit Project on the Value of Properties in Bogota, Colombia. Cambridge, MA: Lincoln Institute of Land Policy.
- Social Exclusion Unit. (2003). Making the Connections: Final Report on Transport and Social Exclusion. London: U.K. Office of the Deputy Prime Minister.
- Suzuki, H., Cervero, R., & Iuchi, K. (2013). Transforming Cities with Transit: Transit and Land-Use Integration for Sustainable Urban Development. Washington, DC: The World Bank.
- Torrens, P. M., & Nara, A. (2007). Modeling gentrification dynamics: A hybrid approach. Computers, Environment and Urban Systems, 337-361.

待开发潜能：把知识型开发区和创新型集群 作为城市发展触媒

Untapped Potentials: Recognizing Knowledge Precinct and Creative Cluster as an Urban Catalyst

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Abstract

Knowledge-based urban development (KBUD) has been praised as the answer to urban challenges in the post-industrial economy and referred as the "future of urban planning". However, there is a consensus among the scholars and practitioners that the implementation of KBUD as a means to develop a knowledge and creative city is not as simple as agglomerating the knowledge and creative industries within a city. Taking three different successful knowledge precinct and creative clusters as the case study, this paper examines the role played by knowledge precinct and creative cluster within the spectrum of KBUD, particularly as a catalyst for urban regeneration. This study utilizes document analysis and case study approach as the methodology; examining Kelvin Grove Urban Village in Brisbane, Chippendale Creative Precinct in Sydney and Knowledge and Innovation Community in Shanghai as the case study. Furthermore, this paper reveals the importance of knowledge precinct and creative cluster in promoting the knowledge-based and creative economy through urban form and identifies the different key player that had driven the success of the three knowledge precinct and creative clusters. This paper may become the first step to recognize the potentials of knowledge precinct and creative cluster as a means to achieve a successful KBUD implementation, which then leads to the development of knowledge and creative city.

摘要

在后工业化经济社会中，知识型城市发展（KBUD）被认为是解决城市发展难题的最佳答案，也被冠以“城市规划未来方向”的美誉。然而，城市发展的研究者和实践者都一致认为，要通过知识型城市发展打造创新型城市，绝不仅仅是在一个城市里把知识和创新型产业结合起来这么简单。本文以三个成功的知识型开发区和创新集群为对象进行案例分析，重点研究了KBUD范畴内知识型开发区和创新集群所发挥的作用，特别是在城市改造时期所发挥的催化剂作用。本研究采用文献分析和案例研

Keywords: knowledge-based urban development, creative city, knowledge city, knowledge precinct, creative cluster, urban regeneration, creative economy

究的方法作为方法论，以布里斯班凯文格罗夫城中村，悉尼齐宾泰尔创新开发区和上海智慧社区创新联盟为对象进行案例分析。另外，本文还凸显了知识型开发区和创新型集群在城市形成时期促进知识型和创新经济发展的重要性，分析了三个案例成功的关键因素。本文首次尝试论证知识型开发区和创新型集群在 KBUD 实践及促进知识型、创新型城市发展中的重要作用。

关键词：知识型城市发展，创新型城市，知识型城市，知识型开发区，创新型集群，城市改造，创新型经济

引言

当今世界，知识被认为是推动生产力发展的主要因素之一，也被贴上“知识型经济（KBE）”的标签（弗罗里达，2005；亨德森，2005）。德鲁克（1993）曾预测知识人才将占总劳动人口的 20%，进一步预示了 KBE 的重要性。创新不仅仅发生在艺术和媒体产业中，它遍布于日常生活的方方面面；在设计和内容成为主要竞争优势的今天，创新更是全球经济市场中（包括城市设计和规划）的核心推动力（弗卢，2002）。但是，现有的城市规划机制由于其自身的局限性，无法满足新的 KBE 的需求，于是 KBUD 顺势产生，“全球知识型经济”也被认为是 21 世纪城市规划者面临的最重大挑战（昆兹曼，2009；本讷沃斯和霍斯珀斯，2007）。在以往，人们已经针对高效 KBUD 战略实践做了大量的研究，但是这些文章并没有涉及知识型开发区和创新型集群的重要性。实际上，知识型开发区和创新型集群发挥着非常重要的作用（见图表 1）。

本文以 KBUD 在满足 KBE 新需求方面的重要性和其实践过程为开端，然后分析澳大利亚、中国等优秀实践案例，进一步讨论知识型开发区和创新型集群的概念和意义。

Introduction

Knowledge is now recognized as one of the main driver of productivity with the label "knowledge-based economy" (KBE) (Florida 2005; Henderson 2005). The dominancy of KBE can be observed as Drucker (1993) projected that knowledge workers will comprise 20 per cent of the total workforce. Creativity is not just simply arts and media industries, but it permeates every aspects of our daily life and becoming the core input in all sectors where design and content are the basis of competitive advantage in the global economic markets; including urban design and planning (Flew 2002). However, it is believed that the current planning mechanism cannot accommodate the new needs of KBE due to its distinct characteristic, which then led to the emergence of the "knowledge-based urban development" (KBUD), and it is no coincidence that the "global knowledge economy" is listed as one of the biggest challenges for planners in twenty-first Century (Kunzmann 2009; Bennerworth and Hospers 2007). In the past years, there has been quite a number of research projects observing the efficient implementation of KBUD strategies. Unfortunately these papers haven't assess the importance of knowledge precinct and creative clusters, in fact the role played by those elements are central within the spectrum, as seen in Figure 1.

This paper will start by examining the importance of KBUD to accommodate the needs of KBE and its implementation to achieve the desired outcomes. Then it will discuss and place the concept of knowledge precinct and creative cluster into the context with the illustration of best practices from Australia and China.

Impacts of creativity on the urban form

The importance of knowledge and human capital in shaping the way we settle and interact with the built form is undeniable, and it can be traced back to 1961 on Jane Jacob's work on the economy of cities (Baum et al. 2007). According to Smith (2000), KBE is an economic system that is based on the production, distribution and use of knowledge, instead of the natural resources and other tangible assets. The process of KBE involves an interactive relation between market actors, where the most essential factor that determines the socio-economic position of each actor is their accessibility to the knowledge networks (Raspe and van Oort 2006; Clarke 2001).

Florida (2002) explored the idea of human capital into a more advanced concept that he called "creative capital". In this concept, creative class is acknowledged as the key for higher productivity and growth—rather than

创新在城市形成过程中的重要性

知识和人力资源在人类建造城市的过程中发挥着巨大的作用，这是毋庸置疑的，早在 1961 年雅各布关于城市经济的著作中就提到了这一点（鲍姆，2007）。根据史密斯（2000）的观点，KBE 是在知识产出、分配和使用方面的经济系统，其对象是知识，而不是自然资源或其他有形财产。KBE 在市场参与者的联系和互动中普遍存在，决定每一位市场参与者的社会经济地位的最重要因素便是其获得知识的能力（拉斯普和凡奥特，2006；克拉克，2001）。

弗罗里达（2002）进一步探究了人力资源的概念，并提出了“创新型人才”的先进理念。在此概念下，创新型人才被认为是生产力发展的关键因素——而不是高质量劳动力（弗罗里达，2002）。尽管在发展早期，创新是只存在于个人层面的现象（如绘画、雕塑等），现代社会已经有了创新型的组织（如公司、工作室等），雇佣创新型人才，推动经济发展（爱普斯坦，2005；昌，2009）。当创新型群体要求获得特定、具体的物质以维持他们的创新能力时，创新型产业便开始影响城市形态，咖啡文化、街头生活时尚和创新中心应运而生（布伦南·霍利和吉布森，2009；维特和吉布森，2009）。此外，温登和贝格（2004）还强调了空间维度的重要性，他们认为城市应该成为创新的温床和孵化器。卡里洛（2004）则认为作为 KBE 的衍生物，创新将影响城市形态的结构；创新让人们足不出户就能进行日常活动（如网上购物、远程会议等），从而提高了工作和生活的灵活性，因此减少了对活动场所的需求——这将导致城市区域的复原风潮。

开发区和集群——城市改造的道路

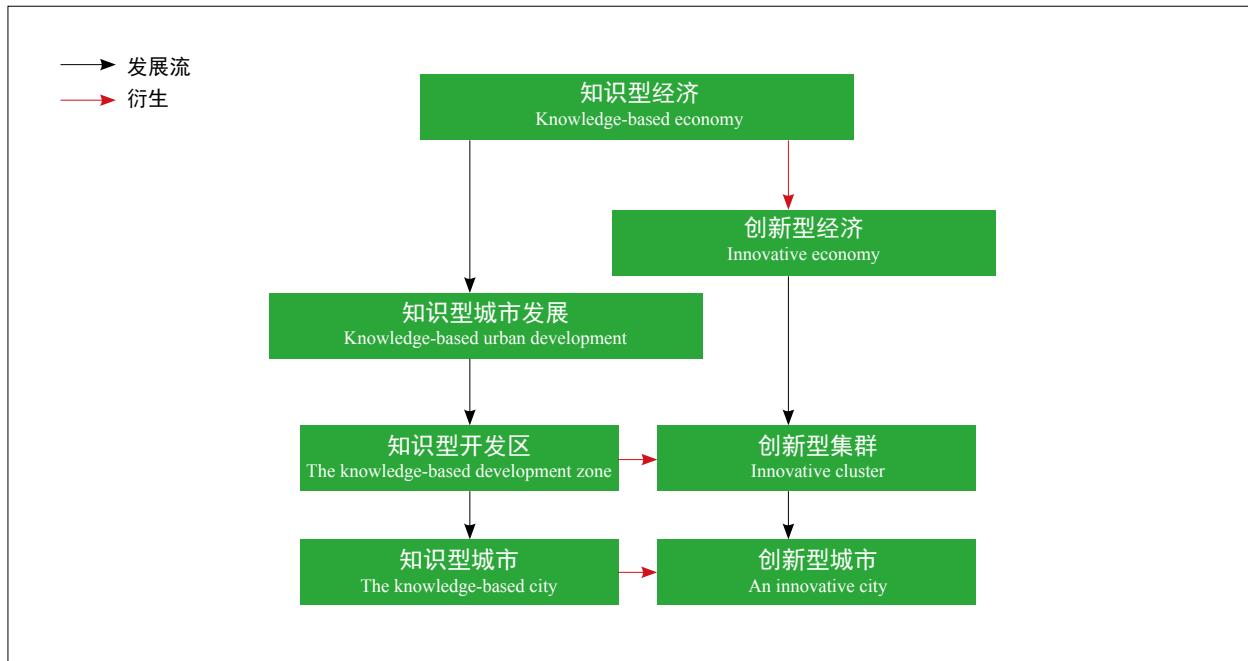
考虑到 KBE 固有的特性，这种后工业

high quality labour (Florida 2002). Although at the earliest development stage creativity emerged from an individual level and solitary activities, such as painting and sculpting, it has now developed into organizations such as firms and studios which generate employment and move the economy (Epstein 2005; Tschang 2009). Creative industries begin to influence the built form when the creative class requires a specific physical attributes to maintain their productivity, which then translated to concepts such as cafe culture, street-life chic and creative hubs (Brennan-Horley and Gibson 2009; Waitt and Gibson 2009). The importance of spatial dimension was also observed by Winden and Berg (2004), where they believe that cities should function as the breeding ground and incubator for creative production and innovation. Carillo (2004) believes creativity, as the derivative of KBE, will influence the structure of urban form since it will give higher flexibility for people to do their activities without the need to displace (e.g. online shopping, teleconference), hence diminish the needs of large space for activities—which then leads to the needs of zone reconversion.

Precinct and cluster, gateway to urban regeneration

Given the distinct characteristics of KBE, it is clear that this post-industrial economy has a significant influence in our urban structure and thus new planning mechanism is required to better accommodate the rapidly growing needs of KBE (Yigitcanlar et al. 2010). Knight (1995, 2008) argues that the current urban planning models have only put their main focus on the built environment and physical form—with the purpose to attract the tangible assets (e.g. financial capital, labour)—with limited consideration in managing knowledge as the major input to economic and urban development. As planners become aware of those limitations, KBUD principles then emerge as a planning alternative (Carillo 2007). KBUD as a new form of development generally has a main purpose of enhancing the productivity of knowledge production, which is then reflected on the built form thus fostering the development of a knowledge city (Yigitcanlar and Velibeyoglu 2008; Cheng et al. 2004).

Both creative cities and knowledge cities have become the main apparent outcome of the successful implementation of KBUD strategies. A knowledge city can be defined as an incubator of knowledge and culture which comprise of integrated knowledge precincts, corridors and regions, where knowledge workers become the main engine of the city through their knowledge production (Yigitcanlar et al. 2008; Dvir and Pasher 2004; Ovalle et al. 2004). Furthermore, Yigitcanlar (2010) argues that knowledge precincts can be said



图表 1. 知识型开发区和创新型集群之间的概念框
Figure1. The framework of the knowledge development zone and innovative cluster

化经济将对城市结构产生重大影响，因此我们需要设计新的城市规划机制，以更好地满足不断增大的KBE需求（伊吉佳拉，2010）。奈特（1995，2008）认为现有的城市规划模型仅仅把重点放在建造环境和物理形态上——其目的是吸引有形财产（如资金，劳动力）——却忽略了知识在推动经济和城市发展中的作用。随着规划者们开始意识到现有模型的局限，KBUD作为城市规划的另一种概念，逐渐兴起（卡里洛，2007）。作为一种新形态，KBUD的主要目的是提高知识的生产力，这种生产力将体现在城市建设形态上，从而进一步促进知识型城市的发展（伊吉佳拉和维利贝乔鲁，2008；成，2004）。

创新型城市和知识型城市都是KBUD战略成功实践的主要显著成果。知识型城市是知识和文化的孵化器，由综合性的知识型开发区、文化长廊和区域组成，知识型人才通过其知识生产力成为城市的主要推动力（伊吉佳拉，2008；德维尔和佩舍尔，

as the catalyst for the development of a knowledge city, because they are experimental life spaces for the next urban generation and laboratories for testing new forms of lifestyles which obscure the boundaries between work, life and leisure activities. On the other hand, creative industries are believed to have a catalytic effect in driving urban renewal and development such as through the redefinition of consumption and lifestyle, and regeneration of urban imagery (Hannigan 2003; Gospodini 2009; Scott 2006).

The concept of knowledge precinct is evolved from science and technology parks; what differentiates this new concept from its predecessor is that a knowledge precinct is not only focused on the advantages of business clustering but instead it aims to become the spatial nexus of KBUD which benefits from the blurring boundaries between living and working facilities (Velibeyoglu 2001; Searle and Pritchard 2008; Yigitcanlar et al. 2008; Cunha and Selada 2007). It is important for the knowledge precinct to become a melting pot between innovative developers and regulators and a seedbed for knowledge production through the promotion of new small-medium enterprises (Yigitcanlar 2010; Felsenstein 1994). However, clustering of high-tech industries and mixed use development will not assure the successful and sustainable knowledge precinct, thus it requires a distinct characteristic of quality of place in order to perform its function (Zolnik 2008; Baum et al. 2007). Quality of place refers to "what is there", in terms of the combination

2004; 奥瓦列, 2004)。伊吉佳拉还认为知识型开发区还将成为知识型城市发展的催化剂, 因为这些开发区是未来城市人口生活的实验区域, 也是测试城市生活新形态的实验室——未来城市中工作、生活、休闲之间的界线已不明显。另一方面, 创新型产业在推动城市革新和发展方面也将发挥催化作用, 比如消费和生活方式的革新, 城市形象重塑等等(汉宁安, 2003; 戈斯泊迪尼, 2009; 斯科特, 2006)。

知识型开发区的概念源自于科技园; 两者不同之处在于, 知识型开发区不仅关注企业集群的优势, 而且希望借助生活和工作界限模糊化的趋势, 成为 KBUD 的空间连结点(维利贝乔鲁, 2001; 塞尔和普里查德, 2008; 伊吉佳拉, 2008; 库尼娅和塞拉达, 2007)。知识型开发区要成为创新开发者和管理者之间融合的工具, 通过促进新型中小企业发展, 为知识生产力提供动力(伊吉佳拉, 2010; 费尔森斯坦, 1994)。但是, 高新技术产业集群和综合发展也无法保证知识型开发区的成功和可持续发展, 因此需要建设高质量园区以确保开发区发挥效能(卓尼克, 2008; 鲍姆, 2007)。高质量园区涵盖了“什么”——即建筑环境与自然环境的结合; “谁”; “未来发生什么”(或园区活力); 还有以上三个部分的综合。知识型开发区将为知识型城市发展创造有利环境(弗罗里达, 2002; 奈特, 1995)。

与其他产业相比, 创新型产业更加依赖于创新参与者的分散性和流体网络, 因此创新型集群的成功将有赖于隐性知识、而不是正规和显性知识的发展(孔, 2009)。但是, 集群的概念对于创新型产业来说仍然是必须的, 因为当创新参与者们相互靠近时能最大限度地激发他们的灵感, 提高生产力, 这样的社会网络关系也能更容易组织和维持(戈登和麦卡恩, 2000; 希密, 2004)。因此, 与知识型开发区类似, 创新型集群也需要为创新型人才提供合适

between built and natural environment, "who is there" and "what is going on" or the vibrancy of place, and the integration between these three components will result in a conducive environment for knowledge city development (Florida 2002; Knight 1995).

Compared to other types of industry, the creative industry has a bigger reliance on scattered and fluid network of creative producers, thus it is believed that creative clusters will succeed through the development of tacit knowledge, instead of formal and codified knowledge (Kong 2009). However, the idea of clustering is still relevant and necessary for the creative industry because social network relationship is believed to be easier to maintain and organize when the contributors are located in close proximity which will stimulate their productivity (Gordon and McCann 2000; Simmie 2004). Therefore, similar to a knowledge precinct, it is essential for creative clusters to provide a favourable environment for creative workers to achieve better economic outcomes (Fleming 2004; Scott 2004; Zheng 2011). Moreover, rather than just being beneficial in micro or individual level (i.e. creative workers), creative clusters also can help to facilitate the "up-scaling" from the concept of "arts" into the "creative economy" as shown in Figure 2. Moreover, due to its unique traits, creative clusters are seen as the primary factor of the strategy for place marketing and improving the city image, which may lead to the generation of "brand effects" and help attract the consumers, workers and international capital (Hee et al. 2008; Bayliss 2004; Bianchini 1993). Although maybe creative industries do not necessitate big offices with hundreds of workers, in terms of employment generation, creative clusters are closely related to the spirit of entrepreneurialism (Heur 2009). Despite the nature of creative workers to congregate in geographical propinquity due to their structural and financial limitation, micro and small enterprises are seen as the main engine to boost their innovation and creativity.

This function of creative clusters to promote entrepreneurship is really important to help sustain economic growth, because entrepreneurs will engender much employment creation and produce and commercialize high-quality innovations. Their firms are also believed to generate spill-over effects that will enhance the regional employment growth rates in the long run (Van Praag and Versloot 2007). Nonetheless, similar to knowledge precinct, simply agglomerating the creative industry activities will not result in a successful creative cluster with the above functions; it needs interlinkages, locational benefits, added values and most importantly strong political will from the government and comprehensive cultural strategies (Evans 2004). The importance of government support to ensure successful creative clusters

的环境，以获得更好的经济成果(弗莱明，2004；斯科特，2004；郑，2011)。此外，创新型集群不仅仅在小型和个人层面(即创新型人才)发挥有利作用，还能促进“艺术”层面至“创新型经济”层面的升级(见图表2)。另一方面，由于其固有的特点，创新型集群被认为是地区营销和提升城市形象的重要战略因素，有助于提升“品牌效应”，吸引消费者、劳动力和国际资金(希，2008；贝利斯，2004；比安基尼，1993)。也许创新型产业不需要大面积的办公室，也不需要雇佣数百个员工，但其与企业家精神有着密切联系(赫尔，2009)。虽然由于在结构和经济方面有所限制，创新型从业者需要聚集起来，不过中小型企业仍然是创新发展的主要动力。

创新型集群能促进企业家精神发展这一功能相当重要，有助于维持经济增长，因为企业家们将创造更多的工作岗位，鼓励高质量创新并将其商品化。企业也将造成外溢效应，提高区域的长期就业增长率(凡·普拉格和沃斯陆，2007)。尽管如此，与知识型开发区相似的是，仅仅将创新型产业活动集聚起来是无法打造成功的创新型集群的；它需要互联、地理优势、附加值，最重要的是来自政府的强力意愿和综合性文化战略(埃文斯，2004)。上海的案例凸显出政府支持对创新型集群的成功有着非常重要的作用。2004年，上海政府成立上海创意产业中心(SCIC)。在SCIC的协助下，上海现有18个创新型集群，占地32.5公顷，容纳了来自全球30多个国家、约800家创新和设计企业(希，2008)。在质量方面，这些集群促进了上海经济从第二产业转型到第三产业。

布里斯班，悉尼和上海的案例分析

为研究KBUD战略是如何在不同城市

is shown in Shanghai, when the government established Shanghai Creative Industry Centre (SCIC) in 2004. Under the assistance of SCIC, now there are 18 creative clusters in Shanghai which resides about 800 creative and design companies from more than 30 countries around the world (Hee et al. 2008), covering a total area of 32.5 ha. In terms of quality, these clusters have helped to foster the shift of Shanghai's economy from secondary to tertiary industries.

Case studies from Brisbane, Sydney and Shanghai

In order to observe how KBUD strategies have been implemented in various cities and translated into a successful knowledge precincts and creative clusters, it will be valuable to observe these practices around the world; Kelvin Grove Urban Village (KGUV) in Brisbane, Chippendale Creative Precinct (CCP) in Sydney and Knowledge and Innovation Community (KIC) in Shanghai. It is interesting to see the different approach taken by planner and government in the Western (i.e. Brisbane and Sydney) and Eastern (i.e. Shanghai) world regarding the creative industry. According to Ren and Sun (2012), the Western nations usually puts more emphasize on the organizational structure, cultural policy making and social equity when discussing about KBUD and creative industries, while by contrast, Eastern nations—specifically China—is focusing on the government control as the only way in promoting the creative and cultural sectors.

KIC is a knowledge precinct that covers approximately a total area of 80 ha. in Yangpu district with the basic idea to integrate the development of college campus, technology park and public community (Shanghai Yangpu Government n.d.). The background of this development is to combine between the function of Silicon Valley in the United States, which is able to provide an environment that is conducive for promoting innovation and entrepreneurship, with Left Bank in Paris that is famous for its creative culture in providing "live-work-play" attitude with minimum segregation (Shui On Land 2005). KIC will be comprised of four main areas which are KIC Plaza, KIC Village, KIC Tech Park and Jiangwan Sports Centre, located within proximity to no less than six universities and home to 300 enterprises which employed around 6,000 knowledge workers (Shui On Land 2005; Fannin 2012). In order to encourage entrepreneurs to reside in KIC, Shui On Land launched several programs such as Winner in Shanghai competition, a television entrepreneurship program, and IPO Club which is Shanghai's first entrepreneurship club, where people can share their experience and provide a business mentoring program. As a result 80 per cent of the enterprise at KIC

进行实践，并且成功打造知识型开发区和创新型集群，我们需要对以下实践案例进行分析：布里斯班凯文格罗夫城中村（KGUV），悉尼齐宾泰尔创新开发区（CCP）和上海智慧社区创新联盟（KIC）。在建设创新型产业方面，东西方的城市建设者和政府（西方以布里斯班和悉尼为代表，东方以上海为代表）采取的做法不尽相同。根据雷恩和孙（2012）的说法，西方国家在KBUD和创新型产业方面通常更加注重组织结构、文化政策和社会公平；相反，东方国家——特别是中国——则会关注政府控制，认为这是促进创新和文化版块发展的唯一方法。

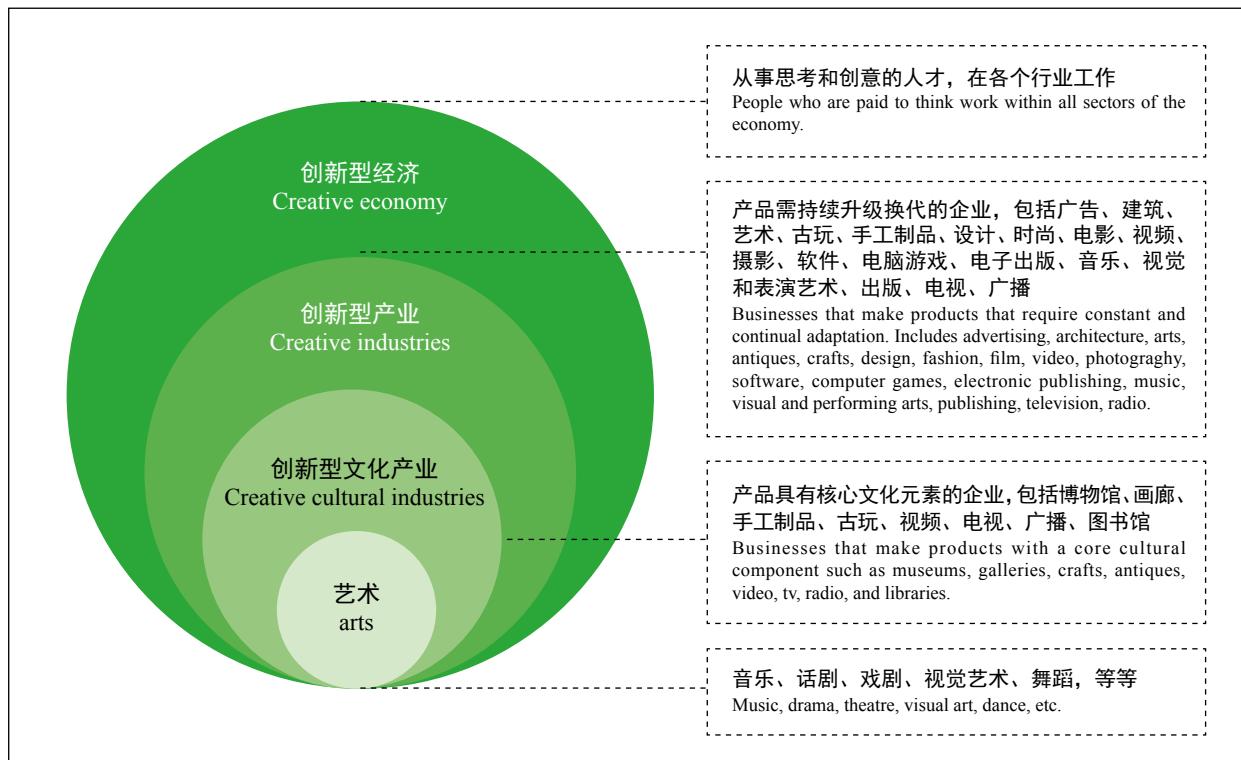
KIC位于上海杨浦区，属于知识型开发区，占地约80公顷，其基本宗旨是将大学校园、科技园和公共社区（上海杨浦区政府）综合在一起发展。此开发区将美国硅谷和巴黎左岸的特点结合起来，既效仿硅谷为创新和企业提供有利环境，又像左岸一样打造独特文化态度和氛围，最大程度融合“生活，文化，娱乐”（瑞安房地产，2005）。KIC由4个区域组成：KIC广场，KIC村，KIC科技园和江湾体育中心；区内坐落了至少6所大学，300家企业，在此工作的知识型劳动者达6000人（瑞安房地产，2005；房利美，2012）。为吸引企业进驻KIC，瑞安房地产举办了一系列活动，包括“上海赢家”比赛、一档企业家电视节目、创业之家俱乐部（上海首个企业家俱乐部，人们能分享创业经验，提供企业指导项目）等等。KIC内80%的企业均为中小型企业（SMEs）和科技新兴公司。

与上海相反，布里斯班的KGUV则更像是一个创新型集群，最大限度地激发创新型产业的潜能。KGUV的目标是成为“布里斯班的创新心脏”。KGUV是La Boite戏剧公司（澳大利亚著名戏剧公司）和昆士兰科技大学创意产业区（促进KGUV创新活动的发展）的所在地（KGUV企业协会）。KGUV与KIC不同，其区内的教育机构不仅仅提供创造性人才和信息交换的平台，而

is small to medium enterprises (SMEs) and technology start-ups.

In contrast, KGUV in Brisbane is more suited to be categorized as a creative cluster given that this project has a focus in maximizing the potential of creative industries. With its goal to become "The Creative Heart of Brisbane" KGUV is home to La Boite Theatre Company—one of the Australia's leading theatre companies—and Queensland University of Technology's Creative Industries Precinct, which are the main engine in fostering the creative activities in the area (KGUV Business Association n.d.). Different from KIC, education institution in KGUV is not just providing the creative talents and platform for information exchange, but it is also the key player in "commercializing" the potential talents. This was done by QUT Creative Enterprise Australia (QUT CEA) through various initiatives, such as Creative3 Forum and Investment Marketplace that harness the importance of integration between creativity, investment and enterprise while linking the prospective investors with the emerging creative business (QUT Creative Enterprise Australia n.d.). Moreover, QUT CEA is also providing an Accelerator Hub which allows a three-year residency program for artists at low rates (QUT Creative Enterprise Australia n.d.). All of these initiatives have resulted in more than 150 start-up enterprises and secured over \$10 million investment from local and global companies (Creative3 n.d.). Apart from the glamorous dimension of creative industries, KGUV is still trying to maintain their spirit of community; one of them is through a project called "The Sharing Stories", which again, was initiated by QUT. This project was started from an idea that believes it is impossible to manufacture a sense of community, thus a creative nurturing approach is required; which was then implemented by engaging the wider community in sharing their collective memories of Kelvin Grove through photographs, public artworks and any other possible creative mediums (Klaebe 2006).

Similar to KGUV, CCP in Sydney is also a creative cluster that focuses on attracting creative individuals, businesses and organizations to flourish creative activities in Chippendale. Two factors that make CCP unique amongst other creative clusters; this cluster is fully organized by a not-for-profit association and team of volunteers—as opposed to private enterprise in KIC and education institution in KGUV—and focuses their work on creating events that may foster and attract creative industries to Chippendale (Chippendale Creative Precinct 2012a). The biggest event that they had was Beams Festival; with its uniqueness and around 5000 attendees, it is believed that this festival can become the big leap for Chippendale to be recognized as the creativity hub of Sydney (Chippendale Creative Precinct 2012b). As



图表 2. 创新型经济的规模 Figure2. Scales of the Creative Economy

且还致力于将潜在的人才“商品化”。澳大利亚 QUT 创新型企业协会（QUT CEA）通过多种活动实现商品化，例如创新 3 论坛和投资市场就将创新、投资和企业联系起来，为潜在投资者介绍新兴的创新企业（澳大利亚 QUT 创新型企业协会）。另外，澳大利亚 QUT 创新型企业协会还打造了“提速中心”，为艺术家们提供廉价的三年住宿项目（澳大利亚 QUT 创新型企业协会）。以上措施成功扶持了超过 150 家新兴企业，并吸引了国内外超过 1 千万美元的投资（创新 3）。除了在创新型产业方面取得喜人成绩，KGUV 还一直尝试发展社区文化；其中一个文化项目便是“分享的故事”，同样由 QUT 举办。该项目源于人们的一种想法——认为无法建设社区的归属感，因此创造了独特的方法，希望提高社区的辨识度。他们在更大的社区范围内开展活动，收集含有凯文格罗夫特色和记忆的图片、

a means for fostering the emergence of creative individuals and businesses, CCP also provides an annual Art Prize that may help them to become more established in the creative industry (Chippendale Creative Precinct n.d.). CCP puts more emphasis on the development of galleries—currently there are 10 galleries in the area—to maintain the creative productivity of the residents, as opposed to KGUV which puts their investment more on creative education and forums (Chippendale Creative Precinct 2012b). Apart from those differences, there is one particular factor that connects the successful development of creative clusters in the case of CCP and KGUV, which is the importance of Reputation, Repose and Rentals. Reputation refers to the identity and quality of creative capital within the cluster, Repose means the solitary environment and atmosphere that will help the artists to keep their productivity and Rentals refers to the affordable rentals to attract the creative workers (Kong 2009).

Conclusion

In the knowledge-era where creativity, technology and innovation become the main engine for economic growth, there is an increasing need to create ideal urban environments to maintain and enhance productivity;

公共艺术品和其他任何物品、媒介，并进行分享交流（科勒贝，2006）。

与KGUV相类似，悉尼的CCP同样是一个创新型集群，主要吸引创新人才、企业和组织聚集一地，举行更多齐宾泰尔的创意活动。CCP有2个显著的特点：集群内的活动全部由非营利性协会和志愿者队伍组织，这与KIC的私营企业和KGUV的教育机构不同；而且集群注重举行活动，促进并吸引齐宾泰尔内的创新型产业（齐宾泰尔创新型开发区2012a）。CCP举办过最大的活动是宾斯节。该节日极具特色，参加人数达5000人，被认为是齐宾泰尔向前发展的一大步，使得齐宾泰尔成为悉尼的创新中心（齐宾泰尔创新型开发区2012b）。作为促进创新型人才和企业发展的手段，CCP设立了每年一度的艺术奖，以进一步打好创新型产业的基础（齐宾泰尔创新型开发区）。CCP更加关注画廊的发展——目前已经开设10家画廊——希望借此维持本地的创新生产力。这与KGUV的情况不同，KGUV将资金更多地投放在创新教育和论坛上（齐宾泰尔创新型开发区2012b）。除了上述的不同之外，CCP和KGUV创新型集群的成功也有一处相同的地方，那就是“名声”“环境”“租金”。“名声”指的是集群中创新资源的质量；“环境”指的是营造单纯的环境和氛围，帮助创作者们提高生产力；“租金”指的是收取便宜费用，吸引创新型人才（孔，2009）。

总结

在知识时代，创新和技术成为了推动经济发展的主要动力，我们需要建造理想的城市环境，以促进生产力发展；而KBUD正致力于这方面。现行城市规划机制产生于工业经济时代，并不能满足KBE的特定需求，新的规划模式KBUD就应运而生（昆兹曼，2009；奈特，2008）。通过预测未来，

and this is what is offered by the KBUD approach. KBUD emerges as an alternative planning approach when the current planning mechanism—which is developed during the era of industrial economy—cannot accommodate the specific needs of KBE (Kunzmann 2009; Knight 2008). Through the futuristic vision, manipulation of urban spaces and strong public-private partnership KBUD is able to foster creativity and technology as a means of economic growth.

The role played by the knowledge precinct and creative clusters is significantly important within the KBUD process in order to achieve its goal, but unfortunately it is still sometimes overlooked. According to Yigitcanlar (2010) and Rend and Sun (2012), these two entities can become the catalyst for urban regeneration which will lead to the development of knowledge and creative city. The main concept that correlates between knowledge precinct and creative cluster is that the obscure boundary between live, work and leisure space; which can be said as a new paradigm compared to the current and previous planning mechanism. KIC in Shanghai, KGUV in Brisbane and CCP in Sydney are believed to be successful in recognizing the importance of precinct and cluster development within the spectrum of KBUD, although they have different key player; private enterprise in KIC, educational institution in KGUV and not-for-profit organization in CCP. KGUV and CCP are also seen as a successful example in implementing what Kong (2009) describes as Reputation, Repose and Rentals. However, despite all the successful stories on its achievement we need to realize that KBUD is not the panacea for all the planning problems, since planning is very dynamic and never static.

规划城市用地，建立公共—私营间强大的合作关系，KBUD能够促进创新和技术发展，从而推动经济发展。

在KBUD领域，知识型开发区和创新型集群发挥着重要的作用，但是现在还是经常被人们忽略。根据伊吉佳拉（2010）、雷恩和孙（2012）的理论，知识型开发区和创新型集群能够成为城市改造的催化剂，从而促进知识和创新城市的发展。知识型开发区和创新型集群之间的相同之处在于生活、工作、休闲之间模糊的界线；与过去和现有的城市规划机制相比，这是一个新的模型。上海的KIC，布里斯班的KGUV和悉尼的CCP均是KBUD领域的成功案例，凸显出开发区和集群发展的重要性，虽然他们的关键因素各不相同：KIC的关键因素是私营企业，KGUV是教育机构，CCP是非营利性组织。KGUV和CCP还是孔（2009）理论中“名声”“环境”“租金”的成功实践。然而，虽然已经有众多成功事例摆在眼前，我们也不能把KBUD当作城市规划问题的万灵药，毕竟城市在不断变化，不断发展。

References

- Baum, S, Yigitcanlar, T, Horton, S, Velibeyoglu, K and Gleeson, B 2007, 'The role of community and lifestyle in the making of a knowledge city', Urban Research Program Practice and Policy Paper 2, Griffith University, Brisbane
- Bayliss, D 2004, 'Creative planning in Ireland: the role of culture-led development in Irish planning', European Planning Studies, vol. 12, pp. 497-514
- Benneworth, P and Hospers, G 2007, 'Urban competitiveness in the knowledge economy', Progress in Planning, vol. 67, pp. 105-197
- Bianchini, F 1993, 'Culture and the remaking of European Cities', in Bianchini, F and Parkinson, M (eds), Cultural Policy and Urban Regeneration: The European Experience, pp. 1-20
- Brennan-Horley, C and Gibson, C 2009, 'Where is creativity in the city? Integrating qualitative and GIS methods', Environment and Planning A, vol. 41, no. 11, 2595-2614
- Carillo, F 2004, 'Capital cities', Journal of Knowledge Management, vol. 8, no. 5, pp. 28-46
- Carillo, F 2007, 'The coming of age of knowledge-based development', Journal of Knowledge Management, vol. 11, no. 5, pp. 3-4
- Carillo, F 2002, 'Capital cities: a taxonomy of capital accounts for knowledge cities', Journal of Knowledge Management, vol. 8, no. 5, pp. 28-46
- Cheng, P, Choi, C, Chen, S, Eldomiaty, S and Millar C 2004, 'Knowledge repositories in knowledge cities', Journal of Knowledge Management, vol. 8, no. 5, pp. 96-106
- Chippendale Creative Precinct 2012a, Chippendale Creative Precinct Strategic Plans 2012-2015, The Chippendale Creative Precinct, NSW
- Chippendale Creative Precinct 2012b, CCP President's Report, NSW
- Chippendale Creative Precinct n.d., Chippendale New World Art Prize, accessed 7 February 2013, <http://chippendalecreative.com/art-prize/>
- Clarke, T 2001, 'The knowledge economy', Education and Training vol. 43, no. 4-5, pp. 189-196
- Creative3 n.d., The Event, accessed 6 February 2013, <http://creative3.com.au/the-event/>
- Cunha, I and Selada, C 2007, 'Innovation hubs as instruments of urban and regional policy', 1st International Seminar on Regional Innovation Policies, Porto
- Drucker, P 1993, Post-capitalist Society, Harper Business, New York
- Dvir, R and Pasher, E 2004, 'Innovation engines for knowledge cities', Journal of Knowledge Management, vol. 8, no. 5, pp. 16-27
- Epstein, EJ 2005, The Big Picture: The New Logic of Money and Power in Hollywood, Random House, New York
- Ergazakis, K, Metaxiotis, K and Psarras, J 2006, 'Knowledge cities: the answer to the needs of knowledge-based development', VINE, vol. 36, no. 1, pp. 67-84
- Evans, G 2001, 'Small is beautiful? ICT and SMEs: a European comparative', Information Technology and Tourism, vol. 2, pp. 1-15
- Evans, G 2004, 'Cultural industry quarters: from pre-industrial to post-industrial production, in Bell, D and Jayne, M (eds), City of Quarters: Urban Villages in the Contemporary City, pp. 71-92
- Fannin, RA 2012, Silicon Dragon Eyes Shanghai's New Tech Hub, accessed 5 February 2013, <http://silicondragon.blogspot.com.au/2012/09/silicon-dragon-eyes-shanghais-new-tech.html>
- Felsenstein, D 1994, 'University-related science parks', Technovation, vol. 14, no. 2, pp. 93-110
- Fleming, T 2004, 'Supporting the cultural quarter? The role of the creative intermediary, in Bell, D and Jayne, M (eds), City of Quarters: Urban Villages in the Contemporary City, pp. 93-108
- Flew, T 2002, 'Beyond ad hocery: defining creative industries', in Cultural Sites, Cultural Theory, Cultural Policy, The Second International Conference on Cultural Policy Research, 23-26 January, Wellington, New Zealand
- Florida, R 2002, The Rise of the Creative Class and How it's Transforming Work, Leisure, Community and Everyday Life, Basic Books, New York
- Florida, R 2005, Cities and the Creative Class, Routledge, New York
- Gordon, IR and McCann, P 2000, 'Industrial clusters: complexes, agglomeration and/or social networks?', Urban Studies, vol. 37, no. 3, pp. 513-532
- Gospodini, A 2009, 'Post-industrial trajectories of Mediterranean European cities: the case of post-Olympics Athens', Urban Studies, vol. 46, pp. 1157-1186
- Hanningan, J 2003, 'Symposium on branding, the entertainment economy and urban place building: introduction, International Journal of Urban and Regional Research, vol. 27, pp. 352-360
- Hee, L, Schroepfer, T, Nanxi, S and Ze, L 2008, 'From post-industrial landscape to creative precincts', International Development Planning Review, vol. 30, no. 3, pp. 249-266
- Henderson, V 2005, 'Urbanization and growth', in Aghion, P and Durlauf, S (eds), Handbook of Economic Growth, North-Holland, New York, pp. 1543-1591
- Heur, BV 2009, 'The clustering of creative networks: between myth and reality', Urban Studies, vol. 46, pp. 1531-1552
- Hong Kong Trade Development Council 2006, Development Report of China's Regional Economy 2006-2007, Hong Kong
- ISOCARP 2005, Making Spaces for the Creative Economy, ISOCARP Review, Bilbao
- KGUV Business Association n.d., About Kelvin Grove Village, accessed 6 February 2013, <http://www.kgurbanvillage.com.au/about>
- Klaebe, H 2006, Sharing Stories: A Social History of Kelvin Grove Urban Village, Focus Publishing, NSW
- Knight, R 1995, 'Knowledge-based development: policy and planning implications for cities', Urban Studies, vol. 32, no. 2, pp. 225-260
- Knight, R 2008, 'Knowledge-based development: the challenge for cities', in Yigitcanlar, T, Velibeyoglu, K and Baum, S (eds), Knowledge-based Urban Development: Planning and Applications in the Information Era, IGI Global, pp. xiii-xxv

- Kunzmann, K 2009, *The Strategic Dimensions of Knowledge Industries in Urban Development*, Zurich
- Laszlo, K and Laszlo A 2007, 'Fostering a sustainable learning society through knowledge-based development', *Systems Research and Behavioural Science*, vol. 24, no. 1, pp. 493-503
- Laszlo, KC and Laszlo, A 2002, 'Evolving knowledge for development: the role of knowledge management in a changing world', *Journal of Knowledge Management*, vol. 6, no. 4, pp. 400-412
- Martin, C, Velasquez, F and Funck, B 2001, *European Integration and Income Convergence*, The World Bank, Washington DC
- Montreal Knowledge City Advisory Committee 2003, Montreal, Knowledge City, prepared by the Montreal Knowledge Advisory Committee, available at www.montrealinternational.com/docs/MtlSavoir_En.pdf
- Ovalle, M, Marquez, J and Salomon, S 2004, 'A compilation on knowledge cities and knowledge-based development', *Journal of Knowledge Management*, vol. 8, no. 5, pp. 107-127
- QUT Creative Enterprise Australia n.d., Leading Business Development Agency for Creative Businesses, accessed 6 February 2013, <http://creativeenterprise.com.au/about-us/corporate-profile/>
- Raspe, O and van Oort, F 2006, 'The knowledge economy and urban economic growth', in *Evolutionary Economic Geography*, Utrecht University
- Ren, X and Sun, M 2012, 'Artistic urbanization: creative industries and creative control in Beijing', *International Journal of Urban and Regional Research*, vol. 36, no. 3
- Scott, A 2006, 'Creative cities: conceptual issues and policy questions', *Journal of Urban Affairs*, vol. 28, pp. 1-17
- Searle, G and Pritchard, B 2008, 'Beyond planning: Sydney's knowledge sector development', in Yigitcanlar, T, Velibeyoglu, K and Baum, S (eds), *Knowledge-based Urban Development: Planning and Applications in the Information Era*, Information Science Reference, pp. 184-202
- Shanghai Yangpu Government n.d., *Innovation Breeds Success – Introduction of Knowledge and Innovation Community*, accessed 5 February 2013, http://english.shyp.gov.cn/business/businessparks/urbanparks/200904/t20090429_50881.html
- Shui On Land 2005, KIC, accessed 5 February 2013, <http://www.shuionland.com/sol/tabid/145/Default.aspx>
- Shyliit, R and Spencer, GM 2011, *Water, Rocks and Trees, Building Upon our Rich Resources: The Creative Economy in Muskoka*, The District of Muskoka
- Simmie, J 2004, 'Innovation and clustering in the globalized international economy', *Urban Studies*, vol. 41, no. 5-6, pp. 1095-1112
- Smith, K 2000, 'What is 'knowledge economy'? Knowledge-intensive industries and distributed knowledge bases', report prepared as part of the project Innovation policy in a knowledge-based economy, Brussels
- Smith, W and Kelly, S 2003, 'Science, technical expertise and the human environment', *Progress in Planning*, vol. 60, pp. 321-394
- Tschang, T 2009, 'Creative industries across cultural borders: the case of video games in Asia' in Kong, L, O'Connor J (eds), *Creative Economies, Creative Cities: Asian-European Perspectives*, The GeoJournal Library, vol. 98, pp. 25-42
- Van Praag, CM and Versloot, PH 2007, 'What is the value of entrepreneurship? A review of recent research', *Small Business Economics*, vol. 29, pp. 351-382
- Velibeyoglu, K 2001, *Technopoles of Global Information Economy*, report, Izmir Institute of Technology, Izmir
- Waitt, G and Gibson, C 2009, 'Creative small cities: rethinking the creative economy in place', *Urban Studies*, vol. 46, pp. 1223-1246
- Winden, W and Berg, L 2004, *Cities in the Knowledge Economy*, European Institute for Comparative Urban Research, Rotterdam
- Yigitcanlar, T 2009, 'Planning for knowledge-based urban development: global perspectives', *Journal of Knowledge Management*, vol. 13, no. 5, pp. 228-242
- Yigitcanlar, T 2010, 'Making space and place for the knowledge economy: knowledge-based development of Australian cities', *European Planning Studies*, vol. 18, no. 11, pp. 1769-1786
- Yigitcanlar, T and Martinez-Fernandez, C 2010, 'Making space and place for knowledge production: socio-spatial development of knowledge community precincts', in Metaxiotis, K, Carrillo, F and Yigitcanlar, T (eds), *Knowledge-Based Development for Cities and Societies – Integrated Multi-Level Approaches*, IGI Global/Information Science Reference, pp. 99-115
- Yigitcanlar, T and Velibeyoglu, K 2008, 'Knowledge-based urban development', *Local Economy*, vol. 23, no. 3, pp. 197-209
- Yigitcanlar, T, Baum, S and Horton, S 2007, 'Attracting and retaining knowledge workers in knowledge cities', *Journal of Knowledge Management*, vol. 11, no. 5, pp. 6-17
- Yigitcanlar, T, Baum, S and Horton, S 2007, 'Attracting and retaining knowledge workers in knowledge cities', *Journal of Knowledge Management*, vol. 11, no. 5, pp. 6-17
- Yigitcanlar, T, Carrillo, F, Metaxiotis, K and Ergazakis, K 2010, 'Editorial: knowledge-based development of cities: a myth or reality?', *International Journal of Knowledge Based Development*, vol. 1, no. 3, pp. 153-157
- Yigitcanlar, T, Velibeyoglu, K and Martinez-Fernandez C 2008, 'Rising knowledge cities: the role of urban knowledge precincts', *Journal of Knowledge Management*, vol. 12, no. 5, pp. 8-20
- Zheng, J 2011, 'Creative industry clusters' and the 'entrepreneurial city' of Shanghai', *Urban Studies*, vol. 16, no. 16, pp. 3561-3582
- Zolnik, E 2008, 'Biotechnology and knowledge-based urban development in DNA Valley', in Yigitcanlar, T, Velibeyoglu, K, and Baum, S (eds), *Knowledge-based Urban Development*, pp. 171-184

历史与现代的和谐拼贴

Harmonious Collage of History and Modernization

悉尼 CBD 掠影

Overview on Sydney CBD

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悉尼 CBD 从北到南呈较规则长方形，四至分别为环形码头、中央火车站、皇家植物园—海德公园、达令港，历史上是英国建立的首个殖民聚落，经过近 230 年的发展和积淀，已经成为澳洲经济、商贸和文化中心。它既是澳洲第一“古城”，又是澳洲现代化程度最高的区域，但当人们漫步于此，会发现历史与现代并不是简单粗暴的“堆砌”，而是柯林·罗所倡导的“拼贴”，通过碎片的形式表达这座城市的过去、现在、未来，让三者在这片土地上和谐共处，相得益彰。

古迹林立 鲜活留存城市发展的史诗

悉尼 CBD 内完整保留了悉尼发展各

The Central Business Center (CBD) of Sydney takes on the shape of rectangle from north to south, surrounded by the Circular Quay, Central Railway Station, Royal Botanic Garden, Hyde Park and Darling Harbor. Sydney was the first colony established by Britain and, with the development and accumulation of nearly 230 years, it has become an economic, commercial and cultural center of Australia. Sydney is the oldest and also one of the most modernized cities of Australia. Yet while strolling here, people find that history and modernization are not just simply or roughly "piled up" but "collaged", in the words of Colin Rowe. This means that fragments are applied to demonstrate the past, present and future of this city, making them harmoniously coexist and bring out the best in each other.

Historic sites in great numbers: An epic recording of Sydney's urban development

The CBD of Sydney preserves important historic architectures across different eras and in different styles. This includes "The Rocks" area, which was developed early in Sydney's history, St Mary's Cathedral, which had taken over 60 years to complete since 1865 and now exists as the largest cathedral in the southern hemisphere, and the Sydney Opera House and Sydney Harbor Bridge, the main landmarks of Sydney. Most of the significant historic architectures are situated in open areas such as parks, water-front zones, and squares, etc., so as to give visual space to the buildings in the context of the high-density urban development. By doing so, the historic sites are successfully conserved.

In addition, the old buildings in the CBD are seldom torn down or rebuilt.

个时期、各种风格的重要历史建筑，包括：悉尼最早开发的地区——岩石区 (the rocks)；于 1865 年开始建设，耗时 60 多年建成的南半球最大的教堂——圣玛丽大教堂 (St Mary's Cathedral)；以及作为悉尼主要地标的悉尼大剧院、悉尼大桥等。

大部分重要的历史建筑都位于公园、滨水区、广场等开敞空间内，为这些历史建筑与周边高密度的城市开发提供了重要的缓冲地带，保留了古迹的浓厚历史气息。

另外，CBD 内拆旧建新的情况并不多见，碧街、麦格理街等著名街道上的历史建筑仍在继续使用，包括了商店、餐馆、酒店、教堂等。它们单体的历史价值可能不高，但在 CBD 内星罗棋布，沿主街道几乎每几十米就可以发现一个特色建筑以及它背后的故事，整体组合起来就形成了一部城市发展的史诗。

商娱活跃 避免“夜空城”的 CBD 通病

悉尼 CBD 是澳洲经济发展的中枢，很多跨国巨头将其亚太总部选址于此，如澳大利亚联邦银行、花旗银行、德意志银行、怡安、达信、安联、汇丰、安盛、荷兰银行等，因此这里汇聚了众多的现代高层建



达令港边的摩天大厦楼群，图中在建的建筑是我国绿地集团投资建设的悉尼绿地中心。Skyscrapers beside Darling Harbor; the one in construction is Greenland Center invested by China's Greenland Group.

The historic buildings on the famous Pitt and Macquarie Streets, etc., remain in use, including shops, restaurants, hotels, and churches. The value of each single historic building may be a little, yet these buildings are scattered across the CBD and greet the eyes every dozens of meters. Their ubiquitous and historic stories embedded formulate an epic of urban development.

Prosperous business and entertainment Not an "empty city at night"

As a key centre of Australian economic development, the CBD of Sydney is home to the headquarters of many international giant enterprises, such as the Commonwealth Bank of Australia, Citibank, Deutsche Bank, Aon, Textron, Allianz, HSBC, AXA, and ABN AMRO Holding. A lot of modern skyscrapers house the companies. The 309-metre Sydney Tower is the highest building in the city. Other famous buildings include Governor Phillip Tower, MLC Center, and the World Building. These buildings are mainly located in the waterfront areas, which are globally famous for urban design, such as Darling Harbor and Circular Quay.

The overall development strategy of Sydney is to create diversity, step by step. Particularly after the Sydney Olympics, the development of some sub-centres, such as Hurstville and Parramatta, came to undertake most of the business functions of Sydney, with the ratio of white-collar workers dropping in the CBD from 60 per cent after World War II to less than 30 per cent in 2004. However, Sydney CBD did not decline; instead, it turned to cater for the increasing number of tourists, and it actively developed diverse industries including hotel, retail, catering, and entertainment. On the one hand, the CBD has effectively alleviated the negative impact of its weakening office role and controlled the vacancy rate of its office buildings. On the other hand, the emerging industries complement existing business administration functions. People come and go in the CBD from day to night, which makes Sydney a vigorous city rather than "an empty city at night" or "an empty city during holidays".

Collage of the old and the new Proper heritage leads to a "growing" city

The people of Sydney respect history and cherish their city. An exemplification of their pride and esteem can be seen in the well-preserved history of different eras in such an expensive area as the CBD. From a professional perspective, their skills in "collaging" the city are worth learning.

筑：悉尼塔以 309 米高度位列区内榜首，其余比较著名的大厦还包括菲利普总督大厦、MLC 中心、世界大厦等。这些大厦主要集中在达令港和环形码头等滨海地区，这里滨水区的城市设计也是举世闻名。

实际上，悉尼城市总体发展战略也逐步走向多中心导向，尤其在悉尼奥运会之后，空港城 Hurstville、西部 Parramatta 等次中心的发展分担了悉尼 CBD 比较多的商务办公职能，CBD 白领职位比例从“二战”后的 60% 跌至 2004 年的 30% 以下。但悉尼 CBD 并未因此而衰落，而是面向日益增加的旅游者，积极地发展酒店、零售、餐饮、文化、娱乐、旅游服务等产业，实现产业多元化。这一方面有效缓解了办公功能弱化对城区经济的不良影响，控制住了办公楼空置率；另一方面这些功能又可以与既有的办公职能形成互补，职员、游客各得其所，CBD 从早到晚人流络绎不绝，活力十足，避免了 CBD 普遍存在的“夜晚空城”“假日空城”。

新旧拼贴 有序传承建设会“生长”的城市

能在一个寸土尺金的地区完整展现城市发展各个阶段的历史，悉尼人尊重历史、珍视自己所处城市的自豪感、自尊心可见一斑。



从海德公园望向南半球最大教堂——圣玛丽大教堂。St Mary Cathedral, the largest church in the southern hemisphere, from the perspective of Hyde Park.



传统商业建筑之间加建玻璃顶棚，增加餐饮空间，改善购物环境。
Traditional commercial buildings with glass ceilings expand dining space and improve shopping environment.

Various examples illustrate the key issues of how to adapt the spatial form of old buildings to new urban functions: extending, rebuilding or keeping the façades, yet changing the inner spatial structures so as to function as business offices; reasonably using modern materials—such as lights, corridors, glass, canopy frames—to interiorize the traditional architectures, increase the open space for entertainment and to strengthen the vitality and interest of shopping streets. Many techniques are used to harmonize the newly built precincts and buildings with existing streets and architectures both in color and style. This is done by following urban-design guidelines and setting requirements for the patterns and styles of ground tiles, walls and architectural articles. With the concept of "collaging the city", Sydney CBD has become a "growing city". We could easily trace back to its history and observe its continuity and heritance during urban development, which easily distinguishes Sydney from other global cities based on its unique "personality".

斑。而从专业角度，悉尼人实现“拼贴城市”的技术手段也非常值得我们去学习。在解决旧建筑空间形态如何适应新城市功能的关键问题上，悉尼 CBD 到处都是值得借鉴的案例：通过加建改建、保留立面但改变传统建筑内部空间结构，使之适应现代商业办公空间的需要；通过灯饰、连廊、玻璃棚架等现代装饰材料方法的合理运用，将传统建筑之间的空间内部化，增加公共空间可以安排餐饮等休闲功能，增加商业街的活力和趣味；通过城市设计的相关指引，限定地砖、墙面、建筑小品的样式和风格，使新建部分与原有街道、建筑在颜色、风格方面实现协调……在“拼贴城市”设计理念指导下，悉尼 CBD 已经变成了一个会“生长”的城市，我们可以很容易地追溯到这座城市的记忆，观察到这些记忆在现代城市发展中的延续和传承，使人们轻易地将这里与其他“世界城市”相区分，彰显出这里的“个性”。

墨尔本能否成功降温 4 摄氏度？

Can Melbourne Lower Its Temperature by 4°C ?

尼尔·麦克马洪 墨尔本自由撰稿人

Neil McMahon, Freelance Journalist in Melbourne



墨尔本市长罗伯特·杜尔表示，高温天气是澳大利亚自然灾害中的头号杀手。Melbourne Lord Mayor Robert Doyle says heat is the biggest killer among natural hazards in Australia. (Vikas Nambiar/flickr/cc)

澳大利亚墨尔本——这个努力从气候变化危机中拯救市民、拯救城市环境的城市，在耐心等待后，迎来了绝望和灾难。

耐心——20世纪90年代末，一场特大干旱降临墨尔本，在经历了10多年的耐心等待后，灾情才得以缓解。绝望——

MELBOURNE, Australia—This city's strategy to save its urban landscape—and protect itself from the perils of climate change—was borne of patience. Followed by despair. Followed by tragedy.

Patience, from waiting for more than a decade for an epic drought that began in the late 1990s to pass. Despair, from realizing that the water shortage was lasting beyond the city's ability to cope. Then tragedy, from a brutal heat wave in 2009 that brought wildfires and so many heat-related deaths that inaction became unthinkable.

Six years on from that catastrophe, the capital of the state of Victoria has adopted climate-change policies seen as road maps for cities globally. These policies include an initiative to do what might seem on the face of it impossible: to reduce the central city's average temperature by 4°C (39.2°F) by 2030.

That goal is to be achieved through a combination of measures ranging from the deceptively simple—planting more trees, and lots of them—to innovative ideas that effectively cool the air. For example, rather than letting water fall and flow into rivers and oceans, the rains are captured under city streets and diverted to feed the urban landscape, which in turn helps Melbourne's 4 million people cope with the effects of a warming planet.

Melbourne's Lord Mayor Robert Doyle says of the 2009 heat wave, which peaked at 45°C (113°F), sparked major power outages and culminated in wildfires that claimed 173 lives that February: "The city itself started to shut down, telecommunications failed, elevators and lifts all over the city started to fail, we were worried about public transport shutting down... It was the wake-up call we needed, not just because of the deaths but because of the health of the city itself. And that included the trees. 40 per cent of those trees were either in decline or were going to die. So for us it was just a question of, 'We just have to do something'."

墨尔本意识到市内缺水问题非常严重，已经无法解决。灾难——2009年墨尔本遭受强烈热浪的侵袭，引发多处森林火灾及多起人员伤亡，墨尔本必须行动起来，不能坐以待毙。

距灾难发生已经6年了。维多利亚州首府已制定一系列气候变化政策，为全球多个城市树立了模范。政策确立的目标听起来有点不可思议：2030年前把中心城区的平均温度降低4℃（39.2°F）。

墨尔本计划通过一系列措施实现上述目标，将传统简单的方法（如植树造林）和创新方法（如有效降低空气温度）结合起来。例如，以前雨水落到地面上会汇流进河流和海洋，现在墨尔本将城市街道下的雨水收集起来，灌溉城市植被，从而帮助墨尔本400万居民减缓气候变暖带来的影响。

墨尔本市长罗伯特·杜尔称，2009年2月的热浪灾害最高气温达45℃（111°F），城市电力供应中断，并引起森林火灾，造成173人死亡。他说道：“城市本身开始瘫痪，电子通信工具失去信号，电梯无法正常运行，我们也担心公共交通系统会因此崩溃……这次灾害给我们敲响了警钟，不仅因为许多人失去了生命，还因为城市的健康受到了威胁。树木也遭受到破坏。40%的树木枯萎或死亡。这件事情告诉我们：‘要行动起来了。’”

新常态

在分析杜尔市长观点的同时，我们意识到墨尔本是一个发达的地区，常常被认为是地球上“最宜居”的城市。另外，虽然墨尔本位于地球上最热地区的东南部，但其“阴冷城市”的称号却更加为人熟知——这源自其潮湿、大风的冬天；天气炎热、无尽日照的夏天却常常被人忽略。过去15年墨尔本的天气证明了上述观点都已经过时了。

The new normal

To put Doyle's description in perspective, note that Melbourne is a sophisticated city whose renaissance frequently lands it atop lists of the planet's "most livable" cities. Moreover, while it sits in the south-eastern corner of one of the hottest countries on earth, Melbourne is better known in Australia as "Bleak City"—derided more for its wet, windy winters than for weeks of endless sunshine. The past 15 years have affirmed that the old clichés no longer hold true.

One of Melbourne's signature policies in response is to use the "urban canopy" to counter what's known as the "urban heat island"—that's the phenomenon where all the roads and buildings of the inner city send temperatures soaring way above that in surrounding suburbs. The ambitious plan is to plant 30,000 trees in the central business area governed by Doyle's Melbourne City Council, sedating the concrete jungle with a forest of natural towers.

Doyle offers the starker statistic to illustrate why it's necessary. The 2013 State of Australian Cities report put the city's average annual heat-related deaths—mainly among the elderly—at about 200 a year. In 2009, more people died from heat than the wildfires. "It's not generally known that heat is the biggest killer in Australia," Doyle says of comparable statistics for natural disasters. He also cites the massive hit to economic activity both in 2009, and again when a January 2014 heat wave made global headlines. It even temporarily shut down the Australian Open tennis tournament, where players battled to stay upright on court. (Temperatures for this year's tournament, which wraps up this weekend, have been cooler than usual.)

Rob Adams is Melbourne council's director of city design and the driving force behind the city's 30-year effort to revive its downtown with a booming population and cultural enhancements. He says that as the climate-change debate took off, local governments were better placed to heed the warning signs than state or national administrations.

"I think this is something that cities around the world experience," Adams told me. "Local governments are recognizing it first because in many cases they can see the direct impact. They look after the parks and gardens. They see when the trees get stressed."

In Melbourne, that stress on local landscapes, from street trees to parks and gardens to the green median strips along roads, was profound. "People said, 'Australia has always had droughts,'" Adams recalls. "But once it got past (a few years) we realized it was no longer a drought. It was the onset of something different. It depleted water stocks to the point we were told to stop



一年前的墨尔本，网球球迷们在清凉的天气中欣赏了2014年澳大利亚网球公开赛赛事（去年的比赛比往常比赛的气温要低）。墨尔本制定了长期的措施，希望通过种植树木、扩大绿化面积、收集雨水等方式降低平均气温。One year ago, tennis fans cooled off during a heat wave that disrupted the 2014 Australian Open in Melbourne. (This year's tournament has been cooler than normal.) The city has a long-term strategy to lower its average temperatures by planting trees, greenery and harvesting rainwater. (EPA/JOE CASTRO)

墨尔本政策的特色之一是利用“城市冠层”应对“城市热岛效应”——热岛效应指城市中心区域的高温气流上升并流向城市周边地区。墨尔本计划在中心商业区种植30000棵树木，该项目由杜尔领导的墨尔本市议会负责，为高楼林立的墨尔本建造一道天然绿色屏障。

杜尔市长利用完整的数据来说明该项目的必要性。2013年澳大利亚城市报告指出，墨尔本平均每年因高温致死人数达到200人（其中大部分是老人）。2009年，因高温天气死亡的人数比在森林火灾中死亡的人数还要多。在比较了自然灾害的数据后，杜尔说：“很多人都不知道，澳大利亚的头号杀手是高温天气。”他还提起在2009年和2014年，澳大利亚的高温天气成为了世界头条，而那两年的经济均遭受了重创。高温天气甚至还一度令澳大利亚网球公开赛暂停。因为天气过于炎热，

watering landscapes—we couldn't put water back into the ground to support our landscapes. We very nearly lost a huge proportion of our landscapes."

Stephen Livesley, a climate-change expert at the University of Melbourne, says desperation during the drought became self-defeating. "They stopped irrigating their trees, and that led to mass mortality of trees. Trees are a long-living investment and it was just short-sighted to starve and kill those trees."

Planting science

After 2009, surrender to drought gave way to the fight—and a decision to spend \$6 million a year spraying the city with greenery. The city sought expert guidance on the types of trees that could thrive in drought conditions, where to plant them and in what numbers.

"Cutting-edge technology played a big part", says Adams.

"With heat imaging you can actually see it," he says. "You take a photo of a tree next to a building, and you can see the building is cooler—because the tree, through its natural process, is putting off moisture and cooling the atmosphere."

"So one of the most effective ways is to put in an urban landscape

选手们在比赛过程中感到身体不适。（今年的澳网公开赛于本周末顺利结束，气温比往届要低。）

罗布·亚当斯是墨尔本市议会城市设计主管，努力推动墨尔本的“30年计划”，希望改造提升人口不断增加且文化不断发展的城市中心地区。他表示，随着关于气候变化的争论拉开序幕，地方政府能够比州政府、国家政府更快地留意到自然环境的警告信号。

“我认为这是每一个城市都会经历的事情。”亚当斯告诉我，“地方政府能第一时间觉察到这些警告信号，因为他们能够看到很多事情直接的影响。他们维护着公园和花园。当树木枯萎时，他们能马上知道。”

墨尔本所有的城市植被，上至公园花园，下至街道绿化树、绿化带，都面临着巨大威胁。亚当斯说：“人们以前说：‘澳大利亚旱灾多。’但几年后，我们发现这不仅仅是旱灾的问题。事情发生了改变。城市的蓄水量急剧减少，我们不得不停止灌溉城市植被——我们无法继续为地面植被供水，维持它们生长。很大部分的城市植被因此枯萎。”

墨尔本大学气候变化专家史蒂芬·利维斯勒表示，干旱带来的绝望使墨尔本变得自暴自弃起来。“人们不再灌溉树木，大量树木因此死亡。树木绿化是长期的投资，任由树木枯死真的是非常短视的做法。”

植树的科学

2009年后，墨尔本终于下决心要解决干旱的问题，并决定斥资600万植树造林，改善城市绿化环境。墨尔本在选择耐干旱树种、种植区域、种植数量等多方面均听从专家指引。

“高新尖端技术发挥了重要作用”，

adjacent to all the buildings,” Adams says. “This is a really important aspect of how dense cities are going to have to operate in the future. They're going to need to have these landscapes. And they are challenging. (It's) not as easy as just planting a tree in the park.”

Complementing the massive tree-planting scheme are more resilient methods of watering them. One such project, in Darling Street on the central city's eastern fringe, was launched two years ago. The street was identified as an ideal experimental site: downhill, with parkland adjacent and located within the area that had borne the brunt of the drought.

Councillor Arron Wood, chair of the city's environment portfolio, calls the Darling Street scheme “a milestone” that is now being replicated at other sites. A giant underground tank captures stormwater, treats it and stores it for reuse in nearby parks and other green areas.

“Darling Street is unique because the stormwater tank is located in the road, where usually we build these tanks in parks,” Wood says. “The road provides the optimum point for water collection in this area. The area now looks like any other street in Melbourne. But underground, a sophisticated stormwater tank is helping to save more than 20 million litres of water and keeping the surrounding parks healthy and green. The system also improves stormwater quality, and reduces runoff into our rivers, creeks and our bay.”

The wider stormwater harvesting network now helps capture 25 per cent of the water required to feed the landscape annually. That's just the beginning. “We aim to source 50 per cent of our water requirements from non-potable sources by 2030,” Wood says. “Even during future drought. This network will provide us with water security in a cost-effective manner.”

Local power

Livesley points out that as important as the urban canopy is to combating climate change, it is but one of many changes governments need to consider. He notes that Melbourne City Council may be a world leader, but that it only covers a small footprint in a sprawling metro area. (The council's downtown jurisdiction covers only 116,000 of the urban area's 4 million residents.) Urban sprawl, transport issues and particularly energy generation are challenges every broader metropolis needs to confront.

“(Local government) is where we're able to trial and demonstrate some of the cutting-edge approaches,” Livesley says. “There are things we know inherently make sense. But in order to make more and more councils embrace it and realize the worth of it, they want numbers. They want to know that if they make this change, what's the temperature-degree benefit. What's the

亚当斯如是说。

“通过热成像技术，我们可以切实看到改变。”他说道，“比如说，我们给建筑楼旁边的树拍个照，我们可以看到建筑楼的温度降低了——那是因为树木能通过自身的代谢过程增加水汽，降低周边温度。”

亚当斯继续说：“最有效的方法之一是在所有的建筑物旁边都种上绿色植物。未来城市的发展方向就是如此，这是非常重要的一方面。城市需要这些绿化植被。但这个任务并不简单，不是随随便便在公园种一棵树。”

除了大量植树的计划外，墨尔本还需要更加灵活的方式来灌溉这些树木。2年前，在墨尔本中心城区东缘区域的达令街就实施了这样一个项目。达令街是理想的试验地点：下坡路，开阔的公园用地，典型的干旱天气。

墨尔本环境部长、议员亚伦·伍德把达令街的项目称为“里程碑”。现在，其他地区纷纷效仿达令街的做法，建设大型地下水槽负责收集雨水，经过处理后储存，用于附近地区公园和植被的灌溉。

“达令街很特殊，因为它的水槽建在了马路下面，通常我们会把水槽建在公园下面，”伍德说，“马路是该地区收集雨水的最佳地点。现在，达令街看上去与墨尔本其他街道无异。但是在地下，设计精妙的雨水槽能够节省超过2000万升水，保证周边公园和绿地的用水供给。该系统同时还能提高雨水水质，减少流入河流和海洋的雨水。”

现在，墨尔本的雨水收集系统不断增加，每年提供的灌溉用水占总灌溉量的25%。这只是一个开始。伍德说：“我们希望在2030年前能够实现非饮用水资源满足50%的用水需求的目标。即使在干旱时期，该雨水收集系统也能通过高效的方式保证用水供给。”



biodiversity benefit? What's the megaliters of water benefit? That's what they want. And I can understand that. Why would you invest in something unless you know the benefit?"

Melbourne's approach has won recognition from awards programs that spot innovations in cities, including the City Climate Leadership Awards and the Guangzhou International Award for Urban Innovation. Cities around the world are finding inspiration in Melbourne's approach, says Lord Mayor Doyle. He recalls speaking to the mayor of Dar Es Salaam at the UN's climate change summit in Copenhagen in 2009. As global leaders floundered, the mayor from Tanzania told him: "The reality is, we'll go back to our cities and we'll do things."

地方政府

利维斯勒指出，和构建“城市冠层”同等重要的，是应对气候变化，这是政府需要面对的众多挑战之一。他说，墨尔本市议会可能处于世界领先水平，但也仅仅局限在都市区域。（市议会管辖的都市区域仅覆盖整个城市400万人口中的11.6万人。）城市扩张、交通拥堵、能源生产是每个大城市需要解决的问题。

“地方政府是试验高新尖端技术的最佳人选。”利维斯勒说，“我们心里明白这种技术是可行的。但是其他城市需要看到数据，才会相信它的价值。它们想知道的是，使用这种技术后会对气温产生怎样的影响？对生物多样性产生什么影响？对水资源产生什么影响？这些是他们想知道的，我能理解。人们都是了解了某事的价值后，才往里投资的。”

墨尔本的技术赢得了众多城市创新奖项，包括城市气候领导奖和广州国际城市创新奖。各个城市正从墨尔本的做法中获得灵感，杜尔市长说。他想起2009年在哥本哈根联合国气候变化峰会上与达累斯萨拉姆市长谈话的情景。全球领导共同展开讨论，坦桑尼亚市长告诉他：“现实是，我们回去各自城市之后就会行动起来。”

强大的城市恢复力： 基督城的 SCIRT 为灾后城市重建提供了模范

Resilience on the Fly: Christchurch's SCIRT Offers a Model for Rebuilding After a Disaster

大卫·基利克 基督城自由撰稿人及摄影师，《如家》杂志编辑，每周专栏《设计素材》作家
David Killick, Freelance Journalist and Photographer in Christchurch, Editor of the *At Home* magazine for The Press newspaper,
Author of the weekly column *Design Matters*

新西兰基督城——你可能没游览过这个城市，但当它消失的时候，你肯定会知道基础设施、饮用水、雨水、废水的地下管道，燃气和电力设备，光纤管道，如脉络般分布于城市街道下的通信电缆……一夕间毁于一旦。

没法洗澡，没有咖啡和茶，没有厕所冲水，没有电灯，没有暖气，也没有交通灯——这个现代繁华的城市突然瘫痪。道路和桥梁已经损坏，挡土墙也倒下了，情况非常恶劣。

在 2010 年和 2011 年新西兰遭受一系列地震侵袭后，基督城这个城市陷入了一片荒凉。

大部分人都看不到地下修理作业的进度，他们只留意到路面的工程和突然出现在城市每个角落的橙色交通锥。基督城专门成立了一个组织，负责城市基础设施重建事宜；这个组织发挥了极大的作用，在灾后如何快速高效完成城市重建这方面树立了典范，并已成为全球通用模型。

这个组织名叫 SCIRT，是“基督城基础设施重建队伍”的简称。这是一个联盟，成员包括地方政府，2 个国家政府机构，

CHRISTCHURCH, New Zealand—You don't see it, but you certainly know when it's not there: infrastructure, the miles of underground pipes carrying drinking water, stormwater and wastewater, utilities such as gas and electricity, and fiber-optics and communications cables that spread like veins and arteries under the streets of a city.

No showers, no cups of tea or coffee, no flushing toilets, no lights, no heating, and no traffic lights—a modern bustling city immediately shuts down. Factor in damaged roads, bridges, and retaining walls above ground, and the situation is dire.

That calamity hit Christchurch, New Zealand, in a series of earthquakes that devastated the city in 2010 and 2011.

Most people here don't see the extent of repair work going on underground. They just notice roadworks and seemingly millions of orange cones that have sprouted up all over the city. Yet the organization created to manage Christchurch's infrastructure rebuild has a vital role, and it's become something of a global model for how to put the guts of a city back together again quickly and efficiently after a disaster.

It's called SCIRT, which stands for "Stronger Christchurch Infrastructure Rebuild Team". It's a sort of consortium consisting of the local government, two national government agencies, and five civil engineering firms. They've teamed up to rebuild the city's water systems, underground utilities, roadways and other components of its so-called "horizontal infrastructure." SCIRT is tasked with spending NZ \$3 billion (US\$2.5 billion) on more than 650 projects by December 2016. The work is almost halfway done and appears on track to



2011年2月22日发生的地震严重摧毁了基督城的中心商业区。地震摧毁了许多建筑物，其中不乏高高的办公大楼和酒店。Much of Christchurch's central business district was severely damaged by the February 22, 2011 earthquake. Hundreds of buildings have been demolished, including most high-rise office buildings and hotels. (Nigel Spiers/Shutterstock)

还有5家国内工程公司。他们一起合作，共同重建城市的供水系统、地下设施、交通道路和其他“基础性设施”。按照计划，SCIRT需在2016年12月前完成超过650个项目，预算为30亿新西兰元(约25亿美元)。现在，SCIRT已完成了差不多一半的项目，预计能按时完成。

另外，SCIRT还需将原来的系统升级，建造更加坚固的基础设施，提高防震能力。这并不难，有时候仅仅是用塑料管替换原来破旧的混凝土管道而已。现在，各城市面临的自然灾害风险越来越高，SCIRT为地区领导人提供了经验和模范。

“我们创造的是灾后重建框架的模板。”SCIRT总经理邓肯·吉布如是说，“我们现行的框架非常高效，也适合其他地方利用和效仿。”

be finished on time.

Just as important, SCIRT's mission is to rebuild these systems stronger and better able to withstand another quake. That's sometimes as simple as replacing broken earthenware and concrete pipes with flexible plastic ones. At a time when many cities face growing threats from natural disasters, SCIRT offers an example for local leaders around the world to learn from.

"What we are creating is a template to create a disaster recovery framework for action," says Duncan Gibb, SCIRT's general manager. "The structure that we've used here is effectively transferred across from construction, and it can be used in construction anywhere."

Waves of destruction

Before 2010, nobody would have imagined the terrible fate that befell this city of 360,000. Although New Zealand sits on a major tectonic plate boundary, the Christchurch fault lines were unknown. Nobody expected a big earthquake to strike in this location.

The first quake struck on September 4, 2010. It measured 7.1 on the

连串灾难

在 2010 年前，没有人会想到厄运将降临到这个有着 36 万人口的城市上。尽管新西兰位于主要地壳构造版块的边缘，但没有人知道基督城在断层线上，因此没有人想到这里会发生大地震。

第一次地震发生在 2010 年 9 月 4 日。地震震级达到里氏 7.1 级，震中在城市外面。这场地震摧毁了许多建筑，但没有造成死亡。第二次地震发生在 2011 年 2 月 22 日，震级为里氏 6.3 级，但破坏性更强。震中位于城市正下方，地震发生时正好是中午，造成 185 人死亡，2011 年共发生了 1.8 万次余震，严重破坏了基督城这座城市。

基督城中心商业区人口密集，遭受到严重的破坏。老旧的石造建筑倒塌了。崭新的哥特式基督教堂像是被炸了一样。我在建于 20 世纪早期的新闻大楼工作，大楼顶层已经坍塌，造成 1 人死亡，数人严重受伤。地震发生时我在刚建成不久的中心图书馆，图书馆没有塌下，但我们仍需撤离大楼。地震摧毁了许多建筑物，其中不乏高高的办公大楼和酒店。

基督城东部紧邻太平洋，地震过后，这里的地面积水严重，沙子从地下冒出来。根据专家的说法，这是史上最严重的土地“液化”。街上淤泥随处可见，房子底部陷进了地面，路面坑坑洼洼。整个郊区被列为“红色警戒区”，一片荒凉。其他城郊地区大多位于偏西位置，受灾情况稍轻。可以说，每家每户都受到地震的影响。

基督城重建的总投入约为 400 亿新西兰元（约 340 亿美元）——约占新西兰 GDP 的 10%。反观日本，只投入了 GDP 的 2% 至 3% 在 2011 年地震和海啸灾后重建项目上。

要重建地面上的设施——我们将其称

Richter scale, but was centered just outside the city. It damaged buildings, but no lives were lost. A second earthquake on February 22, 2011, measured 6.3 but was more devastating. It hit directly underneath the city at lunchtime, killing 185 people. A further 18,000 aftershocks continued to inflict damage throughout 2011.

The compact central business district of Christchurch was destroyed. Older masonry buildings crumbled. The neo-Gothic Christ Church Cathedral, the city's namesake, looked like a bomb hit it. The top floor of the early twentieth century building I worked in, The Press building, caved in, killing one and seriously injuring others. I was in the more modern central library at the time. It stood up well but will still have to come down. Hundreds of buildings have been demolished, including most high-rise office buildings and hotels.

On the eastern side of the city close to the Pacific Ocean, the ground liquefied and "sand volcanoes" began to bubble up from below. It was the worst "liquefaction" event ever recorded anywhere, according to experts. Streets choked with silt and house foundations sank into the ground. Massive craters appeared in roads. Whole suburbs were declared "red zones" and abandoned. Other suburbs, mostly in the more interior west, fared much better and escaped with light damage. However, just about every household has been impacted in some way.

The overall cost of the Christchurch rebuild is estimated at NZ 40 billion (US\$34 billion)—approximately 10 per cent of New Zealand's GDP. That compares with an estimated 2 per cent to 3 per cent of GDP for Japan to recover from the earthquake and tsunami of 2011.

The rebuilding of what goes above ground—the so-called "vertical rebuild"—is proving challenging. Many people have been battling



为“垂直重建”——是非常困难的。许多人与保险公司或“地震委员会”（由政府出资筹建的保险公司）就财物损失和赔偿事宜进行协商。房屋和交通重建成为了突出的问题。人们不断争论城市和中央商务区该如何建造需要的楼房，谁又应该为此买单。

由 SCIRT 领导的“基础性重建”进展良好。这非常重要，因为供水系统和交通道路是基础性设施，是其他部分重建的基础。

联盟模型

要了解 SCIRT 重建方案的创新之处，你首先要知道新西兰建设基础设施的传统方法是怎样的。通常，国家公共机构会列出招标项目，由国内工程公司竞标。一个项目的招标和中标过程很长，可以花上几个月，并且有着工期延误和成本超出预算的风险。

相反，SCIRT 项目是合作的模式。基础设施所属的国有企业为建筑工程买单，

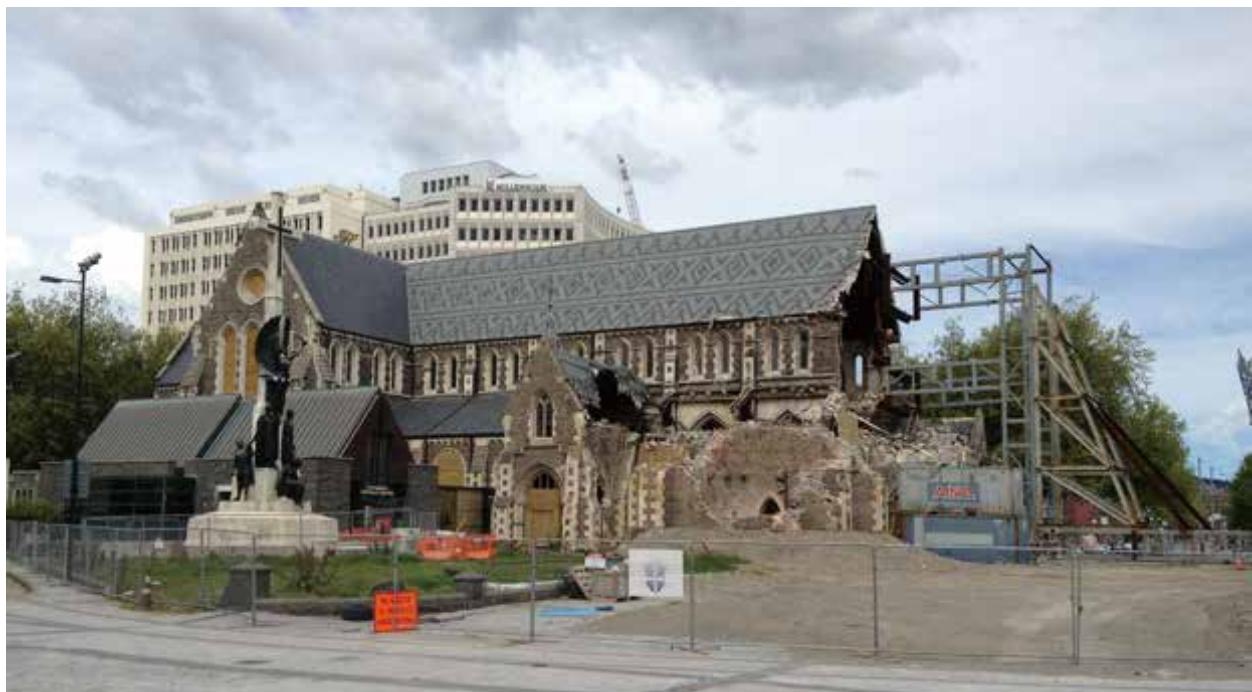
with insurance companies and a government-funded insurer known as the Earthquake Commission to settle claims on lost or damaged properties. Affordable housing and traffic congestion are now emerging as big problems. Disputes have arisen over how the city and the CBD should develop, the kind of buildings that are needed, and who pays for them.

The horizontal rebuild run by SCIRT is faring much better. That's vital, because the water systems, utilities and roads need to be in place before much construction can happen above ground.

Alliance model

To understand what makes SCIRT's approach innovative, you have to know how the conventional model for building infrastructure in New Zealand works. Normally, public-sector clients put out projects for tender, and competing civil engineering companies bid for the work. The process for awarding just one project can take months and runs the risk of construction delays and cost overruns.

Instead, SCIRT is a co-operative model. The public-sector owners of the infrastructure pay for the work, and lend staff to SCIRT to manage and coordinate projects and set overall direction. The five engineering firms are participants in SCIRT, and lend design and fulfillment teams to sketch out and deliver projects. All parties share the risks of building in a place where



并派遣工作人员负责项目的管理和协调工作，把握总体方向。5家工程公司参与到SCIRT项目中，并出借设计和施工团队，负责项目设计和实施阶段。大家都不知道震后的地质结构发生了怎样的改变，所有公司都承担着在未知地质结构上施工的风险；公司间还共享挖掘地面时获得的地质信息。

有3家政府机构参与了SCIRT项目：坎特伯雷地震重建局，基督城市议会，新西兰交通运输局。工程企业包括：关爱城市（City Care）、当纳（Downer）、弗莱彻（Fletcher）、福尔顿·霍根（Fulton Hogan）和麦康奈尔·道威尔（McConnell Dowell）。SCIRT组织是新西兰国家政府于2011年9月成立的。

吉布从澳大利亚来到了基督城，负责SCIRT项目。他说：“总的目标是要建立集合作和竞争于一体的组织。”工程公司们仍然需要竞争投标，获得工程费，但是SCIRT本身拥有绝对的决定权，不需要走传统的流程。SCIRT能决定项目的预算、费用、资金分配和工作量分配。因为成本和费用都是预先确定好的，承包商无法从中钻空子获利。

SCIRT的经理根据几个主要的准则（包括成本、时间、工程重要性等）来分配工作。

“表现好的承包商能得到更多的工作。”

吉布说，“不好的承包商会浪费资金，而好的承包商工作效率高。”所有的承包商在一开始都会分配到同等的工作量；但是现在，他们的工作量已经调整了。

吉布把SCIRT的组织架构称为“联盟协议”。SCIRT的组织架构来源于北海钻井石油公司。“风险高，充满了未知之数。”吉布说。各部门和参与者一致认同既定的清晰目标。“大家都非常关注项目的结果，这个结果不成功，便成仁。若是放在以前，国有企业可以做得很好，承包商可以做得很差，反之亦然。”

在SCIRT的模型中，施工单位可以保



在为安堤瓜街大桥建造新的桥台时，工人们加固了挡土墙，把水挡在海湾外。SCIRT负责重建城市的“基础性设施”，包括供水系统，地下设施和路面交通。Engineers reinforce retaining walls to keep water at bay while building new abutments for the Antigua Street bridge. SCIRT is responsible for rebuilding the city's "horizontal" infrastructure, including water systems, underground utilities and roads. (David Killick/Citiscope)

the geology itself has changed in ways that are still being revealed; they also share information with each other on what they're finding when they dig into the ground.

SCIRT comprises three government agencies: the Canterbury Earthquake Recovery Authority, Christchurch City Council, and the New Zealand Transport Agency. The engineering companies are: City Care, Downer, Fletcher, Fulton Hogan, and McConnell Dowell. The organization was created by the national government of New Zealand in September 2011.

According to Gibb, an Australian who came to Christchurch to build SCIRT, "The whole objective was to create an organization that encompasses both collaboration and competition." Companies still compete for projects and receive a fee, but the central agency makes the big decisions and sets priorities without going through the traditional hoops. SCIRT determines the budget and the fees, and allocates projects. Because costs and fees are set in advance, contractors do not make runaway profits.

SCIRT managers allocate work based on key performance indicators that include the cost, timeliness and value of the delivered projects. "Those who perform better get allocated more work," says Gibb. "Poor performance erodes the fee; good performance increases the fee." All contractors started out being allocated an equal amount of work; however, each company's share has now altered.



这些天来，基督城到处可见橙色交通锥。SCIRT 努力地对在建项目升级完善，希望能满足市民的出行需求。Orange cones are ubiquitous on the roads of Christchurch these days. SCIRT has worked extra hard to update the public of what projects are under construction so they can adjust commutes. (David Killick/*Citiscope*)

留自己的独立性，沿用自己的系统，走自己的流程。这样，他们就能保证工程的安全、质量、环境影响、商业利益等等。完全没有把流程复杂化的必要，这对于国有投资机构来说也是好事，能节约人力成本，抑制官僚作风。

SCIRT 模型的优点包括节约时间、控制预算、精简流程等，工程师们经常将这些优点简化为“能够顺利完成项目”。效率和质量是最重要的。国有投资机构、承包商和老百姓都能从中受惠。到目前为止，预算和成本都在控制范围之内，项目进展良好。

SCIRT 预计于 2016 年 12 月完工，最后一部分为应急设备修复。在那之后，合作企业和承包商的职员和工人将回到原单位工作。

Gibb calls SCIRT's structure an "alliance agreement". It's based on a model originally developed by oil companies in the North Sea for drilling offshore oil rigs: "Lots of risk, lots of unknowns," Gibb says. All parties agree to explicit goals and objectives. "They are all focusing on the same outcomes that will either drive success for all parties or failure for all parties. In a traditional arrangement, a client can be really successful and the contractors do really badly, and vice versa."

In SCIRT's model, construction organizations maintain their own independence, systems and procedures. By being independent, they ensure safety, quality, environmental, and commercial outcomes are optimized; there is no unnecessary duplication of procedures. That is also a win for public funders, through savings on bureaucracy.

Advantages are time savings, control over budgets, less complexity, and—as engineers love to say—just getting things done. Efficiency and performance are paramount. Funders, contractors and the public are expected to benefit. It's hard to argue with the results so far: Cost escalations have been kept down and the budget is on track.

劳里·约翰逊是一名来自旧金山的灾后恢复顾问，正在研究基督城这个案例。他认为，其他城市应该向基督城学习。“把设计、建筑和资金都划归一个组织管理，这种做法很重要，能从头到尾地保证项目的协调进展。”约翰逊说道。

公共关系

除了成功的商业模式外，SCIRT 还能妥善处理项目与居民间的矛盾，并因此获得荣誉。重建项目通常需要封闭道路施工，使城市原本拥堵的交通雪上加霜。SCIRT 会定期发送邮件，通知施工路段，让司机能提前改道行使。SCIRT 甚至让工作人员逐家逐户派发手册，确保市民知道项目进展。

吉布说：“我们制作了大量交通模型，做了很多工作，以便有序地规划交通工程，确保不会造成交通拥堵，然后向市民公布改道路线。”

有时，SCIRT 与社区会在某个工程竣工后举行庆祝活动，比如 2014 年 11 月连接城市和海边郊区的堤道修复完成后，就举行了盛大的重开典礼（庆典上设置了蛋糕摊位，还有自家烘焙食品）。工程师们还注意到学生们对机器开凿路面、埋设管道、铺路等环节十分感兴趣，于是 SCIRT 在施工工地附近的学校里开设专题栏目，让孩子们能学到更多关于建筑的知识，并学会如何在施工时保护自己。实际上，整个城市都参与到重建项目中了。

有着 30 年建筑经验的吉布说，他在技术和管理方面非常有信心，但公共关系同样重要。“我来的时候想，这是一个建筑项目。实际上，这是一个灾后重建项目。但我想到这点时，我就明白不仅是项目团队里的人，这个城市的所有人都在承受着地震带来的痛苦。当我进一步明白到这点时，我就更容易重建这座城市了。”

SCIRT sunsets in December 2016, when emergency repairs are complete. After that date, staff from the partner agencies and contractors will go back to their parent organizations.

Laurie Johnson, a San Francisco-based disaster recovery consultant who is studying what's going on in Christchurch, says the SCIRT model is one cities everywhere should look at. "It's essentially bringing together the design, the construction and the funding into one organization that is working together seamlessly from beginning to end," Johnson says.

Public relations

Apart from its commercial model, SCIRT has won accolades for its engagement with a deeply rattled public. Rebuilding projects often close roads and make the city's bad traffic problem worse; SCIRT sends out regular emails announcing where projects will be underway so that drivers can plan their commutes. SCIRT even sends people out to knock on doors and distribute leaflets to make sure people know what is going on.

"We do a huge amount of traffic modeling and all sorts of work so that we sequence our jobs so they are close to each other to make sure that there's always an alternate route," Gibb says. "Then we've got to advise the public of what the route is."

Sometimes, SCIRT and the community will celebrate the completion of a project, such as last November's grand re-opening of a causeway that links the city with some of the seaside suburbs (the festivities included cake stalls and home-baked goods). Engineers also have noticed that school kids are fascinated by the sight of machines digging holes in the ground, laying down pipes and paving roads. SCIRT has been running sessions at schools near work sites so that kids can learn more about construction and how to stay safe while works are in progress. Indeed, the whole city is a living workshop.

Gibb, who has 30 years of construction experience, says he was well prepared for the technical and management task, but the people side has been equally important. "I came along and thought this is a construction project," Gibb says. "Well, actually, it's a disaster recovery project. And when you take that into context and you understand that not only are the people in your team suffering from this but the people in the community, and when you are more mindful of that, you can actually work with minimum additional effort to help build the resilience back into the community."

温哥华：“最绿色城市”的全球典范

Vancouver: A Global Example for Becoming the "Greenest City"

本刊编辑部

The Editorial Department

根据最新发布的美世 2015 年城市生活质量排名 (Mercer's Quality of Living Rankings)，加拿大温哥华被列为北美生活最惬意城市。类似的荣誉对温哥华来说，已不是什么新鲜事。近年来，温哥华在各项世界最佳居住城市调查中名列前茅，2002 年以来已 8 次被经济学人智库 (EIU) 评为“全球最宜居城市”之首。2012 年，温哥华凭“理想温哥华：打造面向全民的宜居可持续空间”项目，从全球 159 个城市中脱颖而出，荣获首届广州奖。目前，温哥华正在努力使自己成为全球“最绿色城市”。这座揽誉无数的宜居城市，经历了怎样的发展之路？对于今天城市可持续发展的需求，又有哪些值得借鉴的意义？

“最绿色城市”的发展历程

温哥华是个年轻的港口城市，19 世纪初它还只是一片荒野，只有一些土著过着原始的渔猎生活。随着近代工业的兴起和矿产资源被发现，加拿大渐渐得到开发。1886 年，加拿大太平洋铁路通车，温哥华正式设市，为纪念第一位到达此地的探险者英国海军上校乔治·温哥华而以其姓氏命名。

全球化和城市化进程方兴未艾，城市的爆发式发展让各地城市越来越趋于千篇一律。在时代大潮中，温哥华却始终屹立于世界城市，与众不同且独具魅力。

温哥华的特别之处首先得益于独特的

According to the latest Mercer Quality of Living Rankings, Vancouver, Canada, was selected as the most livable city in North America. Such an honour is no longer a surprise to Vancouver as in recent years it has always come out among the best in various surveys on livable cities worldwide. Eight times since 2002 it has reached the top of the "Livability Ranking" conducted by Economist Intelligence Unit. In 2012, with the initiative of "Visionary Vancouver: Creating a Welcoming and Sustainable Place for All", it stood out from 159 cities and won the first Guangzhou International Award for Urban Innovation. At present, Vancouver is trying to become the "greenest city" in the world. What is the development story for such a livable city? And what lessons can be learned for other current sustainable development initiatives?

Development of the "Greenest City"

Vancouver is a young harbor city. In the early nineteenth century, the region now occupied by the city was largely wilderness where some aborigines lived a primordial life, fishing and hunting. Gradually the area opened up with emerging industries and the exploration of mineral resources. In 1886, the Canadian Pacific Railway went into operation and Vancouver became an official city. It was named after the British Captain George Vancouver who was one of the first European explorers to land at the place.

Globalization and urbanization are ongoing, and explosive urban development makes cities gradually fall into the same pattern. Yet despite such a context, it is possible that Vancouver could still keep its unique charm among the global cities. Vancouver differentiates itself from others primarily by its special natural environment. This city is located at approximately 50 degrees North, even closer to the North Pole than Harbin in China. Its winter is milder than most other Canadian cities due to the North Pacific Current and the Rocky Mountains. Such a miraculous location makes Vancouver a world-famous tourist city with relatively temperate weather, flourishing flowers



自然环境。这座城市的纬度已接近北纬 50 度，从地图上看比中国黑龙江的哈尔滨还要北。又因有太平洋暖流经过，并以落基山脉为屏障，使这座城市没有冬天。如此神奇的地理位置让这里气候温和湿润，四季花草茂盛，港口全年不冻，成为世界著名的旅游城市。根据 TripAdvisor 最新发布的旅行者票选结果，温哥华被评为 2015 年加拿大首选旅游目的地。

除了良好的先天环境，更重要的是这座城市一直坚持的可持续发展理念和城市规划方法。很难想象 50 年前，温哥华还是一个被严重污染所困扰的城市。

20 世纪 60 年代，北美和欧洲各地城市中心港口区开始衰退，制造业和工业开始大规模向郊区迁移。在温哥华，大量的失业和港口废弃，市中心人口流失量大，如何改善生态环境和实现城市可持续发展成为温哥华面临的严峻问题。于是，从 20 世纪 70 年代开始，温哥华市政府便致力于城

and unfrozen harbors all the year around. According to the latest poll results released by TripAdvisor, Vancouver was elected as the most favoured tourist destination in Canada in 2015. Apart from favourable natural conditions, a more important factor is that this city has always insisted on its concept of sustainable development and urban planning. It is hard to imagine that Vancouver was severely troubled by pollution just 50 years ago.

In the 1960s, the central harbours of North America and Europe began to decline and the manufacturing and industry began to move to suburbs on a large scale. Similarly affected by this general trend, Vancouver experienced serious unemployment, deserted ports and mass loss of population in the downtown area. Improving the environment and achieve sustainable development became urgent problems facing Vancouver. Hence, from the 1970s, the Vancouver municipal government devoted itself to transforming the functions of its central district. The designers at that time intentionally kept some industrial features as a historic record of the city's development and then brought in a new infrastructure system so as to thoroughly remould the city.

In 1986, Vancouver held the World Expo, a turning point in its development. The Expo was held in the downtown False Creek area, covering 67 hectares. During the construction, the government focused on long-term urban development and initiated environmental improvement and urban

市中心区的功能的转变。当时的设计者希望能保留一些工业化时期原貌，为城市发展保存历史印记，然后引进一套新的城市基础设施体系，从而实现城市面貌的脱胎换骨。

1986年，世博会在温哥华举办，这一盛事对温哥华的发展具有里程碑意义。世博会会址位于温哥华市中心的福溪地区，占地67公顷。在建造会址时，温哥华市政府着眼长远，顺势对福溪地区进行了环境治理和城市规划改造，使得福溪焕然一新。此时，温哥华迎来了第一次“城市复兴”。

1988年，温哥华成立世界上首个气候特别小组，专门评估大气变化对城市规划和活动的影响；1990年，温哥华发表云层变化报告，并据此制定针对大气变化的工作目标。1990年至今，温哥华针对气候变化共采取近40项政策，内容涵盖了综合发展战略、鼓励企业行动、整合社会力量、强化交通规划、提升建筑要求、加强绩效评价等方面。

2003年，温哥华赢得2010年冬奥会和冬季残奥会主办权，迎来了“城市复兴”的第二次契机。2003年，温哥华启动奥运城市规划，在福溪之畔建设冬奥村。冬奥村的所有建设都经过国际绿色建筑认证系统LEED认证，成为世界上最绿色环保社区。冬奥会举办前夕的2009年，温哥华现任市长罗品信（Gregor Robertson）组建“最绿色城市行动小组”（The Greenest City Action Team），并制定了“最绿色城市2020行动计划”，目标是使温哥华在2020年能够成为世界上最环保的城市，最终实现一个伟大的愿景：让温哥华成为一个充



planning to renew this area. Vancouver was "rejuvenated" for the first time.

In 1988, Vancouver launched the Task Force on Climate Change to examine the impact of atmospheric change on urban planning and activities. In 1990, Vancouver released Clouds of Change, a report that described the goals set by the task force. Since 1990, Vancouver has issued nearly 40 policies to tackle climate change, ranging from setting out comprehensive development strategies, and encouraging industrial activities, to integrating social forces, strengthening transport planning, increasing construction standards and improving performance evaluation.

In 2003, Vancouver successfully won the right to host the 2010 Winter Olympics and Olympic Paralympic Games. It welcomed the second opportunity for "rejuvenation". In 2003, Vancouver launched the plan for Olympics and established the Winter Olympic Village in False Creek. The village was certified to Platinum LEED standard and was thus named as the greenest neighbourhood in the world. In 2009, just one year before the event, the present mayor Gregor Robertson set up the Greenest City Task Force and made the "Greenest City 2020 Action Plan" which aimed at making Vancouver the most environment-friendly city in the world by 2020 and also a vital, sustainable, diverse and livable city to meet every citizen's needs.

Breakthroughs of the "Greenest City"

To accomplish the greening goal, the "Greenest City 2020 Action Plan" focuses on three aspects. The first focus is to realize zero greenhouse gas emission. This mainly includes showing strong leadership in dealing with climate change, promoting green transportation—including making walking, bicycle riding and public transportation the prioritized choices for its citizens—and giving incentives for building developers to lead the trend of green design and construction.

The second focus is to realize zero waste. It is planned that Vancouver will establish a well-developed recycling system and become a city without waste. This step, together with the first focus, aims to realize a green economy, form the greenest economic structure, encourage the green and environment-friendly enterprises, reduce carbon footprint and make Vancouver, a city with minimal greenhouse gas emissions.

The third focus is to sustain a vibrant eco-system. This includes easy access to nature, clean water, local food and clean air. "Easy access to nature" means that green land is readily available to the citizens in their daily lives; "clean water" refers to the goal that the citizens have access to the cleanest water in the world; "local food" involves an emphasis on locally produced food, improving the working conditions for the staff in food industry and making Vancouver the global



满活力、可持续发展、多元化的宜居城市，满足每个市民的需求。

“最绿色城市”的突破领域

“最绿色城市 2020 行动计划”的目标是实现温哥华在 2020 年成为世界上最环保城市，并明确了 3 个重点领域。

第一个重点领域是实现二氧化碳零排放。主要包括在处理气候变化问题上展现领导能力；推广绿色交通，让步行、骑自行车和使用公共交通工具成为市民最优先的交通选择项目；推广绿色建筑，引领世界环保建筑与设计潮流。

第二个重点领域是实现零废弃物。计划将温哥华建成无废弃物城市，在全市建立完善的废弃物再循环利用系统。

通过二氧化碳零排放和零废弃物两个重点领域的打造实现绿色经济，建立最环

leader of urban food; "clean air" means that Vancouver's citizens are able to breathe the cleanest air compared to people in other global mega cities.

The "Greenest City 2020 Action Plan" holds up a high standard for urban environment sustainability and propels Vancouver to ponder the relationship between "livability" and "favorability for business": a green city does not refuse but welcomes business. There is a misconception that environmental protection must obey many rules and spend huge amounts of money. However, a greener and more livable city could attract more people and enterprises to invest. Vancouver's "Greenest City Initiative" created thousands of jobs in green industries and contributed to urban employment. Likewise, to create business does not necessarily damage the environment. Vancouver was the first city to include standards for green construction and introduce sustainable development into law. Therefore it reveals that livability and business promotion can be mutually facilitated and complemented.

Ways and Means to the "Greenest City"

At present, Vancouver is pushing forward its "Greenest City" plan mainly in the fields of green transportation, green urban planning and

保的经济结构，鼓励绿色、环保企业的设立；减少碳足迹，使温哥华成为温室气体排放量最小的城市。

第三个重点领域则是打造健康生态系统。其中包括亲近自然、洁净水源、本地事物、洁净空气4个具体目标。亲近自然主要使市民在日常生活中很容易就能接触到绿化区；洁净水源则旨在为温哥华居民提供世界上最洁净的饮用水；本地食物追求食品的当地化，包括改善食品工作人员的工作环境，使温哥华成为世界上城市食品领域的领头羊；洁净空气则是要让市民呼吸到世界大城市中最洁净的空气。

“最绿色城市2020行动计划”对城市环境的要求很高，迫使温哥华思考宜居与宜业的关系：绿色并不意味着不利于创业，反而应该是有利于创业。人们往往以为为了环保必须遵守很多规矩，花很多钱，但是如果城市更环保、更宜居的话，就会吸引更多的人、更多的企业前来投资。事实上，在打造“最绿色城市”的过程中，温哥华新增了几个绿色环保领域的工作岗位，为解决城市就业做出了重要贡献。同样，宜业也不必然意味着对环境有所破坏。温哥华是北美第一个将建筑环保标准以及可持续发展标准写入法律条文的城市。由此可见，宜居和宜业是相互促进、相辅相成的。

“最绿色城市”的行动路径

目前，温哥华主要通过绿色交通、绿色城市规划、绿色经济三个方面来推动“最绿色城市”计划的实施。

绿色交通引导市民出行选择依循步行、自行车、公共交通、水上交通、私家汽车的先后顺序。为此温哥华采取了许多措施。步行和自行车出行是温哥华市政府最优先鼓励的出行方式，为此市政府在市区设计高密度的步行与自行车专用道路。



green economy. Green transportation sets an order of transportation means for citizens to move across the city, from walking and bicycling to public transportation, water transportation and car transportation. Henceforth, Vancouver will implement many measures. Walking and riding are most encouraged by the municipality, which designs many walking ways and bikeways in the downtown area. To ensure safety, convenience and comfort, these paths are well marked and beautified—planted with trees and flowers. The paths are widened so that citizens can talk shoulder by shoulder when walking or riding.

Vancouver also pays tremendous attention to the development of public transportation. It endeavours to increase efficient infrastructure such as for subway and light-railway transport, and encourages electric vehicles as a substitute for gasoline vehicles. For instance, Skytrain takes passengers across the unique scenery of Vancouver. This rapid transit system, which crosses the sky of Vancouver, was initiated in 1987 and includes three lines and 33 stations. It totals up to 49.5 km and stands as the longest pilotless rapid transit system. People can enjoy the most beautiful city landscape on the Skytrain while heading for their destinations.

Vancouver also promotes green urban planning to integrate with green transportation. In terms of community planning, it fully considers the residents' need for walking, riding, working and shopping, and thus enhances the integration of living, working and shopping. Details also count in its planning. Safety and comfort of the residents are taken into account when designing the height and separation distance of buildings—open-air cafés and public greenbelts are built to lessen the shadow-effect of buildings. Different apartments and supporting facilities are designed for people of different ages and incomes. Public policy requires for approval by the city council but also involves public participation from planning to implementation. If the

专用道路设置明显标识，并进行绿化和美化，注重使用者安全、快捷、舒适的体验。专用道路还适当加宽，以便于市民在步行或骑车时能够并排聊天。

温哥华也十分重视公共交通工具优先发展，努力增加地铁、轻轨等高效的公共交通设施，鼓励以电动汽车替代燃油汽车。其中，架空列车（Skytrain）是温哥华一道独特的风景线。这个飞越大温哥华地区天际的捷运系统始建于1986年，目前已有3条路线共33个车站，全长49.5公里，是全球最长的无人驾驶捷运系统。坐着架空列车，可以饱览温哥华最美的城市风景，也可以实现通勤的需要。

温哥华同时推动绿色城市规划，与绿色交通形成整体。在社区规划上，充分考虑居民步行、骑车、工作、购物的需要，提高社区的居住、工作、购物一体性。在细节设计上，根据居民的安全与舒适性来规划建筑的高度、间距，以露天咖啡馆、公共绿地等减少建筑物阴影对阳光的遮挡。在住宅设计上，为不同年龄和收入的群体规划不同的住房和配套设施。在公共决策上，规划方案从酝酿到实施的全过程都有公众参与，都必须通过市议会审定，开发商改变土地用途也必须获得社区的同意。在公私合作上，市政府每周都与土地拥有者和建筑商开会讨论各项工作，开发商承接项目必须缴纳一笔用于公共福利的费用作为社区改革发展基金，建筑工程必须有城市建筑协会的参与。通过人性化的规划设计、广泛的公共参与以及融洽的公私合作，最后实现了绿色发展的理念坚持和良好机制。

基于绿色城市的发展理念，温哥华还致力发展绿色经济。温哥华市区的2.5万家企业提供了大约40万个就业岗位，技术型企业是其中的主要支柱。目前，绿色经济已经为温哥华提供了2万个就业岗位，并以6.3%的速度增长，是其他类型企业增速的3倍。其中绿色建筑行业的就业率最

real estate developers intend to change the use of land. In terms of public-private cooperation they need the agreement of the people. The municipal government holds meetings with the land owners and developers every week to discuss issues of concern. In order to undertake projects, developers must pay a sum of money into a community reform and development fund and the construction must involve the Urban Construction Association. Through human-oriented planning, extensive public engagement and harmonious public-private cooperation, Vancouver successfully formulates the concept of green development and a favorable mechanism.

Based on the concept of "green development", Vancouver is also committed to a green economy. Thousands of enterprises in the downtown area provide about 400,000 jobs, with technology companies as the major contributors. At present, the green economy has supplied 20,000 jobs and maintains an increase of 6.3 per cent, twice as fast as the increase in other fields. The employment rate in the green building industry is the highest, amounting to 5,000 jobs in total. The second highest sector is the green food industry. Vancouver is developing a green industrial park, which will serve as a pilot area and incubator for clean energy technologies. The park will mainly develop and improve technologies for energy efficiency. Dozens of firms have entered the park, including a number of international corporations. It actively invites business and investment in green economy and also promotes local green enterprises into the global market. In addition, the government adopts a series of policies and measures to encourage green enterprises, such as developing procurement policies and practices that support the sales of local food in the city-run facilities (including community centers, restaurants and



高，达到 5000 个岗位，其次为绿色食品行业。当地正在发展的绿色工业区项目，是清洁能源企业技术的创新示范区和孵化器，主要开发提升能源利用效率的技术，目前已有数十个企业进驻，其中包括许多跨国公司，一方面对绿色经济大力招商引资，另一方面也推动本土绿色企业走向国际。此外，温哥华市政府还通过一系列政策措施鼓励绿色企业发展，如落实绿色公共采购政策，支持当地食物在市营组织（包括社区中心、饭店、特许经营店）中的销售；支持举办绿色社区活动，由市政府负责审批和赞助。

通过绿色交通、绿色城市规划和绿色经济“三驾马车”共同发力，盘活企业、市场和群众等社会资源和力量，既实现宜居环境，又促进经济发展。

“最绿色城市”的经验借鉴

城市的可持续发展是 21 世纪人类所

concessions). These are drawn upon to support the green community events that the city sponsors and permits.

Vancouver synergizes the "three carriages" of green transportation, green urban planning and green economy to vitalize the social resources and forces like enterprises, markets and people. By doing so, it enables to create a livable environment and enhance the economic development.

Experience Learned from the "Greenest City"

Urban sustainability is a common issue facing human beings in the twenty-first century. Vancouver has accumulated rich experience in creating livable space. It is worth learning from Vancouver's promotion of urban sustainability and livability and its long-term strategy and strong sense of responsibility.

1. Leading Urban Development and Construction with an Advanced Concept

Long before launching the “Greenest City 2020 Action Plan”, Vancouver had formulated a human-oriented concept—"creating a city for all". Following this concept, Vancouver has made tremendous achievements and become a



面临的共同课题，温哥华在打造面向全民的宜居可持续空间方面积累了大量的成功经验。温哥华对于城市可持续发展和宜居性的重视，及其公共部门具有长远的战略眼光并勇于承担责任等特点，值得各地城市借鉴学习。

（一）以先进理念引领城市的发展和建设

温哥华早已设立了一个以人为本的理念——“打造满足每个市民需求的城市”。在这一理念的引领之下，温哥华取得了令人瞩目的成就，成为举世闻名的宜居城市。由此可见先进理念对推动城市发展的重要价值。

所谓理念，应该具有显著的理想性、深刻性和相对的稳定性。一些城市会错把发展目标看成发展理念，以目标代替理念的失当之处在于：城市发展目标是很容易被调整的，尤其是新的政府上台后，往往要提出新的发展目标，过往所制定的目标也就无法继续执行。而理念则可以统摄城市发展的各项目标、计划。换言之，目标和计划是为了实现理念而存在的。

由此可见，城市应依据城市发展条件和特点，深入考虑，确立一个包含宜居与可持续发展内涵的先进理念，作为城市创新的灵魂，并以此引领城市未来的建设和发展。

（二）为城市的可持续发展制定长期规划

在城市的可持续发展问题上，温哥华的公共部门具有长远的战略眼光，早在1988年已成立世界上首个特别气候小组，专门评估气候变化对城市规划和活动的影响；除了以2020年为界的中期目标，还制定了2050年为界的长期目标。

一些城市，尤其是发展中国家的城市，对城市可持续发展问题不够重视，缺乏长远的规划和政策，导致可持续发展在实际



world-famous livable city. It embodies the precious value of “a city for all” in promoting urban development. Some cities mistake the development goal for the development concept. A concept is obviously idealistic, profound and relatively stable. A development goal is easy to adjust. When a new government takes office, it usually puts forward a new development goal and thus goals made in the past are discontinued. However, a concept could integrate all the goals and plans of urban development. In other words, goals and plans exist for realizing concepts. This point shows that it is necessary to agree upon an advanced and proper concept for urban development.

2. Making a Long-Term Plan for Urban Sustainable Development

The public sector of Vancouver has adopted farsighted strategies concerning urban development. In 1988, it established the first task force on climate change to examine the impact of atmospheric change on urban planning and activities. It set a sustainable urban development mid-term goal for 2020 and a long-term sustainability plan for 2050. Some cities, especially cities in developing countries, pay insufficient attention to sustainable urban development, and they lack long-term planning and policy. This results in failures of sustainable development, failures to adopt related concepts and consequently brings about more serious and complicated problems in the environment, industrial development and social services, etc. It is necessary to develop instructive and forceful policies and rules with a forward-looking concept and to set short, medium and long-term goals for sustainable development.

3. Advocating Green Industrial Development and Effectively Shortening the Time for Environmental Improvement

In terms of ecological improvement, Vancouver takes a different

工作中未得到贯彻，导致更加严重的环境生态、产业发展、社会服务等方面复杂的突出问题。

立足高点，着眼长远，制定具有指导性和强制性的专门政策和法规，并为可持续发展分别设定短期、中期、长期的工作目标，对实现城市可持续发展非常有必要。

（三）倡导绿色产业发展，有效缩短环境治理的时间

在环境治理的问题上，与多数城市单纯限制污染、搬迁重化工产业的“减法”思路不同，温哥华将工作重点放在树立宜居的价值观以及倡导绿色产业发展的“加法”上，有效缩短环境治理的时间。

在传统的做法里，当一个城市遭遇环境问题困扰时，便希望改善污染状况，但是这种阶段性的改善往往不能延续太长时间。

将可持续发展作为推动科技创新的切入点，集中发展或引进废弃物处理和节能环保方面的科学技术和产业，可以助力城市的环境治理。

（四）以高标准的成功范例为城市树立绿色标杆

温哥华通过规划拱顶型的城市天际线、北福溪湾以及市中心南区的高密度住宅区、东南福溪湾的完善水旁社区3个高标准的成功范例，既改善了城市环境，也为全市其他地区以及其他城市树立了先进标杆。

打造高标准的成功案例，为城市生态环境发展树立标杆，是推动城市全面绿色发展的有效做法。尤其可以选取若干生态环境相对恶劣的区域作为试点，从社区规划、建筑的节改造、绿色房屋设计及建造、废水废物循环利用、降低社区整体能耗等领域进行全面改造，待取得一定实际效果后，总结经验、加以改良，并向其他社区推广，以此推动宜居城市建设。



view than other cities which simply constrain pollution and relocate the heavy chemical industry. It focuses on establishing the concept of livability, promoting green industry and effectively reducing the time of environmental improvement. Classically, a city hopes to decrease pollution levels when confronted by environmental problems, yet it usually fails to sustain the necessary periodical improvement. Good sustainable development serves to enhance technological innovation and develop or introduce scientific technologies and industry in waste management and energy conservation so as to facilitate the improvement on urban environment.

4. Setting a Green Model with High Standards and Successful Practices

Vancouver planned three high-standard and successful practices: the vault city skyline, the northern False Creek Bay and the residential community with high density in the southern downtown. These projects not only improve the urban environment but also set a model for other areas of Vancouver and other cities. Developing successful practices and setting ecological standards provide effective measures for promoting green urban development. In particular, the city could choose several environmentally damaged areas as pilot spots and conduct overall reforms in community planning, energy saving, green house designing and constructing, sewage and waste recycling, energy-consumption cutting, etc. When some practical outcomes are achieved, it is time to draw lessons for improvement and to promote the practices in other communities to finally enhance the construction of livable cities.