中国光谷中心区
总体城市设计
China Optics Valley
CENTRAL AREA URBAN DESIGN

第一册
总体规划与北核心区
VOLUME I
MASTER PLAN & NORTH CORE AREA

SOM

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愿景
Vision

中国光之城
China's City of Light

中国武汉光谷中心区总体城市设计为实现东湖国家自主创新示范区宏伟愿景建立了一个长远的城市发展框架：在武汉市打造全球化科技金融创新中心。

中国武汉光谷中心区将成为一个生态友好的城市中心，吸引新一代的高新技术产业，构筑国际领先的低碳生态城市中心。它将利用城市中心区的聚集力以及和谐的自然的优美环境提供源源不断的创新灵感。

光谷中心区将以其标志性的绿色商业核心巩固武汉的经济地位以及武汉作为中国最具前瞻性大都市的国际形象。

光谷中心区融合自然、城市、可持续性生活品质以及高端就业机会将成为吸引国内外一流人才的磁石，并将实现武汉未来发展目标。光谷中心区将成为国内外企业和居民的理想宜居场所。

光谷中心区总体城市设计利用场地内特有自然景观与周边优美的环境为中心区创造更高的价值和激发源源不断的创新灵感。它的形成，与武汉规划设计院的通力协作密不可分。

这个灵活的可行性强的规划方案建立在常青山麓之中，将成为中国闪耀的光之城。

This China Optics Valley Central Area Urban Design establishes a long-term framework for realizing the bold vision of the National Innovation Demonstration Zone of East Lake: To create a uniquely attractive international Technology and Finance Innovation Center for Wuhan.

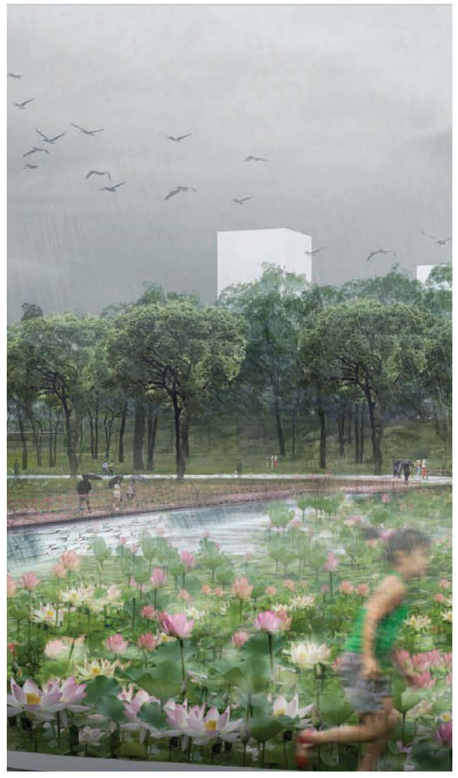
It will be an advanced eco-friendly city center that brings together China Optics Valley's rapidly emerging and diversifying next-generation industries. It will harness the innovative powers of urban density with the creative inspiration of nature.

Optics Valley Central Area and its signature green downtown core will ensure Wuhan's economic position and global image as central China's most future-focused big city.

Its differentiating harmony of nature, city, sustainable quality of life and cutting-edge career opportunities will create a magnet for the world-class Chinese and international talent who will realize Wuhan's destiny in the 21st century. Optics Valley Central Area will be a place that generations of residents and enterprises, foreign and domestic, will be proud to call home.

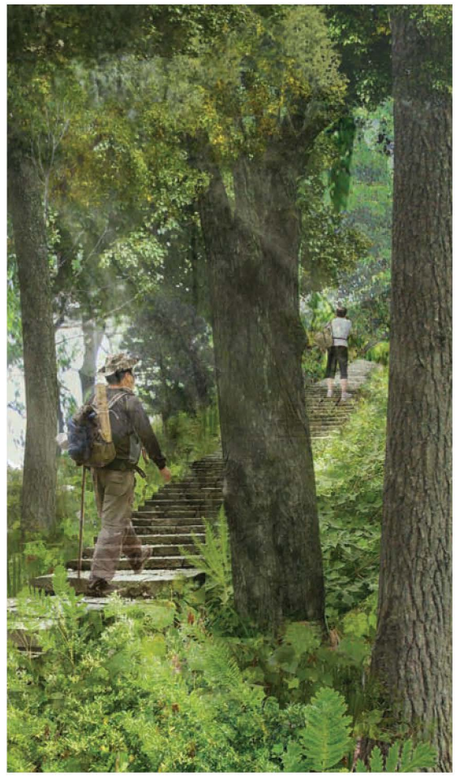
This urban design uses the rare natural beauty of the site and its lush environment to create value and activate innovation. It is crafted in collaboration with the Wuhan Design and Planning Institute.

It is a workable plan to build China's shining city of light on ever green hillsides.



水之城

City of Water



山林之城

City of Mountains & Forests

自然之城

City of Nature

智慧之城

City of Knowledge

交通之城

City of Transit

活力之城

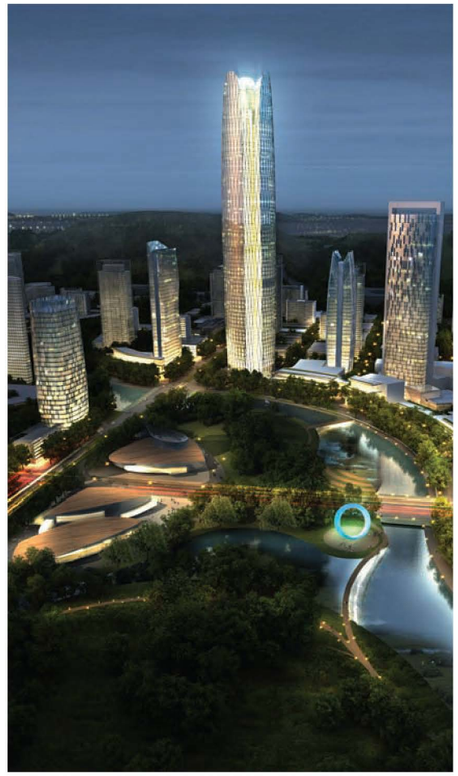
City of Diversity

邻里之城

City of Active Neighborhoods

现代生活之城

City of Modern Lifestyles



独特建筑之城

City of Distinctive Architecture

高能效之城

City of High Performance

水之城
City of Water

水通过保护起来的自然地表径流从九峰山经光谷核心区流向南面的湖泊。
独一无二的武汉：一个与自然和谐共存的国际化都市。
这种设计意图是让光谷的科技创新如流水般源源不息。

Water flows naturally from the mountain to the lake through Optics Valley Central Area.
Uniquely Wuhan: A new international city center in harmony with nature.
Designed to make innovations in emerging technologies flow as naturally as water.

规划保留了光谷中心区独特的自然风光，不仅提升了地区的价值，也丰富了人们生活和工作环境。

作为世界上绝无仅有的新兴地区，光谷中心区会吸引来自全世界的精英，投资者和跨国公司，给每一个来过的人留下难以磨灭的印象。

The East Lake District's natural beauty is preserved to add value and enrich working and living in Optics Valley.

A memorable new district like nowhere else in the world will attract talent, investors and international companies – and impress everyone who experiences Optics Valley Central Area.

山林之城

City of Mountains & Forests

自然之城
City of Nature

武汉市以及东湖区的领导智慧，加之武汉市规划设计研究院提供的具有前瞻性的初期工作，共同为光谷中心区制定了独特的重要规划设计原则并保证其成功实施。武汉将成为一个以自然环境为导向的城市。

该地区所具有的天然分水岭和地形界定了城市的形态并创造出独特的城市特征。从办公塔楼、咖啡店和住宅望去，绿色的自然景致尽收眼底。周边优美的自然环境有助于提供价值，同时还能为人们提供一个独特的绿色生态城市环境。

The wisdom of Wuhan and East Lake District leaders – along with forward-looking initial work of WPDI – led to the key principle that differentiates Optics Valley central area and guarantees its success. It will be a city of nature.

Its natural watersheds and topography define its form and create its unique urban character. With green views from office towers, cafes and residences. Unprecedented access to nature creates and sustains real estate value and offers uniquely green urban living.

光谷所提供的集中式多功能的都市环境，将在中国知识经济的发展中起到引领作用。

是否能吸引并留住创造性人才，与地域质量息息相关。

光谷中心区将成为这个地区新思维的摇篮。

智慧之城

A compact mixed-use urban environment designed to play a leadership role in China's development of a knowledge-based economy

The attraction, retention and creativity of innovative people are all tied to the quality of place.

Optics Valley Central Area is designed to be a district-wide incubator of new thinking.

City of Knowledge

交通之城
City of Transit

人的移动便捷性是区域是否有经济竞争力和增长潜力的基础指标。

中心区的建设旨在使步行更方便，交通更便捷，并更有效地连接光谷和大武汉。

“时间就是金钱”，良好的交通体系保证知识经济大环境下市场运作的快捷。

The mobility of people is fundamental to an area’s economic competitiveness and prospects for growth.

The central area is designed to maximize walkability and transit convenience and to connect effectively with all of Optics Valley and Wuhan.

“Time is money,” and good transit enables speed to market in a knowledge economy.

虽然技术的创新无法预测，但是把经验，人才和适宜的微环境综合在一起有助于激发人们的创造性思维。

光谷总体城市设计的主要目标，是创造一个充满活力的密集型城市环境，以促进新兴科技和商业的发展。

Innovative breakthroughs are unpredictable, but a rich mix of experiences, people and micro-environments are known to help surface creative and entrepreneurial thinking.

Activating a compact and stimulating city setting to advance the science and business of emerging technologies is a key goal of the Optics Valley Central Area Urban Design.

活力之城
City of Diversity

邻里之城

City of Active Neighborhoods

跟我们所有人一样，富有创新精神的科研人员和成功的商人都把家庭放在第一位。同时，他们，也跟我们所有人一样， 最缺少的就是时间。所以，在一个便利的邻里社区，步行可以到达学校，商场，公园，娱乐场所和所有交通线路，家庭生活会更有效率，人生更美满。

Innovative researchers and successful business managers – like all of us – put family first. And, like most of us, what they have the least of is time. A convenient neighborhood with schools, shopping, parks, recreation and transit all within a quick walk makes life happier and more productive for the whole family.

现代生活之城
City of Modern Lifestyles

如今的城市从早到晚都充满了活力与生机，光谷中心区将成为人们在中国体验生活方式不可错过的一站。

下班后与朋友及同事在各种会所的休闲娱乐活动能够刺激经济的增长。知识经济时代需要同时注重文化与娱乐，以保证高效的工作状态。该总体规划中还设计了多个供人们健身、放松的场所，以及老少皆宜的绿色步行道。

Today's cities on the move are alive with energy from early morning until late into the night, and Optics Valley Central Area will be one of China's must-experience lifestyle centers.

The next economy is created among friends at clubs after work, as well as with colleagues at work. The knowledge economy requires culture and entertainment that keeps brains in high gear. And places for physical exercise and quiet relaxation in nature are all designed into the plan. Along with long green strolls for grandparents and toddlers.

独特建筑之城

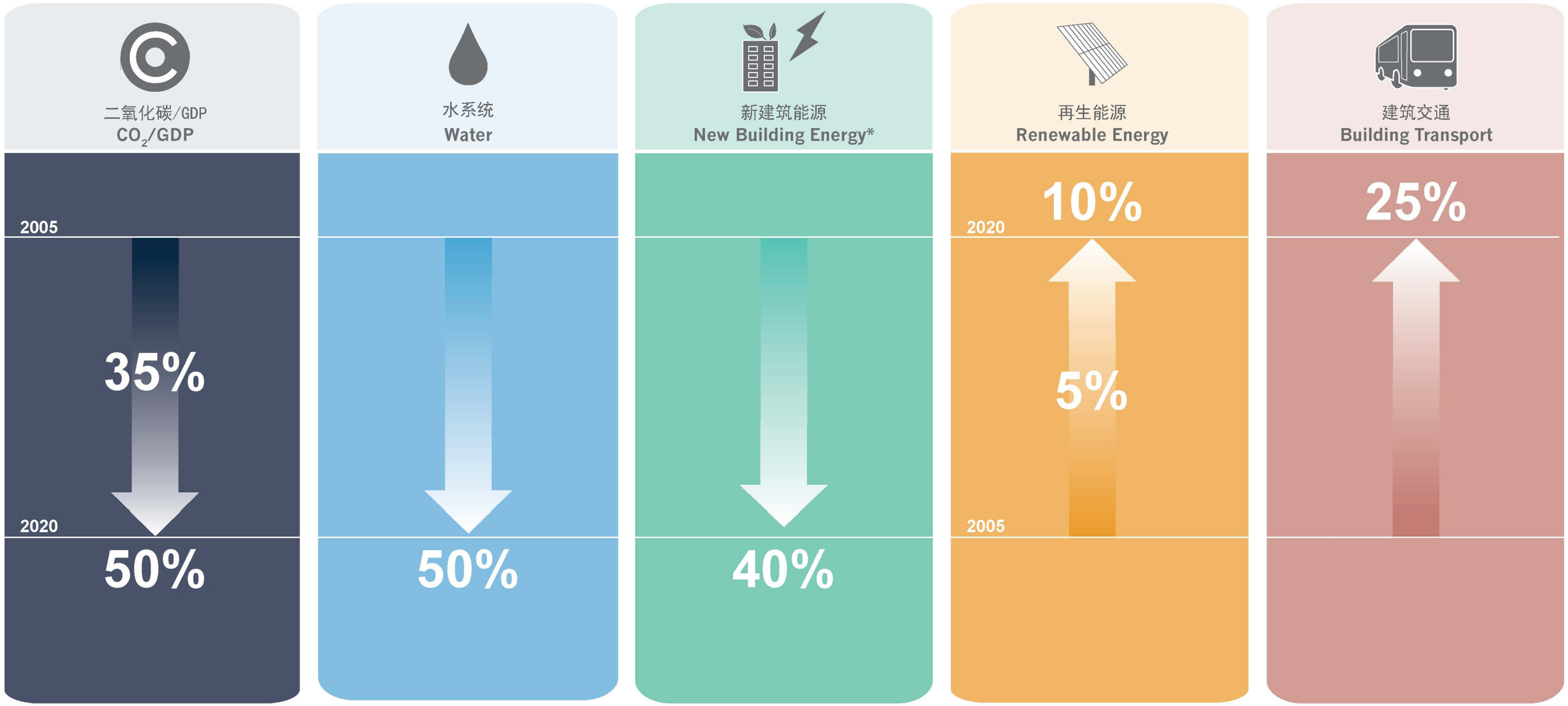
City of Distinctive Architecture

优秀的建筑能够激励当地的人们追求自己的梦想，同时还能向全国乃至世界展示政府在城市发展的宏伟远景。

该总体城市设计为未来在光谷中心区提供良好的建设设计环境–使武汉光谷成为了世界的亮点，同时体现出了武汉日益繁荣的景象。

Great architectural design has the power to inspire local people to pursue bold dreams and to communicate local leadership's high aspirations to the nation and the world.

This urban design creates settings for great architecture — designed by many firms — to put Wuhan's Optics Valley on the must-see global map and signifying Wuhan's growing stature.



在中国乃至世界范围内的未来都市–将采用新一代的高效基础设施，尽可能的减少对环境产生的负面影响，同时极大地提高了自然资源的利用和循环利用。

该规划设计旨在将光谷中心区建设成为21世纪城市的典范，积极采取减少能耗、水资源的利用、碳排放以及废弃物措施。

The city of the future – in China and around the world — will be characterized by next-generation, high-efficiency infrastructure that minimizes negative impacts on the environment and maximizes the use and re-use of natural resources.

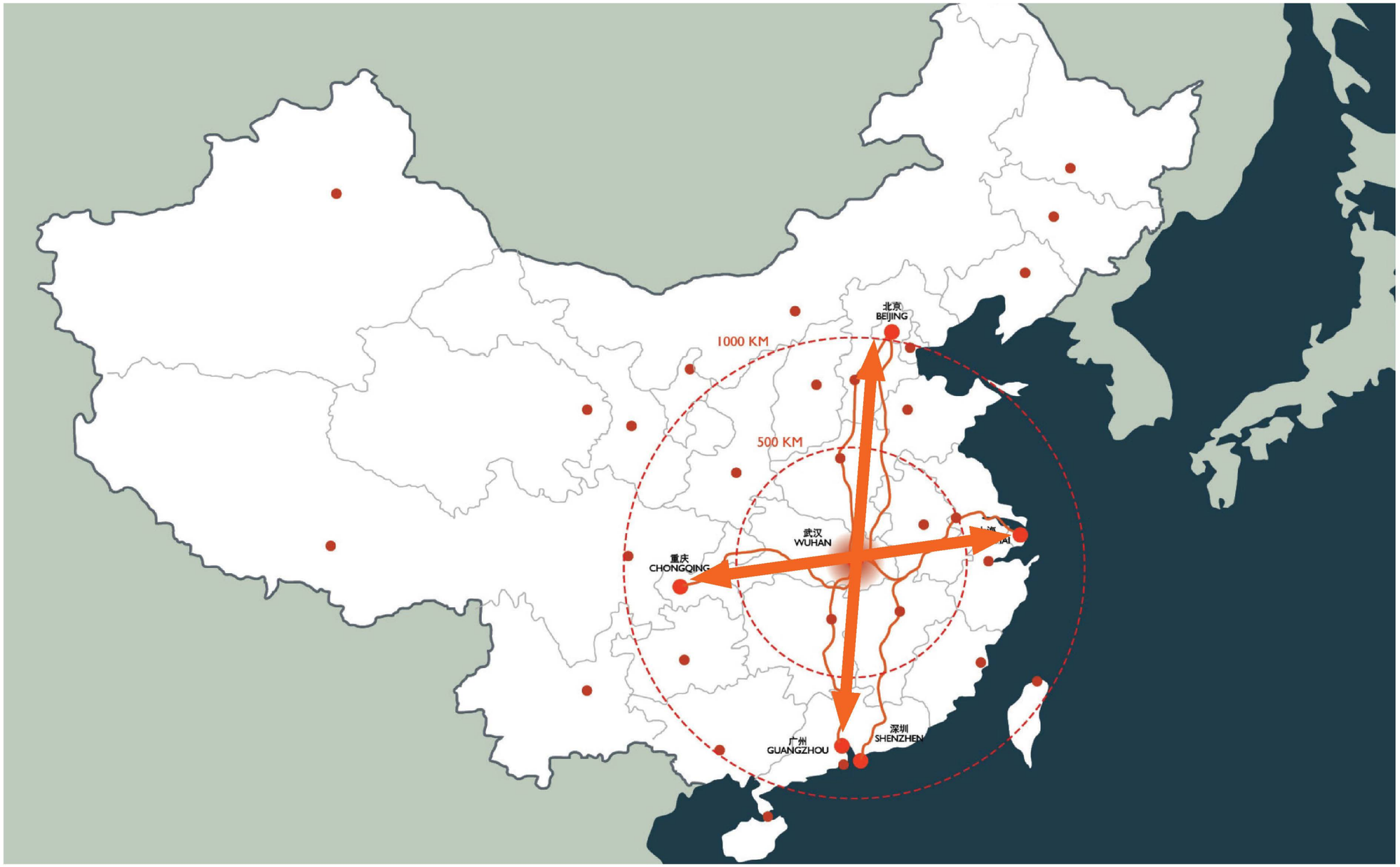
Optics Valley Central Area is designed to be a showcase 21st century city with its aggressive metrics to reduce energy, water, carbon emissions and waste.

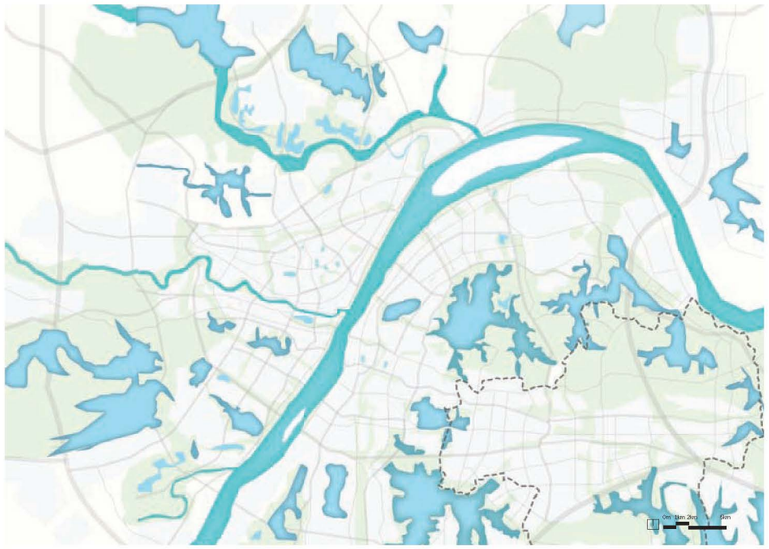
高能效之城
City of High Performance

区域定位与功能
Regional Positioning and Programming

武汉位于中国的十字路口。在这里，东西交汇，南北交融。在城市的不断发展之中，武汉逐渐形成了多中心的城市格局。

Wuhan is China's crossroads. Here, the East connects with the West. North connects with South. With the development of city, Wuhan become a multiple centers city.

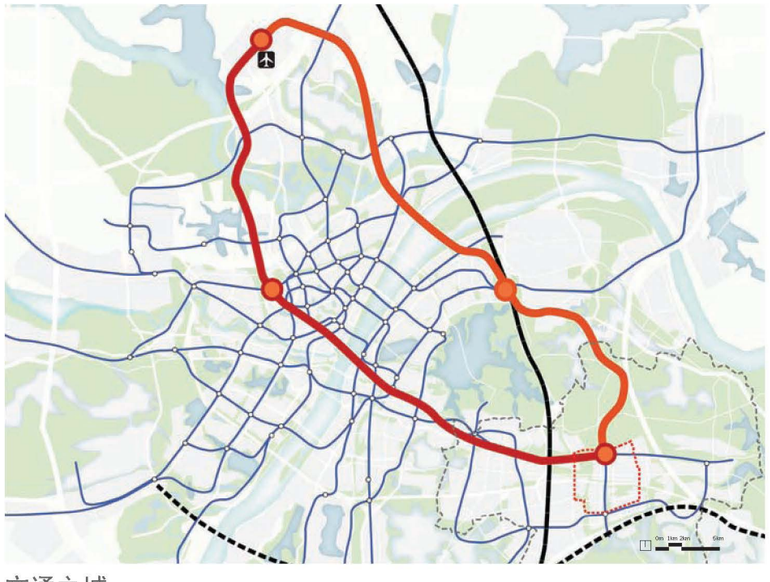




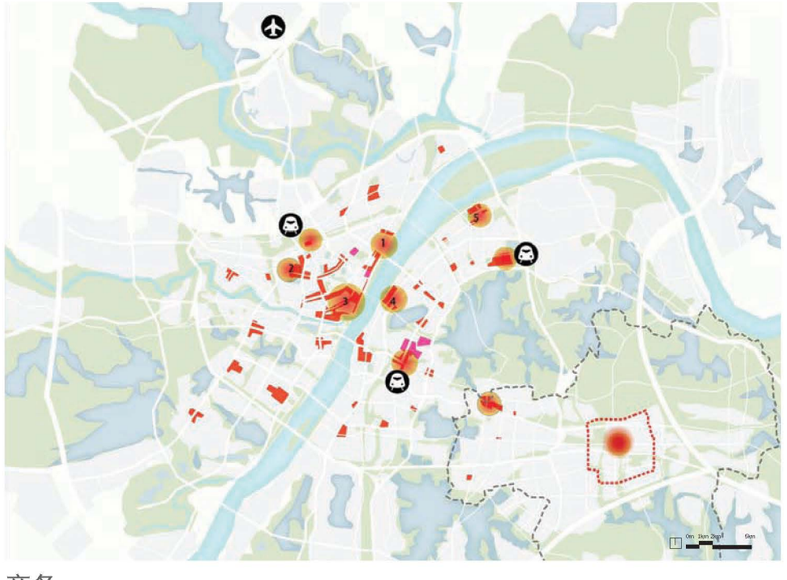
水
Water

花园
Garden

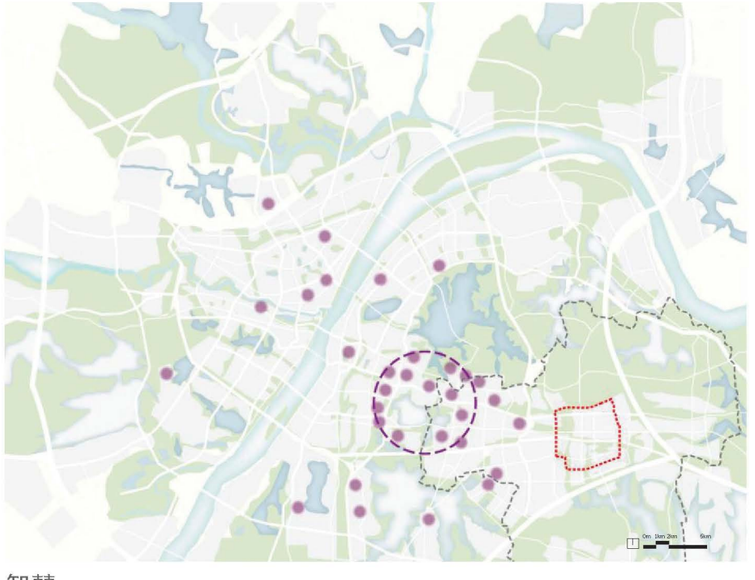
城市发展
Urban Development



交通之城
A City of Transit



商务
Business



智慧
Knowledge

东湖自主创新示范区
East Lake District

武汉科技新城
WUHAN'S NEW HIGH TECH CITY

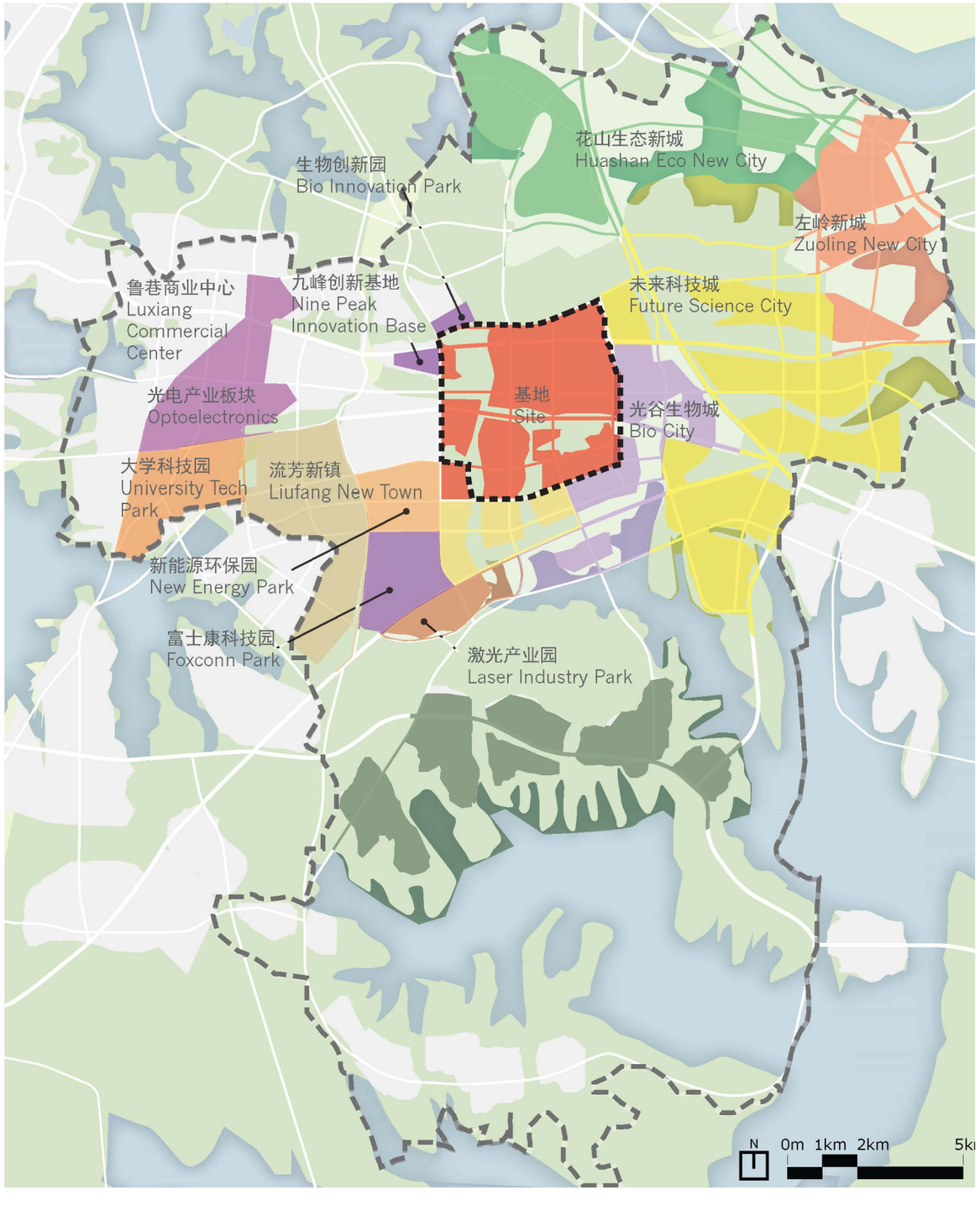
绿色城市
GREEN ENVIRONMENTAL CITY

创新城市
INNOVATION CITY

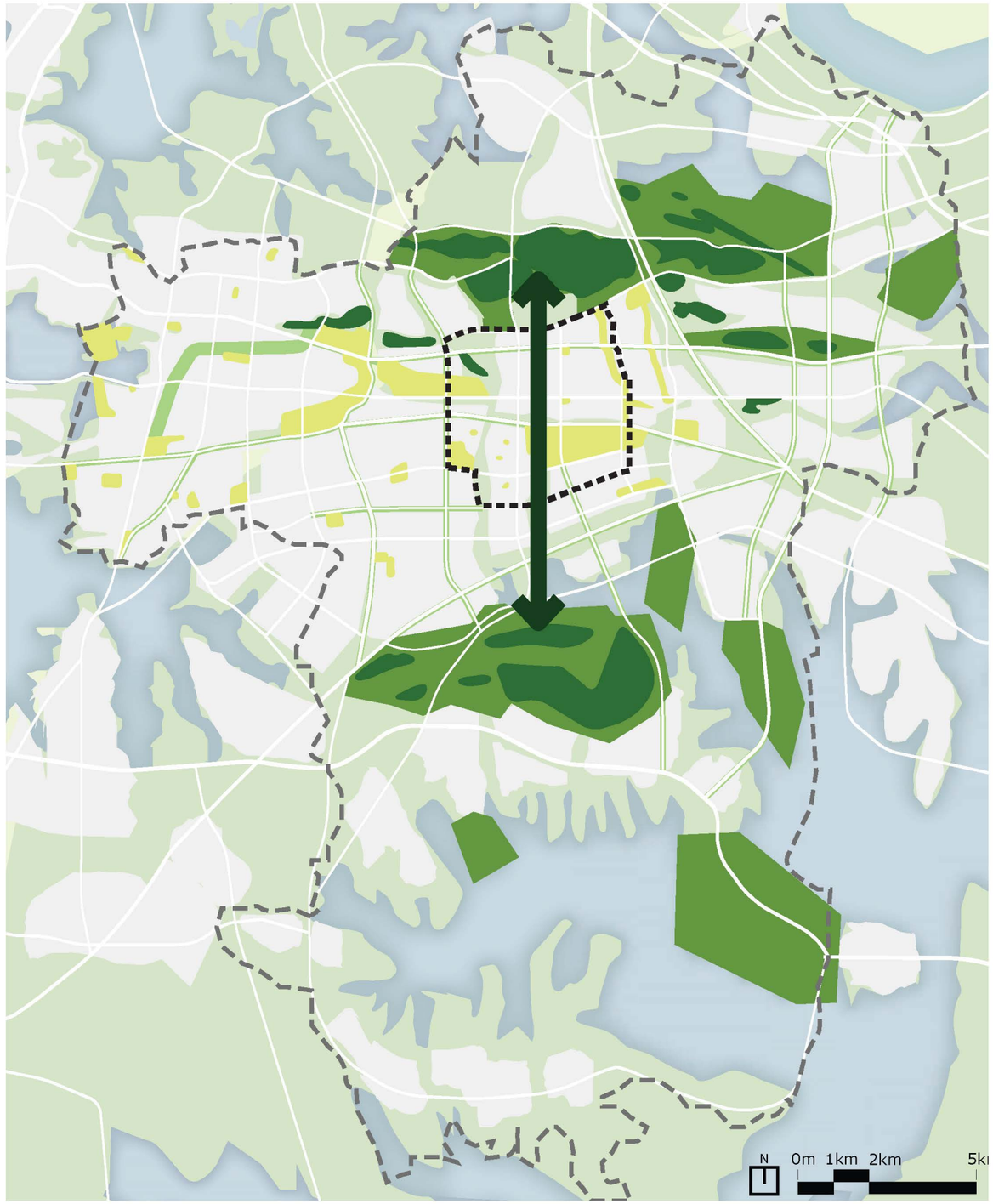
智慧能源与公交
SMART ENERGY, SMART TRANSIT

全球性
GLOBAL IDENTITY

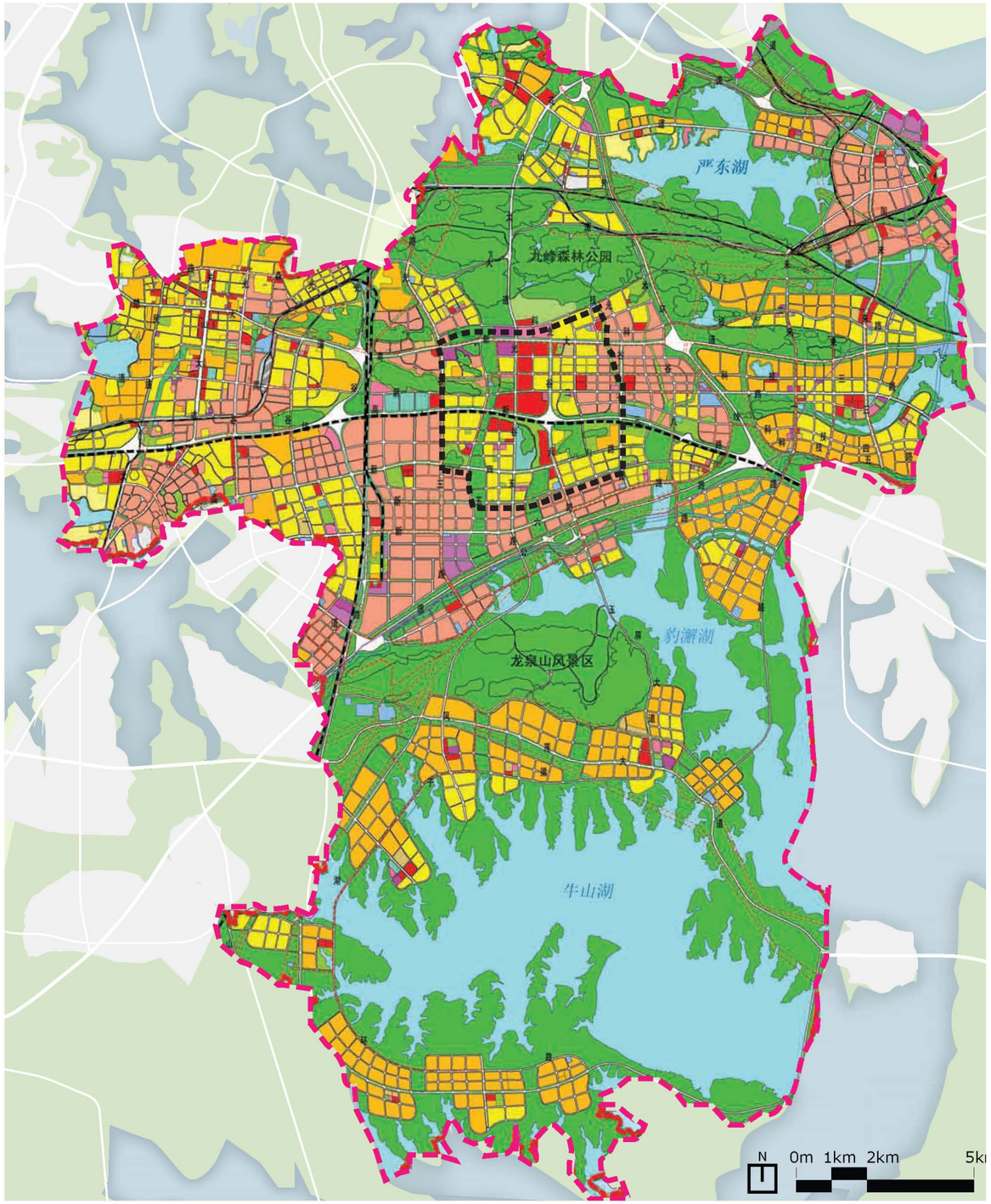
产业园布局
District Program



开放空间
Open Space

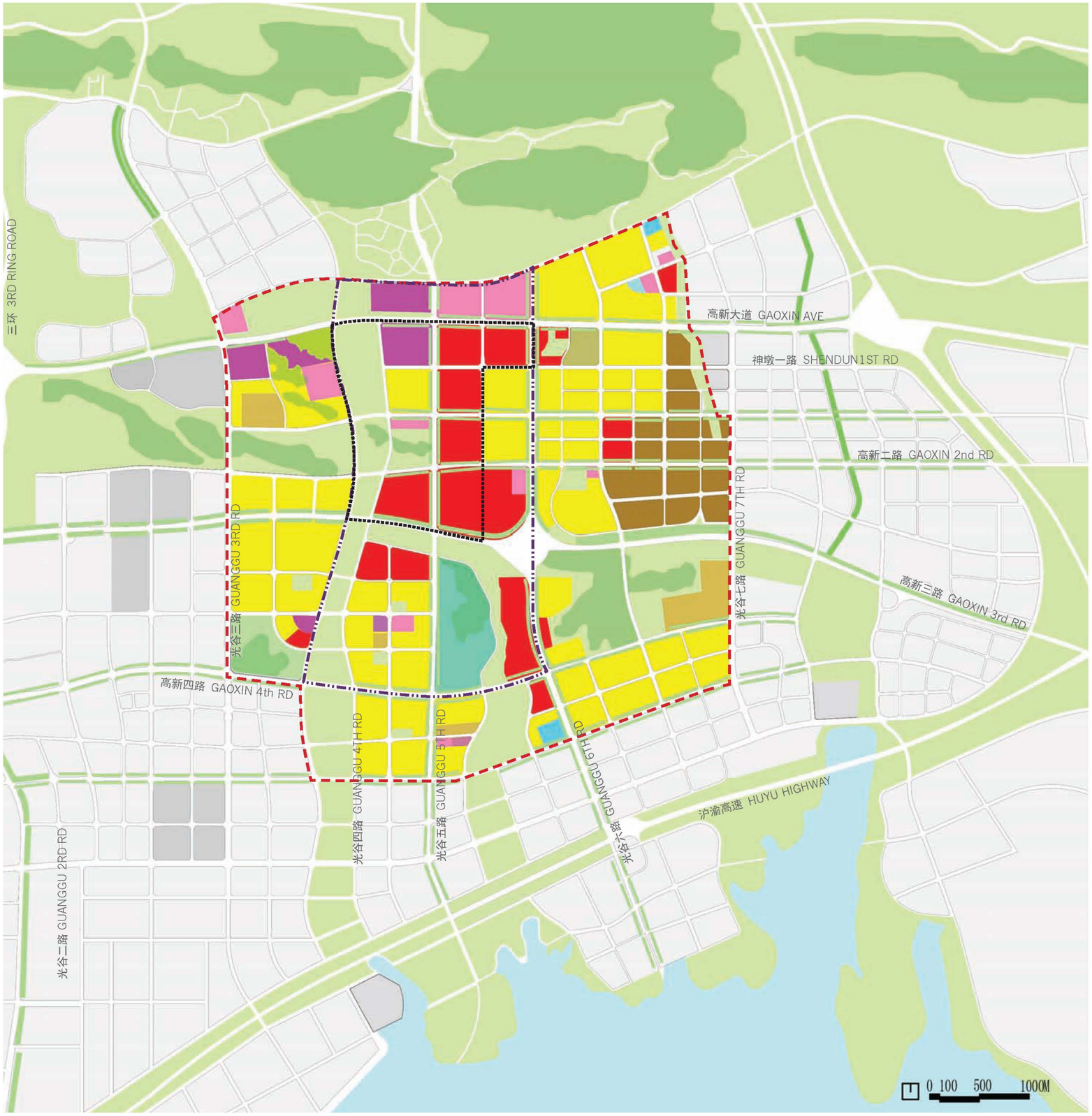


用地性质
Land Use



规划区域
Plan Area

	代码 Code	用地性质 Land Use	用地面积（ha） Land Area (ha)	百分比%
1	R	居住用地 Residential	675.13	32.9
2	C	公共设施用地 Public Facility	410.43	20
3	M	工业用地 Industry	136.18	6.7
4	S	道路广场用地 Road and Plaza	383.71	18.7
5	U	市政公用设施用地 Utility	10.18	0.5
6	G	绿地 Green	432.6	21.2
建设用地小计 Developable Land			2048.23	100
7	G	生态保育用地 Eco Preserved Land	301.92	
总计 Total			2350.14	



启动区
START-UP AREA

核心区
CORE AREA

中心区
CENTRAL AREA

战略地位
Strategic Positioning

中国光谷TBD —中国中部的科技金融创新中心

Optics Valley TBD — Technology and Finance Innovation Center

- 服务中部、辐射全国、面向世界的国际化商务城区
- International Business District

- 促进中部战略性新兴产业深化的总部控制中心和后台服务中心
- Headquarter Control Center and Back office Service Center

- 促进武汉市金融创新，现代服务业与高新技术产业共融的示范平台
- A Platform to Merge Modern Service Industry and High Tech Industry

发展策略
Development Strategies

TBD是现代服务业的聚集区
TBD is the Center for Modern Service Industry

通过现代服务业的内容界定和门类划分，
结合光谷的自身特色和产业发展规律，
提出光谷中心区的现代服务业发展定位、
服务人群以及光谷中心区需重点发展的现代服务业门类。

总部经济是TBD现代服务业的核心
Headquarter Economy is the Core of the TBD Business

通过总部经济的概念解读，
结合武汉市现代服务业的发展趋势，
及光谷中心区的总体发展需求，
提出光谷中心区的总部经济发展方向。

将光谷中心区打造成
Build Optical Valley Center Area into:

集行政办公、科技会展、会议交流等为一体的光谷行政展示中心
Administration Center integrating office, expo and conference exchange etc.

集金融商务、总部经济、管理咨询等为一体的现代服务业聚集区
Modern Service Industry Cluster Area providing financial, business, headquarter economy, management consulting services

集休闲购物、文体娱乐、医疗卫生等公服为一体的宜居活力住区
Livable and active Residential Area providing leisure, shopping, sports, cultural and medical facilities

中心区优化平面

Central Area Refinement Plan

中心区
Central Area

中心区将成为光谷和东湖区密集型、高能效的城市枢纽。

作为一个独立的城市，中心区内将设计一个国际知名的研究和商务中心，连接并影响区域内的新兴产业。

山丘、分水岭和绿色开敞空间共同界定了其独特的造型，将有助于创建一个独具特色的、多功能的、国家级高科技中心，吸引国际化的优秀企业以及顶尖的人才入驻。

作为东湖区和武汉市的一部分，光谷中心区的总体规划旨在打造一个注重交通、采用新一代基础设施，同时注重生态环境的21世纪城市的典范。

独特的建筑以及国际化的城市框架将提高武汉在中国中部的城市地位，并标志着其进入了国际化都市的行列。

The Optics Valley Central Area will be the compact, high-energy urban hub of Optics Valley and the East Lake District.

Designed as a free-standing city, the central area will create an internationally significant research and business center that connects and leverages the region's emerging industries.

Its globally unique urban form — defined by its hills, watersheds and green open spaces — will create a distinctive mixed-use, national high-tech center capable of attracting high quality investment, international corporations and top talent.

Integrated into the fabric of the East Lake District and the Wuhan region, the district is master planned to be a model 21st century city of transit, next-generation infrastructure, and eco-friendly districts.

Its distinctive architecture and world-class urban framework will enhance Wuhan's leadership in Central China and signal its arrival into the community of global cities.

规划原则
Principles

彰显自然水流路径使之成为城市的特色景观

Waterways featured as amenities within the city

联系现状的山丘使之成为公共园地

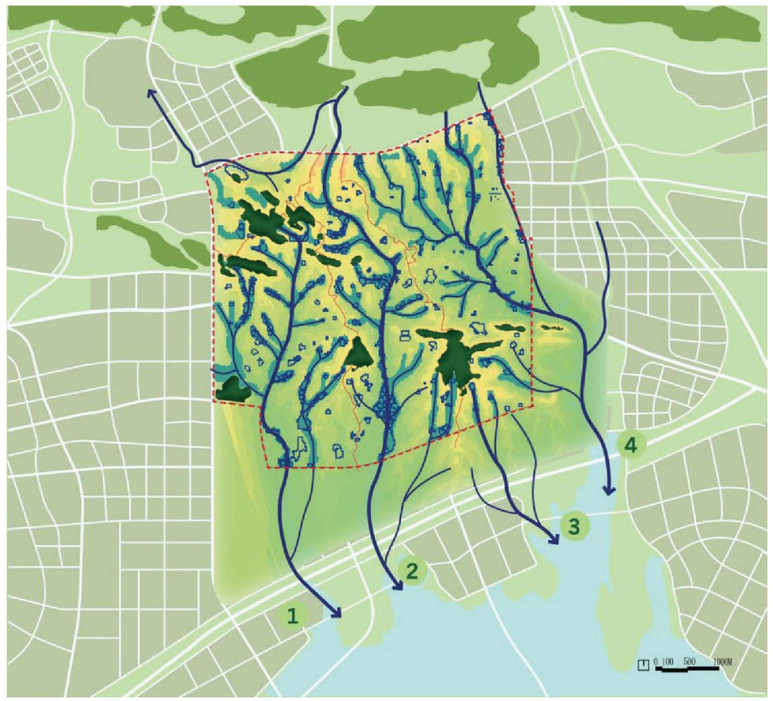
Hills integrated as public parkland

结合水流路径和现状山丘创造独特的城市开放空间系统

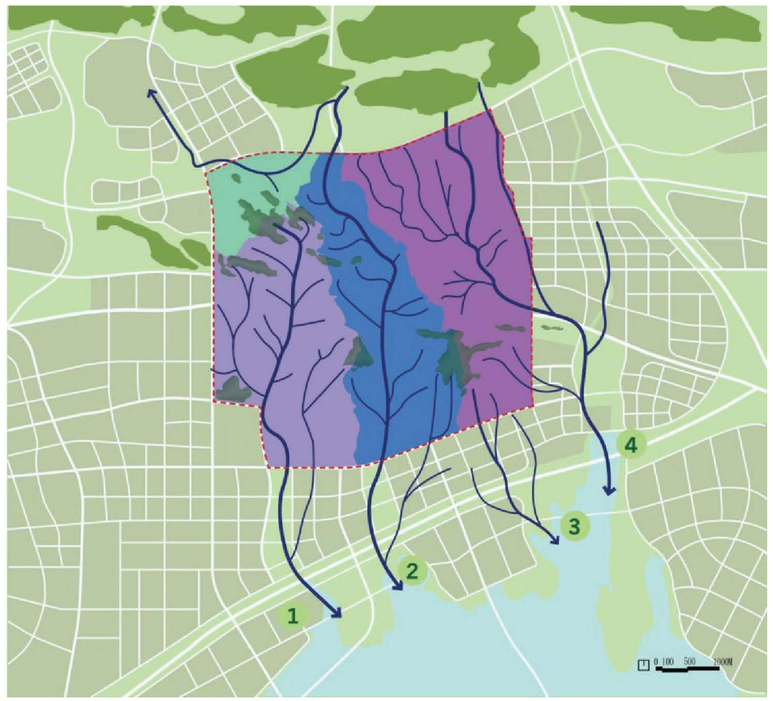
Waterways and hills create unique open space system

现状山丘
Hills

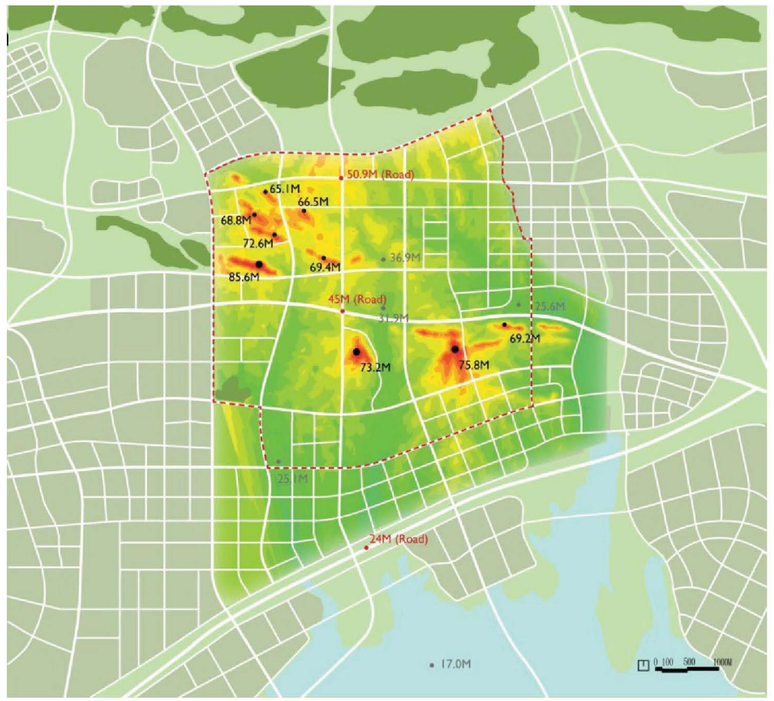
现状水体
Ponds



自然水流路径
Waterways



流域
Watersheds



地形标高
Site Elevation

潜在的可建设用地
Potential Developable Land

确定的道路
Fixed Roads

确定的地块
Fixed Parcels

框架
Framework

山丘、分水岭和绿色开敞空间共同界定了其独特的城市形态，将有助于创建一个独具特色的、多功能的、国家级高科技中心，吸引国际化的优秀企业以及顶尖的人才入驻。

作为东湖区和武汉市的一部分，光谷中心区的总体规划旨在打造一个注重交通、采用新一代基础设施，同时注重生态环境的21世纪城市的典范。

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Integrated into the fabric of the East Lake District and the Wuhan region, the district is master planned to be a model 21st century city of transit, next-generation infrastructure, and eco-friendly districts.

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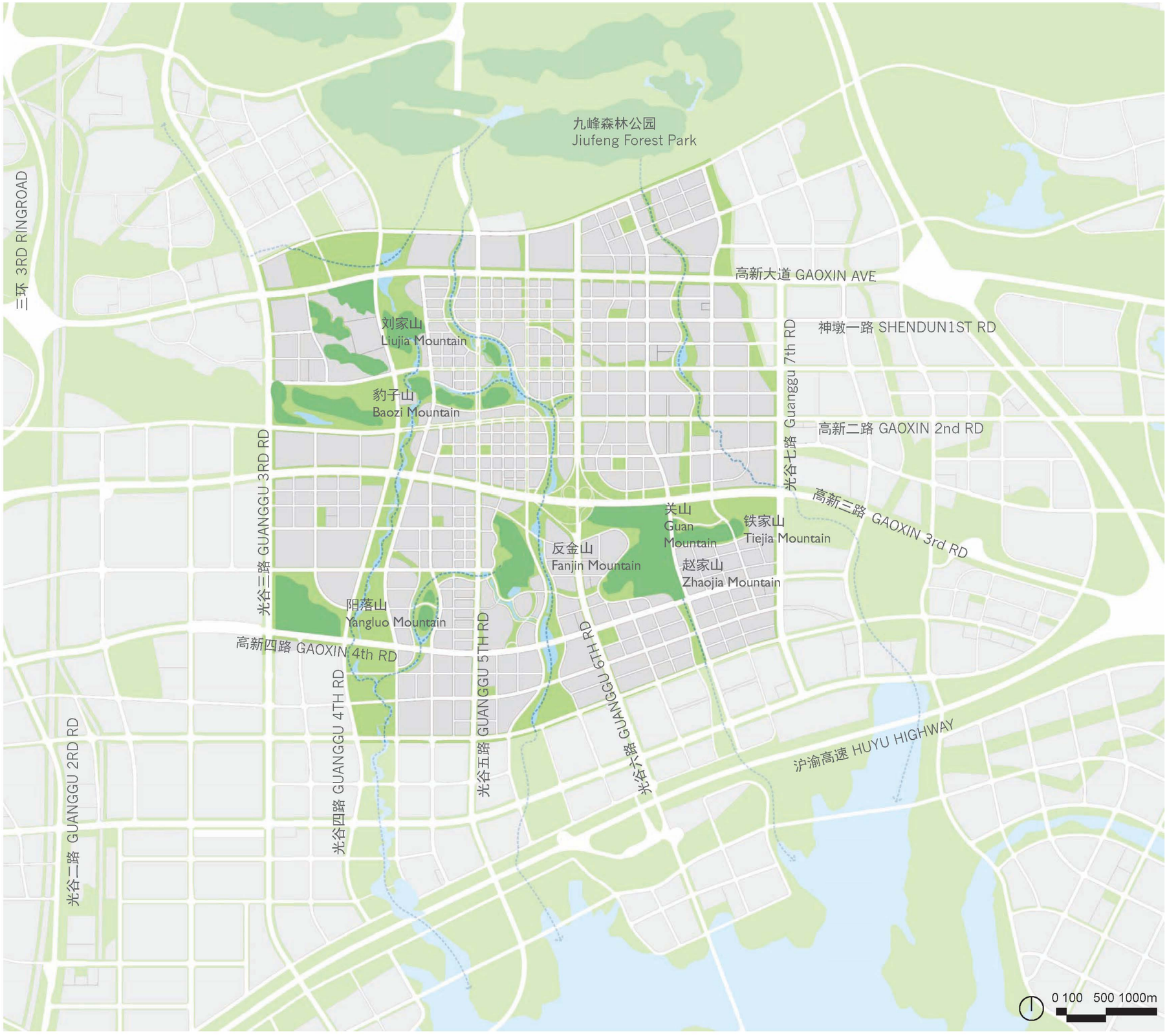


光谷中心区总体规划框架保存了场地珍贵的水体元素，在设计中结合了自然元素，联系了当地的生态系统。把重塑可持续发展且具有活力的的基本目标，通过重新恢复以及重新构建城市绿化网络以赋予城市中心的活力 。

Wuhan is a city of water. Engaging nature into the design of the new city center has required an understanding of the ecology and systems embedded in the site. Restoring and reconnecting to the greater green and networks of the city, and embracing them into a an active role are fundamental goals in this endeavor of transforming a sustainable and dynamic city center.

中心区保留了四条雨水生态廊道，为恢复湿地和联系生态系统提供了一个绝佳的机会，为规划范围内的更阔用地加强经济和美学价值，提高整体的生活质量。提供增加生态和物种多样性的战略机会、加强生态功能和价值、改善水质、为当地社区提供兼容性的访问和教育机会。

Optics Valley central area open space network preserved four storm water corridors, presents a unique opportunity to restore wetland and connect ecosystem for enhancing economic and aesthetic values and overall quality of life within the master planning area. This chapter outlines the goals, framework, and strategies for increasing habitat and species diversity, enhancing ecological functions and values, improving water quality, and providing compatible access and educational opportunities for the local community.

阶梯式生态湿地
创建一系列湿地长廊或阶梯可改善从排水渠流入南面牛山湖的水体的水质。这些阶梯将种植莎草植物、草席等湿地植物而把微细泥沙沉积物中的有机物质沉淀。根据不同地地理位置和地形标高，这些阶梯的与城市结构紧密结合。在改善水质之外，湿地提供动物觅食和涉禽迁水禽栖息地。人类对这些领域的使用仅限于观望和周边踏访。

STEPPED ECOLOGICAL WETLANDS
A series of wetland benches or steps would be created to improve the quality of water discharged from drainage canals into the Niushan Lake. The steps would be vegetated with sedges, rushes, and other wetland plants to trap fine sediments and organic material. The wetlands would be inundated seasonally by storms flows. In addition to improving water quality, the wetlands would provide foraging habitat for migratory waterfowl and shorebirds. Human use of these areas should be limited to interpretive overlooks and adjacent trails.

生态湿地以及动植物栖息地的保护策略
下面规划导则为光谷中心区提供一个增强本地物种和生态的基本框架。

- 还原生物多样性有利于本地植物，野生动物和鱼，包括濒危和受威胁物种。
- 建立现有山体和水体之间联系，恢复河岸及湿地栖息地，使小型哺乳动物，鸟类运动，鱼类和其他水生物种得到栖息。
- 还原繁殖，觅食和避难候鸟和水禽栖息地，鱼类和其他水生物种。
- 改善水质通过创建湿地来移除泥沙和有机材料。
- 提供公共通道和环境教育，同时保护现有的和重塑的栖息地。

WETLAND AND HABITATS PROTECTION GUIDING PRINCIPLES
The following goals were developed to provide a basic framework for enhancing native habitat and ecology in optics valley central area.

- Restore a diverse mosaic of habitat types to benefit a broad range of native plants, wildlife, and fish, including endangered and threatened species.
- Establish connections between existing and restored hills and water body to enable movement of small mammals, birds, and fish and other aquatic species.
- Restore breeding, foraging, and refuge habitat for migratory birds and waterfowl, and fish and other aquatic species.
- Enhance water quality by creating wetlands to remove sediment and organic materials.
- Provide opportunities for public access and environmental education consistent with protecting existing and restored habitat areas.

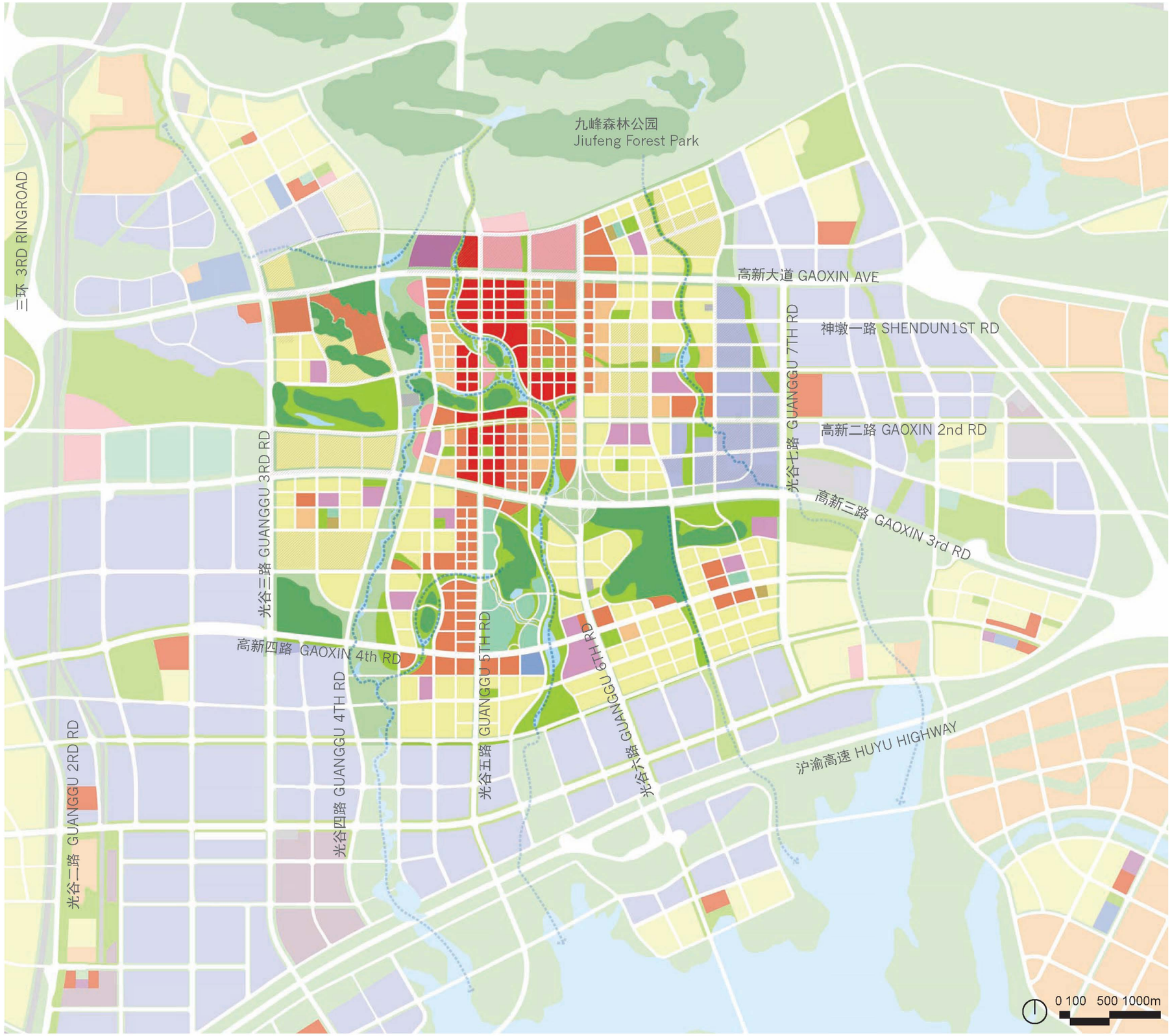
用地性质
Land Use

通过对土地的使用和密度进行战略性布局来打造一个具有前瞻性的多功能城市。光谷中心区平衡生活，工作以及文化娱乐多种功能，营造出一个便于步行的集约型邻里社区，并把各开放空间和交通线路连接起来。

总体城市设计的框架灵活，以适应规划实施过程中出现的无法预测的市场变化。

Land uses and densities are strategically distributed to create the critical mix of a forward-thinking city. Balancing live, work and cultural and recreational functions, the Optics Valley Central Area creates compact, walkable neighborhoods connected to open space and transit.

The urban design's flexible framework ensures adapatability to any unanticipated market changes throughout the implementation period.



- 商务及商业 COMMERCIAL
- 综合功能（公共设施兼住宅）MIXED USE - CR
- 综合功能（住宅兼公共设施）MIXED USE - RC
- 行政 ADMIN
- 文化/展览 CULTURAL/EXHIBITION
- 医院 HOSPITAL
- 教育 EDUCATION
- 工业 INDUSTRY
- 公共设施 PUBLIC FACILITY
- 居住 RESIDENTIAL
- 市政 UTILITY
- 体育 SPORT
- 公园 PARK
- 保育用地 RESERVERD GREEN
- 保护山体 HILL

用地功能原则
用地功能分区规划依据以下原则，为将来的开发创造条件，以达到建立世界级、交通便利、适宜居住、可持续开发的都市环境的总体远景。

LAND USE PRINCIPLES
The land use plan is guided by the following principles that together enable future development to achieve the overall vision of establishing a world-class, transit-oriented, livable and sustainable urban environment.

交通便利的综合功能节点
建立紧凑的综合功能商业节点，离现有或拟建地铁车站仅5分钟的步行路程。交通便利的开发模式将以最大限度利用公共交通，提倡步行与骑自行车，尽量减少日常开车上下班的现象。离车站步行可及各种综合功能功能项目，可在日间各时段促进公共交通。

TRANSIT ORIENTED MIXED-USE NODES
Establish compact nodes of mixed-use commercial uses located within a 5-mintue walking distance of an existing and planned subway station. A transit oriented development pattern will maximize access to public transport, promote walking and bicycle use, and minimize daily vehicular trips to work. A mix of uses located in walking distance to transit can also generate transit trips throughout the day.

界定商业中心的层次等级
清晰地界定商业中心的层次等级，如此可吸引并支持丰富多样以及辅助性的经济活动。商业中心可通过加强商业多元化的功能来凸显其特色和识别性。

HIERARCHY OF COMMERCIAL CENTERS
Define a clear hierarchy of commercial centers that can attract and support diverse yet complementary economic activities. Commercial centers should include a balance of office, retail, wholesale markets and distribution, creative industries, light industries.

紧凑的居住小区
塑造紧凑的居住小区，包含多样的住房、小区自己的商业、公共配套设施、及开敞的空间。居住小区一般以一项景观元素以作区别，如河流或水道、空地或商业区。小区的中心一般是小区商业或社区用房如学校。

COMPACT RESIDENTIAL NEIGHBORHOODS
Create compact residential neighborhoods that combine a diversity of housing with neighborhood-serving retail, public amenities and open space. Residential neighborhoods are typically defined by a landscape element, such as a river or canal, open space or commercial district. Neighborhoods are typically centered around neighborhood-serving retail or community uses such as a school.

连接的开放空间
开放空间形成相互连接的网络，达到多样娱乐、交通、及居住要求。用地功能分区规划加强了绿色廊道与地块内部小区的连接。这些连接使绿色廊道的价值深入地块内部，为更广阔的区域建立起更鲜明的自然城市的形象。

Connected Open Space Network
Provide an interconnected network of open spaces to meet diverse recreation, transportation, and habitat requirements. The land use plan reinforces connections between the green belts and neighborhoods located internal to the site. These connections draw the value of the open space into the site and provide a stronger natural city center identity for a larger area.

用地布局旨在最大化利用地块可达性以及尽量靠近特色景区。

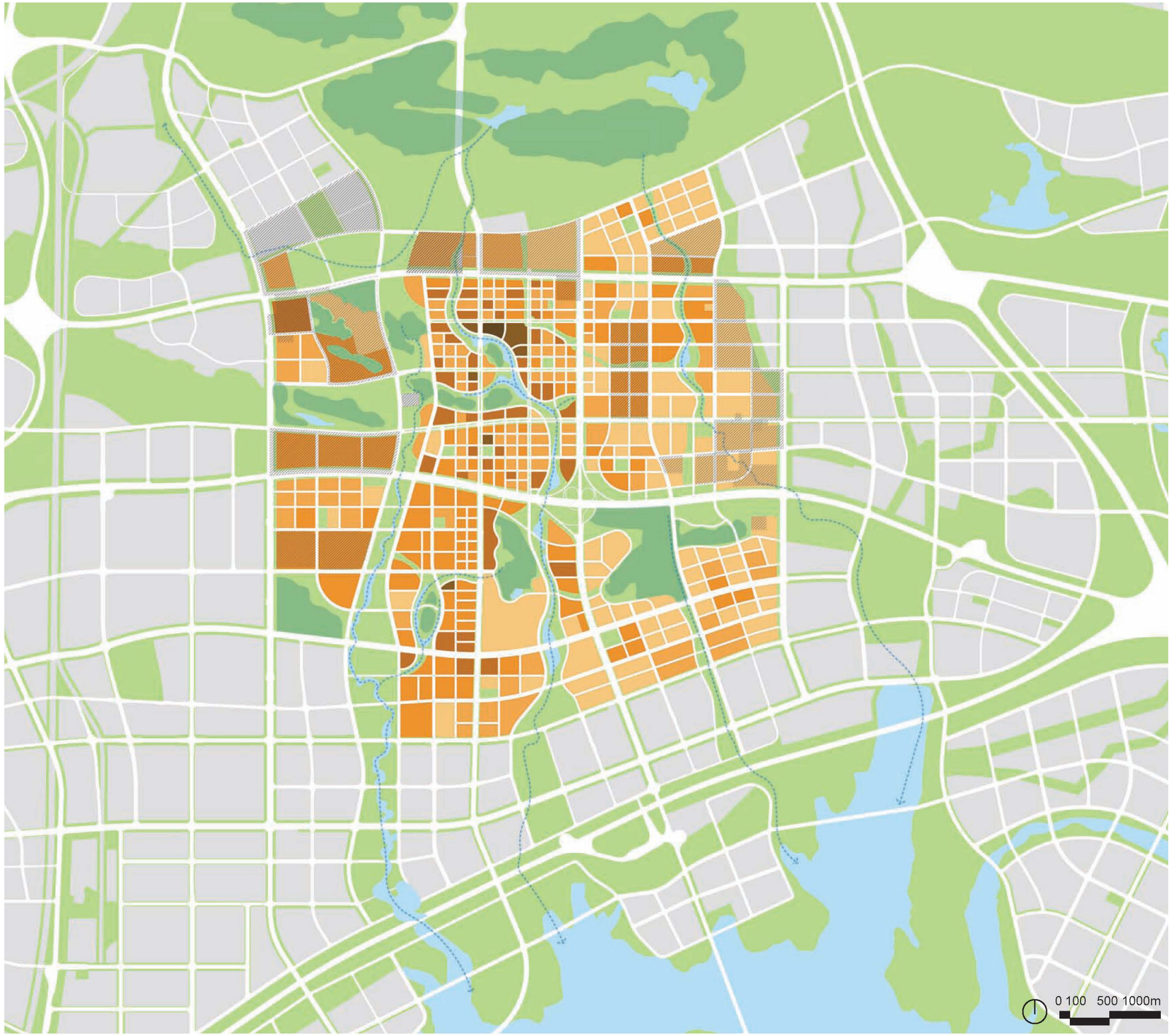
The organization of land uses aims to capitalize the most from accessibility to the site, transportation infrastructure, and proximity to special sites of interest.

总平面
Illustrative Plan

建筑高度
Building Heights

最高的建筑物矗立在光谷中心区核心区中心公园处，同时它也位于地铁线路交汇处。这些建筑在城市中将具有高度可见性，并会成为令人印象深刻的地标。地标塔楼将帮助光谷中心区创造融合山水的赋予特色的商务核心区，以及一个国际化的世界级商业中心。

The tallest buildings are reserved for the Core Area and will be centered on the Guanggu central park and the confluence of subway transit services. These buildings will be highly visible from across the city and as a result will become memorable urban landmarks. Landmark towers will help to define Optics valley as an integrated natural hills and water business district and an international world-class commercial center.



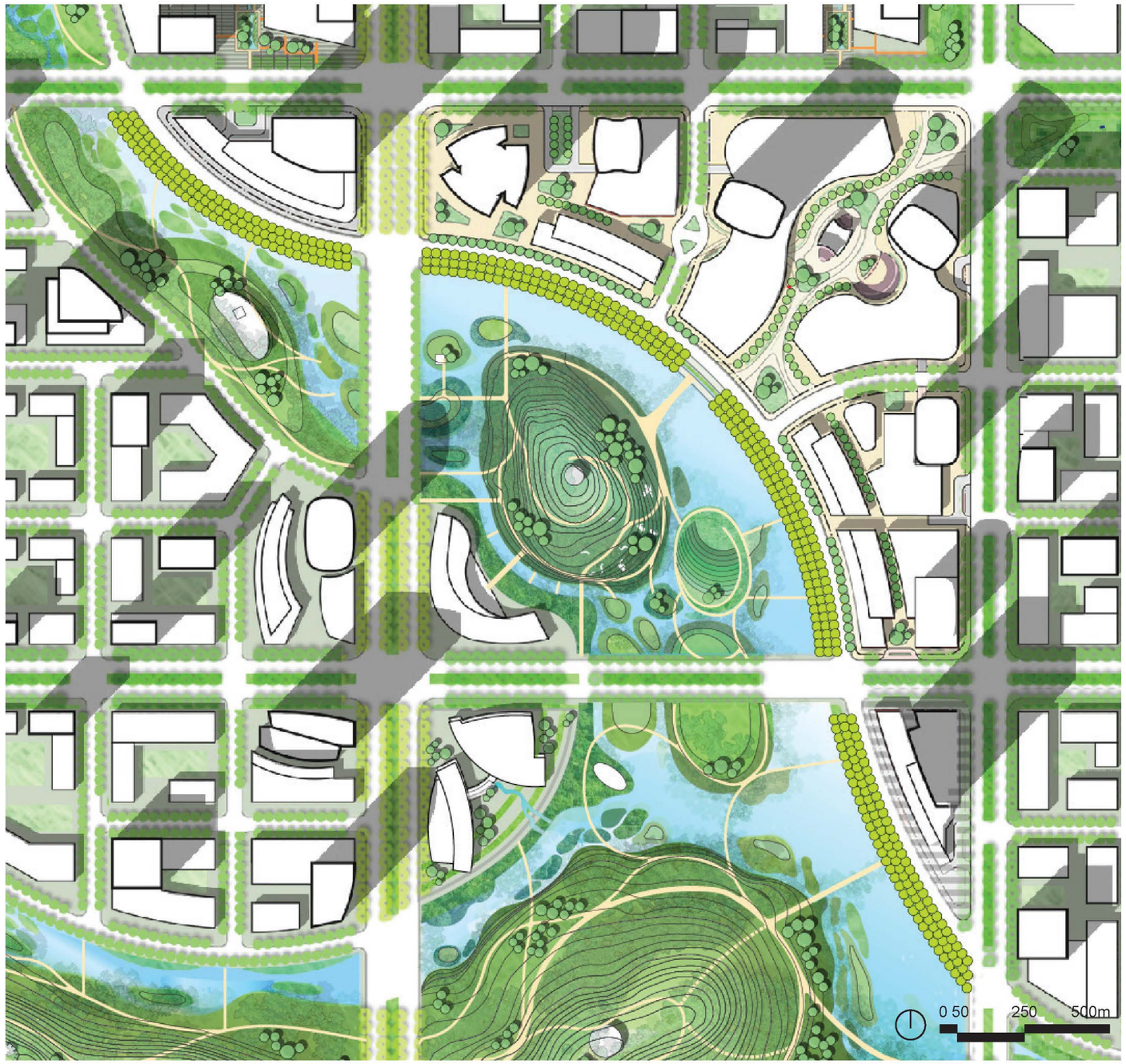
开发强度
Development Density

规划的光谷城市形态框架将会满足重要的可持续设计目标：
与自然元素的融合将帮助保留生态山丘，融合自然水流系统；一个以人为尺度的建筑肌理将创造舒适的步行环境；以公交为导向的开发将支持公交使用，以及高强度地块开发和地标塔楼的建造将最小化整体开发的建筑覆盖率。

The proposed Optics Valley city skyline framework will meet important sustainable design objectives:
The integration of natural features will help to protect the hills and preserve the waterways; a human-scaled building fabric will create comfortable pedestrian environments; transit oriented development will support transit use, and landmark towers will minimize the overall physical footprint of development.

北核心区平面

North Core Area Plan



北核心
North Core

北核心包括东湖地区密度最高的商业商务开发中心。位于中心位置的光谷中心公园，为人们展现了山水的自然美景。城市和自然的完美结合，使其成为世界上独一无二的城市中心。

沿地标性滨水步道组织的地标性塔楼群和文化设施环绕中央公园而建，将成为新城市中的不眠之城，为人们提供各种集会场所。

延伸到核心区外部的公园区与西部生态走廊和北部文化行政中心相连接。

北核心的开发，旨在塑造一道美丽的城市天际线，身在其中的人们可以尽享阳光和美景，成为新兴区域最为引人注目的焦点。

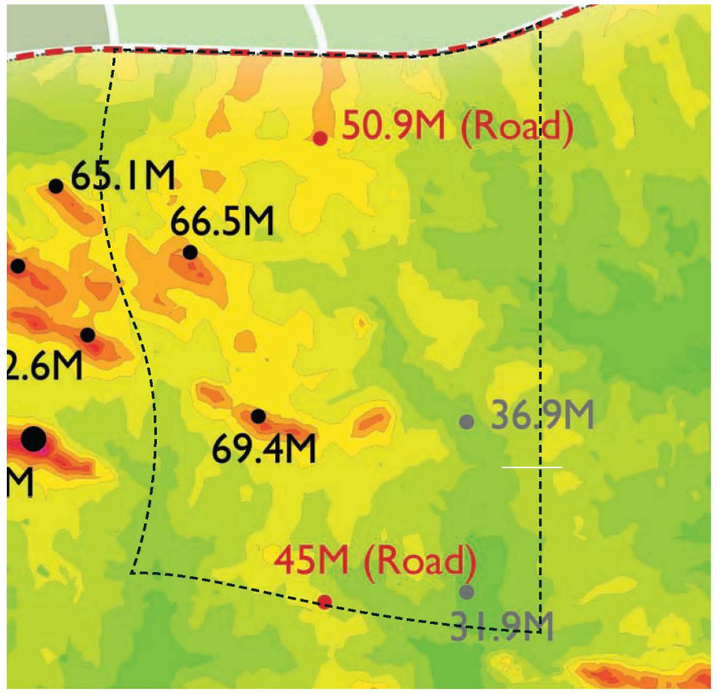
The North Core contains the highest concentration of commercial development in the East Lake District. At the center lies the Guanggu Central Park, showcasing natural hills and streams, integrating city and nature like no other urban center in the world.

A collection of landmark buildings and cultural facilities lines the central park, organized along an iconic waterfront promenade that will become the new city's gathering space both day and night.

The park network extends to the outer reaches of the core, linking surrounding neighorhoods to the western eco-corridor and northern cultural and administration areas.

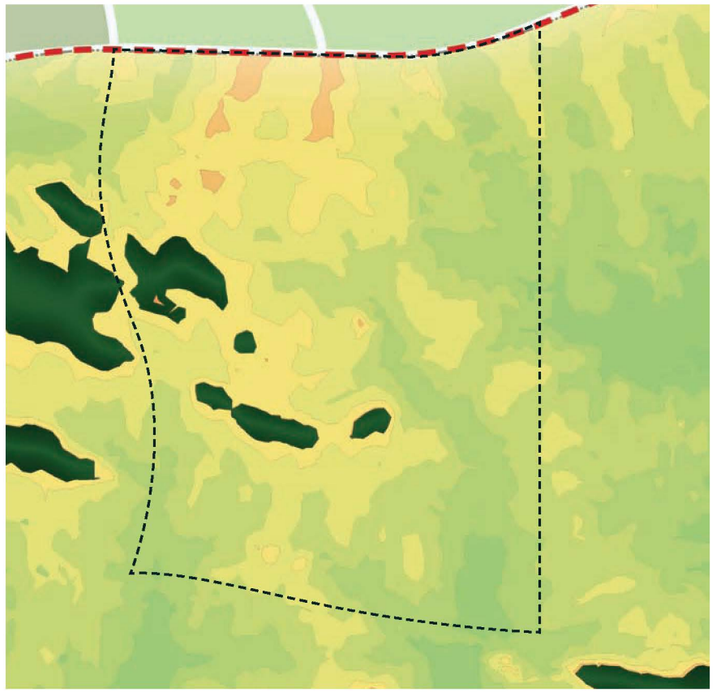
The North Core will develop over time to form a skyline that is designed to facilitate access to sunlight and views while creating a striking statement for the emerging district.

场地分析
Site Analysis



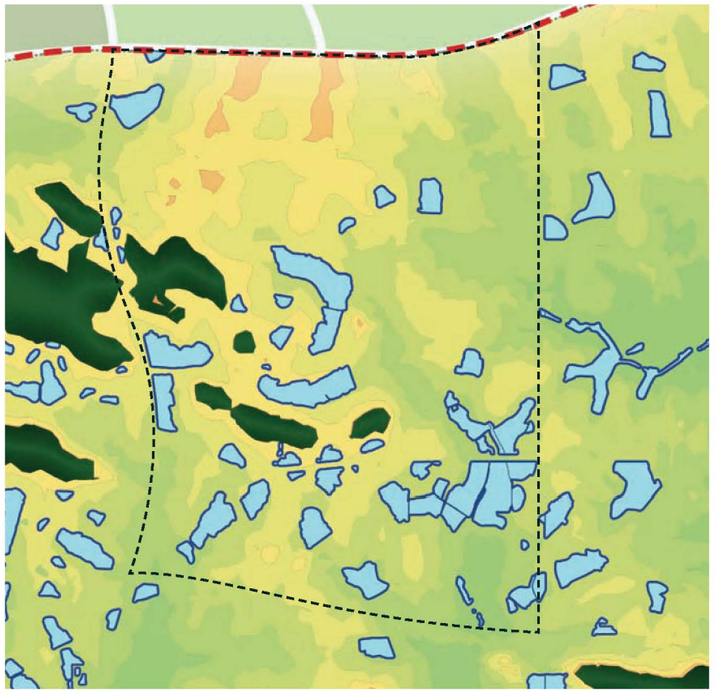
高程 Topography

分析现有场地内的海拔、植被和水文变化。北核心区现有高程范围在31. 9米到69. 4米之间。
The existing site is analyzed for changes in elevation, vegetation and hydrology. The North Core site ranges from 31.9 meters to 69.4 meters.



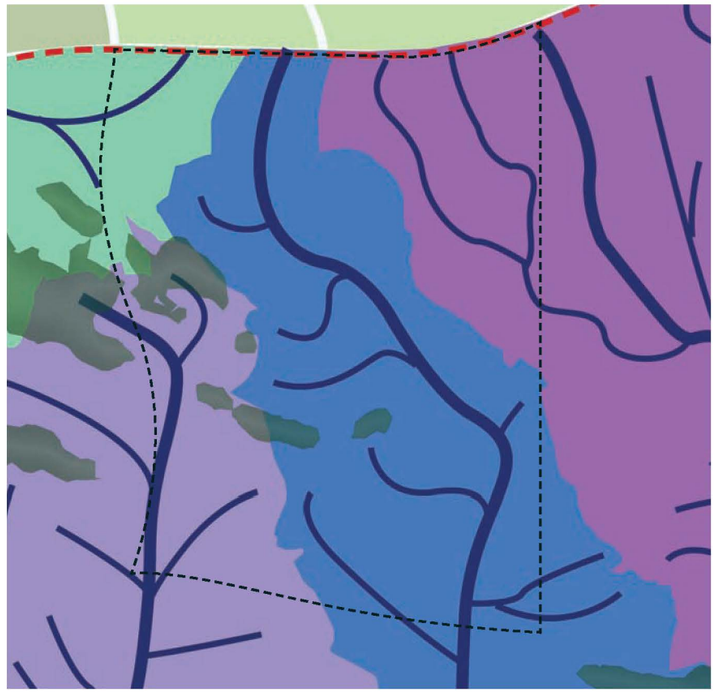
山丘 Hills

保留东湖区的山体以提高光谷中心区的工作和居住价值。这些山丘将成为北核心区景观的视觉焦点。
The East Lake District's hills are preserved to add value and enrich working and living in Optics Valley. The hills will become visual features within the North Core landscape.



水体 Water

保留位于北核心区内大量天然湖泊和农用水塘作为开放空间和水道。
Natural lakes and agricultural ponds exist throughout the North Core site. Many of these ponds are preserved as open space and waterways with the master plan.

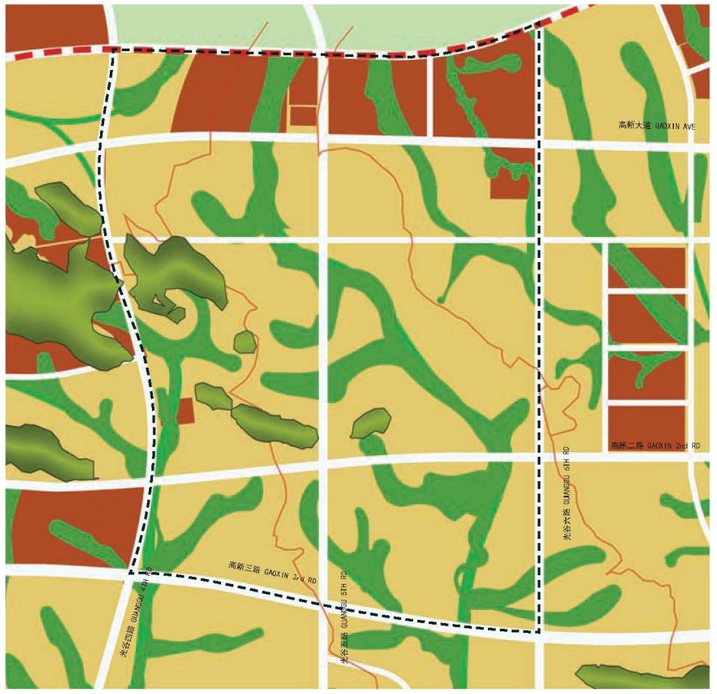


地表径流及流域 Waterways and Watersheds

从山上自然流到湖中的水贯穿光谷中心区。保留和保护位于北核心区内的四个分水岭。
Water flows naturally from the mountain to the lake through Optics Valley Central Area. Four distinct watersheds exist within the North Core area. Watersheds are to be preserved and protected.

确定的道路 Fixed Roads

场地内很多道路已建或正在建造中。此总体规划考虑到场地内已规划的道路并分析了这些人为干预对环境和生态系统造成的影响。
Several major roads have been recently built or are under construction. The master plan accommodates the planned roads and analyzes the effects of these man-made interventions on the environment and ecosystem.



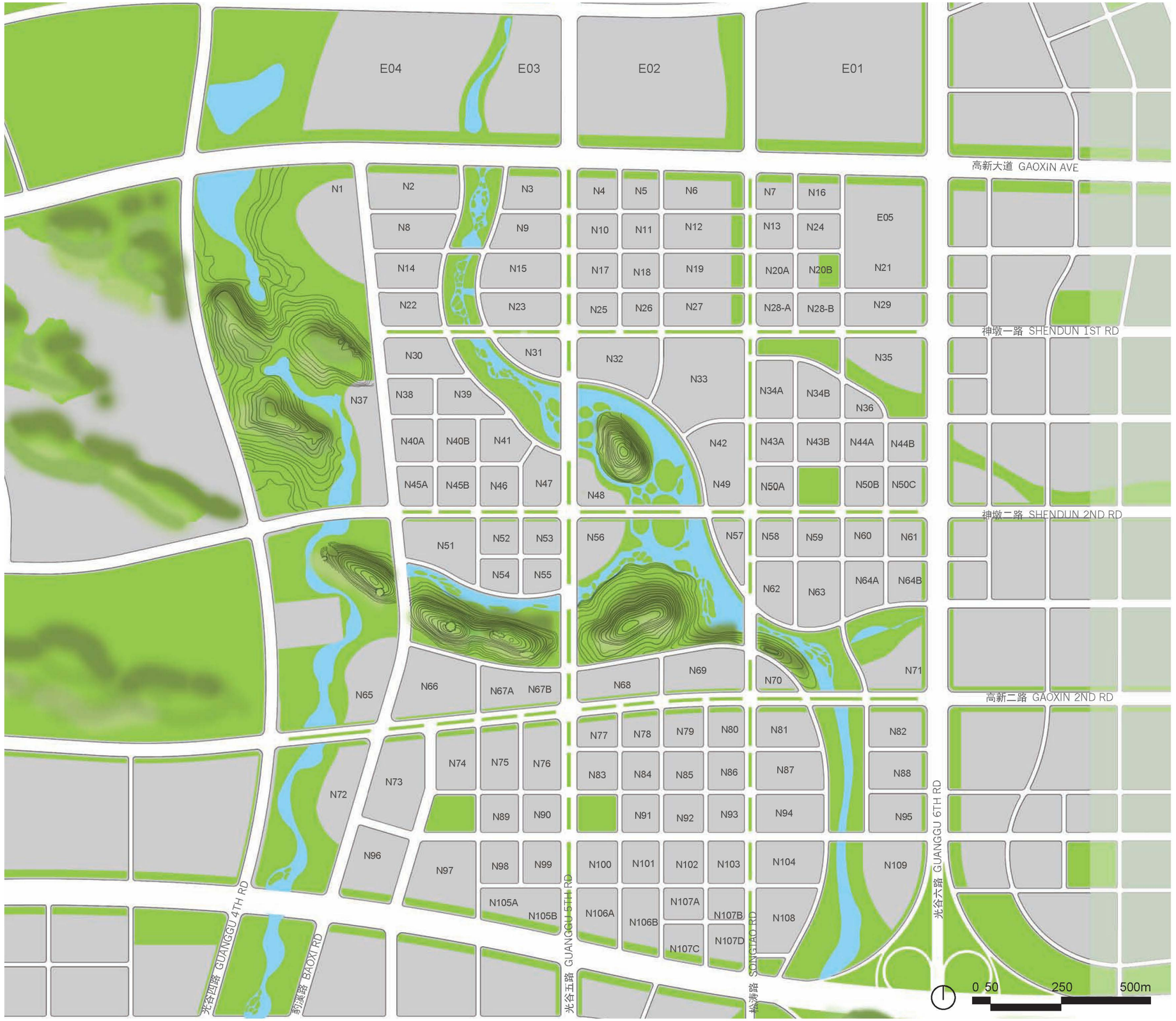
确定的地块 Fixed Parcels

场地内一些地块已经出售或正在设计和建设中。此总体规划考虑了这些已开发地块并分析了其对场地自然系统和将来发展的影响。
Several development parcels have been sold or are under design and construction. The master plan accommodates these developments and analyzes their impact on natural systems and future development.

规划框架
Framework

考虑到现状道路网格及控规要求，框架方案提出满足各尺度街块需求的灵活道路布局。尺度介于150米至100米之间的小型街块，有利于增加开发地块的临街面，鼓励步行，提供建筑间的便捷连接通道。

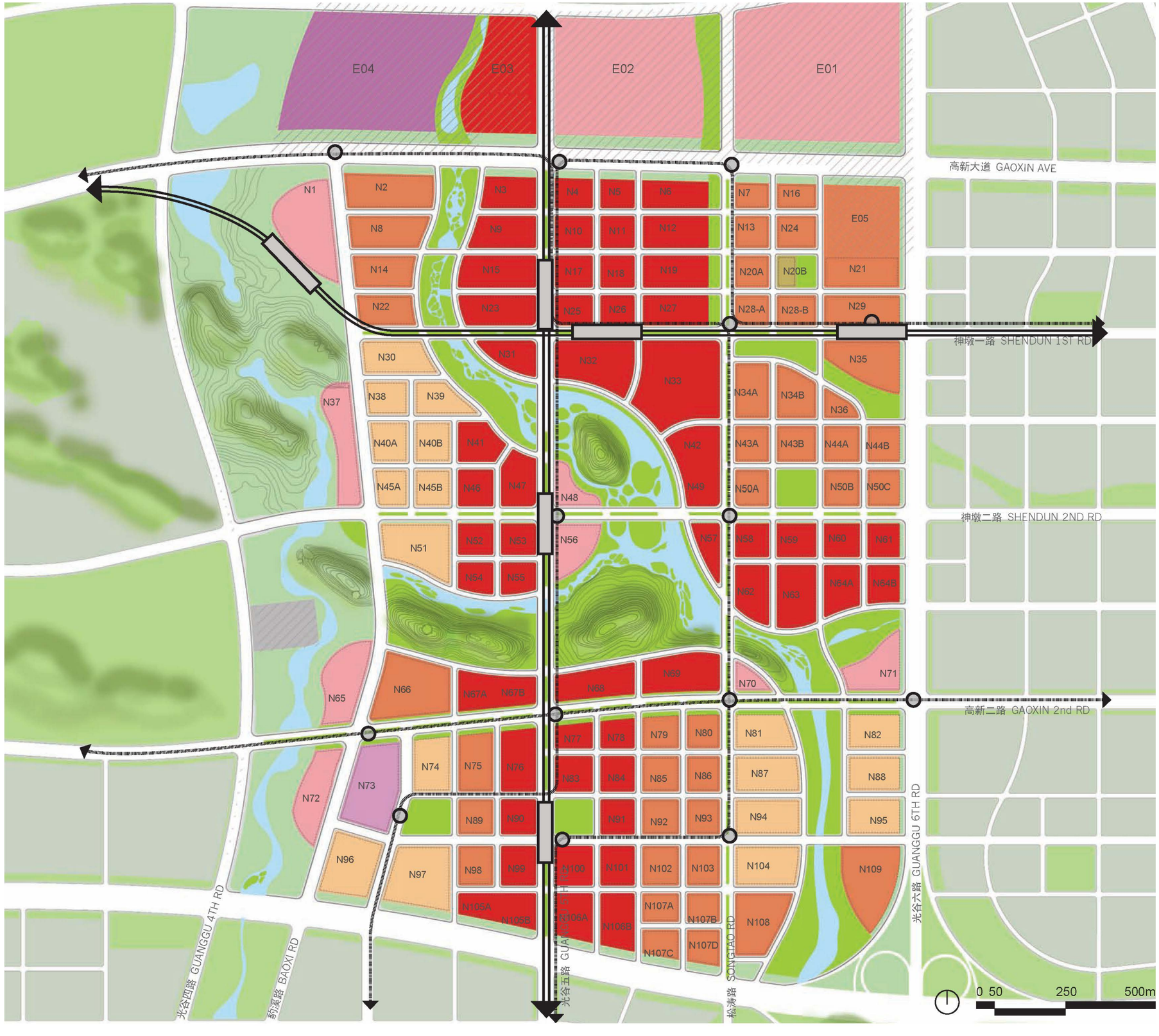
Working with the existing street grid and control plan, the master plan framework creates a flexible system of streets and roads catered to the needs of each block type. Small Blocks (with dimensions ranging between 150m and 100m) promote increased development frontage, walkability and convenient passage between buildings.



用地
Land Use

经济繁荣与城市的宜居性密切相关。完善细化的用地规划是这两方面相辅相成与可持续发展的关键。为了建设宜居、宜商、宜游新城，必须仔细考量用地类型的相互关系。

Economic prosperity and urban livability go hand-in-hand. A robust and fine-grained land use plan is the key to these two factors supporting each other successfully and sustainably. In order to create a place where people aspire to live, do business and travel, each type of land use must be considered carefully in relation to each other type of land use.



北核心区总平面
North Core Illustrative Plan

光谷核心区是位于东湖地区腹地。作为一个高密度、多功能的城市中心，核心区为总部办公、商业/娱乐、酒店和住宅楼的开发提供了充足的空间。

区域内遍布的有轨电车网络和大面积绿化空间，有助于提高土地价值，同时也为区域内的上班族、居民和游客提供了配套设施。

北部核心区集中布置了高密度商业开发和重要的文化设施。

The core area of Optics Valley is the heart and soul of the East Lake District. Conceived as a high-density, mixed-use urban center, the core offers abundant space for the development of headquarter offices, retail/entertainment, hotels, and housing.

The entire area is linked by a citywide tram network and an extensive green network that provides value to surrounding property and amenities to workers, residents and vistors.

The North Core contains the highest concentration of commercial development, as well as important civic and cultural facilities.

城市形态
City Form

城市形态

城市形态提供了一个由自然和建成环境组成的视觉结构。光谷核心区的城市形态结构由多种要素所界定，它们如同相互交织的层，在整体结构和特色中能被感知。这些要素包括九峰山，生态走廊，光谷中心公园，保留山丘，一个结构清晰地街道网格，一个连续的、行人尺度的、并结合了气候考虑因素的建筑肌理，以公交为导向的节点，以及描绘了天际线顶端并成为易识别中心的地标塔楼。

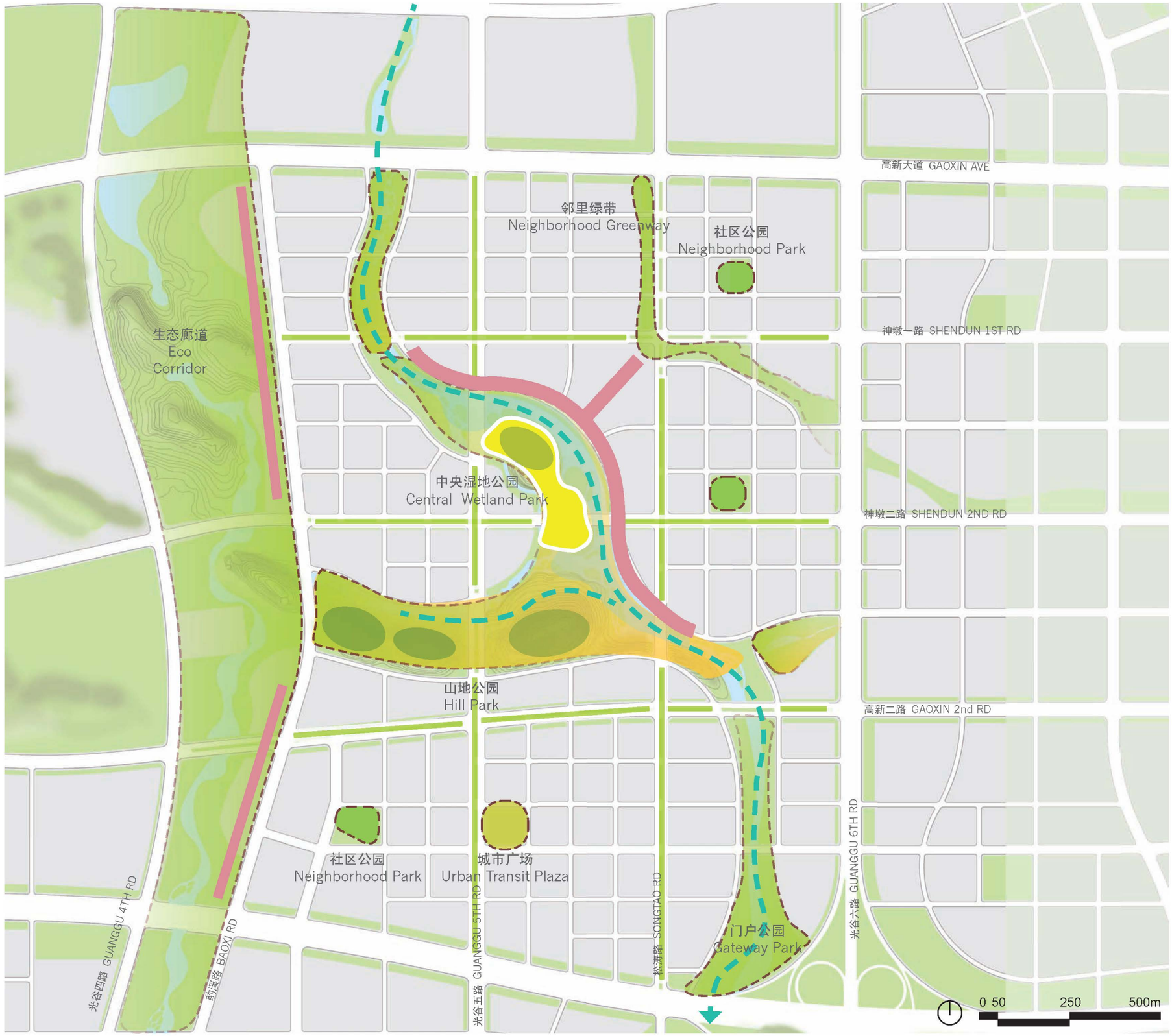
CITY FORM

City form provides a visual framework comprised of the natural and built environment. The Optics Valley city form framework is defined by multiple elements that can be perceived as integrated layers that provide structure and character. These elements include Jiufeng Mountain, eco-corridor, Guanggu central park, preserved hills, a coherent street grid pattern, a continuous fabric of human-scaled buildings with integrated weather protection elements, transit oriented nodes, and landmark towers that punctuate the skyline and provides a recognizable center.

开放空间系统
Open Space

武汉将成为一个以自然环境为导向的城市。该地区所具有的天然分水岭和地形界定了城市的形态并创造出独特的城市特征。从办公塔楼、咖啡店和住宅望去，此规划方案所提供的绿色的自然景致尽收眼底。周边优美的自然环境有助于提高价值，同时还能为人们提供一个独特的绿色生态城市环境。

Wuhan will be a city of nature. Its natural watersheds and topography define its form and create its unique urban character. The master plan offers green views from office towers, cafes and residences. Unprecedented access to nature creates and sustains real estate value and offers uniquely green urban living.



开放空间系统
Open Space

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规划结构示意图
Planning Structure

通过对土地的使用和密度进行战略性布局来打造一个具有前瞻性的多功能城市。北核心区平衡生活，工作以及文化娱乐多种功能，营造出一个便于步行的集约型邻里社区，并把各开放空间和交通线路连接起来。

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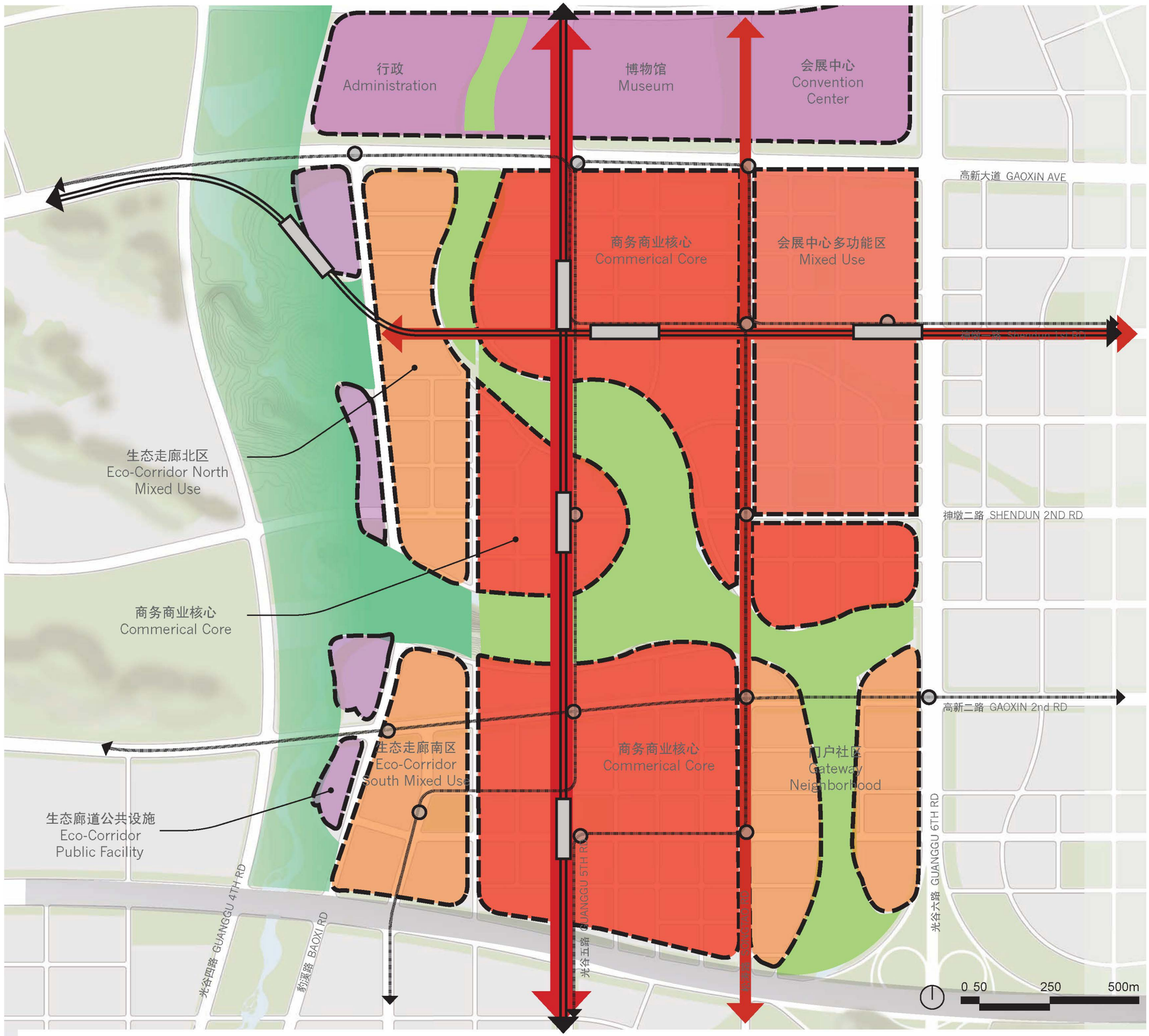


主要商务及商业
PRIMARY COMMERCIAL

混合功能
MIXED- USE

文化/展览
CULTURAL/EXHIBITION

社区
NEIGHBORHOOD

分区
Districts

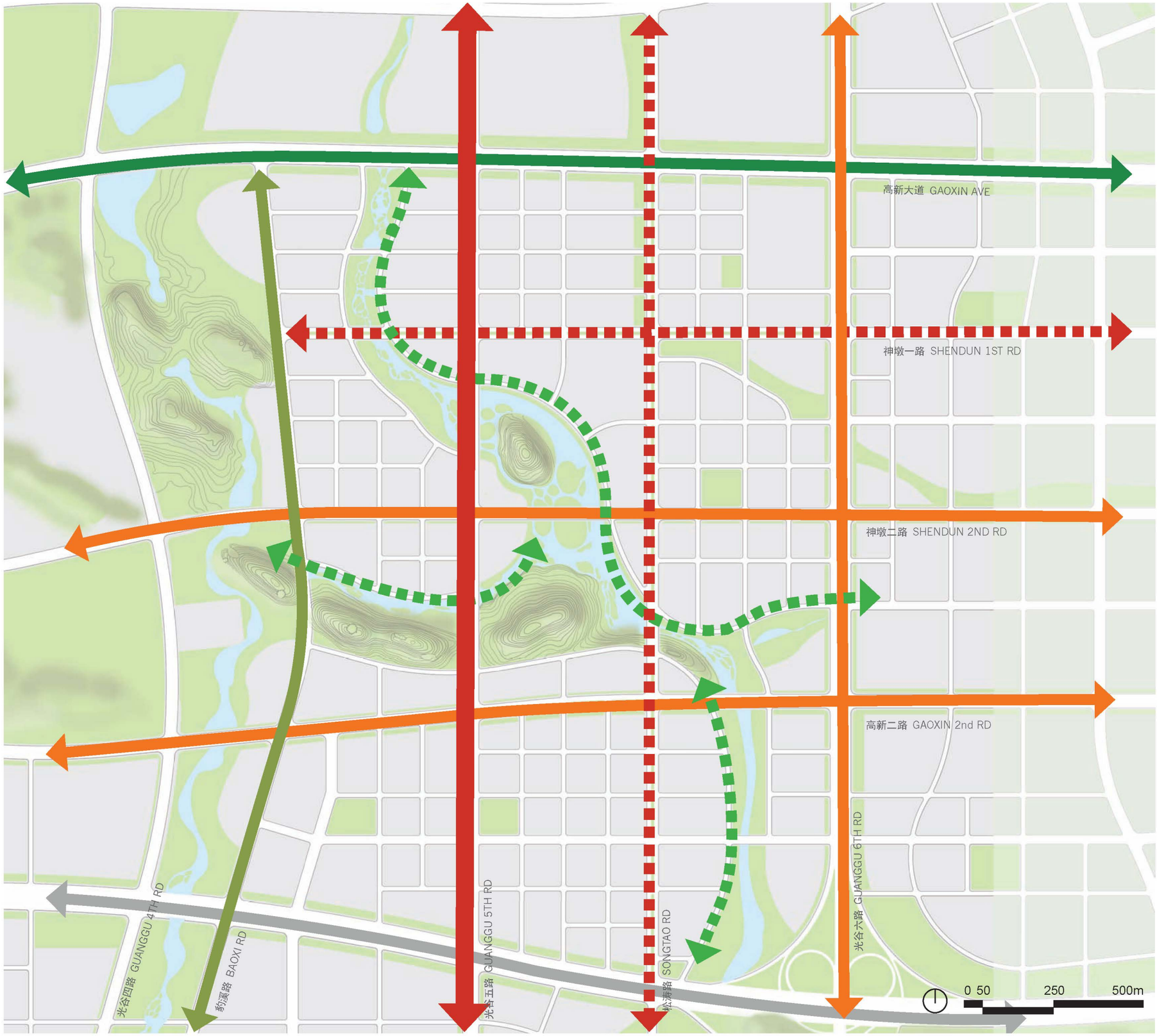
通过对土地的使用和密度进行战略性布局来打造一个具有前瞻性的多功能城市。光谷核心区平衡生活，工作以及文化娱乐多种功能，营造出一个便于步行的集约型邻里社区，并把各开放空间和交通线路连接起来。

Land uses and densities are strategically distributed to create the critical mix of a forward-thinking city. Balancing live, work and cultural and recreational functions, the Optics Valley Central Area creates compact, walkable neighborhoods connected to open space and transit.

规划结构示意图
Planning Structure

具有特色的主要街道组织核心区。光谷五路作为主要的商业林荫大道以及主要的办公性地址道路。松涛路神墩一路提供了优质的零售临街面。公园的边缘提供了一个密集区的休闲体验。高新大道是一个宏伟的市民林荫大道。豹溪路建立了一个重要的文化边界。

Major streets with unique character provide organization for the core area. Guanggu 5th Road acts as a major commercial boulevard and prime office address. Songtao road and Shendun 1st Road offer prime retail street frontage. Park edges provide a recreational experience along the edges of the compact districts. Gaoxin Avenue is a grand civic boulevard, while Baoxi Road establishes a critical cultural edge.

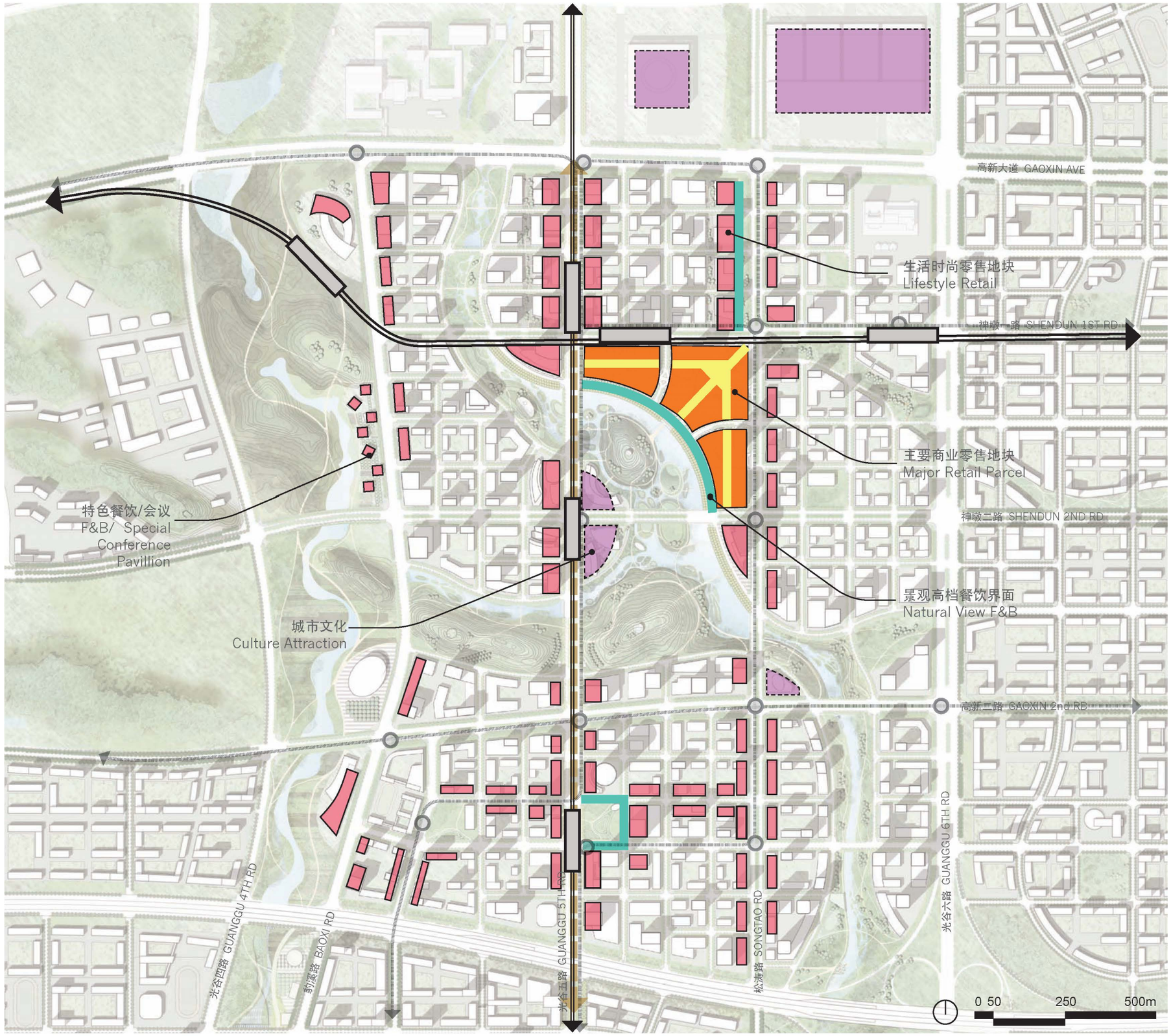



LUECOS
MARK JACKSON
xwatch

地上零售设施
Above Ground Retail

如今的城市从早到晚都充满了活力与生机，光谷中心区将成为人们在中国体验生活方式不可错过的一站。下班后与朋友及同事在各种会所的休闲娱乐活动能够刺激经济的增长。知识经济时代需要同时注重文化与娱乐，以保证高效的工作状态。零售主要布置在沿滨水步道的商业中心内、公共交通站点以及主要的商业零售街。

Today's cities on the move are alive with energy from early morning until late into the night, and Optics Valley Central Area will be one of China's must-experience lifestyle centers. The next economy is created among friends at clubs after work, as well as with colleagues at work. The knowledge economy requires culture and entertainment that keeps brains in high gear. Retail is focused at a major retail center along the waterfront promenade and at transit stations and along major retail and commercial streets.



建筑体量功能
Building Program

核心区办公空间充足，以吸引世界级企业入驻，并把住房安置在办公，商业以及社区配套设施周围。

总体城市设计的框架灵活，以适应规划实施过程中出现的无法预测的市场变化。

Sufficient office space is provided to attract world class companies to settle in the emerging district, while housing is integrated throughout the Central Area in close proximity to offices, shopping and community facilities..

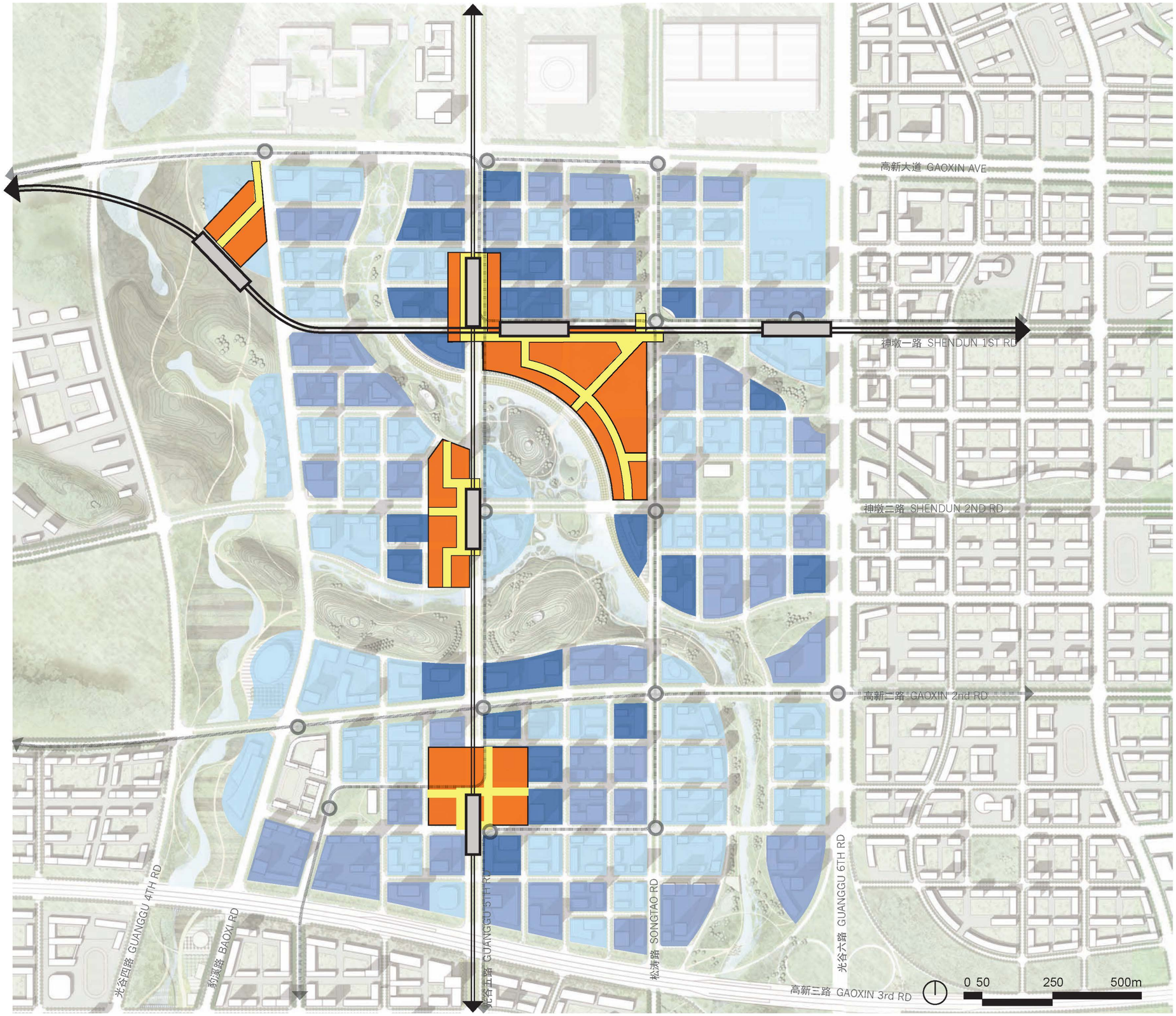
The urban design's flexible framework ensures adapatability to any unanticipated market changes throughout the implementation period.

- 商业（包括办公，金融，酒店，零售）
  COMMERCIAL (INCLUDING OFFICE, FINANCE, HOTEL, RETAIL)
- 居住
  RESIDENTIAL
- 混合多功能
  MIXED USE
- 文化，公共设施
  CULTURE, PUBLIC USES
- 教育科研
  EDUCATION

地下空间利用
Underground Uses

地下空间的行人通行可以延伸，将交通体系与沿光谷五路和神墩一路的主要目的地和辅助服务设施连接。额外的零售功能为地下空间带来了活力。

Pedestrian access extends below ground connecting transit to major destinations and amenities along Guanggu 5th Road and Shendun 1st Road. Additional retail activates the below-ground spaces.



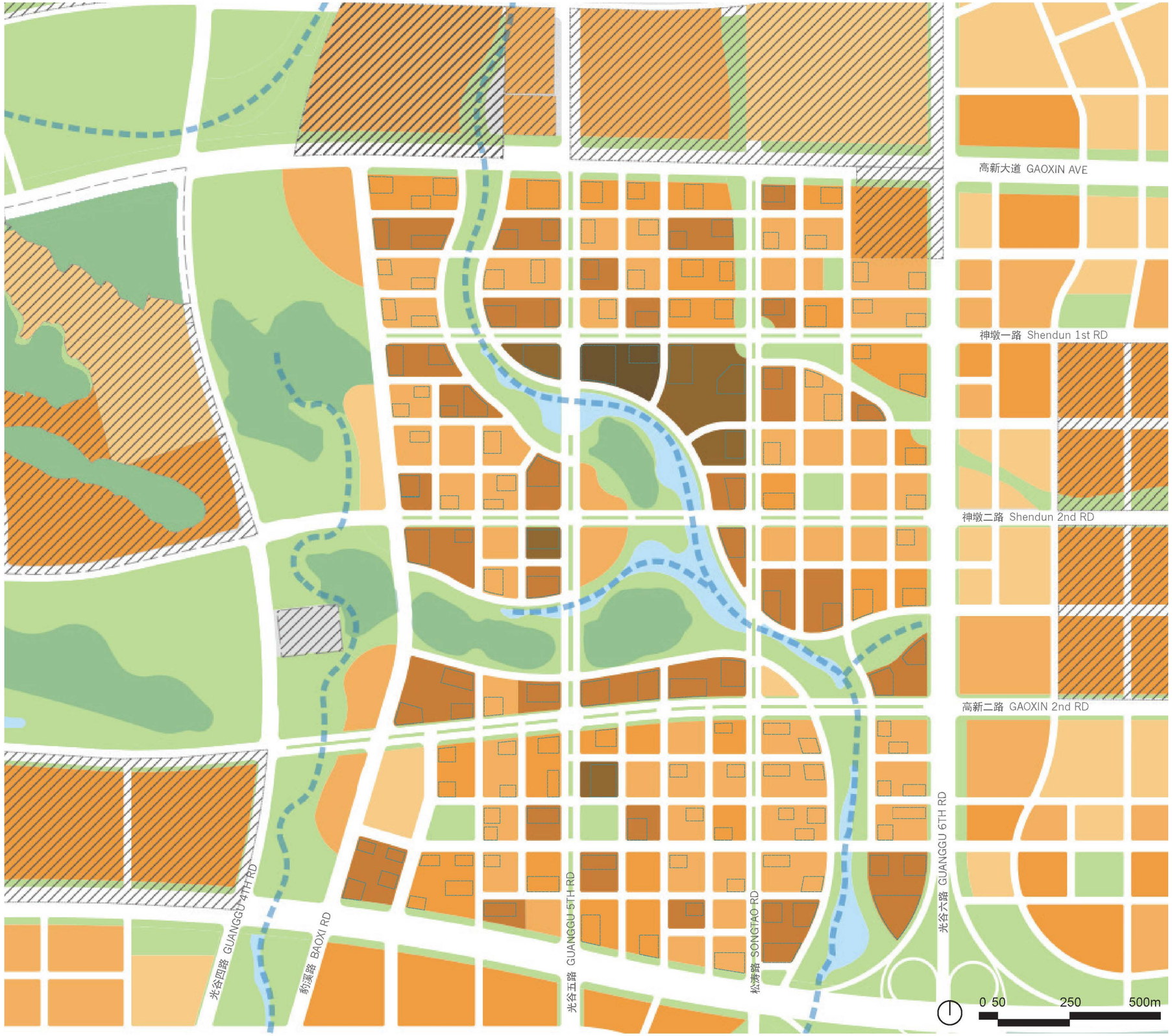
建筑高度
Building Heights

沿地标性滨水步道组织的地标性群楼和文化设施环中央公园而建，将成为新城市中的不眠之城，为人们提供各种集会场所。

北核心的开发，旨在塑造一道美丽的城市天际线，身在其中的人们可以尽享阳光和美景，成为新兴区域最为引人注目的焦点。

A collection of landmark buildings and cultural facilities lines the central park, organized along an iconic waterfront promenade that will become the new city's gathering space both day and night.

The North Core will develop over time to form a skyline that is designed to facilitate access to sunlight and views while creating a striking statement for the emerging district.



建筑体量
Building Massing

规划建议的天际线对于光谷中心区地区的整体形象和转变有着重要的作用。意在创造一个能够代表很好的建筑比例和合理组织的形态，具有足够的塔楼间距、高度差异和建筑特色

The proposed skyline plays an important role in the overall image and transformation of Optics valley. It is intended to represent a well proportioned and understandable organization of buildings with adequate tower separation, height differential, and architectural character.

城市地标
CiITY MAJOR ICONIC TOWER

城市次级地标
SECONDARY ICONIC TOWER

城市背景塔楼
BACKGROUND TOWERS

文化公共标志性建筑
LOW ICONic buildings

用地
Land Use

核心区办公空间充足，以吸引世界级企业入驻，并把住房安置在办公，商业以及社区配套设施周围。

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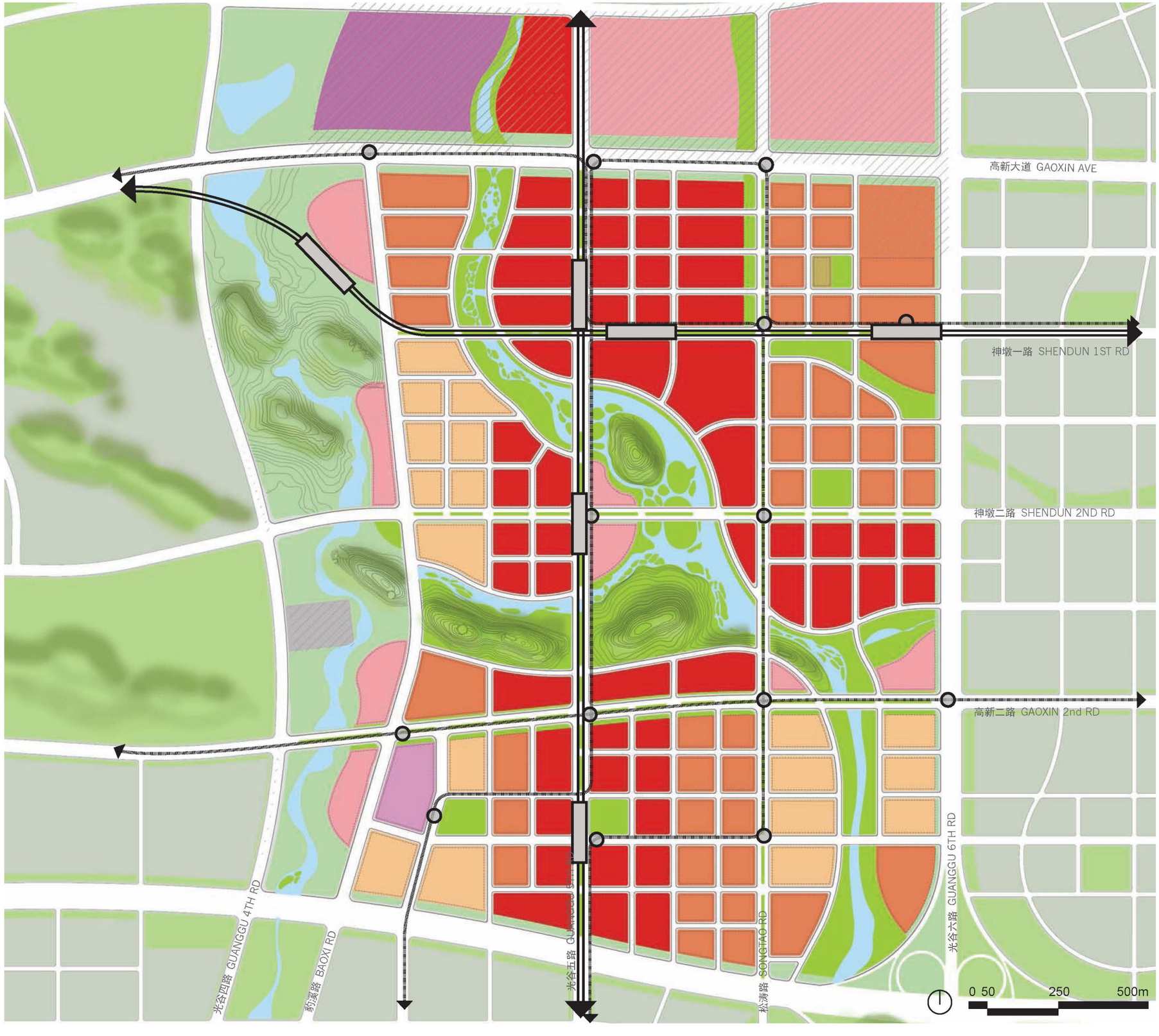
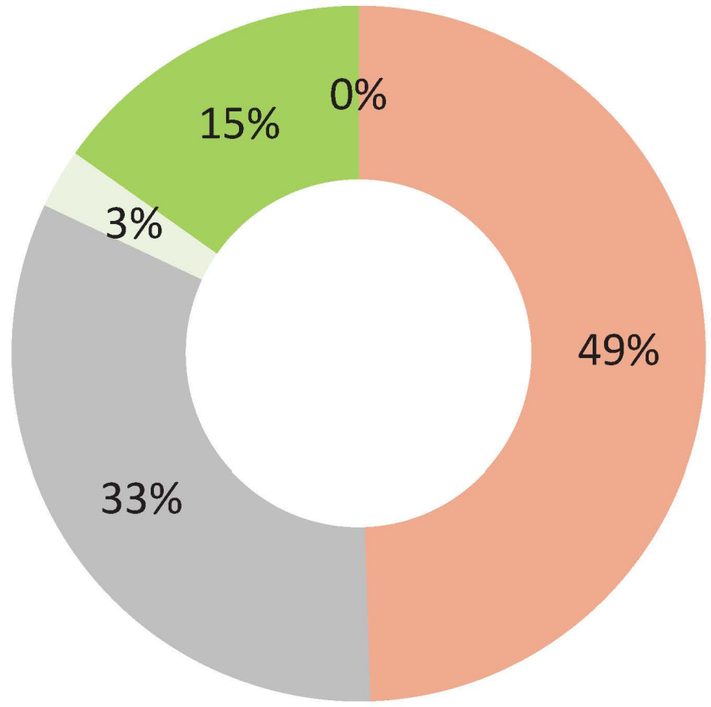


功能配置
Program

		核心区3. 2sqkm Core Area			
用地编码 Land Code	用地功能 Land use	用地面积 Land area	用地比例 Land Ratio	容积率 FAR	建筑面积 GFA
B	商务 Commercial	643,328		5.7	3,672,720
	商业混合功能 Commerial Mixed use	513,286		3.8	1,963,015
A	行政 Administration	0			
	文化/展览/公共设施Cultural/Exhibition/Publi	28,000		2.5	70,000
	医院 Hospital	0			
	体育 Sport	0			
	教育 Education	29,103		0.7	20,372
R	居住 Residential	265,508		2.7	726,442
M	工业 Industry				
U	市政 Utility				
	可开发用地 Developable Land Area	1,479,225	46%	4.4	6,452,549
S	道路 Road	1,180,375	36%		
	道路绿化退界Road Green Setback	89,000	3%		
G	绿地公园 Open space	486,700	15%		
	保育用地 Preserved Green	0	0%		
	Total Green Area	575,700	18%		
	总计 **Total**	**3,235,300**			



可开发用地
Developable Land Area

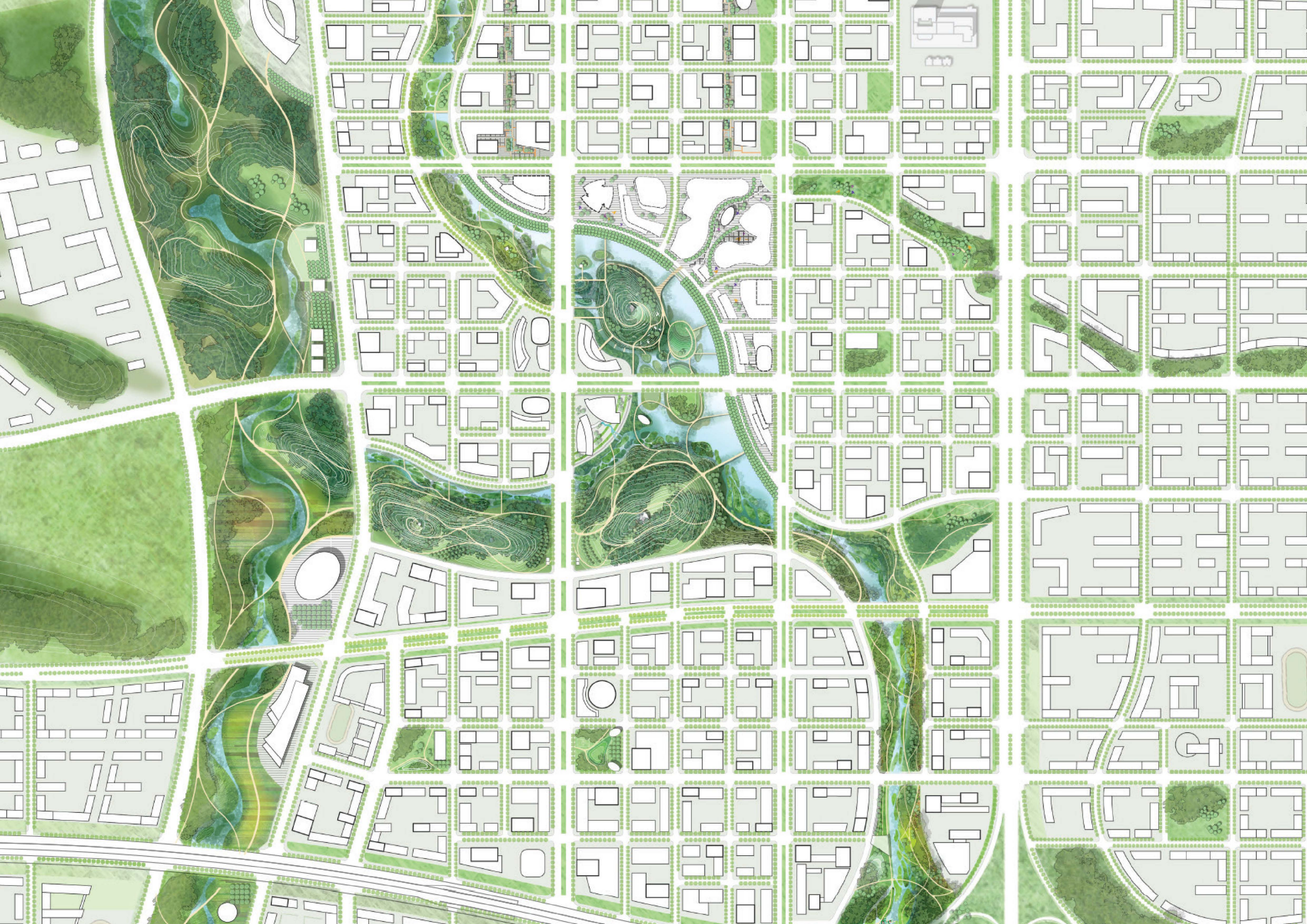
道路
Road

绿地公园
Open Space

保育用地
Preserved Green

道路绿化退界
Road Green Setback

开放空间
Open Space



自然之城
City of Nature

The new city is organized by the existing natural systems and features that also provide its key amenities. These features include the varied topography and hills that define uplands, many of them covered with beautiful, lush forests. Many of these hills have been preserved to create a strong backbone to the open space system. The form of the topography directs the flow of rain water toward its end point at the lake. With the same idea, many of the existing streams and drainage ways have also been preserved and enhanced to create a dynamic water system capable of conveying and purifying large volumes of water and also storing it for visual, recreational, and irrigation uses throughout the open space system. The form of the open space is then completely structured in a topographic and riverine network that is a new approach in linking the citizens of the new city to each other and to the nature around them.

光谷中心区利用现状自然系统与地形特点组织空间形态及主要配套设施布局。大量有着优美葱郁森林景观的山体高地与多样化的地形构成地区特色。设计中保留大部分山体形成开放空间系统，结合地形设计引导雨水径流顺势汇流入湖。同时，利用并改造大部分现状河道及排水系统，建立大规模雨水传输与净化的动态水系，并通过开放空间系统存储雨水，用于景观、娱乐及灌溉功能。开放空间的形态设计与地形及滨水系统达到完美结合，成为实现中心区居民相互交流与亲近自然的新方式。

北核心区
North Core

The North Core is home to the essential defining open space elements and amenities of the park system. The Crescent is a powerful urban arc at the central hub of the city that creates a broad, tree shaded esplanade for activity overlooking a curving series of stepped ponds with wetlands and forested hills beyond. Weirs defining the water levels also provide locations to cross the water at each “water step”. The hills are threaded with trails and pathways leading to overlook belvederes, elevated pavilions and tea houses.

北核心区是定义开放空间元素与公园配套设施的重要区域。新月形区域是核心区的标志性城市弧线，其内设置宽阔林荫步道，可眺望水体、湿地以及远处山林的错落景致。挡水围堰通过景观设计可打造为过河的水上步道。山麓人行小径引领人至观景台、山坡凉亭及茶馆。

北核心区
North Core Plan

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交织光纤
Braiding Fiber Strategy

活动路线
Program Activity Trails

利用天然地形与河流走势，建立开放空间系统。山体为高地，河流成低点。两者之间较为平坦的地段设置了多样尺度的山麓与山谷公园，功能各异。有些侧重于综合性与娱乐休闲，有些则更多体现农业或生态，例如草坪与湿地等。相互交织的河道的形态设计与水系流向相呼应，并与道路和功能相结合，布局灵活，形态自由，在蜿蜒山间流动，变换呈现为溪流和水塘等不同形态。

The order of the natural system of topography and water flows leads to means of developing the open space system. The hills establish strong anchoring high points and the water flows establish the low points. In between lie flat valleys of varying widths for park use – hills and valleys. Some of the uses are highly programmed and recreational and some are more agricultural or ecological in nature like meadows and wetlands. The essential geometry in use in “riverine”, meaning dictated or informed by water flows – braided flows. The “braiding” of paths and uses allows flexibility and resonates with the fluid geometries of meandering streams and ponds as they undulate between the hills.

联通性 Connectivity

- 城市开放空间 Urban Open Space
- 滨水大道 Riverfront Promenade
- 开放空间联系 Open Space Connection
- 文化走廊 Cultural Trail

场地调研
Site Conditions

设计尊重并合理开发场地现有景观资源：在保留现有水道，山地，农田等标志性元素的同时提升场地地位，最大化开发场地潜在景观资源，充分展示武汉特色风貌。

In an effort to utilize the vernacular landscape and existing site conditions, from waterways, mountains, to farming and culture, the landscape reflects the many networks and systems in Wuhan. The landscape enhances the existing underlying network for fibers and brings these elements to the forefront.







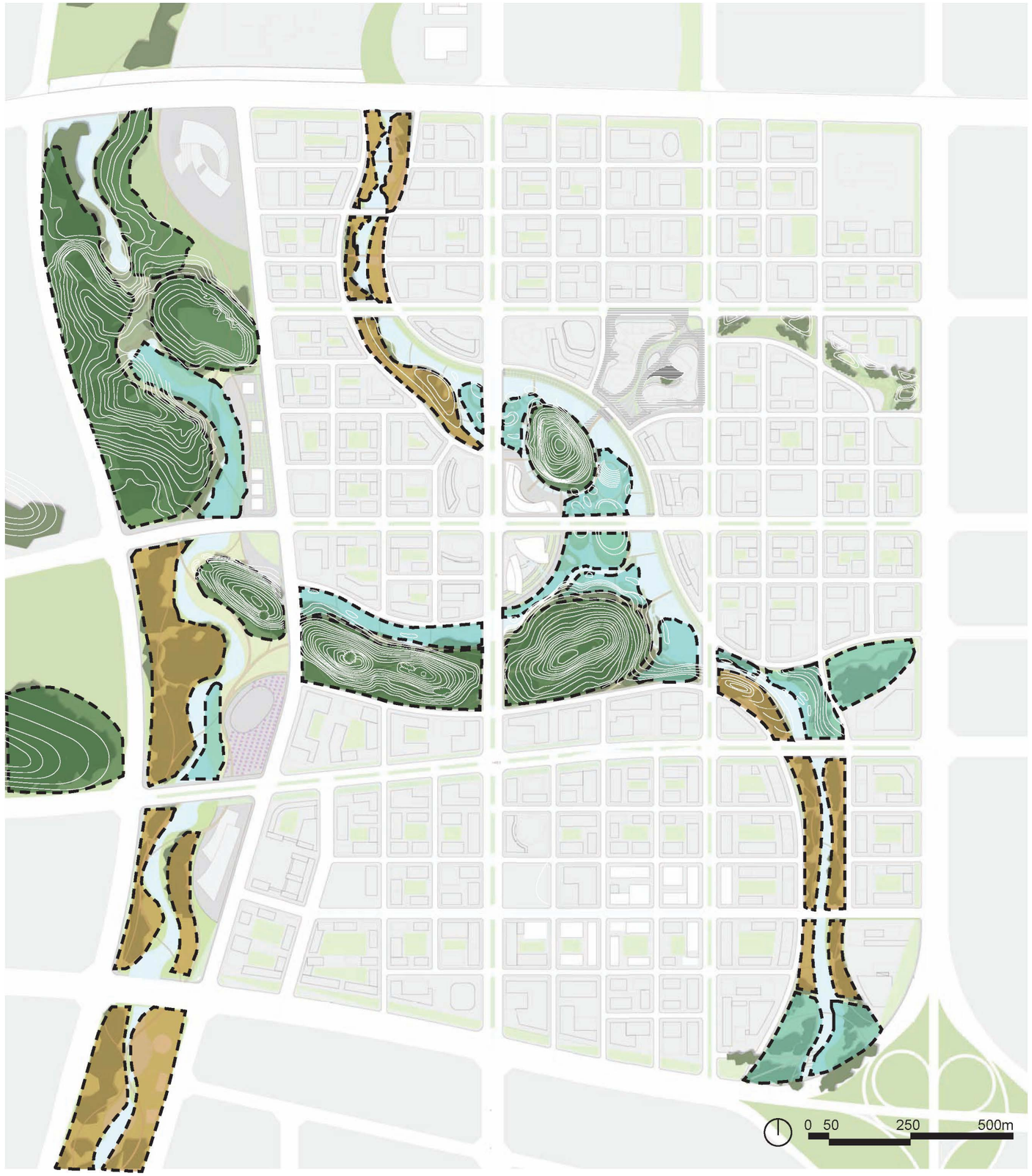





场地地形
Site Topography

起伏的地貌构成场地内显著景观特征，亦成为景观设计师的首要机遇和挑战。设计在保留现有地形、地貌特征的基础上实施功能性、空间性改造。新的道路、园路系统，观景结点的设计大大提升并丰富了人们的观景体验。设计引入多种乡土植物搭配现有现有自然林木。水道和湿地均根据现有地形、地势合理安排，以最小化场地改造。

The varied Site Topography of Wuhan is somthing that should be embraced and given the forefront of design. The existing topography will be kept, enhanced with minimal yet poignant design qualities. New paths and overlooks will create access to different views of the new landscape. Native forests will be supplemented with new growth trees and planting. Wetlands and waterways will be developed according to existing topography to maximize water collection and minimize new grading.



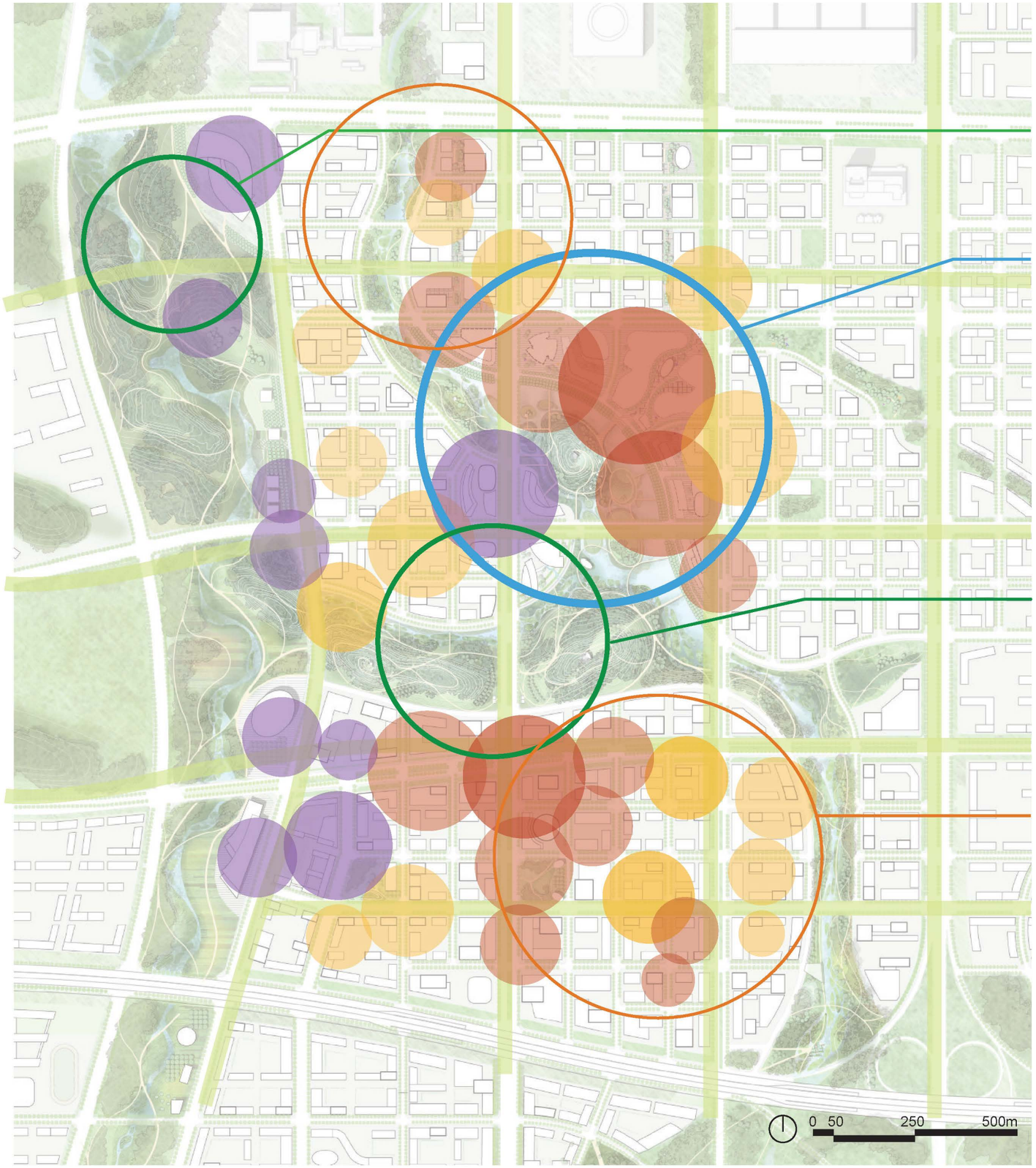
现有山丘 Existing Mountains

新增树林 New Forested Landscape

人工岛和湿地 Islands and Wetlands

核心区水岸规划
Downtown Waterfront

北核心功能
North Core Urban Land Use



生态走廊	**Ecology Corridor**
文化建筑	Cultural Buildings and Trail
示范农业	Demonstration Farms
生态村	EcoVillages

光谷中心公园商业区	**Guanggu Central Park and Commercial District**
地标性商业建筑	Signature Commercial Towers
核心区步行大道	Downtown Promenade
中央广场	Central Plaza
餐饮	Restaurant and Cafes
大型购物中心	Large Scale Retail
娱乐休闲中心	Entertainment Centers
剧场	Amphitheater
主要文化建筑	Prominent Cultural Buildings

城市山地公园	**Urban Mountain Park**
登山路	Hiking Trails
城市观景台	City Overlook
山麓餐饮、购物	Mountainside Cafe and Retail
季节性溪流	Seasonal Stream

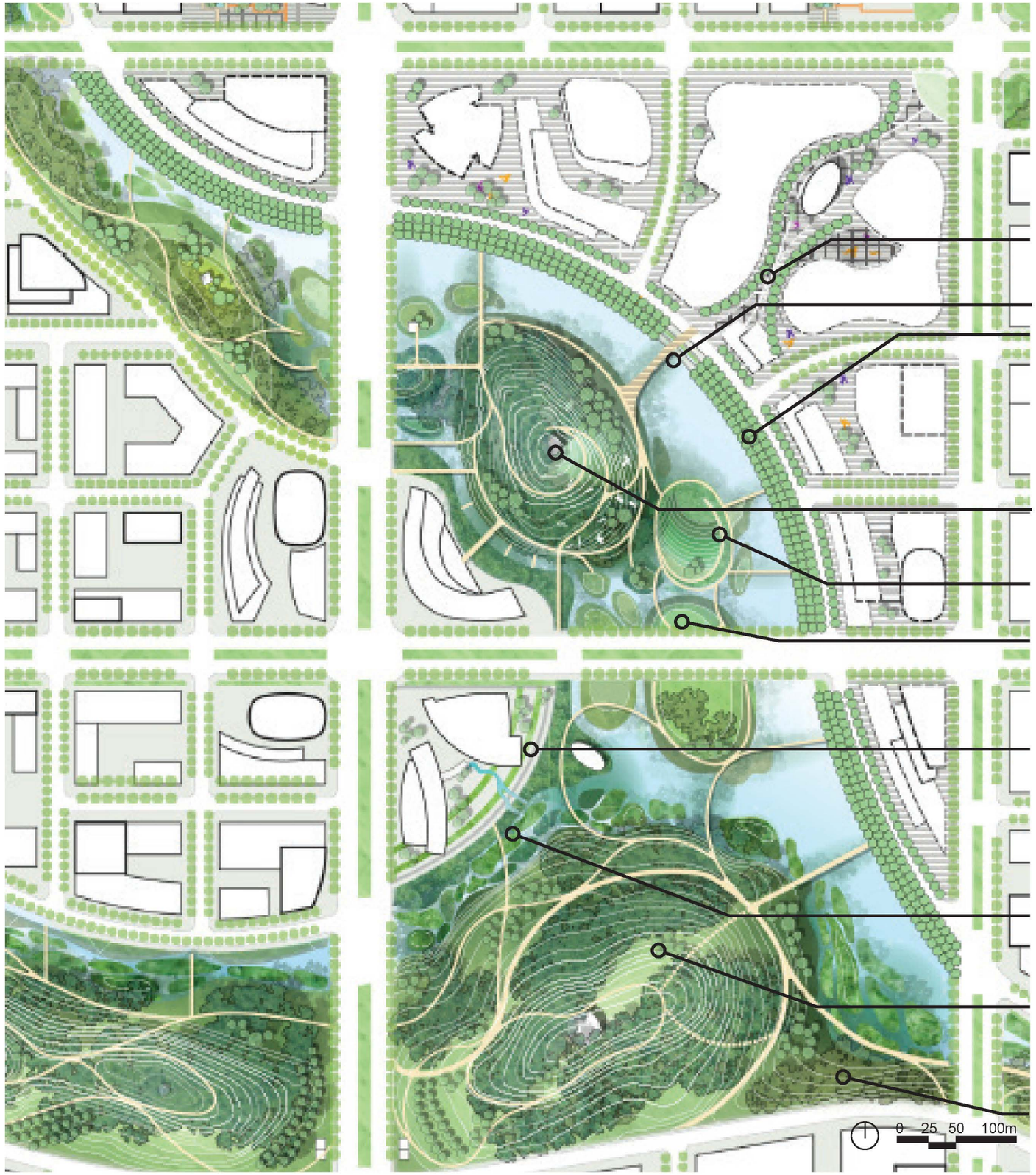
多功能社区	**Mixed Use Neighborhood**
餐馆，商铺	Local Cafes and Shops
小庭院	Small Courtyards
运动场，学校	Playgrounds and Schools
集市	Farmers Market
节日庆典	Festival

商业区 Commercial Area

文化区 Cultural Zone

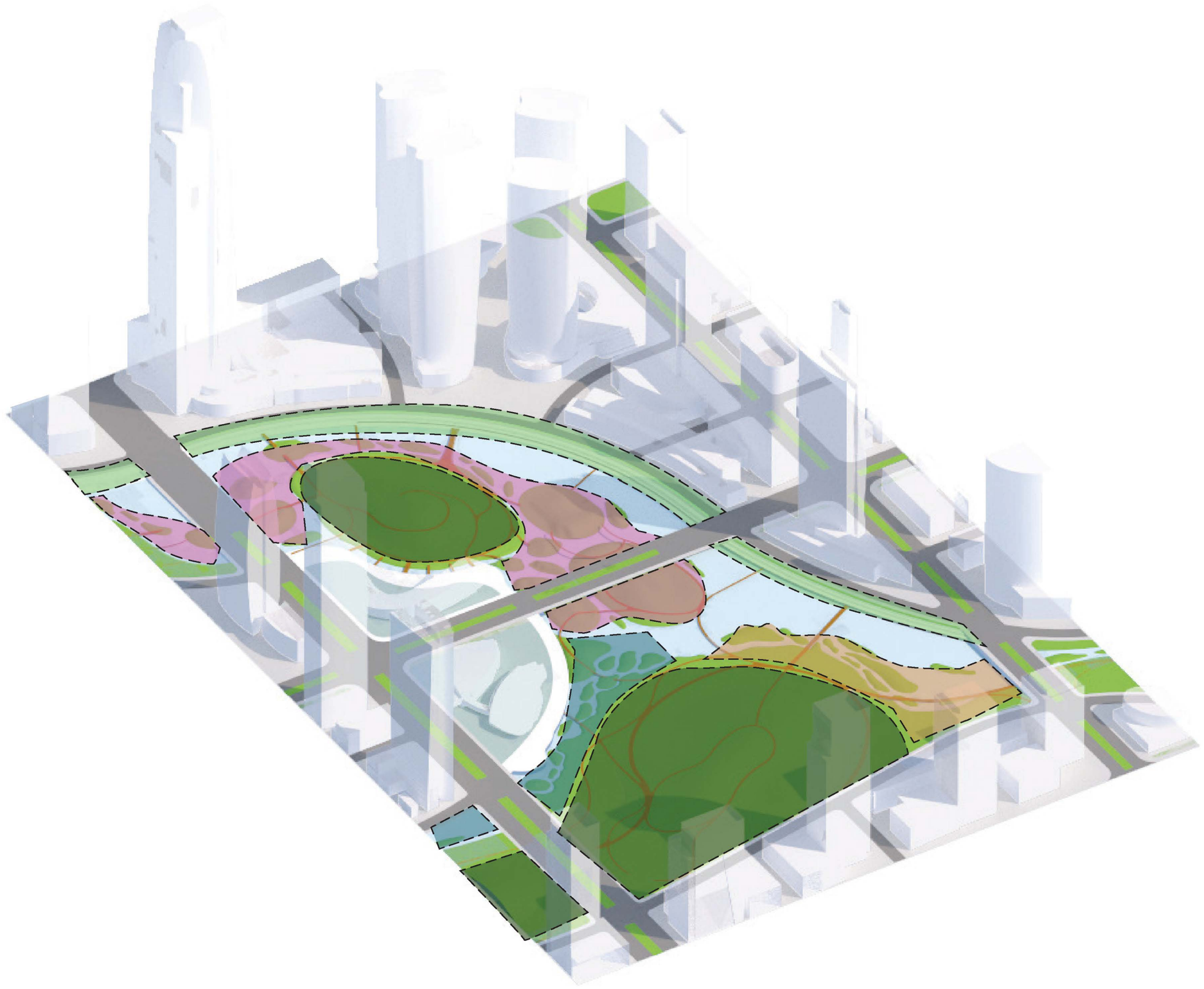
多功能住宅区 Mixed Use Residential

光谷中心公园
Guanggu Central Park



中央广场	**Downtown Plaza**
步行桥	**Pedestrian Bridge**
滨水大道	**Downtown Waterfront Promenade**
餐饮	Cafe
购物	Shops
摊贩	Vendors
儿童游乐场	Children's Playground
现有山丘	**Existing Downtown Hill**
露天剧场	**Amphitheatre**
雕塑园	**Sculpture Park**
文化设施	**Cultural Buildings**
博物馆	Museum
剧院	Theater
人工岛及溪流	**Islands Stream**
现有景山	**Existing Overlook Hill**
湿地	**Wetlands**

光谷中心公园
Guanggu Central Park



种植分析 Planting

现有山地
Existing Mountains

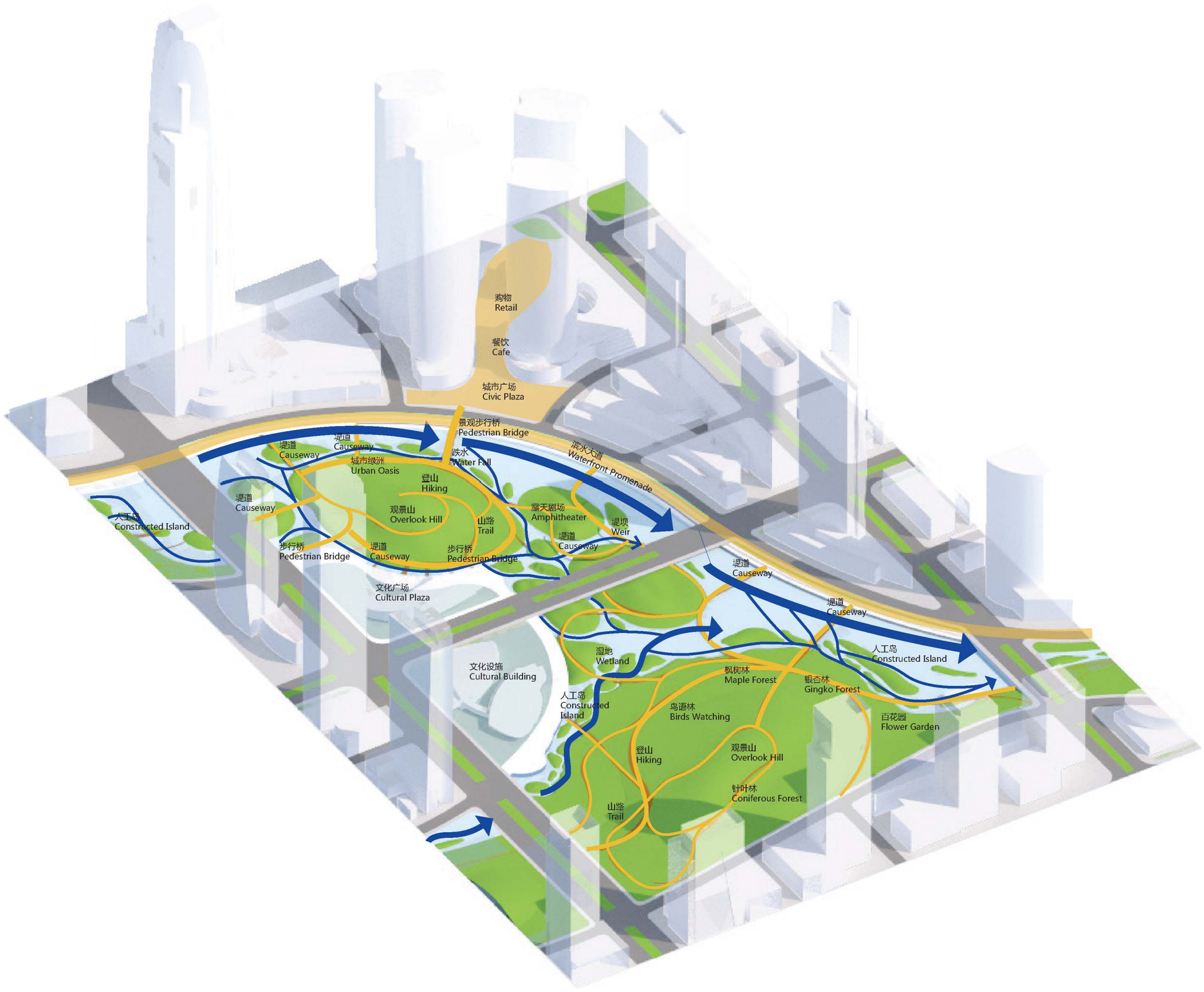
步行大道树
Promenade Trees

人工岛及湿地
Islands and Wetlands

人工湿地
Emergent Wetlands

季节性溪流植被
Seasonal Stream Vegetation

光谷中心公园
Guanggu Central Park



连接与水流
Connections and Waterflow

主要步行连接
Primary Pedestrian Connection

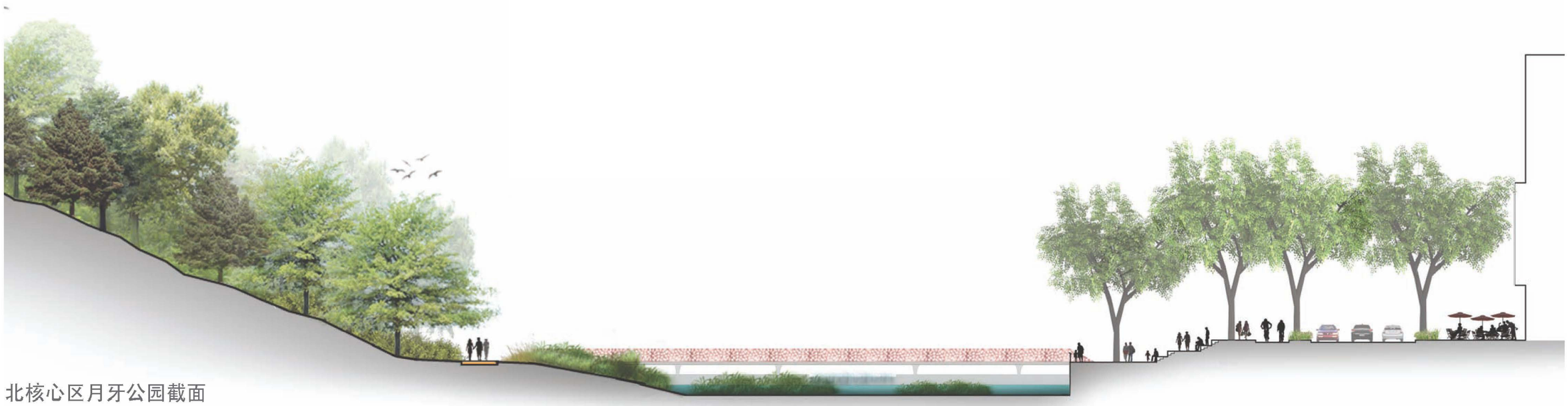
二级步行连接
Secondary Pedestrian Connection

主要水道
Primary Waterway

溪流
Stream Flow

湿地水流
Wetland Flow

滨水大道
Downtown Promenade



北核心区月牙公园截面
Section at Downtown Crescent Park

新月公园与光谷五路连接处截面　Crescent Park at Guanggu 5th Rd

新月公园与神墩二路连接处截面　Crescent Park at Shen Dun 2nd Rd

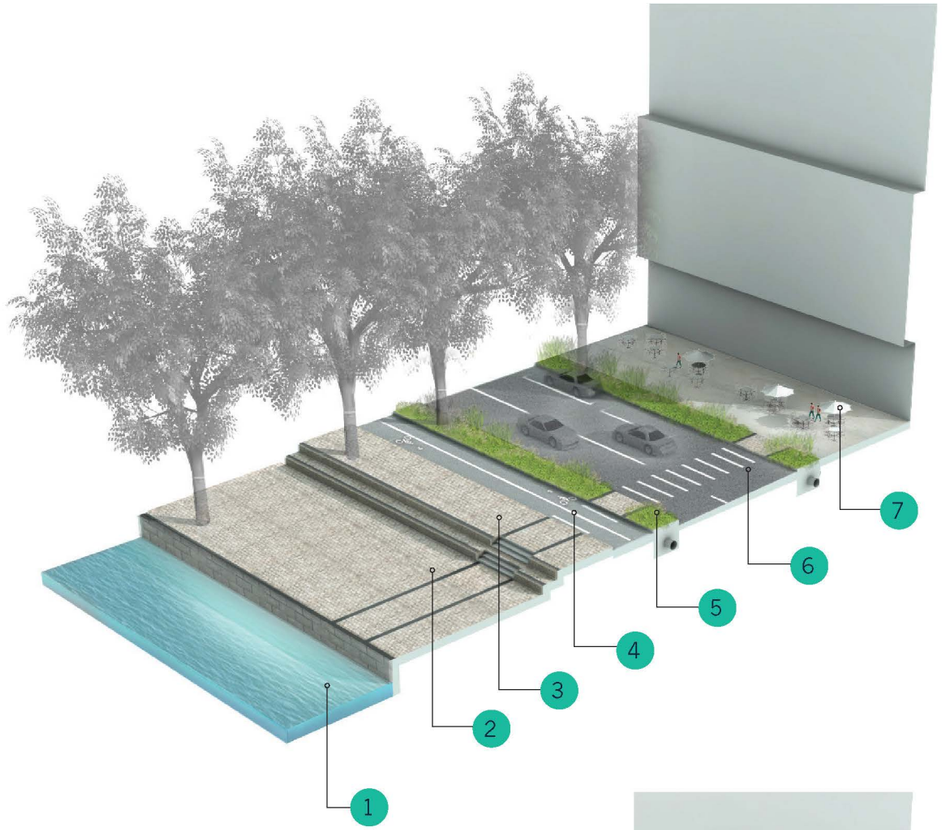
光谷核心区街道功能分析
Guanggu Downtown Streetscape Program

北核心区新月公园截面

1. 新月公园水景
2. 主步行道及广场
3. 上层步行道
4. 自行车道
5. 植物水道
6. 车行道
7. 临街商业建筑

Guanggu Downtown Promenade at Guanggu 5th Rd

1. Crescent Water Feature
2. Main Promenade and Plaza
3. Upper Promenade
4. Bicycle Lane
5. Bioswale
6. Promenade Road
7. Commercial Frontage

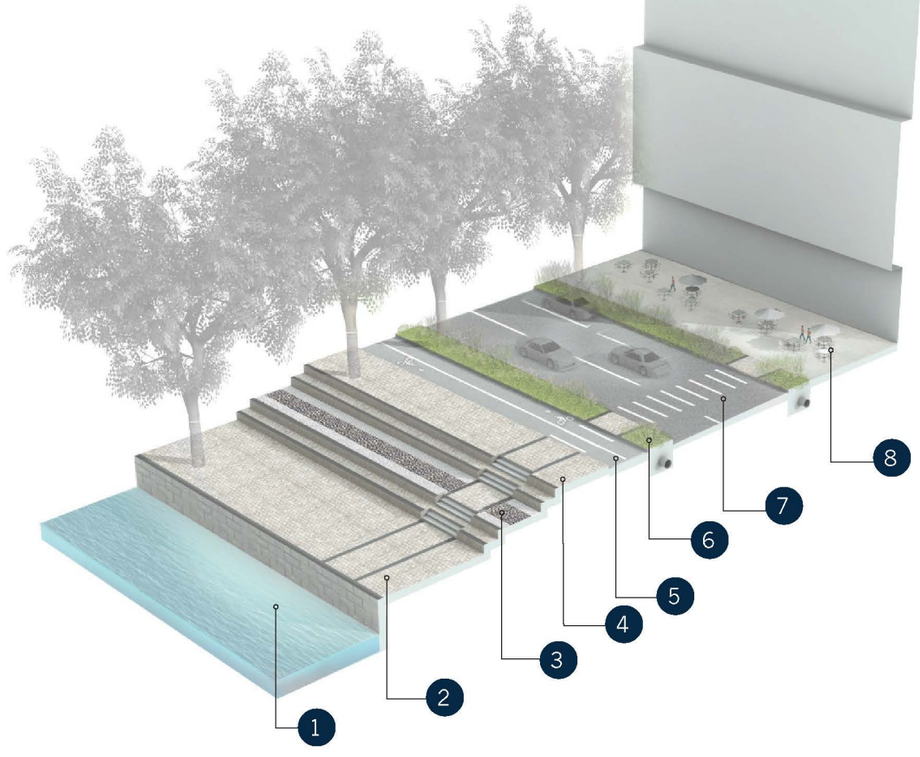


新月公园与神敦二路连接处截面

1. 新月公园水景
2. 主步行道
3. 卵石台阶
4. 上层步行道
5. 自行车道
6. 植物水道
7. 车行道
8. 临街商业建筑

Guanggu Downtown Promenade at Shen Dun 2nd Rd

1. Crescent Water Feature
2. Main Promenade
3. Riverstone Terrace
4. Upper Promenade
5. Bicycle Lane
6. Bioswale
7. Promenade Road
8. Commercial Frontage

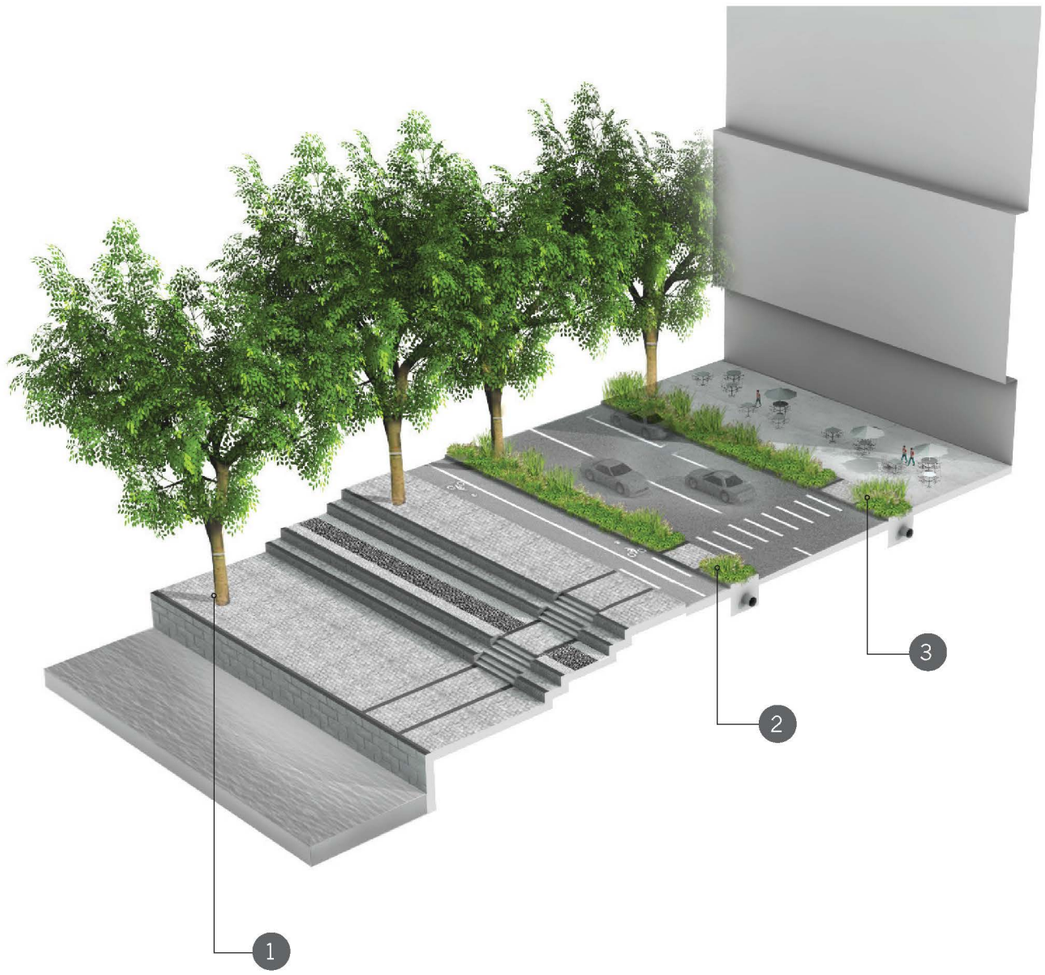


光谷核心区街道种植分析
Guanggu Downtown Streetscape Planting

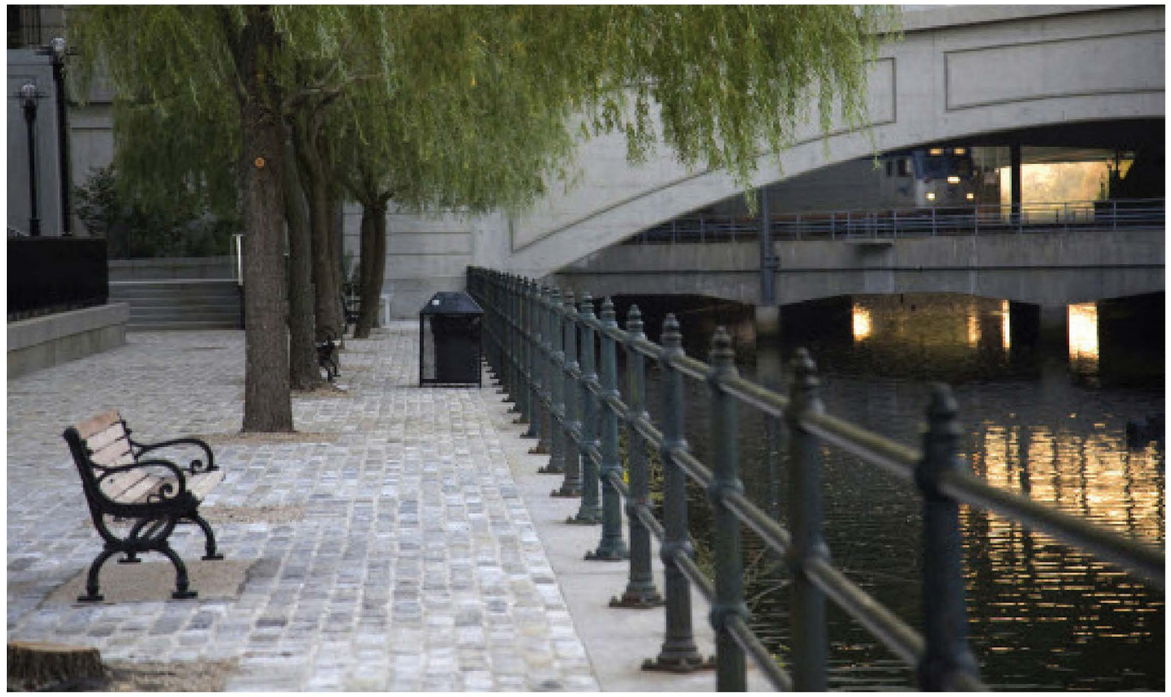
1 行道树：悬铃木 STREET TREE: SYCAMORE

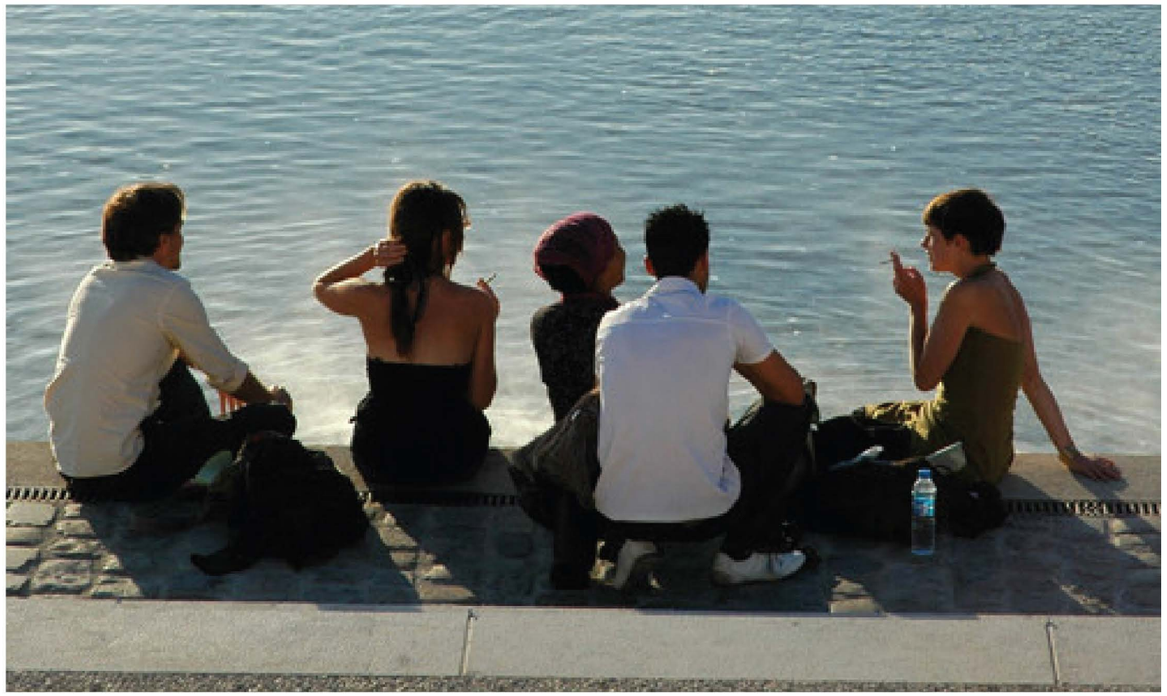
2 植物水道 BIOSWALES

3 人行道植物 SIDEWALK PLANTING



硬质河岸
Hardscape Edge Condition

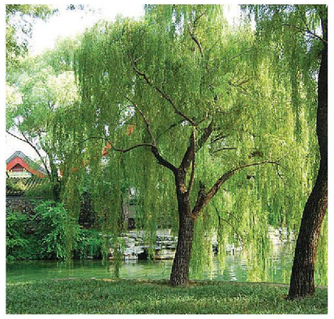




软质河岸
Planted Edge Condition

1 分解花岗岩铺装 DECOMPOSED GRANITE PATH

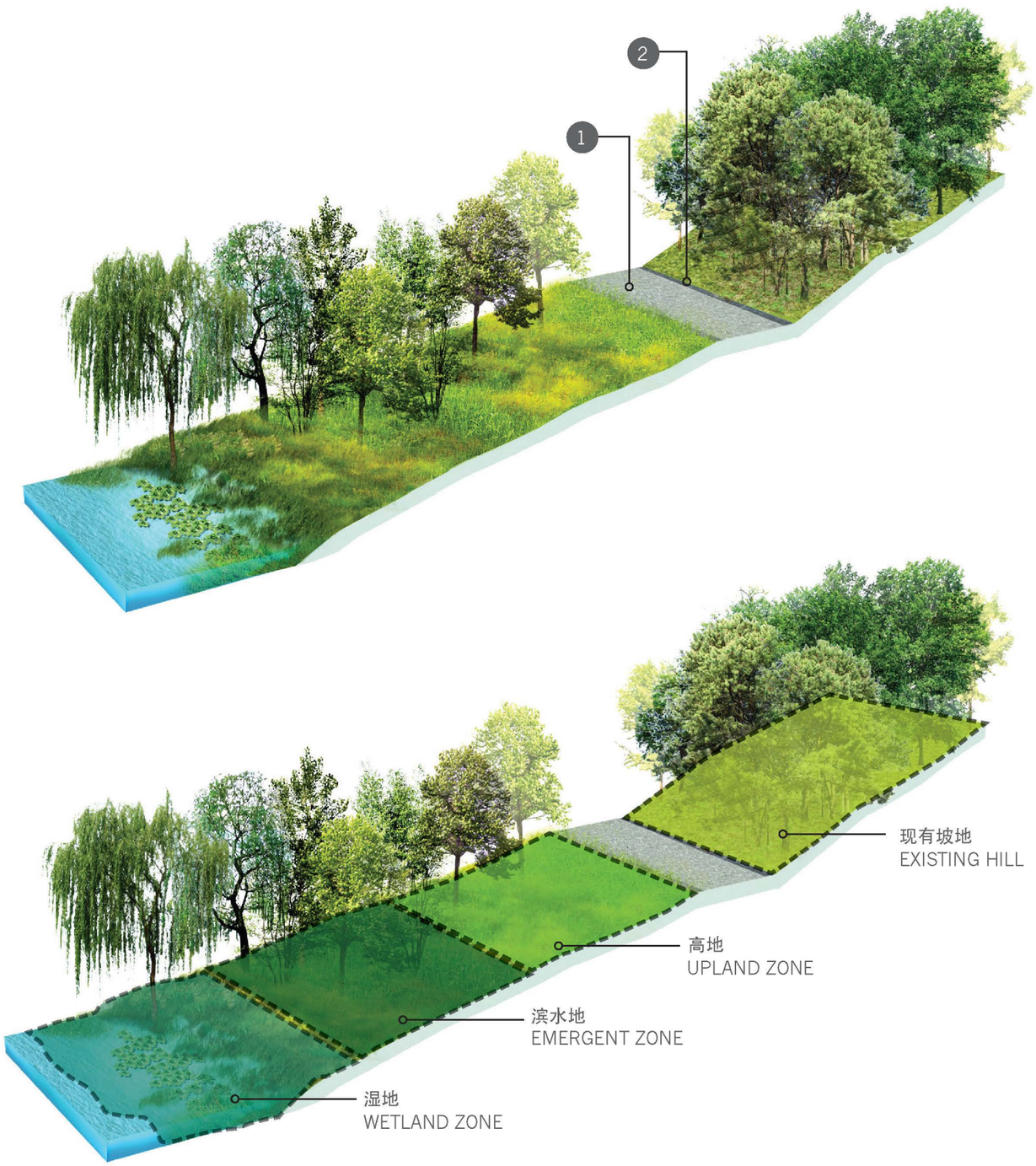
2 石材铺装 LONG PAVERS



高地植物 UPLAND ZONE

滨水地 EMERGENT ZONE

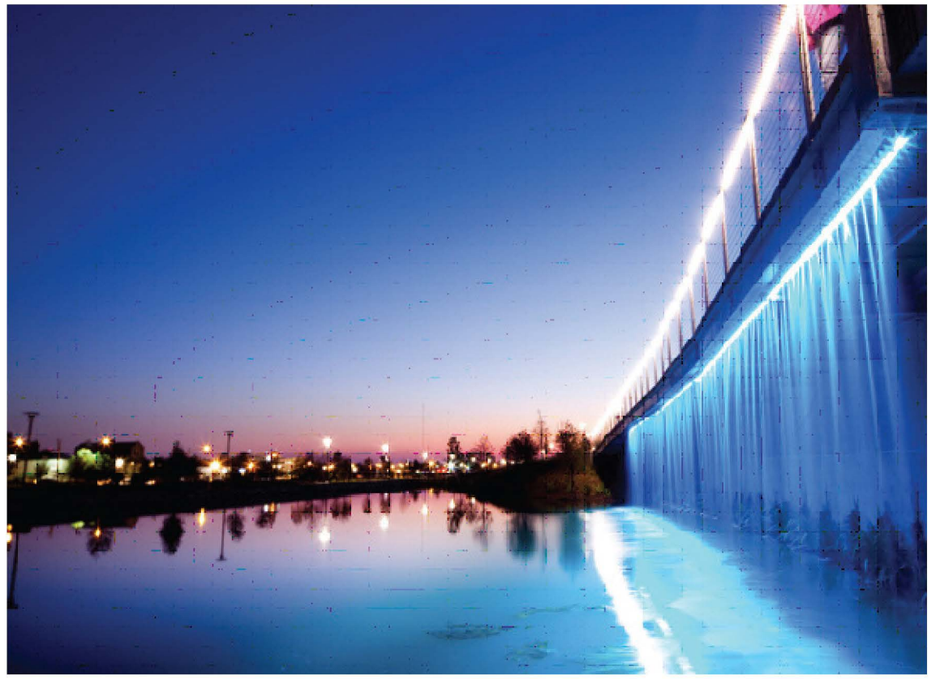
湿地植物 WETLAND ZONE



光谷中央公园步行桥及跌水
Guanggu Central Park Pedestrian Bridge and Waterfall

光谷中央公园步行桥连接核心区步行大道、广场及观景山并横跨中央跌水。在穿过这一标志性建筑的同时，人们既可以领略光谷中心水道、湿地、露天剧场等不同风景，也可以驻足桥中，看脚下瀑布川流而过。

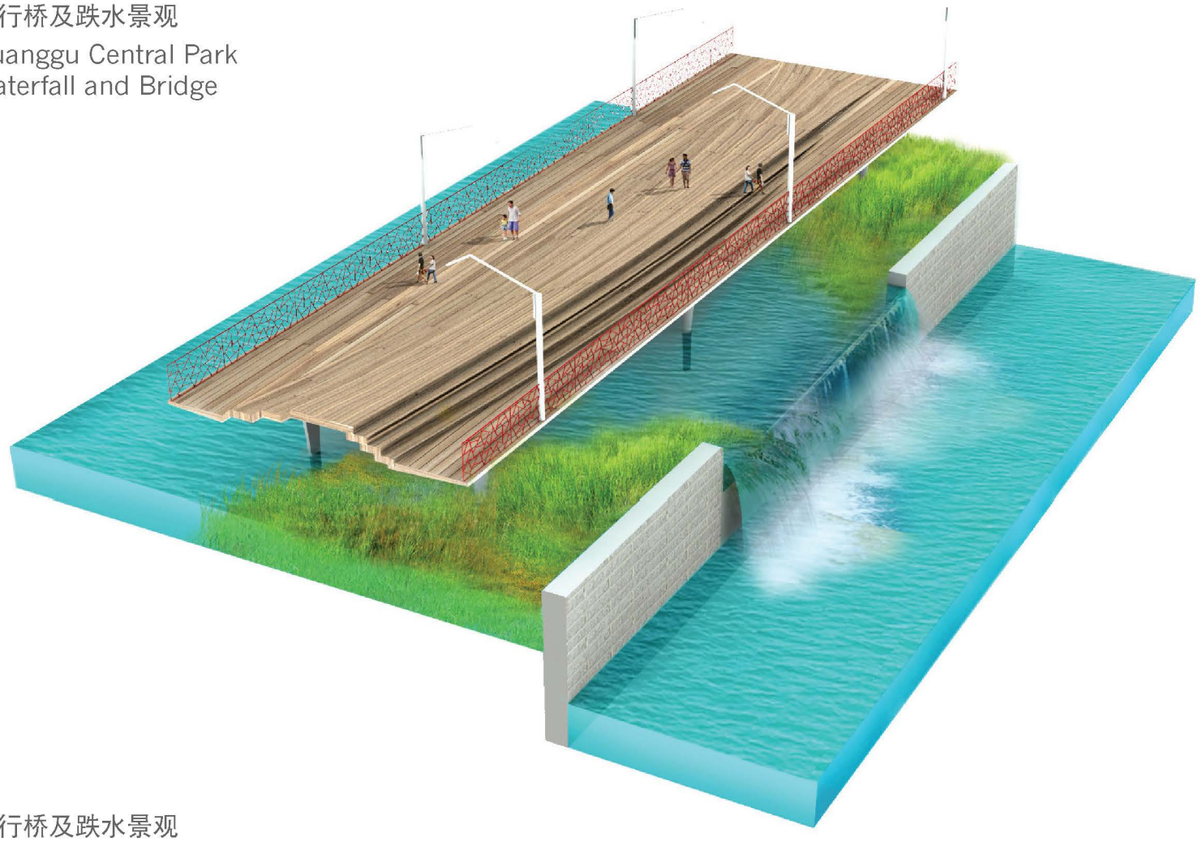
The Pedestrian Bridge connects Guanggu Promenade and Plaza with the Overlook Hill, spanning the Central Waterfall. This signature bridge takes pedestrians up and over the Guanggu Waterbody, over the wetlands, to the historic Wuhan Hills, amphitheater and park paths. At the top of the bridge, the visitor sees the dramatic Central Waterfall.



光谷中央公园步行桥及跌水
Guanggu Central Park Pedestrian Bridge and Waterfall

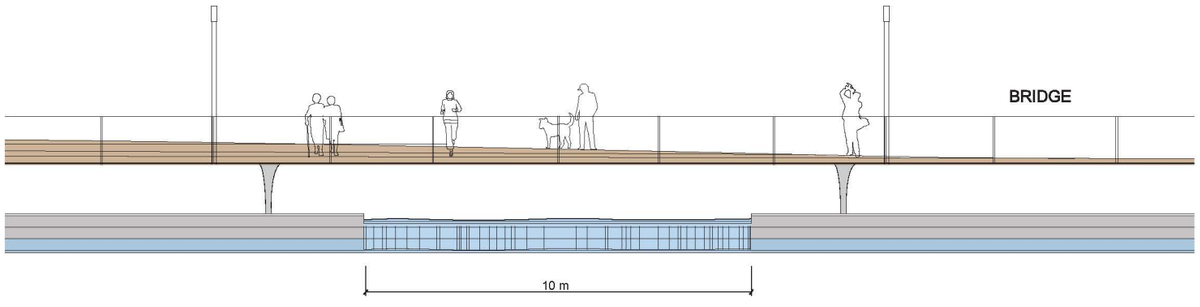
步行桥由木材制成波浪起伏造型，为游人提供了观赏广场、山丘及水面的独特视角。独特的阶梯式设计也为人们提供了不同的休闲体验。

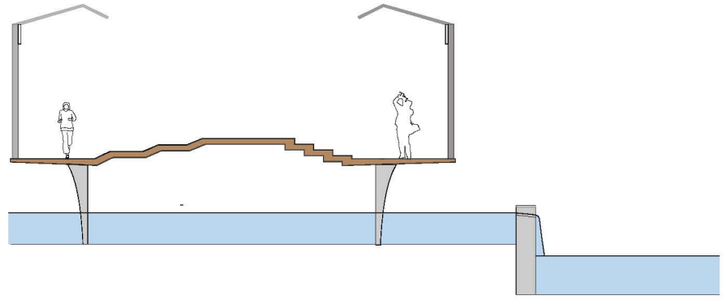
Made of undulating local wood, the Pedestrian Bridge gives the visitor an unprecedented view of the Plaza, the Hills and the Lake. The bridge has steps to give different perspectives and for gathering.

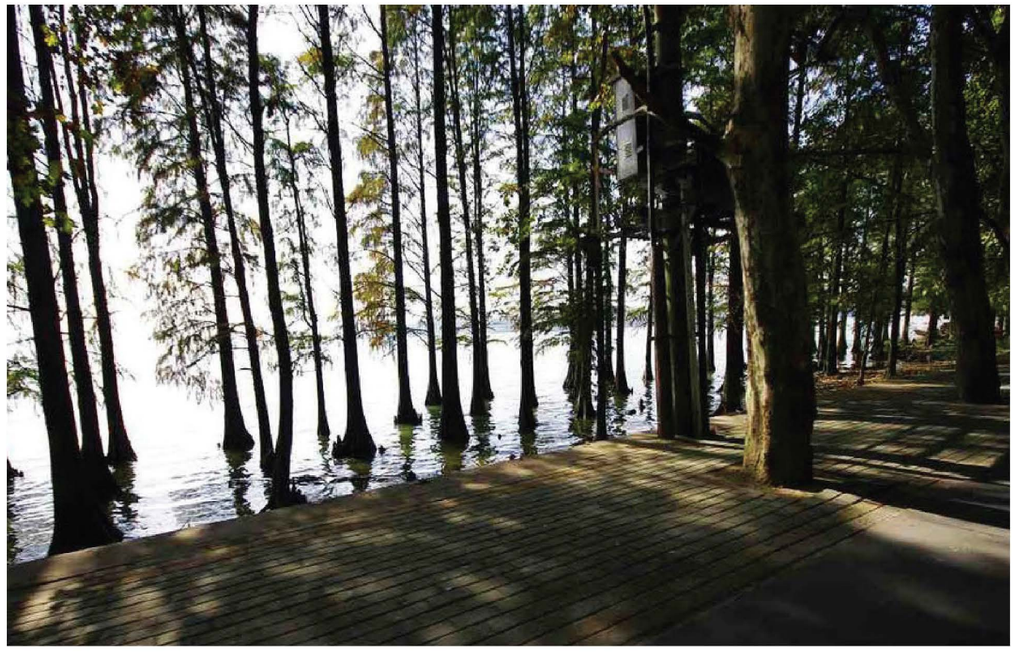


步行桥及跌水景观
Guanggu Central Park
Waterfall and Bridge

步行桥及跌水景观
Guanggu Central Park
Waterfall and Bridge Elevation







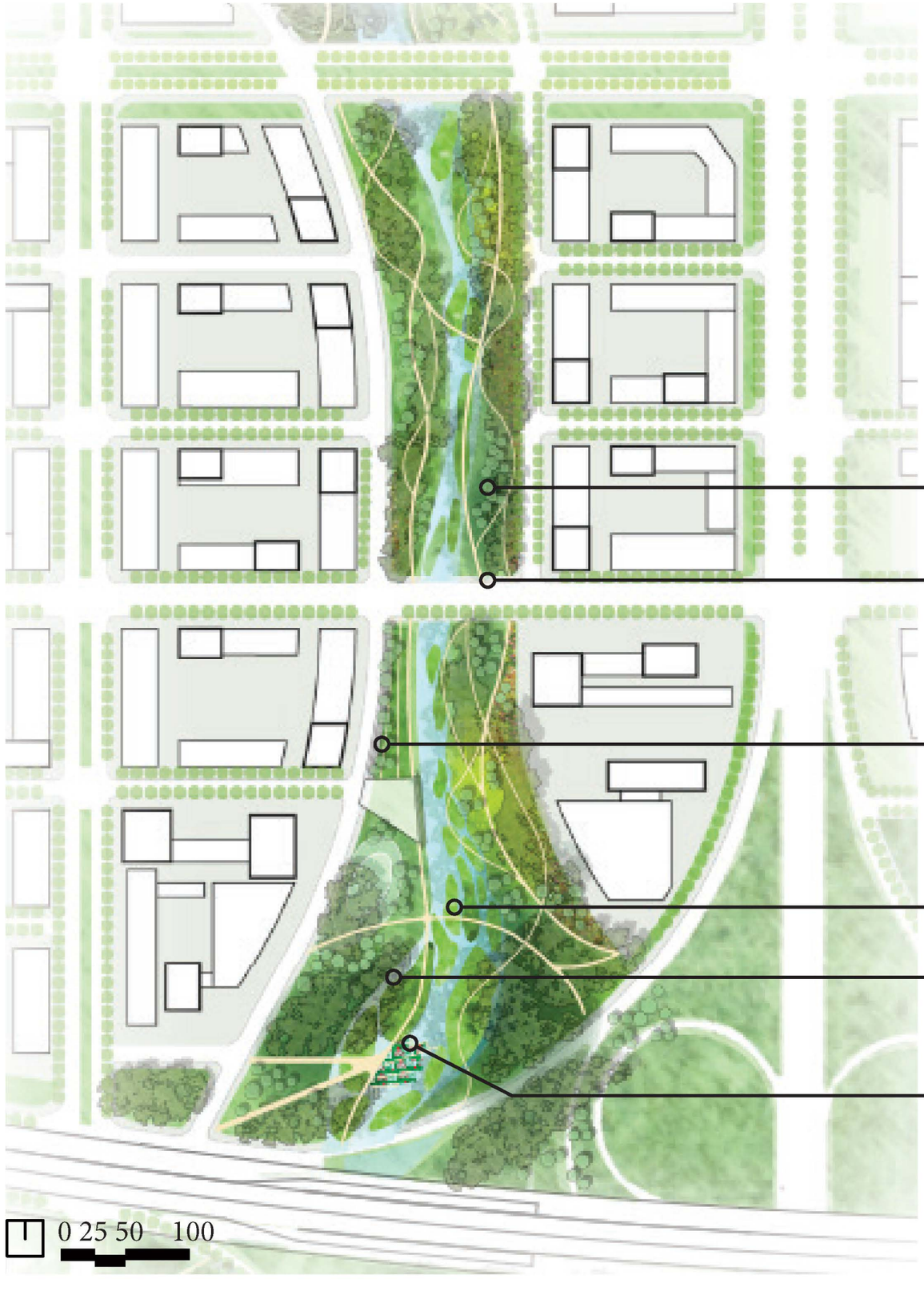
门户公园
Gateway Park

From Gaoxin 5th Road, the Gateway Park is an beautiful entry park that highlights local planting and landscape. A Cypress Grove allows for people to experience the water by a system of paths and boardwalks, bringing them close to nature. Extending from the Gateway Park, islands, forests, and streams interweave with paths and openspace to create a diverse landscape.

门户公园使用乡土乡土植被营造特色景观。在这里，蜿蜒的园径和水面栈道将岛屿，溪流，湿地以及茂密的池衫林等独具特色的景观连在一起，为人们提供了又一处亲近自然的场所。

门户公园
Gateway Park

门户公园
Gateway Park



自然园径 Urban Nature Paths
儿童公园 Children's Park

百花园 Flower Garden

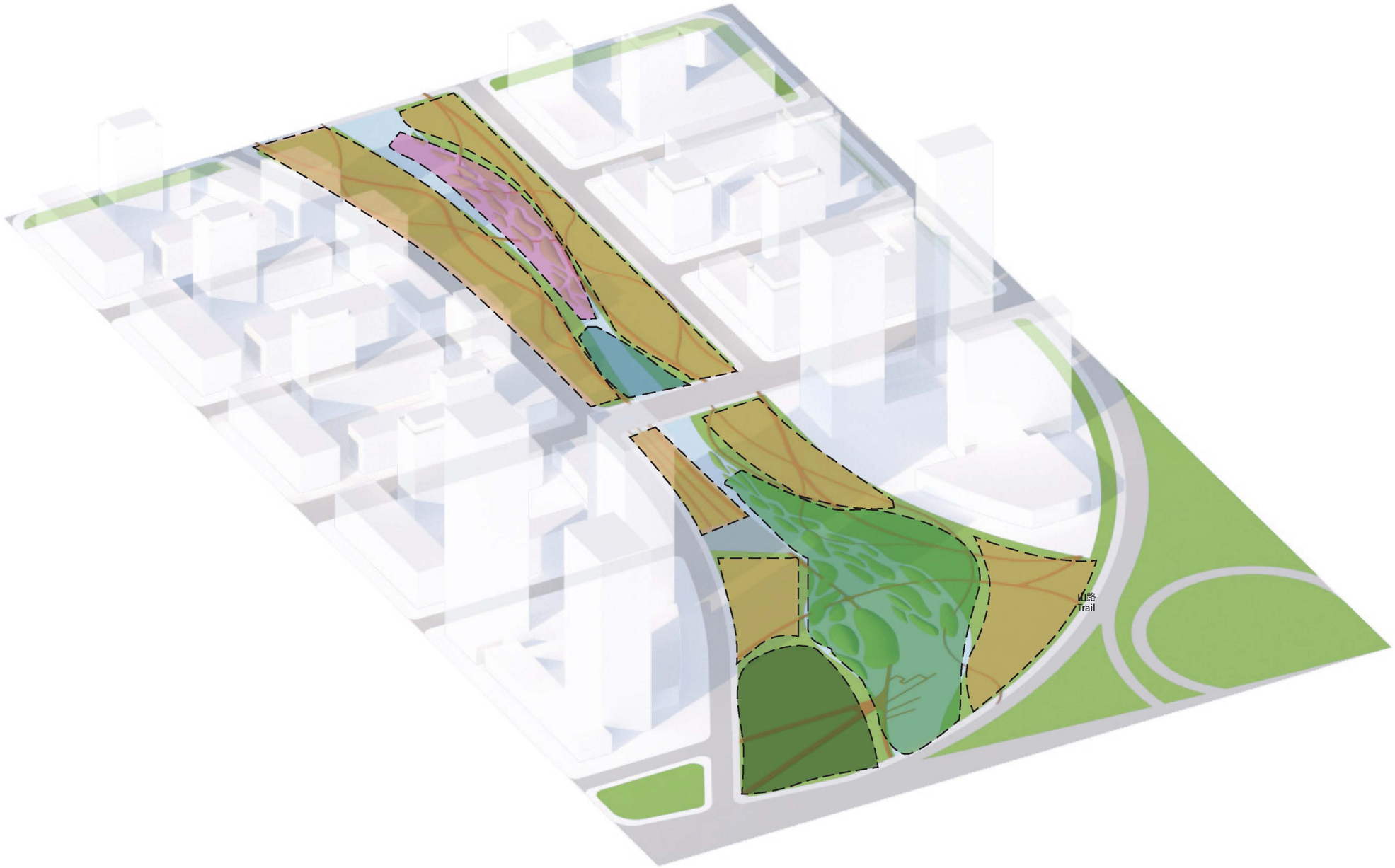
文化广场 Cultural Plaza
餐饮 Cafe
购物 Shops

标志性步行桥 Iconic Gateway Pedestrian Bridge

池杉林 Water Cypress Grove
观景平台 Overlooks
栈道 Path

码头 Marina
皮艇 Kayaks
划艇 Canoes
泛舟 Paddleboats

门户公园种植分析
Gateway Park Planting Diagram



现有山丘 ExistingHill

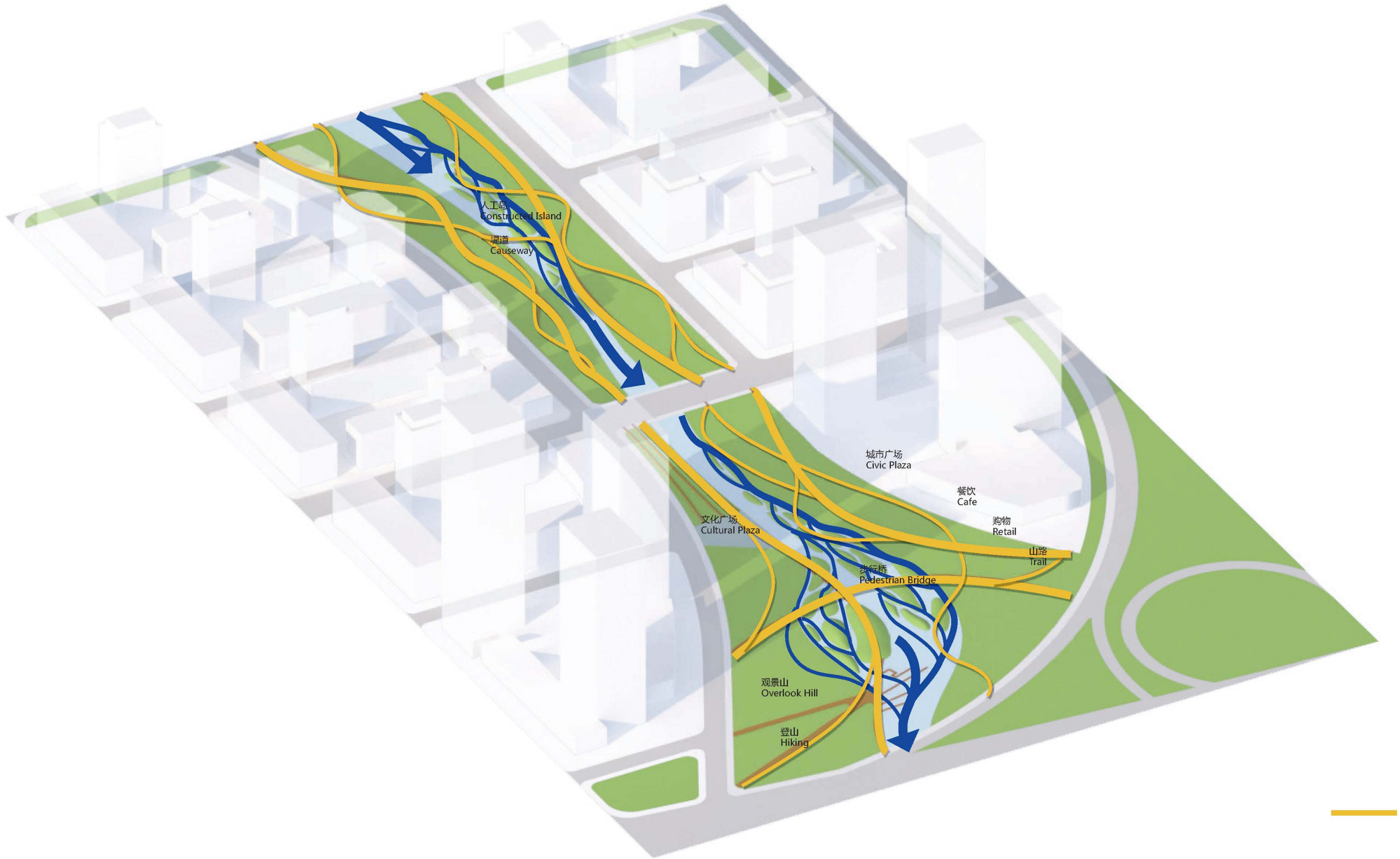
池衫林 Cypress Grove

人工岛及湿地 Islands and Wetlands

混合林 Forested Landscape

季节性溪流植被 Seasonal Stream Vegetation

门户公园水流、交通分析
Gateway Park Water and Connections Diagram



主要步行连接
Primary Pedestrian Connection

二级步行连接
Secondary Pedestrian Connection

主要水道 Primary Waterway

溪流 Stream Flow

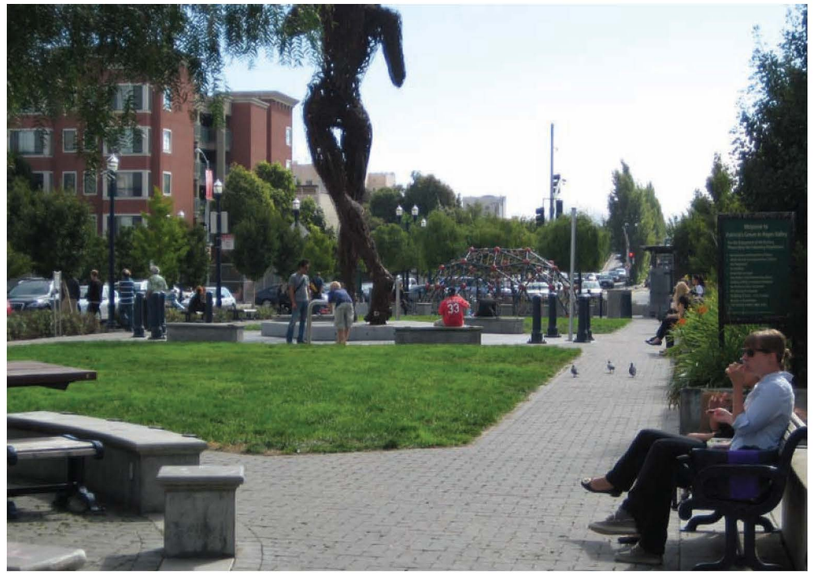
湿地水流 Wetland Flow

社区公园
Neighborhood Parks

Small semi-private Neighborhood Parks maximize openspace, while also creating new opportunities of small cafes and shops. When possible, the program connects people to nature and open space via a series of design interventions.

小型半私密社区公园最大化公共环境，营造出新型餐饮、购物环境。通过良好的空间、功能组织使居民在亲近自然的同时充分利用公共空间。

社区公园
Neighborhood Park






社区公园
Neighborhood Park

社区公园
Neighborhood Park

典型社区截面（宽）
Typical Wide Neighborhood Section

典型社区截面（窄）
Typical Narrow Neighborhood Section

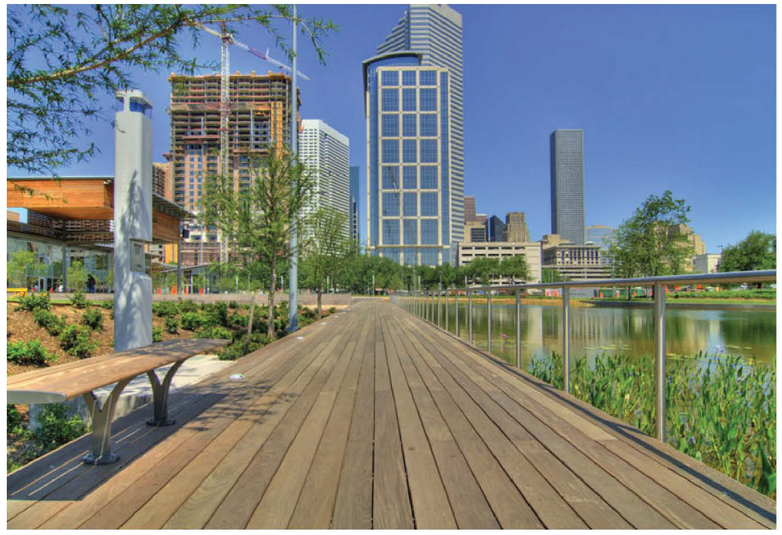
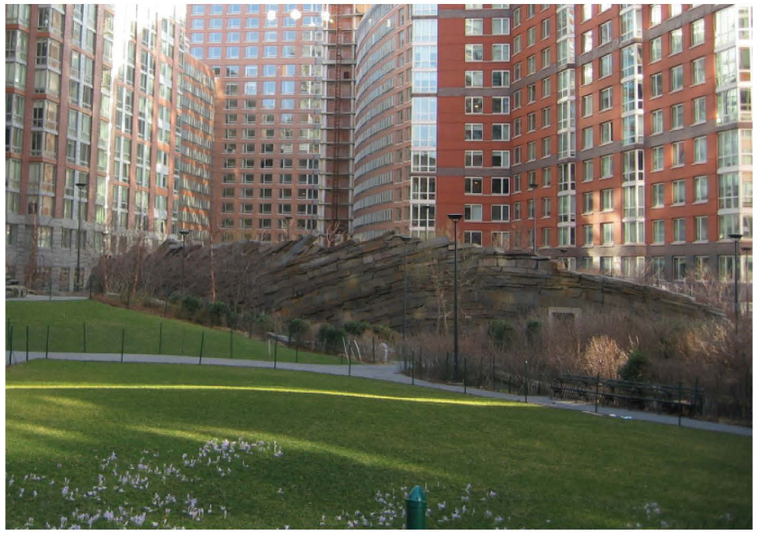
城市公园
Urban Parks

Urban Parks create an intricate web of open space throughout the new city and provides residents with a series of green gathering spaces and connections that range from intimate neighborhood parks to more prominent cultural and regional parklands.

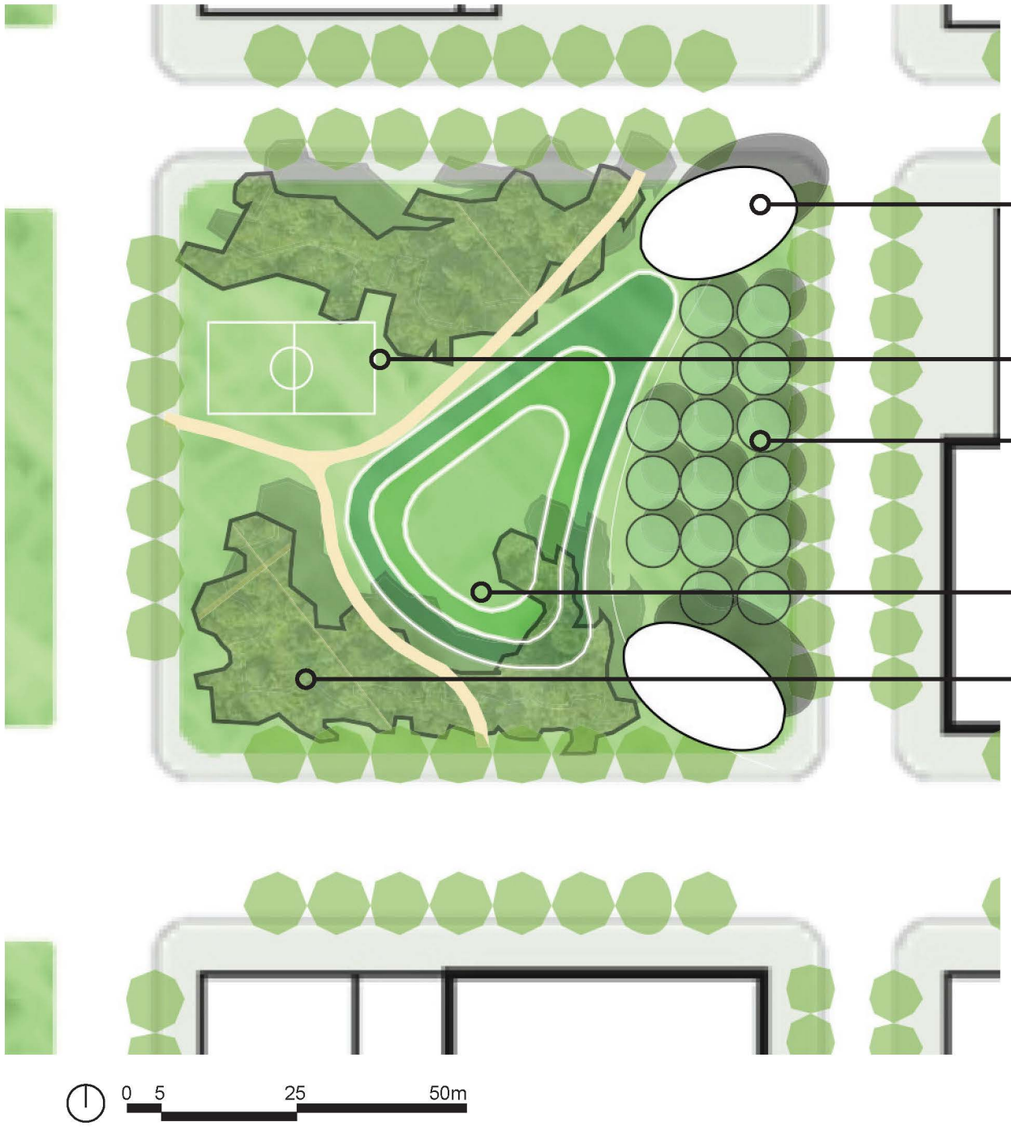
场地内的城市公园组成一张大的公共空间网，丰富并增强了人们对公共空间的使用，同时起到连接小型社区公园和大型文化公园、广场的功能。

城市公园
Urban Park

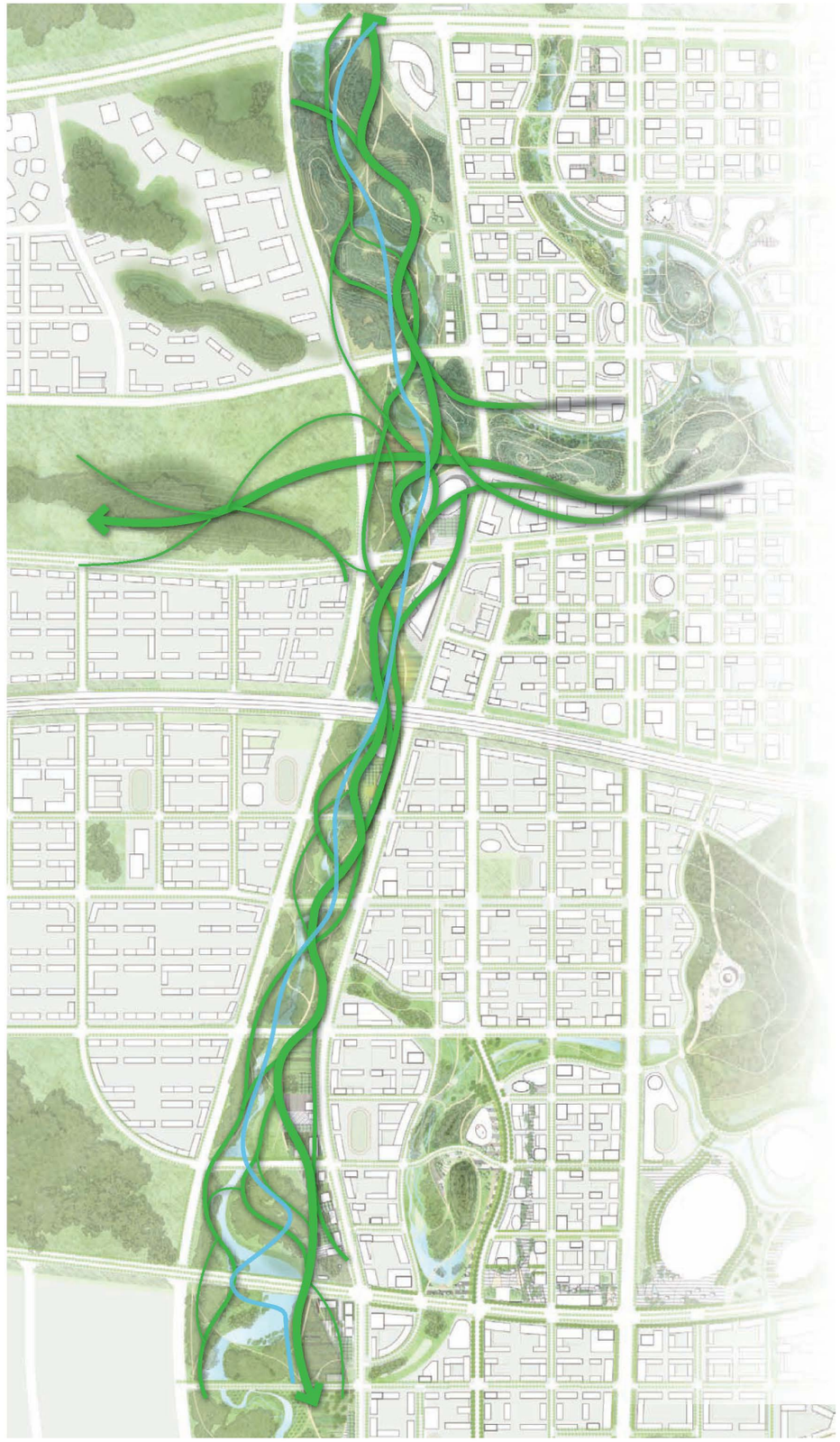



城市公园
Urban Park



广场亭 社区市场	**Neighborhood Pavilion** Community Market
多功能场地	**Multipurpose Field**
社区广场 餐饮 购物	**Neighborhood Plaza** Cafe Shops
儿童游乐场	**Children's Playground**
树林小丘	**Forested Mounds**



生态廊道
Eco Corridor

The Eco Corridor highlights a broad landscape corridor flowing toward the lake that creates the western edge of the new city. This zone contains numerous forested plateaus and high points with valleys flowing between them with abundant streams, ponds, and some larger lakes. Due to its breadth, it can support larger natural systems including wetlands, farms, as well as major sports fields and other more specialized programmed uses. The largest trail complex on the site is threaded through the constantly evolving landscape “rooms” formed by crossing roadways.

生态廊道为一条通向湖滨的宽阔景观廊道，构成中心区西侧边界。该廊道内包括各种林地、山谷高地和丰富的河流水系。大尺度景观廊道内设置较大面积自然生态区，包括湿地、农田，以及主要运动场和其它特色功能区。网络状密布的景观步道将道路交叉处的景观区交织串接。

生态廊道
Eco-Corridor

生态廊道
Eco-Corridor Plan

文化设施 **Cultural Entry and Intermodal Transit Hub**

行政中心 Government Center
生态廊道入口 EcoCorridor Entrance

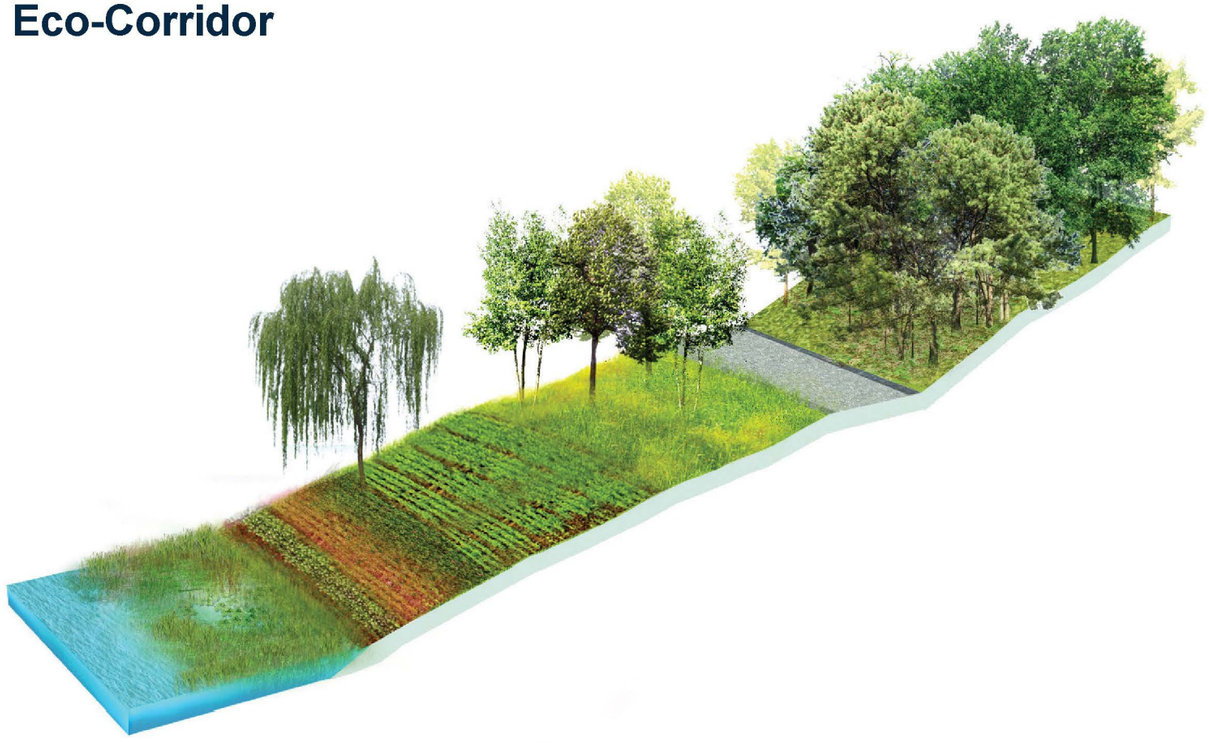
生态村和商业广场 **Eco Village and Retail Plaza**

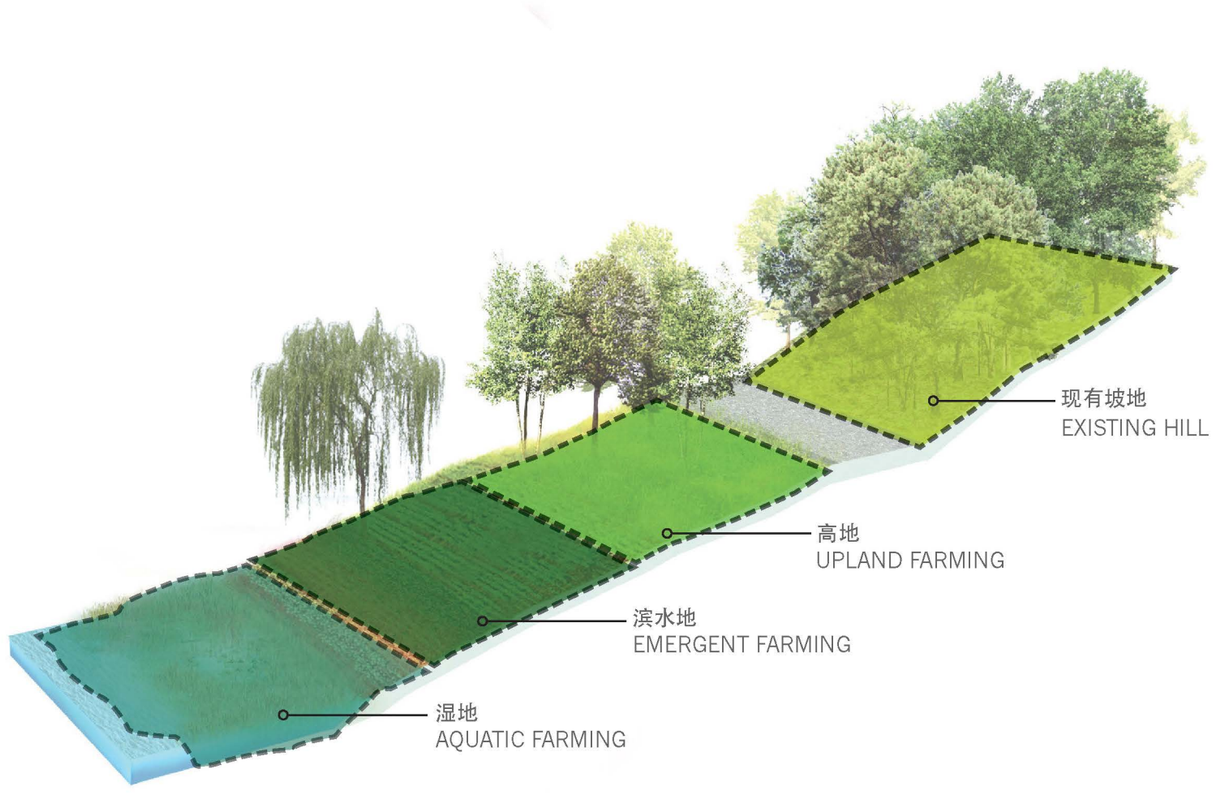
有机食品餐馆 Organic Restaurant
新鲜蔬菜市场 Fresh Food Market
艺术家村及画廊 Local Artists and Galleries
现有观景山 Existing Overlook Hill

农业研究中心 **Agricultural Institute**

城市农业 Urban Farms
樱花路及果园 Cherry Blossom Path and Orchard
农业示范区 Demonstration Farms
温室 Green House

生态廊道
Eco-Corridor





高地　UPLAND FARMING

滨水地　EMERGENT FARMING

湿地　AQUATIC FARMING

生态廊道及生态村
Eco-Corridor and Eco Village

艺术家画廊 **Local Artists and Galleries**

生态村及商业广场 **Eco Village and Retail Plaza**

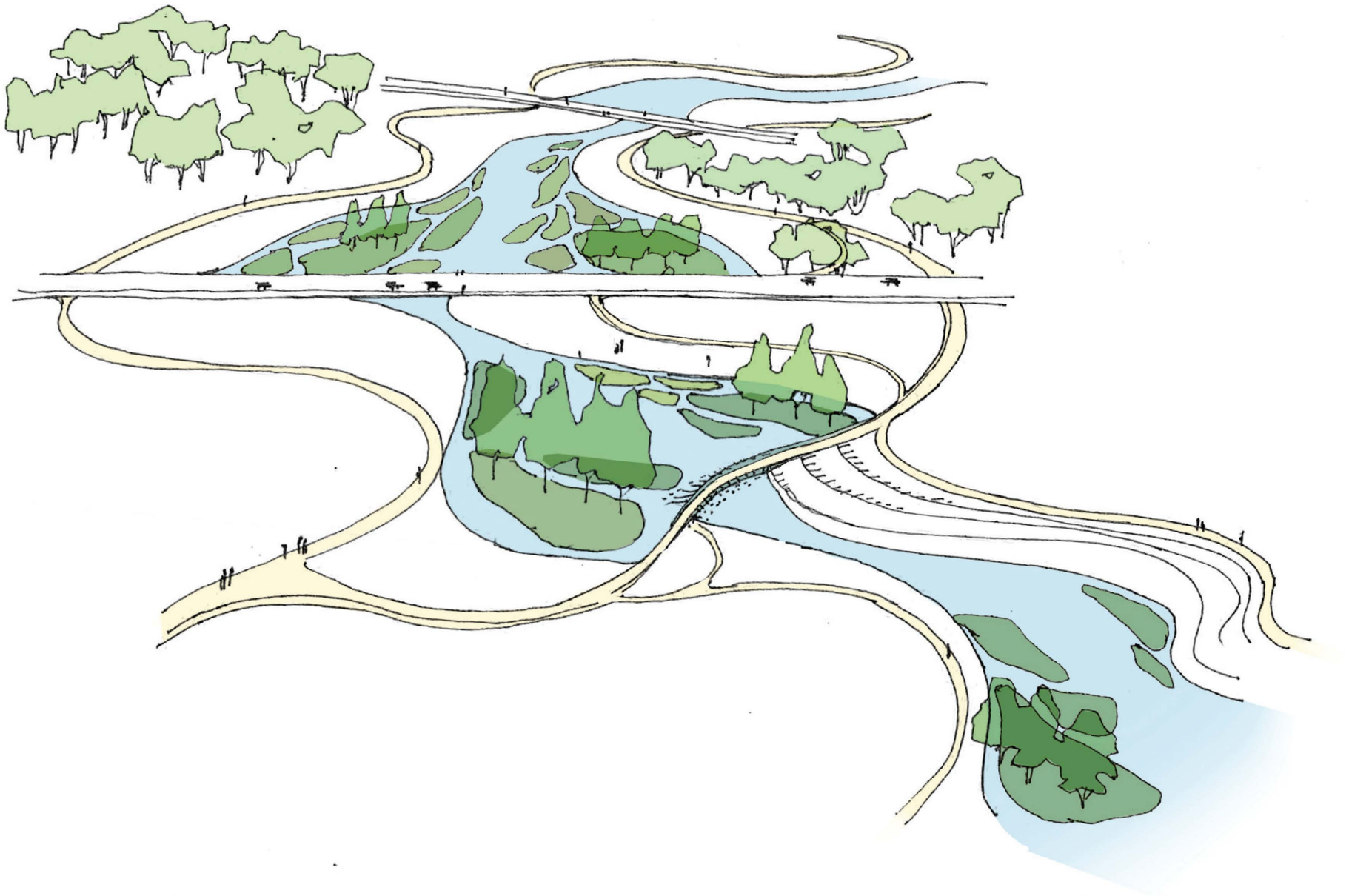
生态村	EcoVillage
生态酒店	Eco Hotel
农产品市场	Farmer's Market
艺术家画廊	Local Artist Galleries
有机食品餐厅	Organic Restaurant

新鲜食品市场 **Fresh Food Market**

现有景山及树林 **Existing Overlook Hill and Forest**

城市农业示范区 **Urban Demonstration Farms**

农业中心 **Agricultural Center**

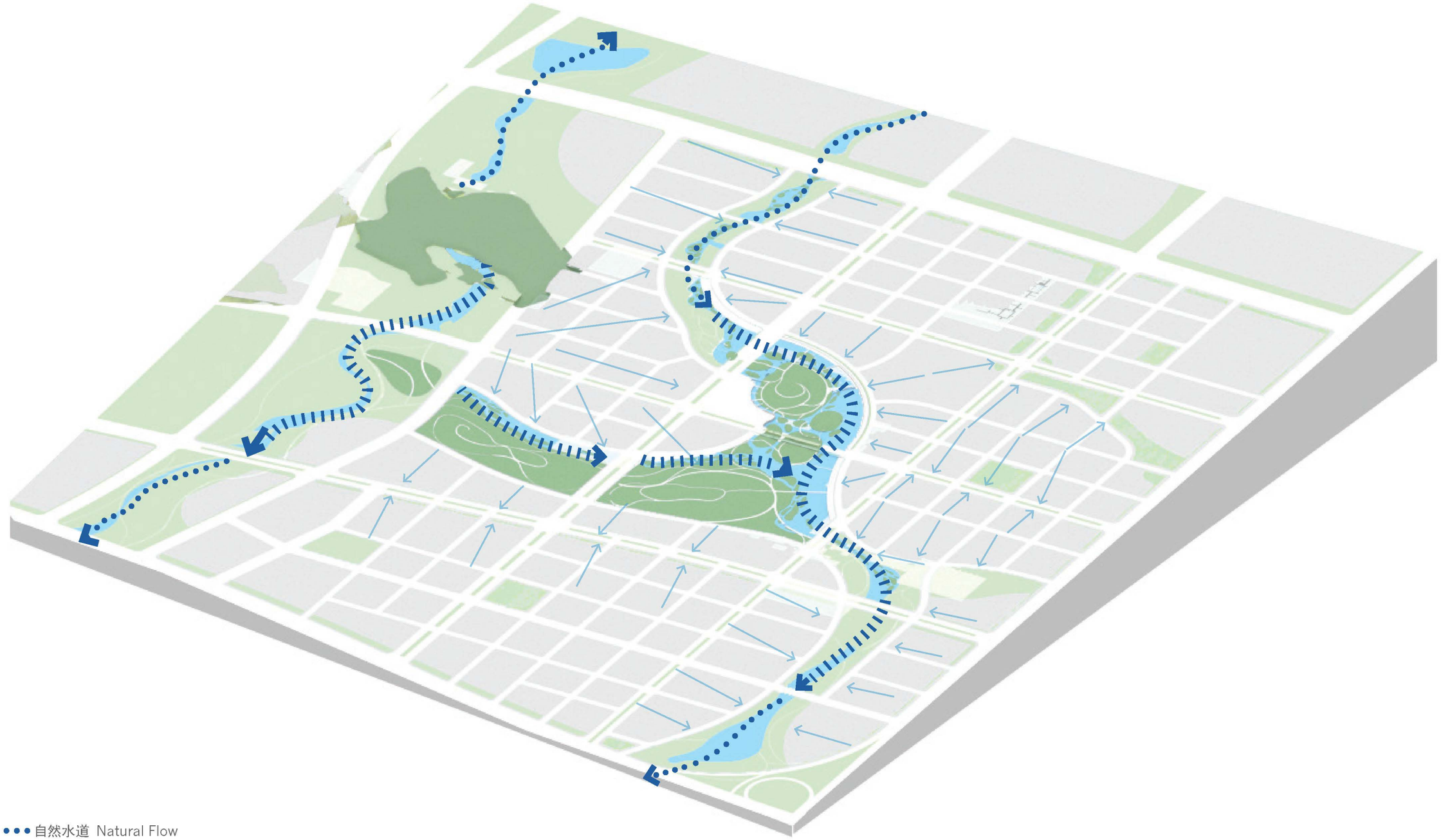


水流概念
Water Strategy

A great deal of water flows in seasonal streams through the new city on its way to the lake. To make water more available for residents to enjoy as well as use for irrigation supply and natural wetland system development, weirs (small check dams) are proposed to detain water on the sloping site. As the topography varies, the response to water design also varies. In areas like the Downtown Crescent, gradients are flatter and it is possible to provide what is essentially a continuous “stepped” lake, with weirs providing convenient pedestrian crossing points. Where the gradient steepens, it will be less desirable to continuously step the water. Instead, the streams would be retained in their natural flowing state with periodic weirs to create ponds and wetlands as stopping points.

大量入湖的季节性河流流经中心城。为了满足日常生活及灌溉用水、以及天然湿地系统的开发需求，拟建坡地贮水围堰（小型淤地坝），针对地形特点提供不同的河道设计。例如中城新月形区域，坡度较缓和，可设计基本连续的“台地式”湖体，同时提供围堰方便行人通过。坡度大的区域则不适用该手段，但可通过周期性围堰结构根据天然的水流量设置池塘和湿地，确保河道水量。

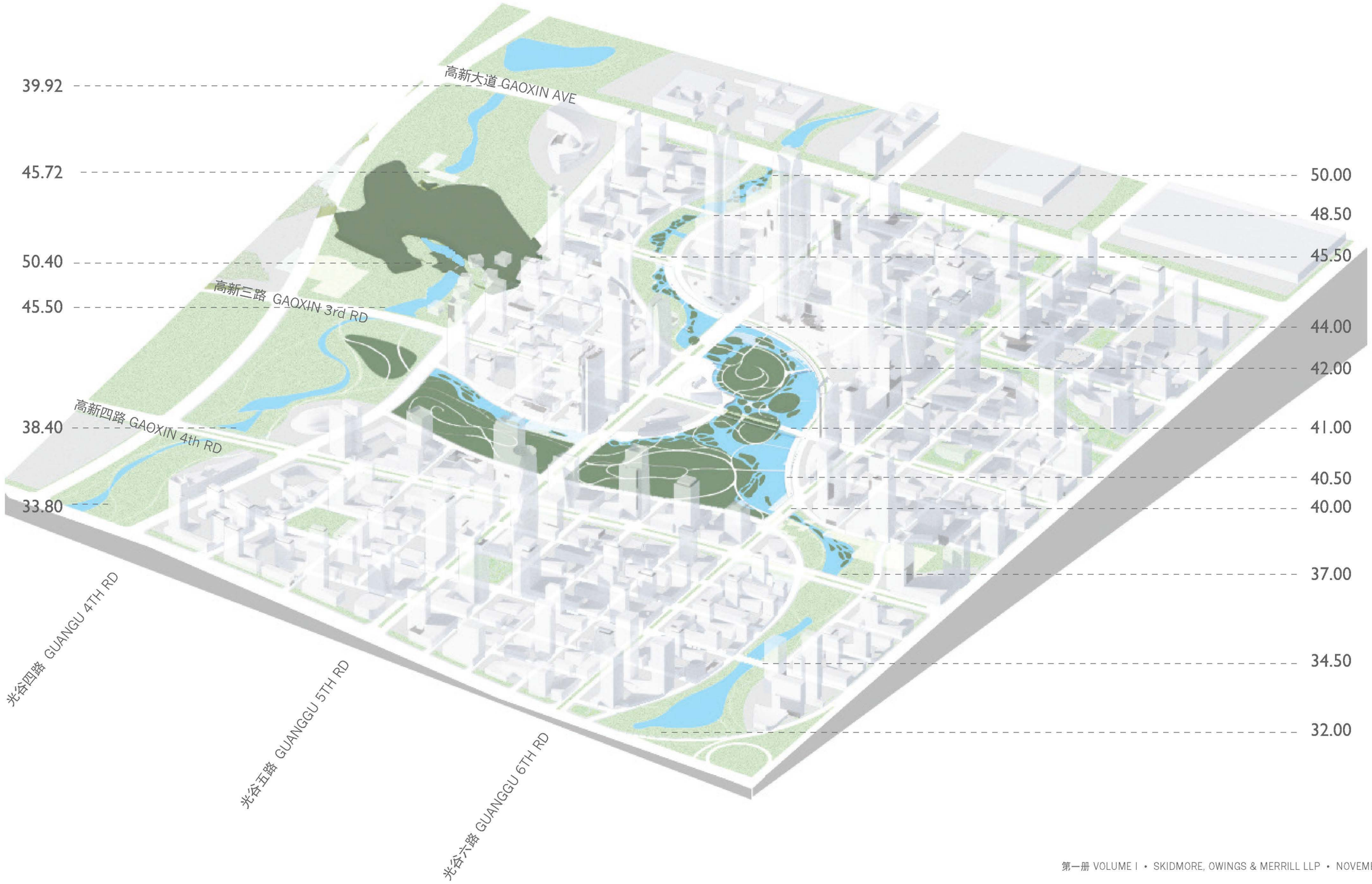
总体水体设计策略
Overall Water Strategy



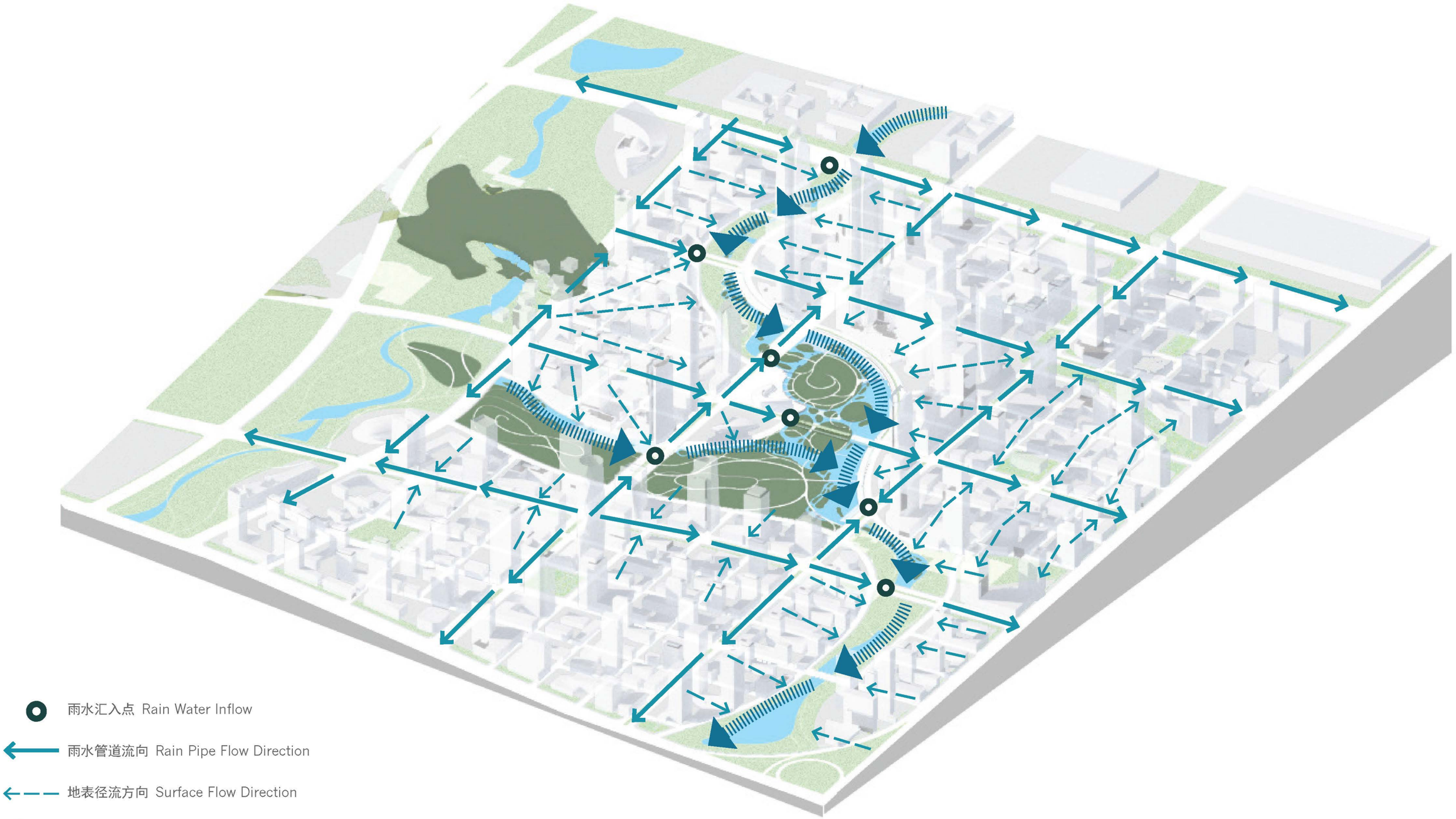
自然水道 Natural Flow

阶梯式水道 Stepped Lakes

道路及水体高程
Road & Water Elevation Strategy



道路与水流高程设计
Water Collection Strategy



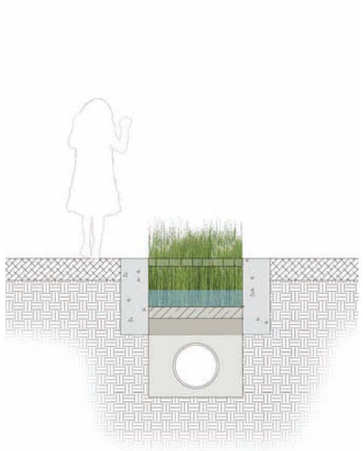
溪流设计
Stream

湿地
Wetlands

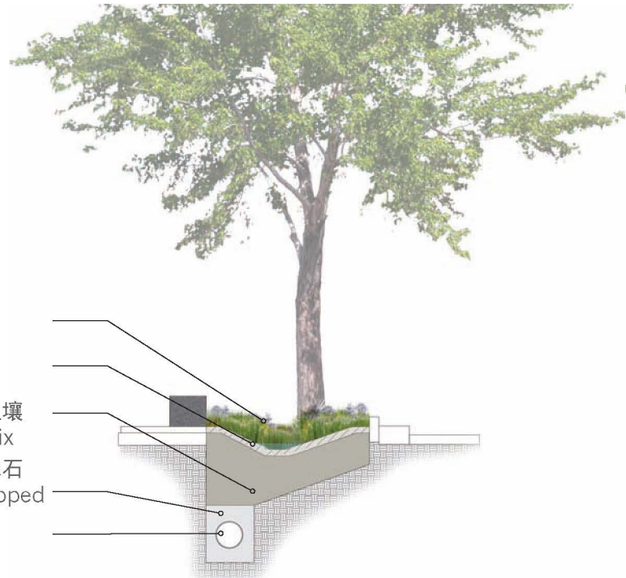
植物水道（生态洼地）
Bioswales

生态型城市雨水处理系统包含植物水道、生态沟渠，生态塘，树池，湿地和生态溪流等。城市雨水处理的目标之一是使正常降雨量下的污染雨水和地表径流通过植物水道收集过滤后再汇入城市排水系统。植物水道设计可以用来替代传统路面排水系统，并起到良好的生态效应。

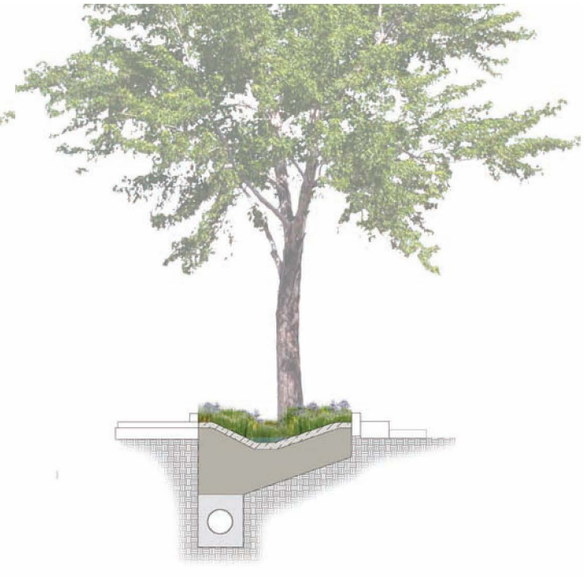
The proposed storm drain system will be designed to convey storm water via bioswales, biogutters, ponds, tree wells, and the stream corridor. One of the goals of the storm drain system is to infiltrate runoff from small storm events. Rainwater runoff will flow on the surface of the ground eliminating the need for a conventional, piped storm drain system while increasing bio-filtration and infiltration.



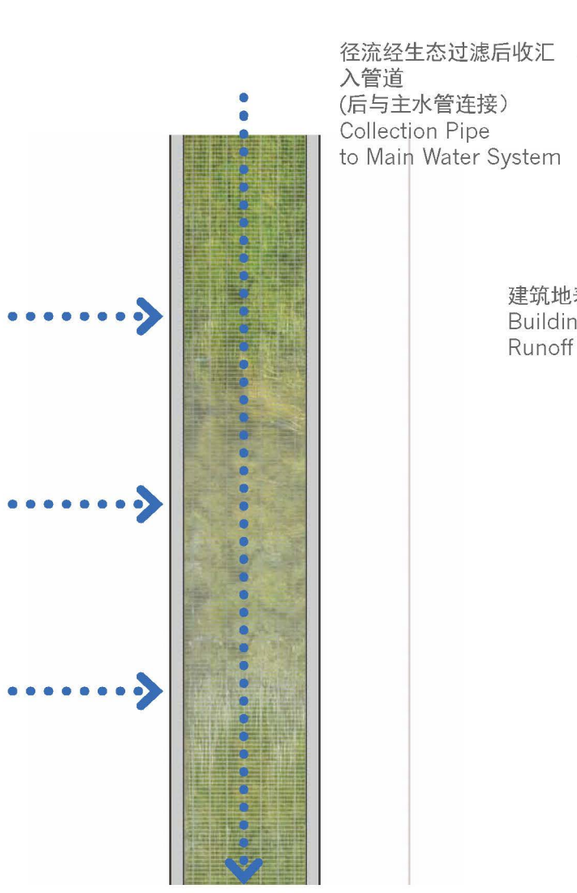
植物水道截面
Bioswale Runnel

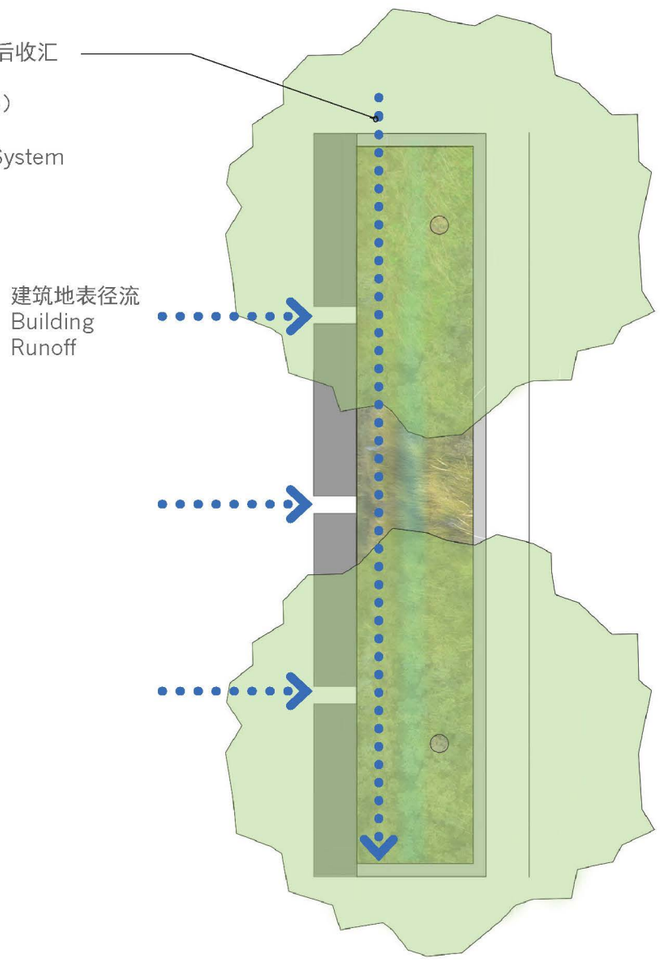


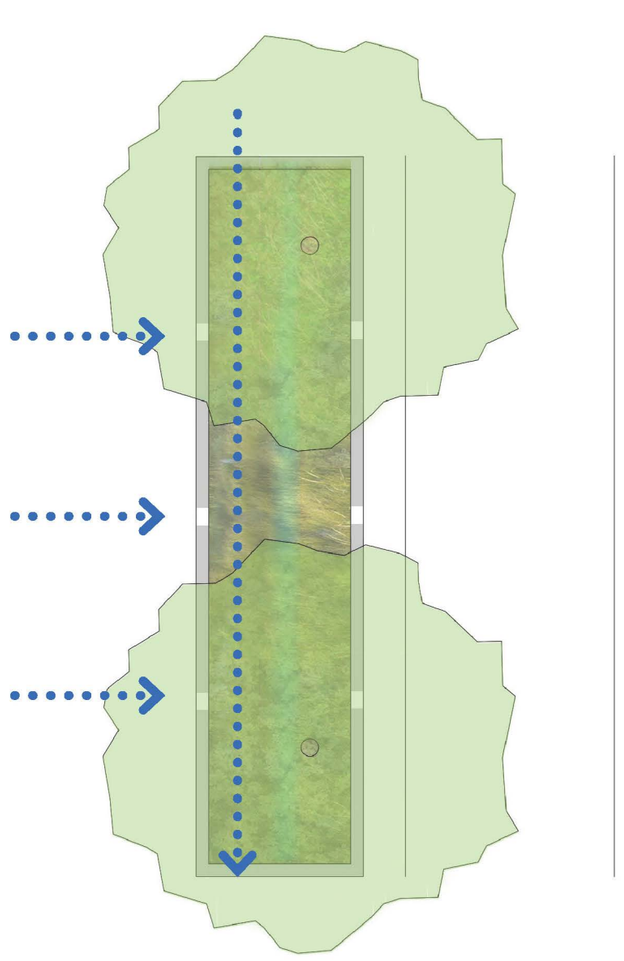
植物水道与座椅设施结合细部
Bioswale with Seating



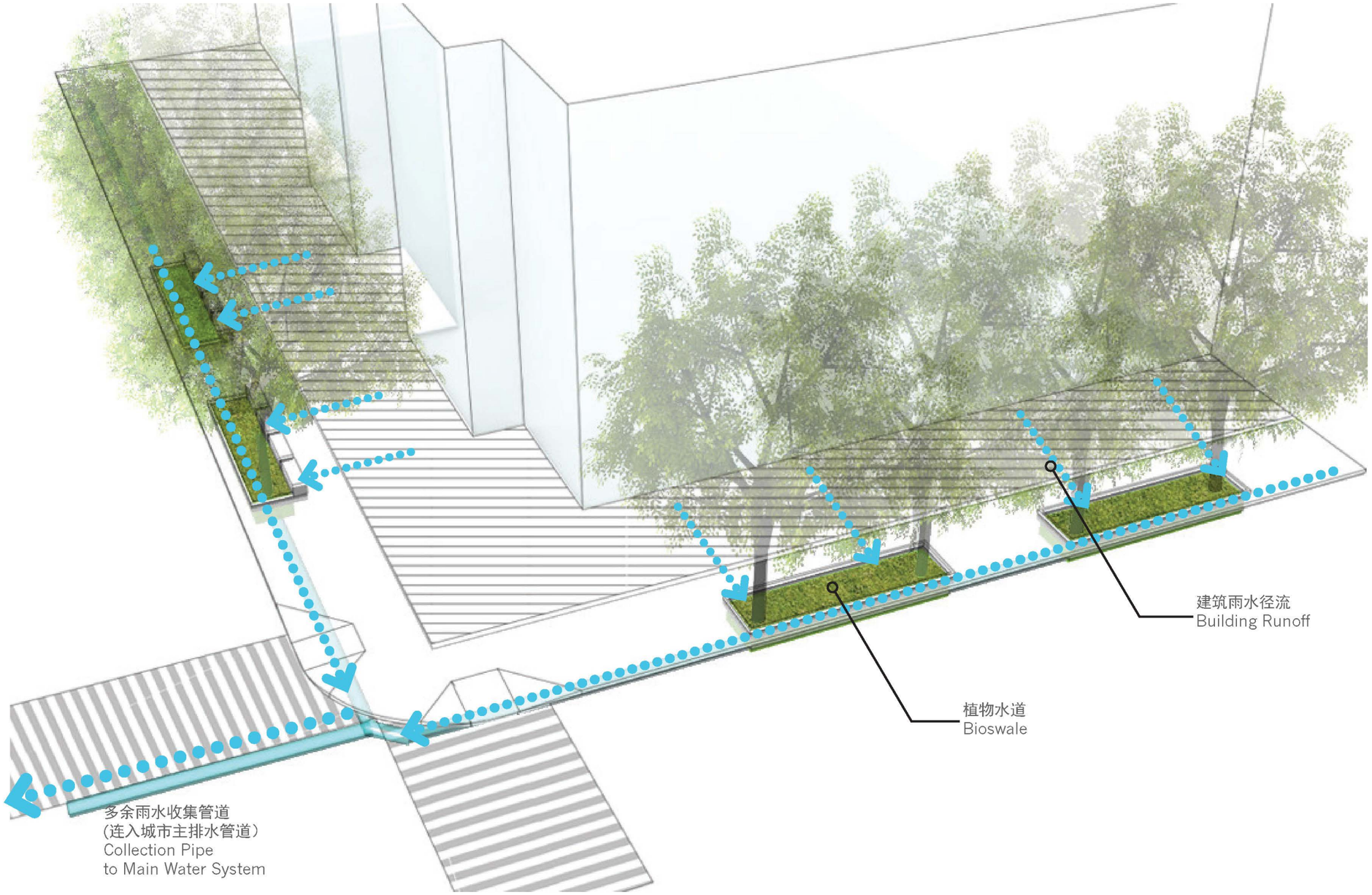
植物水道与路缘结合细部
Bioswale with Curb







植物水道（生态洼地)
Bioswales

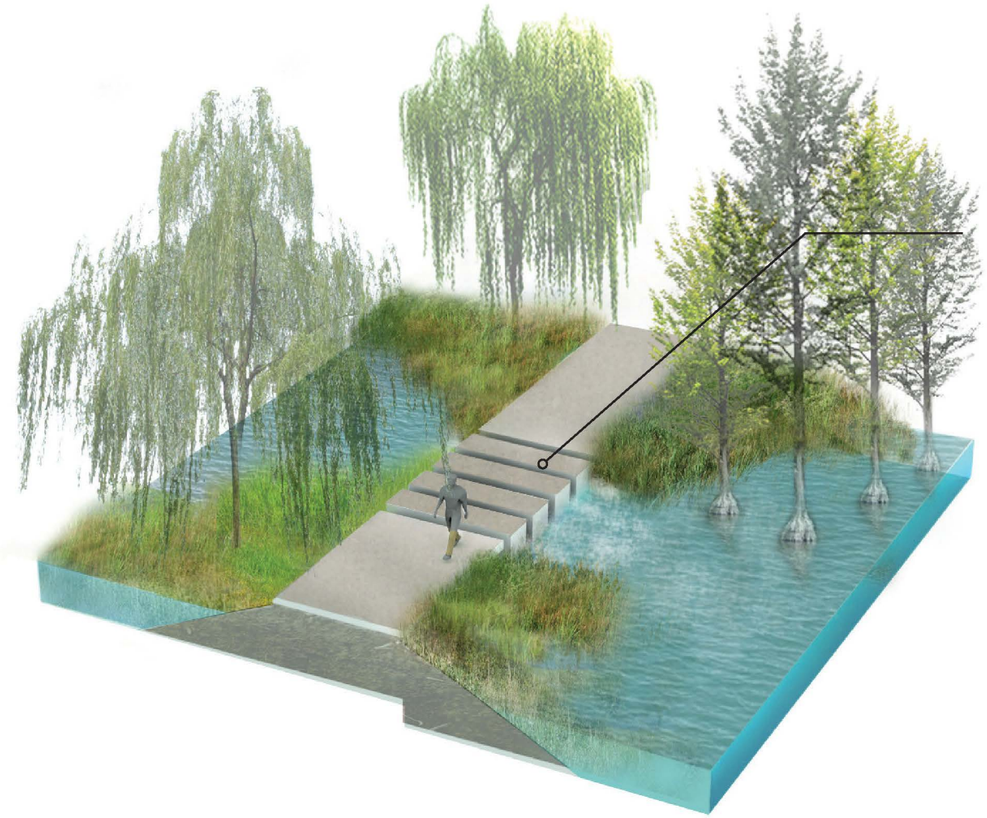


步行式堤坝
Causeways

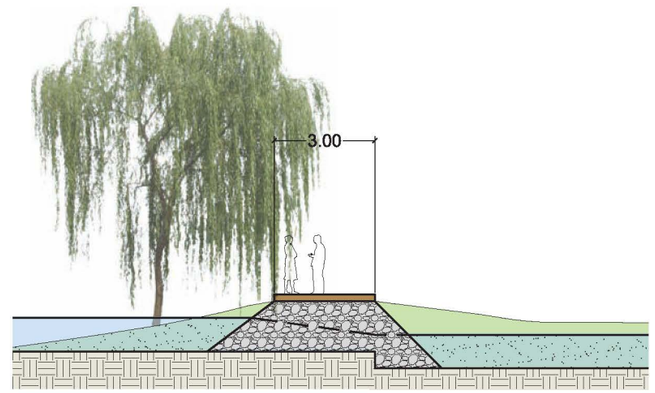
现有堤坝 Existing Wuhan Causeway

现有堤坝 Existing Wuhan Causeway

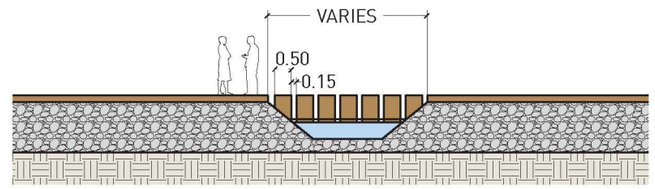
步行式堤坝
Causeways



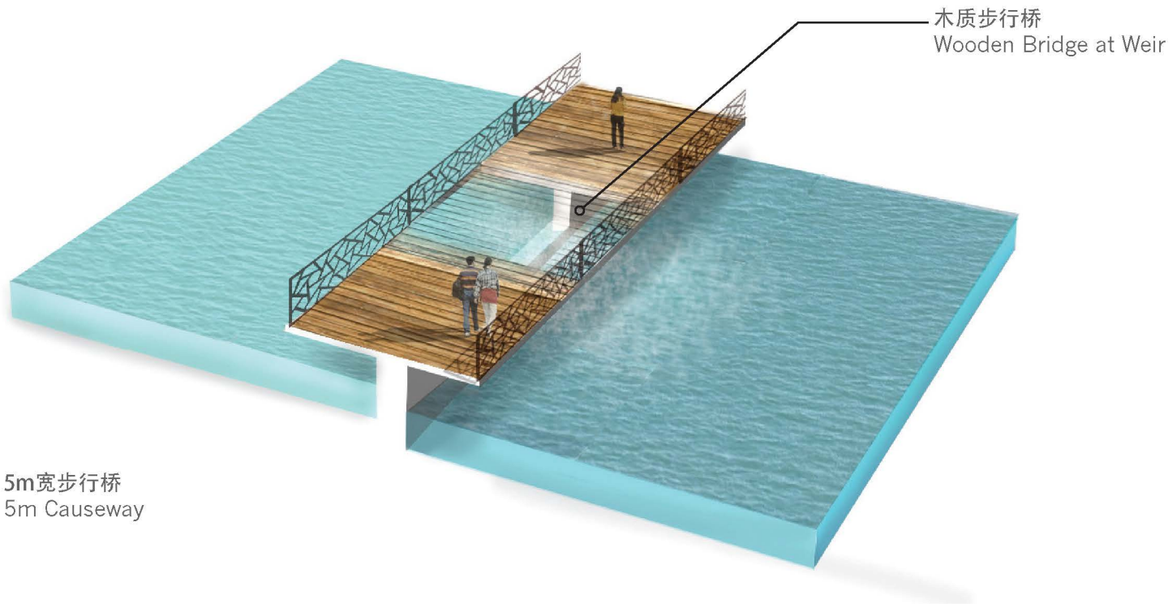
2m宽汀步
2m Causeway



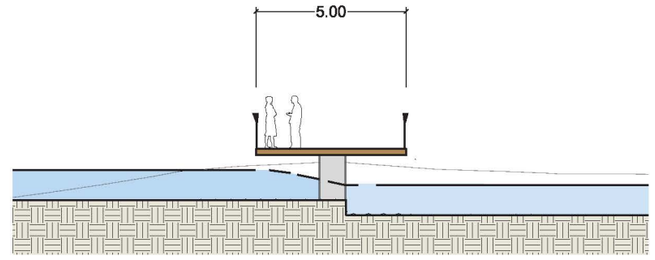
步行式堤坝横截面
Causeway Cross Section



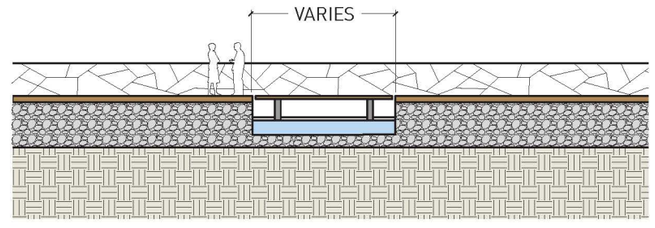
步行式堤坝纵截面
Causeway Long Section



5m宽步行桥
5m Causeway



步行式堤坝横截面
Causeway Cross Section



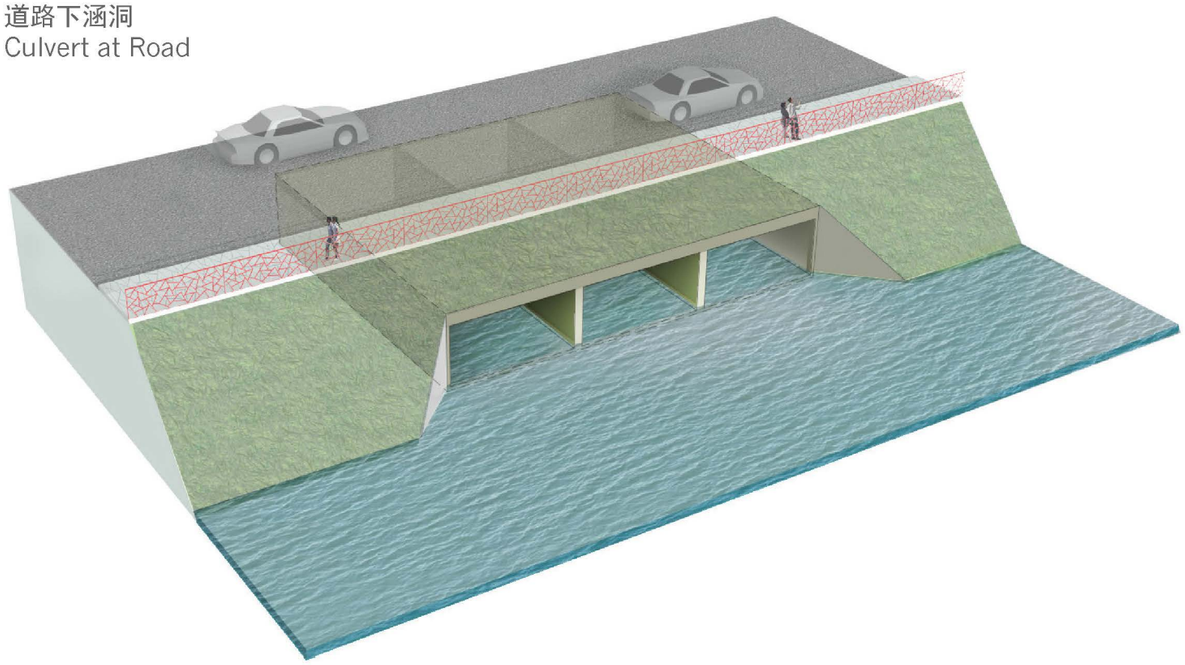
步行式堤坝纵截面
Causeway Long Section

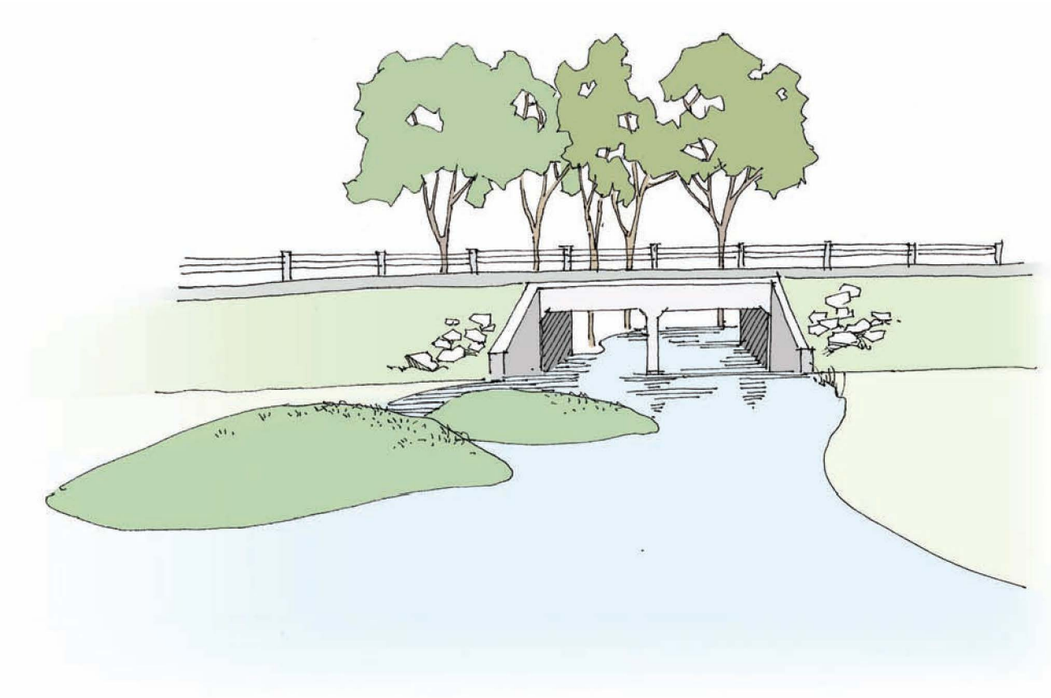
堤坝类型
Culverts and Weirs

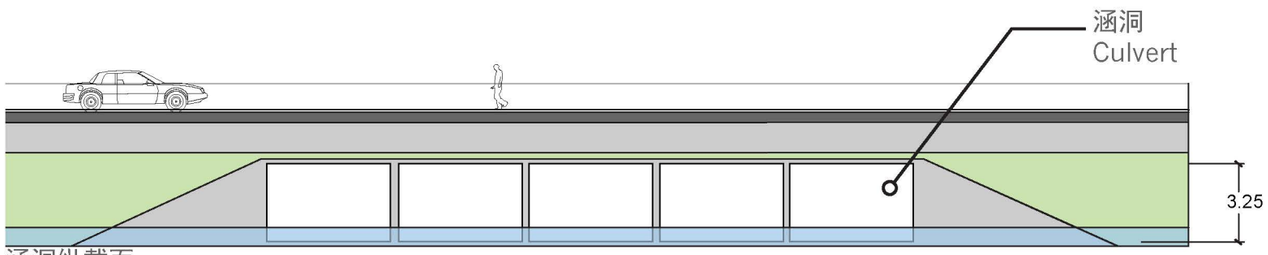
武汉现有堤坝
Existing Wuhan Weir

典型堤坝 Typical Weir

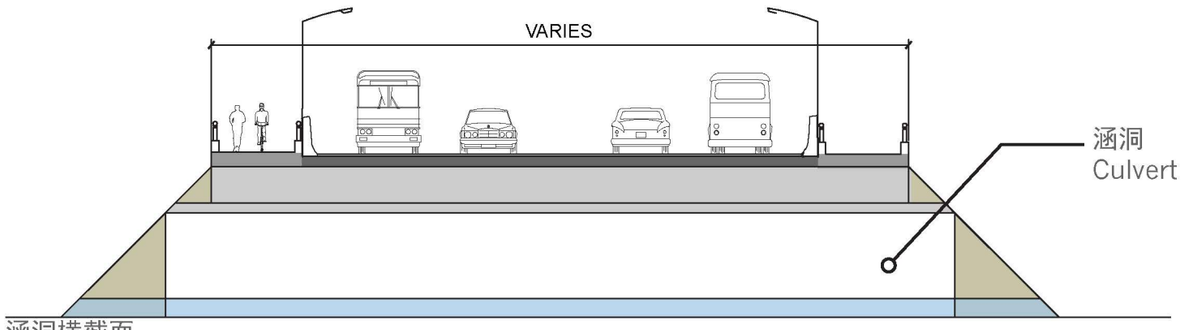
道路下涵洞
Culvert at Road





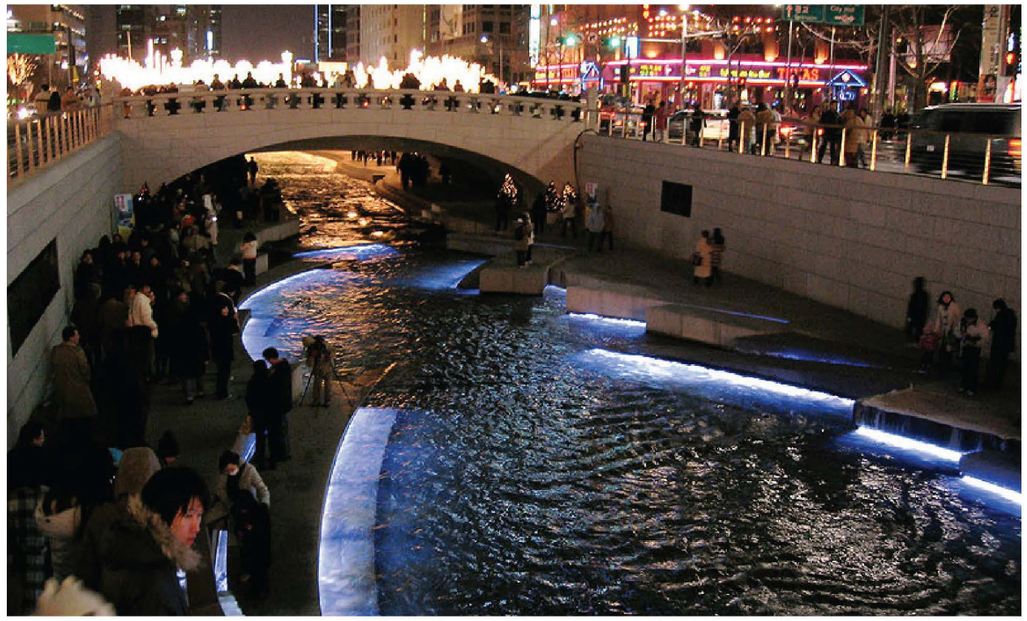


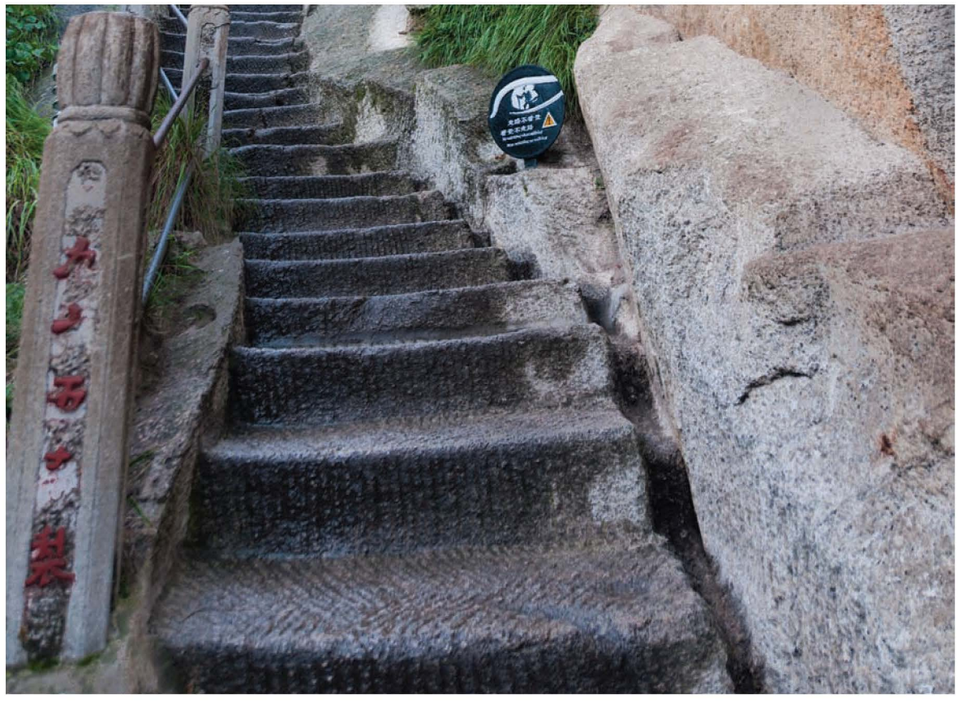
涵洞纵截面
Culvert Long Section



涵洞横截面
Culvert Cross Section

河岸 山径
Waterways and Paths



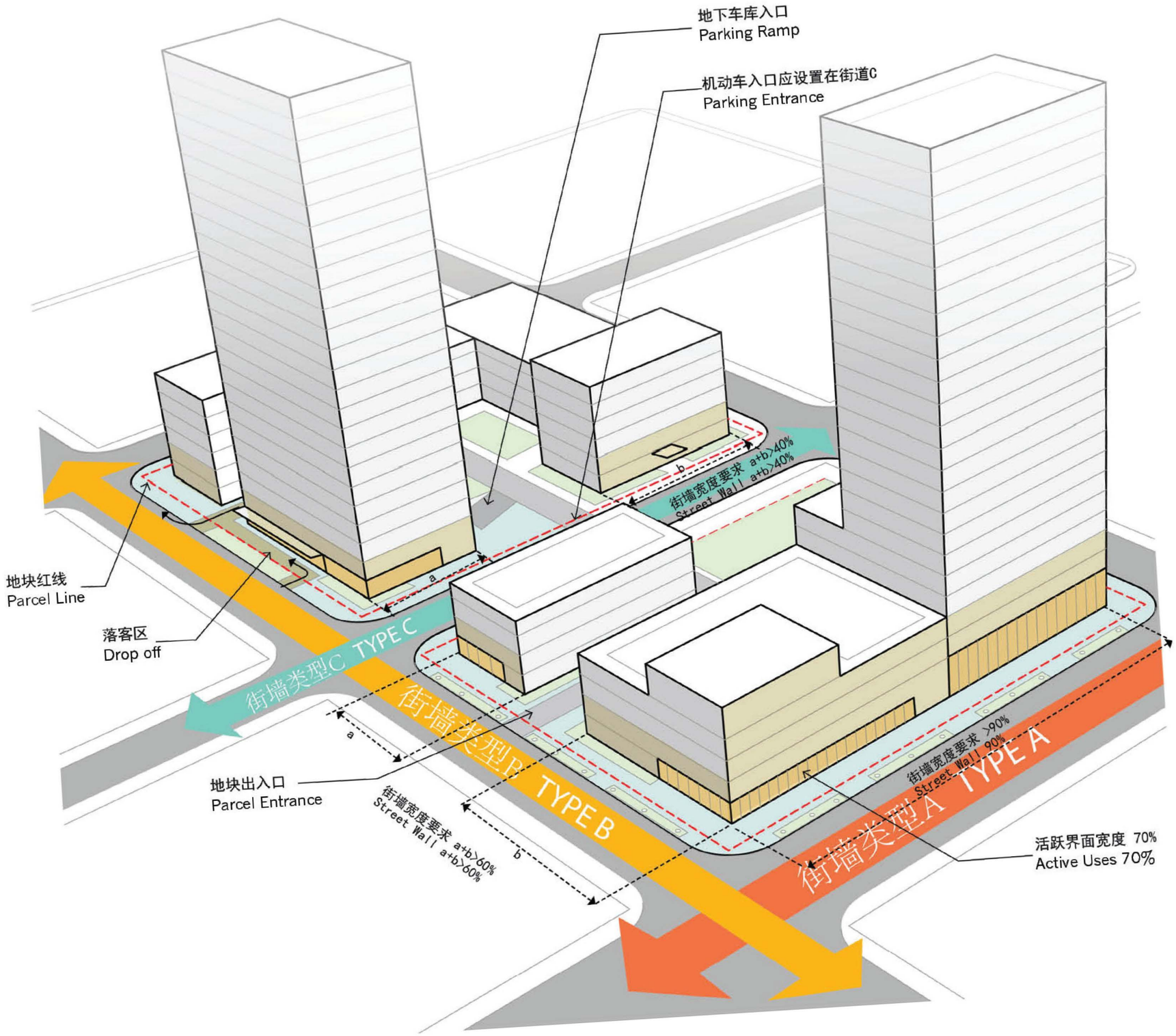


公共领域导则
Public Realm Guidelines

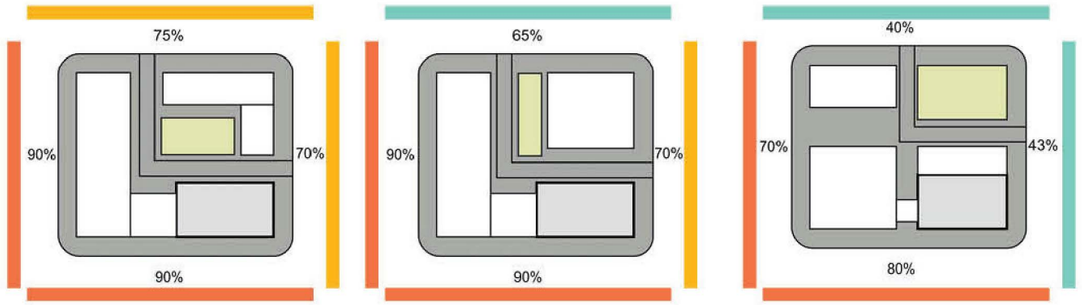
The new city is organized by the existing natural systems and features that also provide its key amenities. These features include the varied topography and hills that define uplands, many of them covered with beautiful, lush forests. Many of these hills have been preserved to create a strong backbone to the open space system. The form of the topography directs the flow of rain water toward its end point at the lake. With the same idea, many of the existing streams and drainage ways have also been preserved and enhanced to create a dynamic water system capable of conveying and purifying large volumes of water and also storing it for visual, recreational, and irrigation uses throughout the open space system. The form of the open space is then completely structured in a topographic and riverine network that is a new approach in linking the citizens of the new city to each other and to the nature around them.

光谷中心区利用现状自然系统与地形特点组织空间形态及主要配套设施布局。大量有着优美葱郁森林景观的山体高地与多样化的地形构成地区特色。设计中保留大部分山体形成开放空间系统，结合地形设计引导雨水径流顺势汇流入湖。同时，利用并改造大部分现状河道及排水系统，建立大规模雨水传输与净化的动态水系，并通过开放空间系统存储雨水，用于景观、娱乐及灌溉功能。开放空间的形态设计与地形及滨水系统达到完美结合，成为实现中心区居民相互交流与亲近自然的新方式。

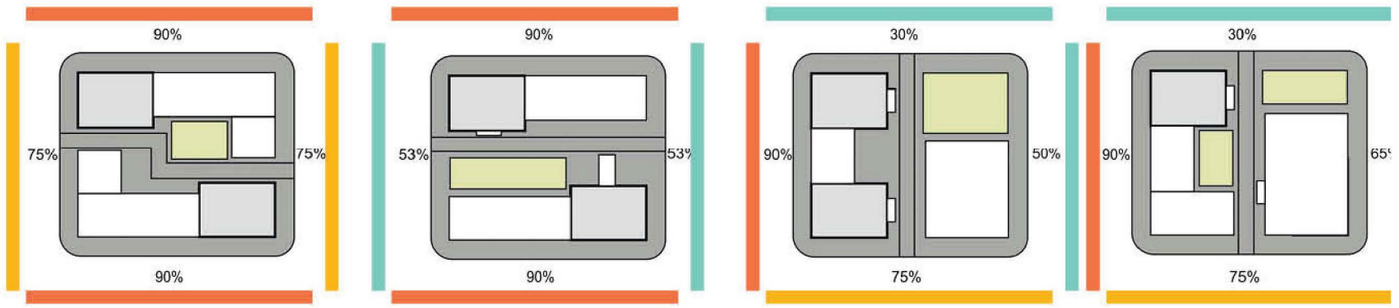
街墙系统
Street wall Types



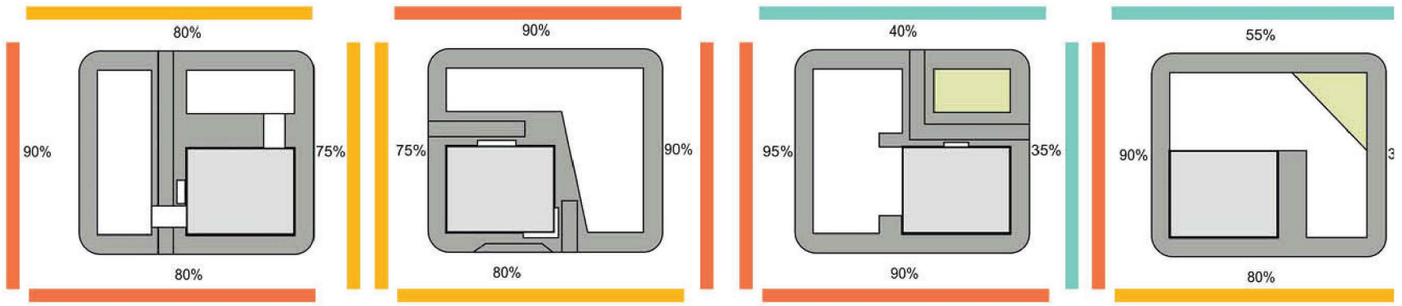
一栋典型尺度高层
One Mid SizeTower



两栋典型尺度高层
Two Mid SizeTower

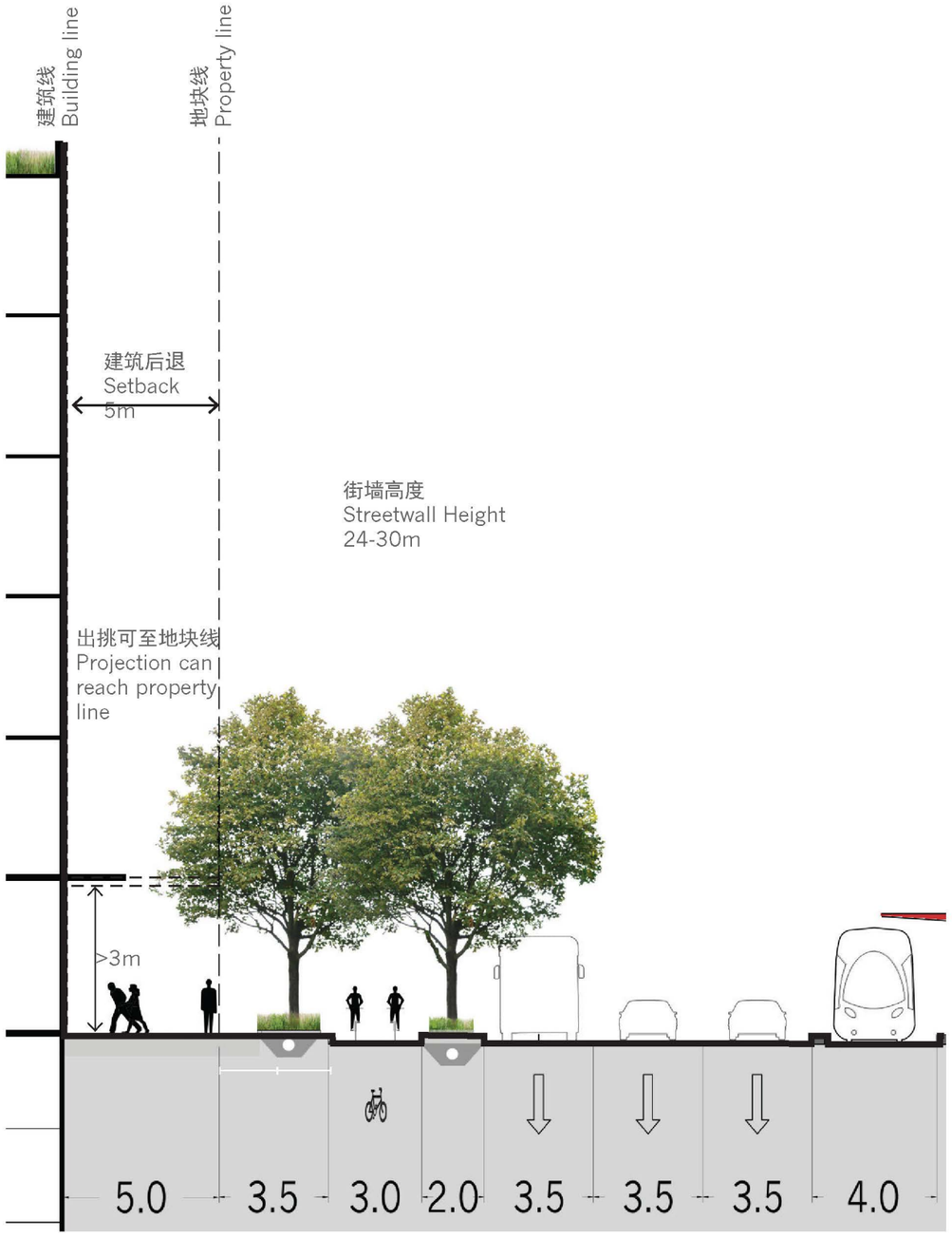


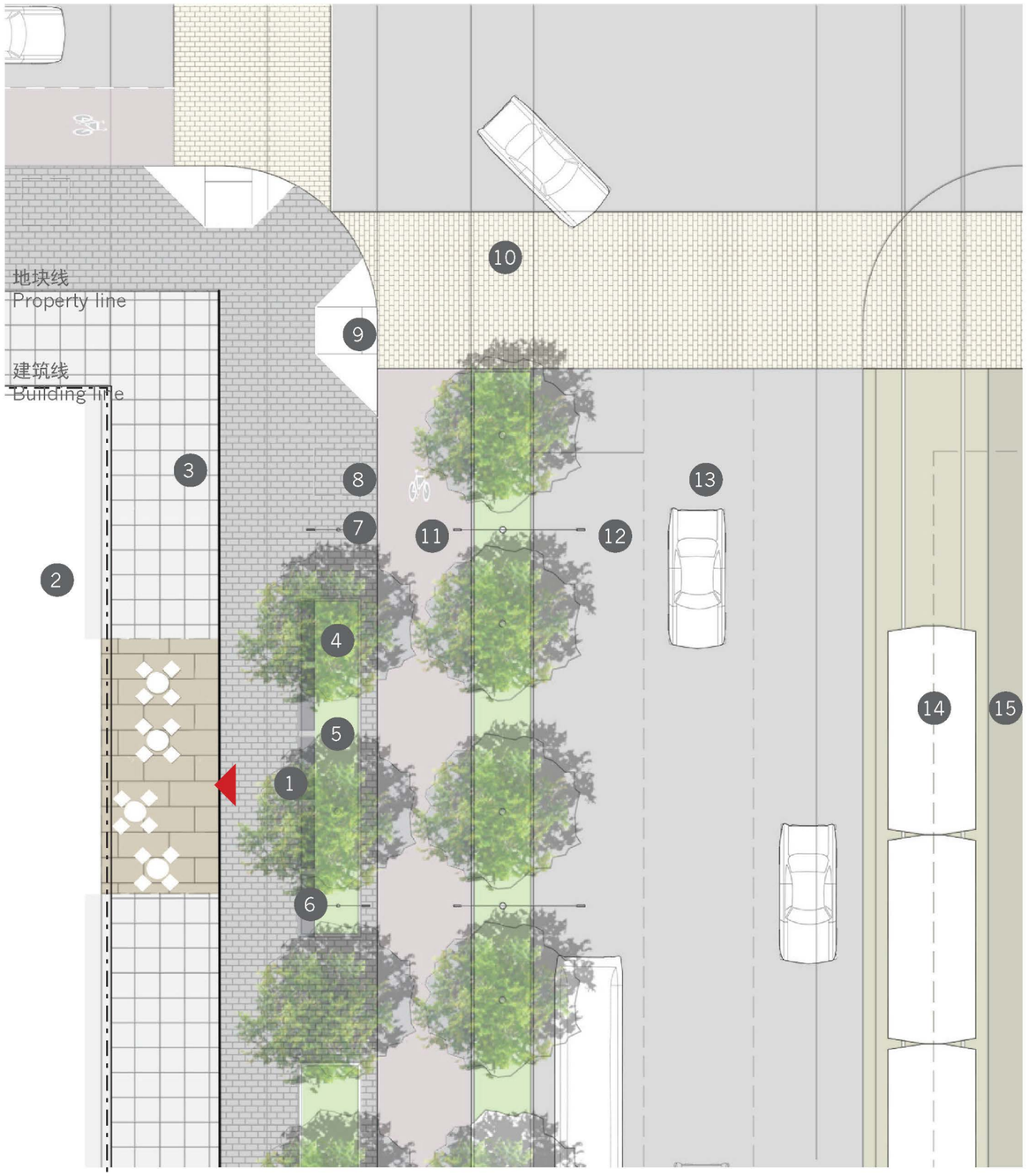
一栋典型大尺度办公高层
One Regular Office Tower



街道类型A(光谷五路)
Street Type A (Guanggu 5th Road)

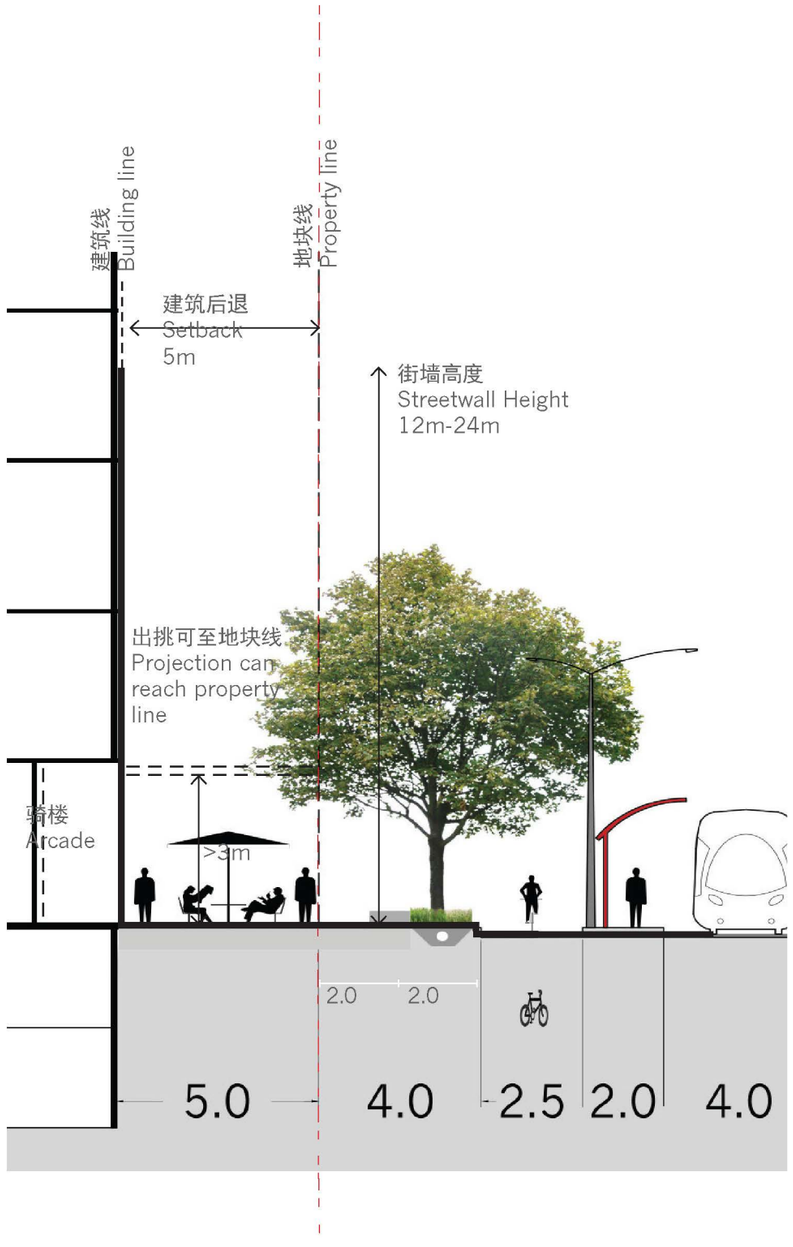
主商业街道
Primary Commercial Street

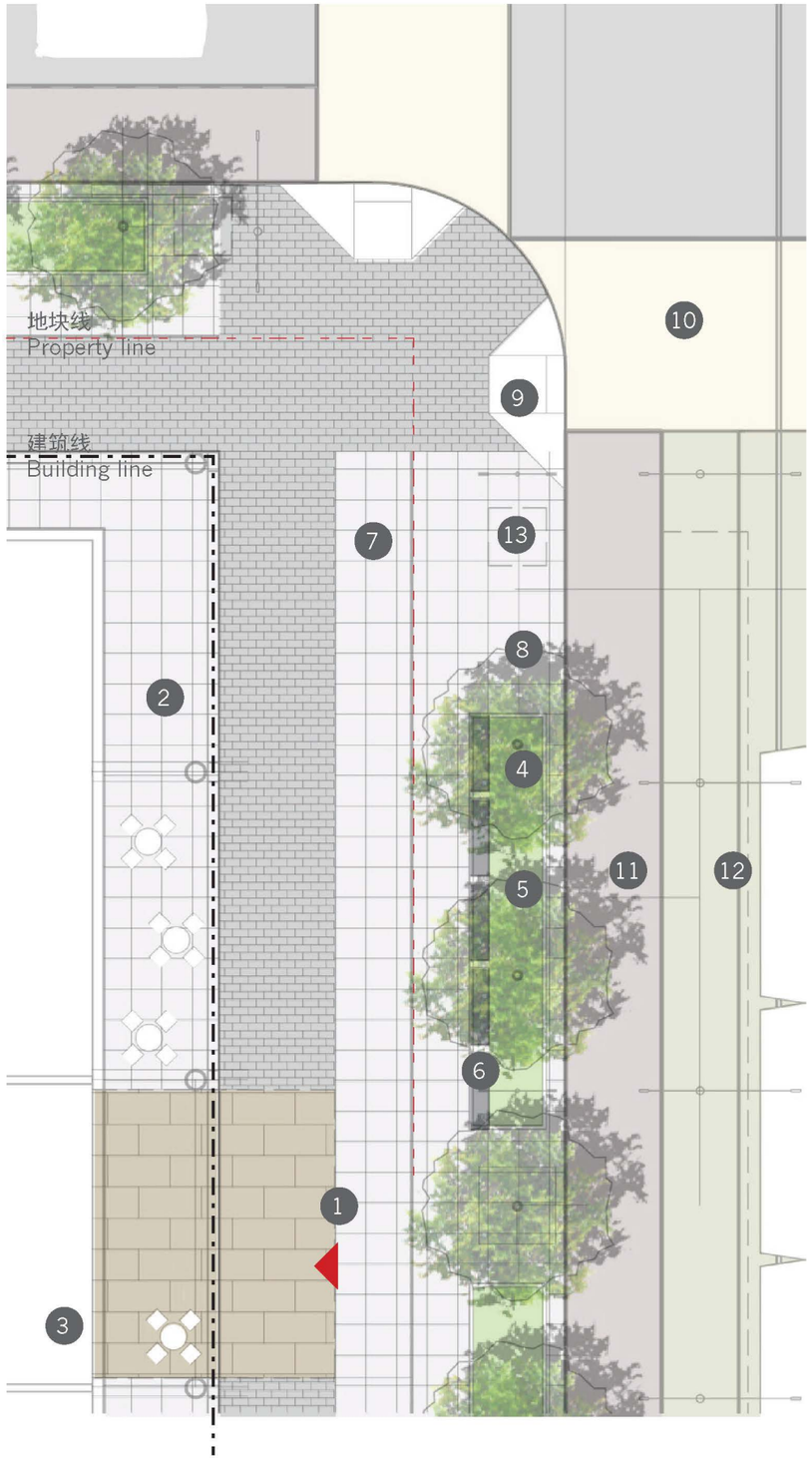




1. 入口 Entrance
2. 商业零售 Retail
3. 退界空间和人行道整合为公共空间 Integrate Setback Zone with Sidewalk as Public Space
4. 景观植栽 Planting
5. 生态过滤 Bioswale
6. 座椅 Seating
7. 行人街灯和广告旗 Pedestrian Lights/Banner
8. 垃圾回收 Trash Receptacle
9. 无障碍斜坡 Sloped Ramp
10. 清晰铺地的人行横道 Distinctive Paving for Pedestrian Crossing
11. 清晰铺地的自行车道 Distinctive Paving for Bike Lanes
12. 公车道 Bus Lane
13. 车道 Car Lane
14. 有轨电车 Street Car
15. 月台 Platform

街道类型A (松涛路)
Street Type A (Songtao Road)



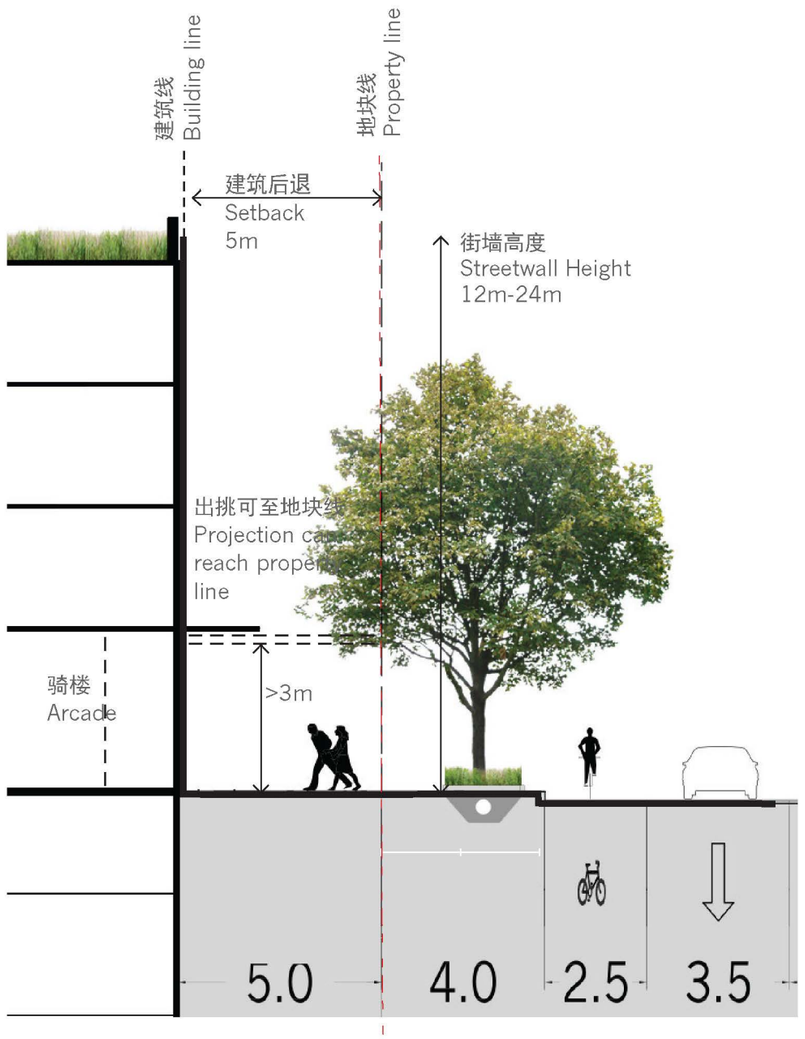


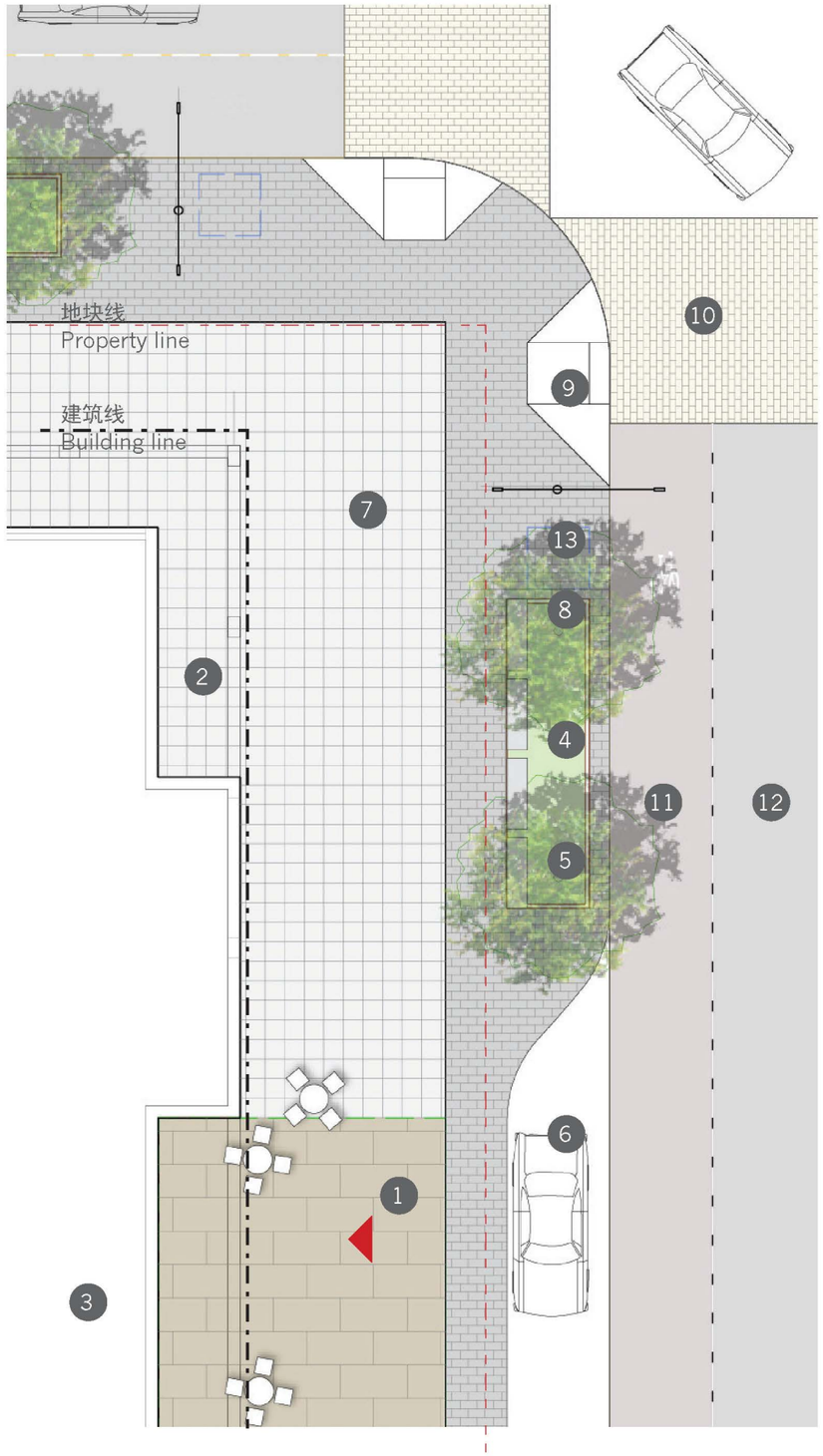
主商业街道
Primary Commerical Street

1. 入口
   Entrance
2. 可能的骑楼/地面层退缩
   Potential Arcade/Ground Floor Recess
3. 商业零售
   Retail
4. 景观植栽
   Planting
5. 生态过滤
   Bioswale
6. 座椅
   Seating
7. 退界空间和人行道整合为公共空间
   Integrate setback zone with sidewalk as public space
8. 行人街灯和广告旗
   Pedestrian Lights/Banner
9. 无障碍斜坡
   Sloped Ramp
10. 清晰铺地的人行横道
    Distinctive Paving for Pedestrian Crossing
11. 清晰铺地的自行车道
    Distinctive Paving for Bike Lanes
12. 车道
    Car Lanes
13. 垃圾回收
    Trash Receptacle

街道类型B
Street Type B

二级商业道路及下客区
Secondary Commercial Road and Drop Off





1 入口
Entrance

2 可能的骑楼/地面层退缩
Potential Arcade/Ground Floor Recess

3 零售商业
Retail

4 景观植栽
Planting

5 生态过滤
Bioswale

6 下客区
Passenger Drop off

7 退界空间和人行道整合为公共空间
Integrate setback zone with sidewalk as public space

8 行人街灯和广告旗
Pedestrian Lights/Banner

9 无障碍斜坡
Sloped Ramp

10 清晰铺地的人行横道
Distinctive Paving for Pedestrian Crossing

11 清晰铺地的自行车道
Distinctive Paving for Bike Lanes

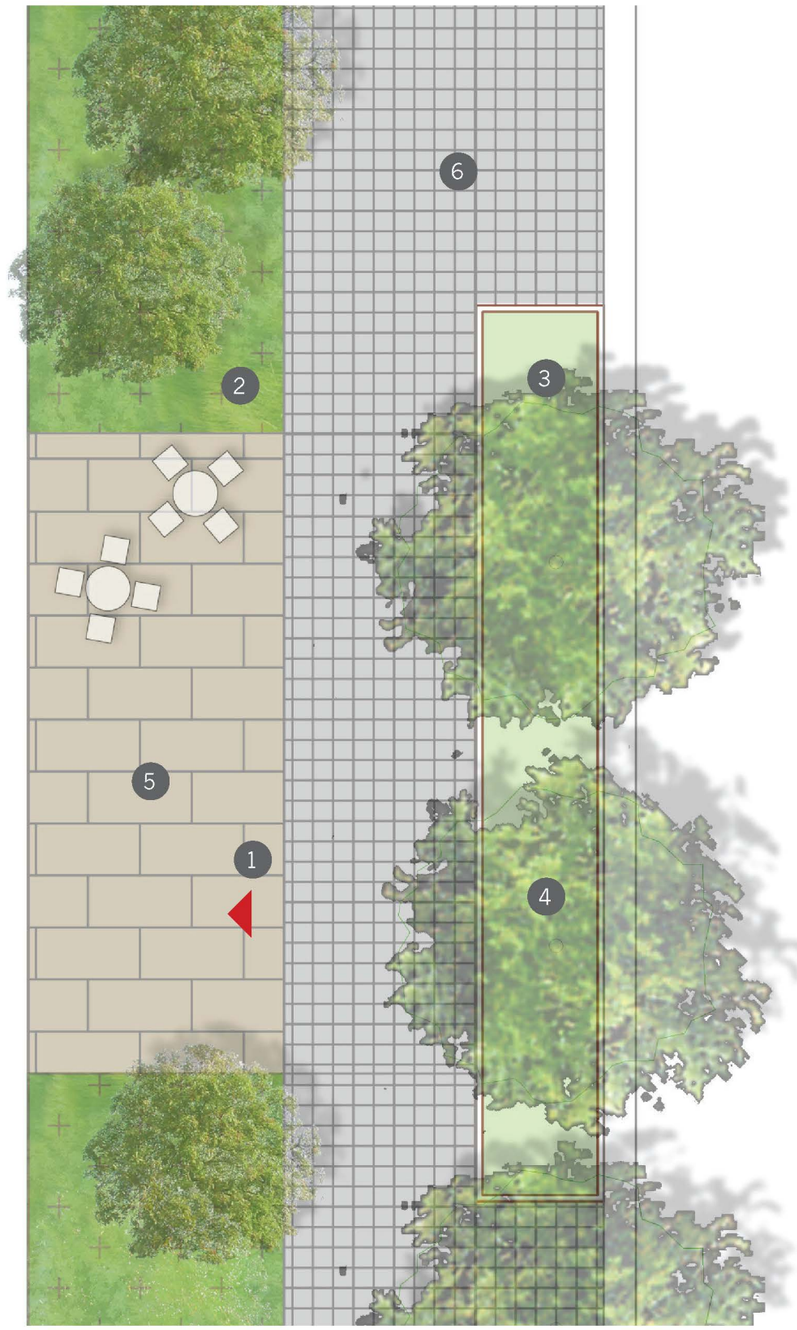
12 车道
Car Lanes

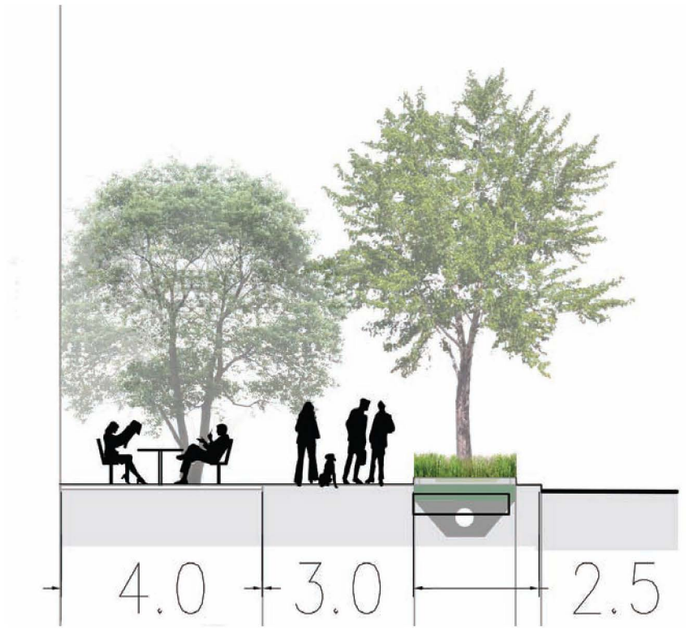
13 垃圾回收
Trash Receptacle

街道类型C
Street Type C

半私密街道

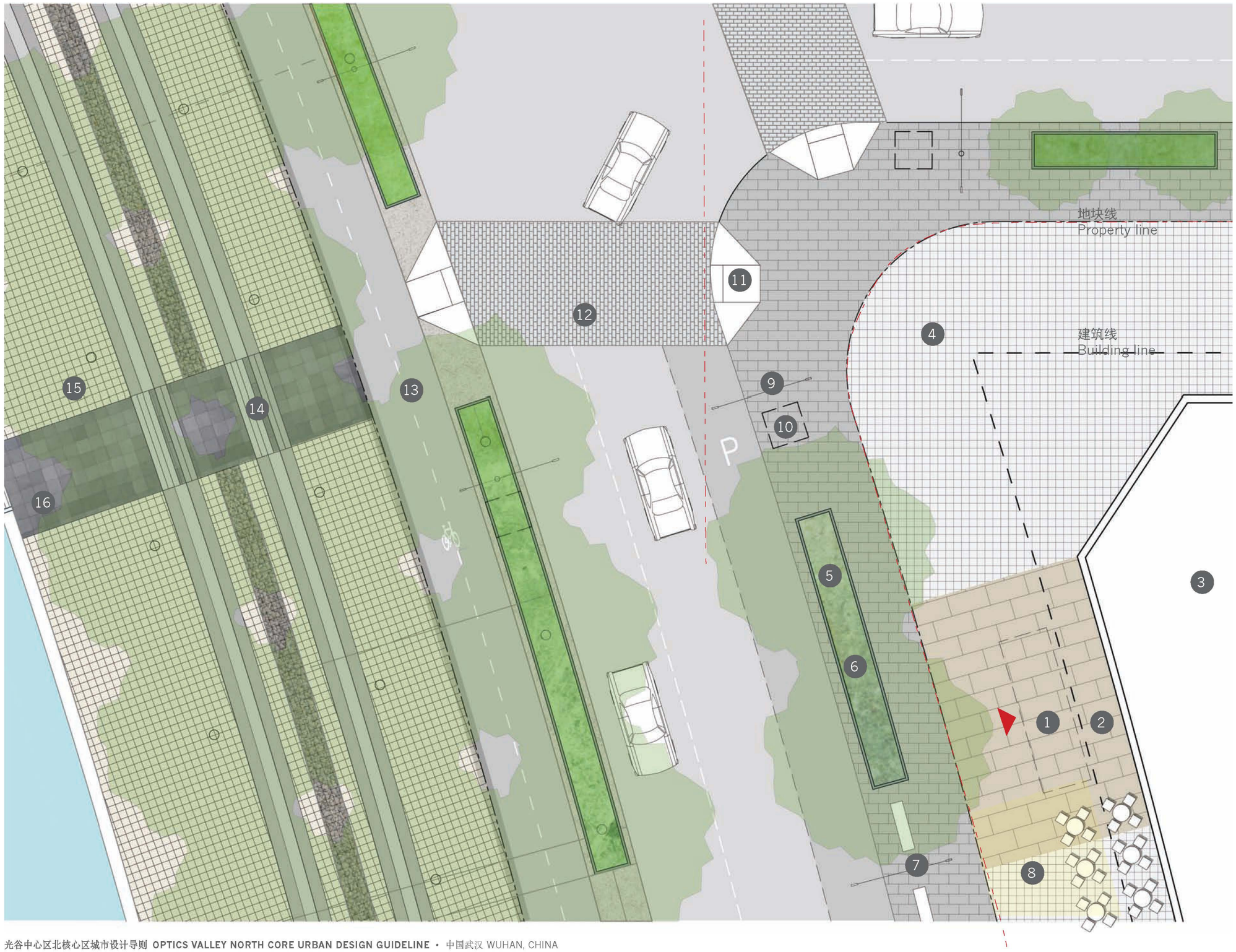
Semi-Private Street





1. 入口
   Entrance
2. 景观植栽
   Planting
3. 沿街植栽
   Streetside Planting
4. 生态过滤
   Bioswale
5. 清晰铺地的入口
   Distinctive Entrance Paving Type
6. 清晰铺地的入行道
   Distinctive Walkway Paving

新月街道景观
Crescent Streetscape



1 入口
Entrance

2 骑楼/地面层退缩
Arcade/Ground Floor Recess

3 商业零售
Retail

4 退界空间和人行道整合为公共空间
Integrate Setback Zone with Sidewalk as Public Space

5 景观植栽
Planting

6 生态过滤
Bioswale

7 座椅
Seating

8 配合商业可在建筑退界内设置户外座与餐饮
Potential Outdoor Seating/Dining within Setback

9 行人街灯和广告旗
Pedestrian Lights/Banner

10 垃圾回收
Trash Receptacle

11 无障碍斜坡
Sloped Ramp

12 清晰铺地的人行横道
Distinctive Paving for Pedestrian Crossing

13 清晰铺地的自行车道
Distinctive Paving for Bike Lanes

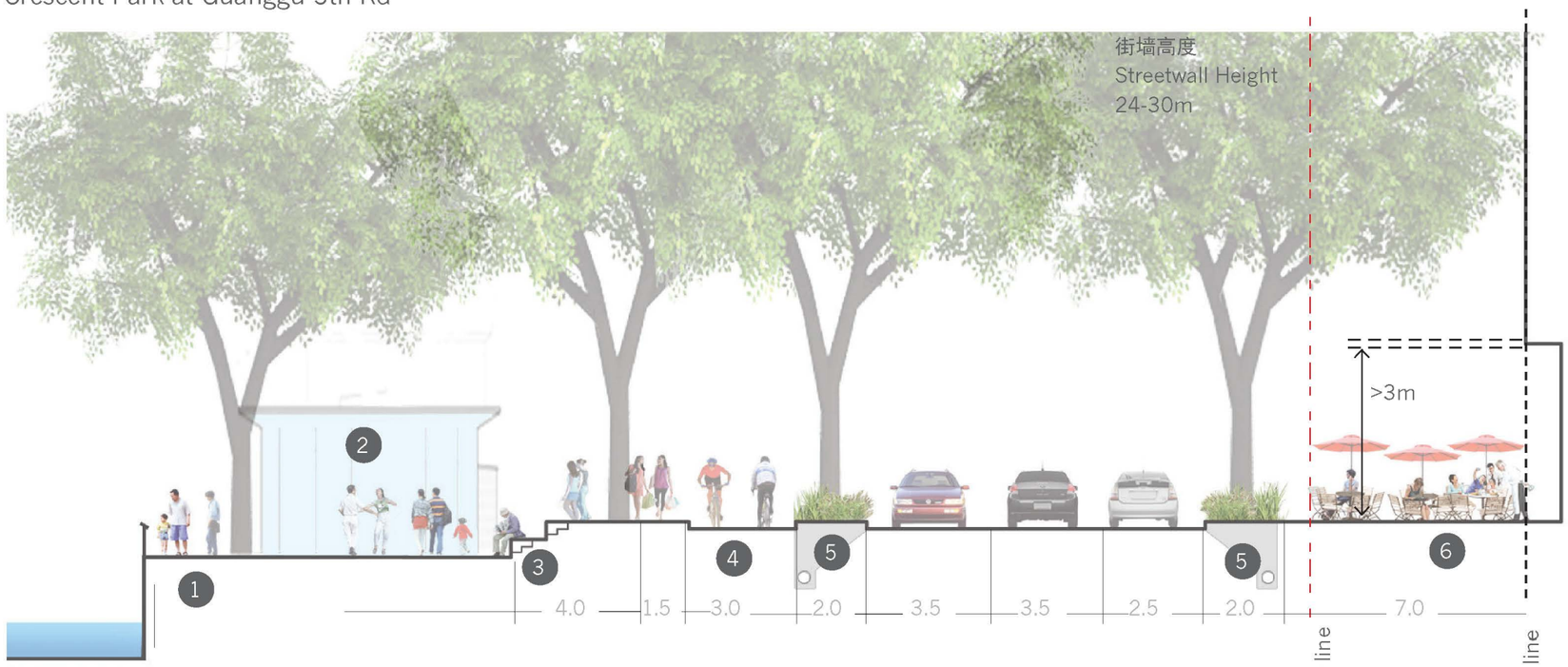
14 阶梯广场
Terrace

15 滨水大道
Waterfront Promenade

16 行人步行桥
Pedestrian Bridge

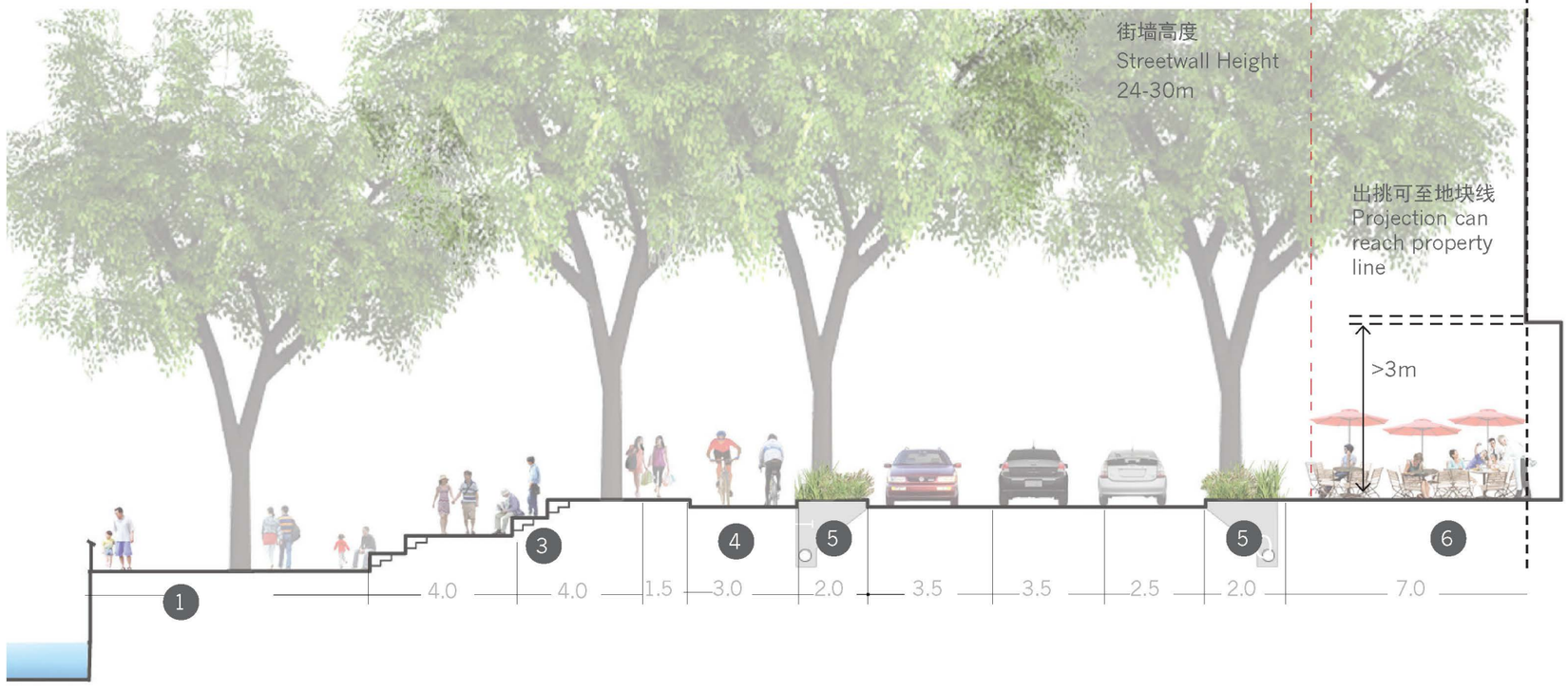
新月公园与光谷五路连接处截面

Crescent Park at Guanggu 5th Rd



新月公园与神墩二路连接处截面

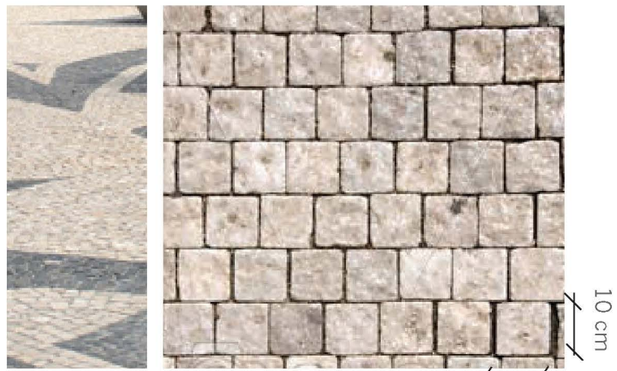
Crescent Park at Shen Dun 2nd Rd



光谷核心区街道景观截面
Guanggu Downtown Streetscape Levels

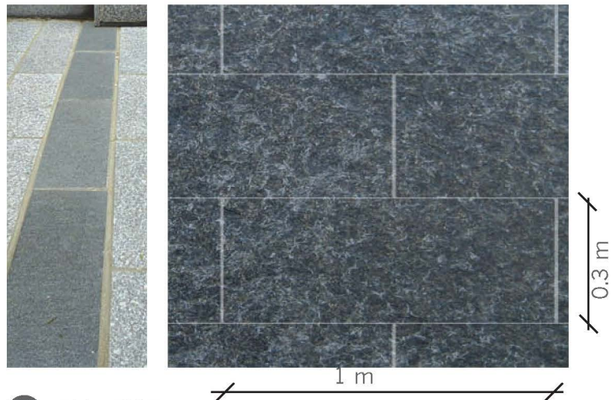
1. 滨水大道
   Waterfront Promenade
2. 水岸亭
   Waterfront Pavilion
3. 阶梯广场
   Seating Terraces
4. 自行车道
   Bike Lanes
5. 生态过滤
   Bioswale
6. 室外餐饮
   Outdoor Seating Cafe

光谷核心区街道景观示意图
Guanggu Downtown Streetscape Levels



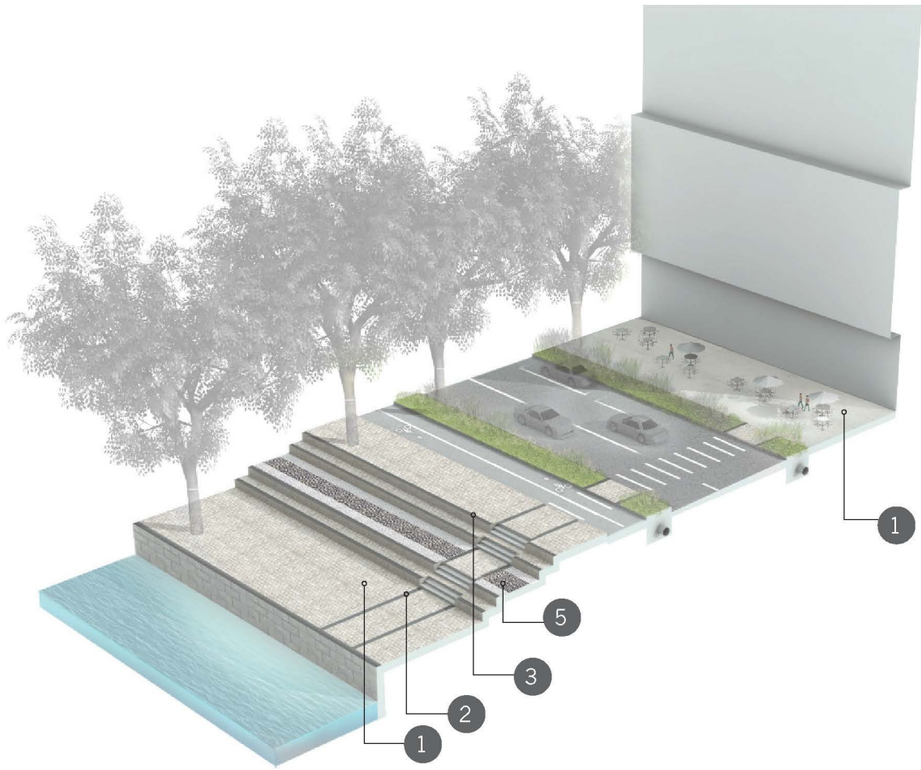
1 白色铺装打底 WHITE BASE

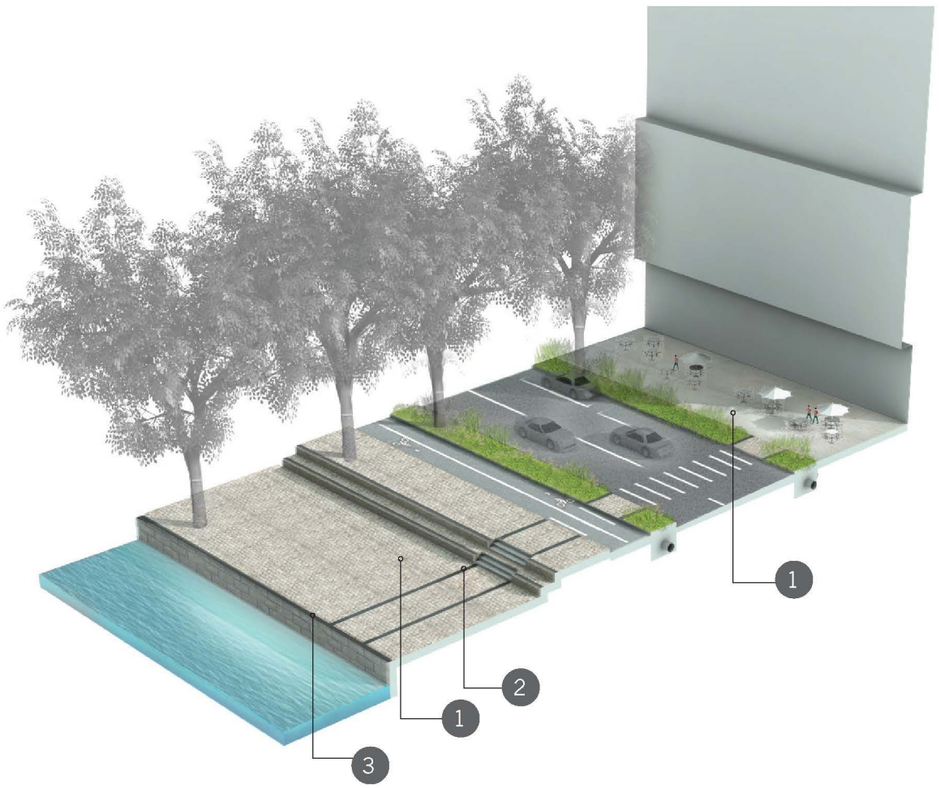
2 黑色铺装点缀 DARK ACCENT



3 长条形铺装 LONG PAVERS

4 卵石铺装 RIVER STONE ACCENT



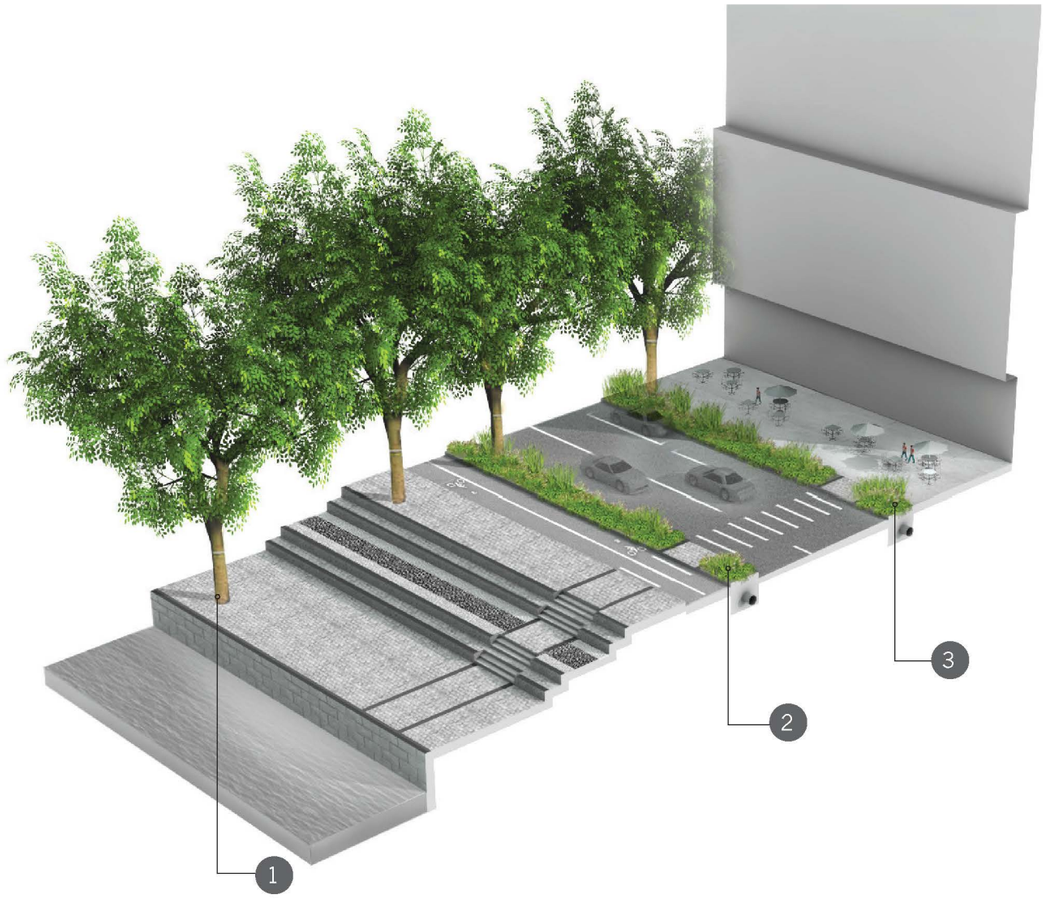


光谷核心区街道种植设计
Guanggu Downtown Streetscape Planting

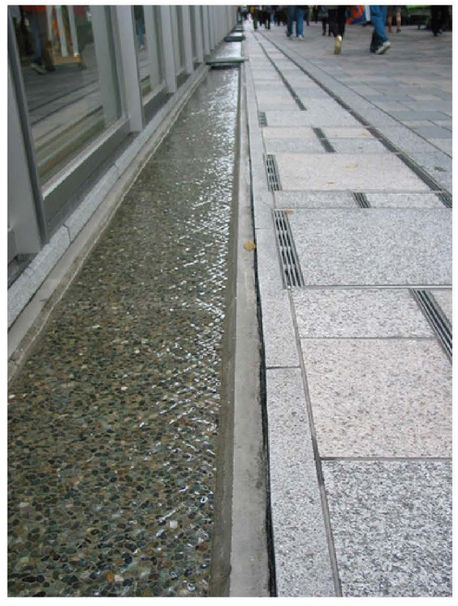
1 行道树：悬铃木 STREET TREE: SYCAMORE

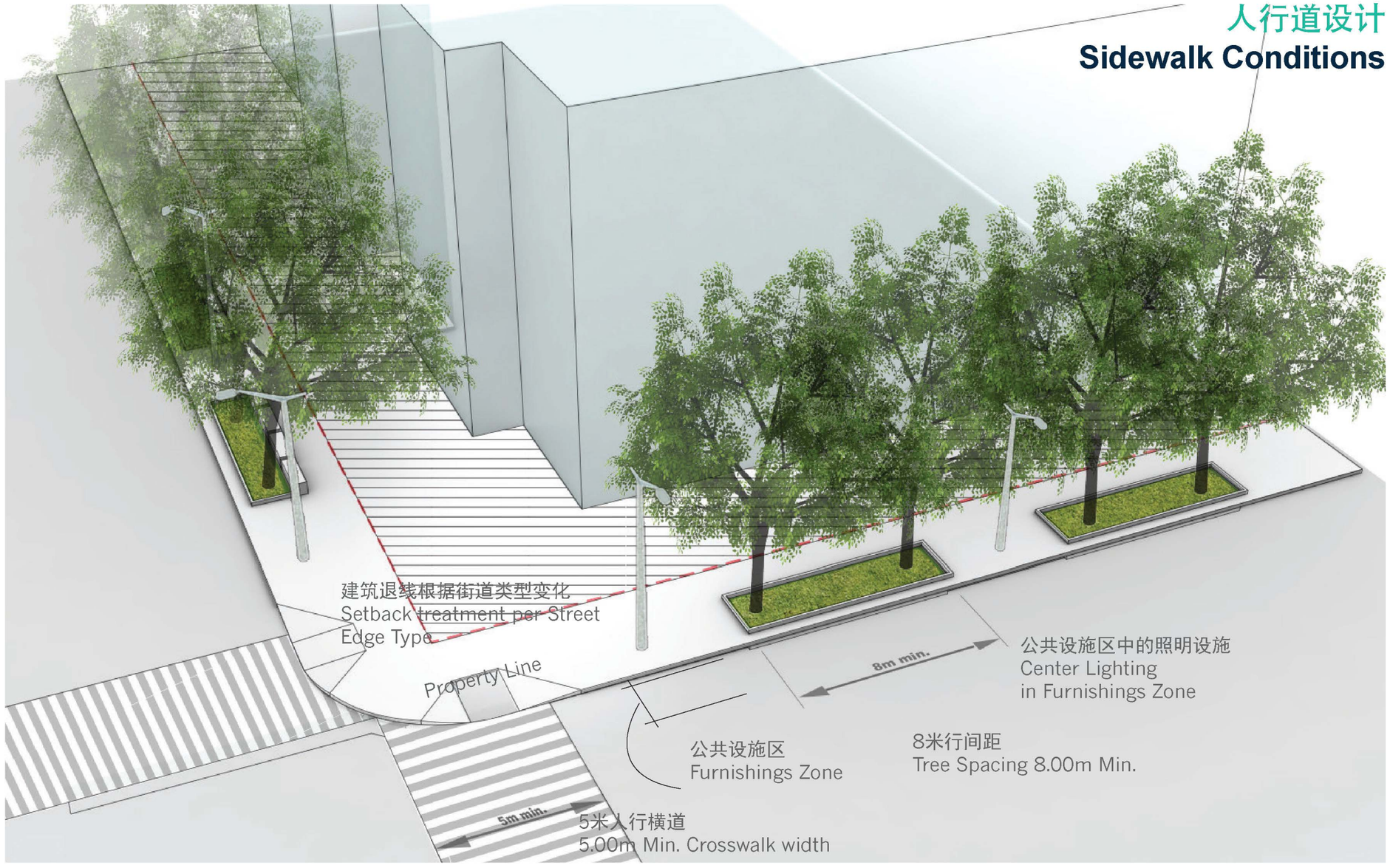
2 植物水道 BIOSWALES

3 人行道植物 SIDEWALK PLANTING



人行道设计
Sidewalk Conditions





设计手法

- 为鼓励步行，所有街道均在马路两侧设置连续步行系统
- 步行系统分为三个区域：毗邻马路的公共设施区；步行区；以及与建筑相邻的灵活可变的景观/活动区
- 步行道最小设计宽度为5米，商业区步行道建议宽度为8米以上
- 步行系统在所有路口需连续，与人行横道连接处需使用无障碍设计

DESIGN APPROACHES

- To encourage pedestrian activity, streets shall have continuous sidewalks on both sides of the street.
- Sidewalks should be designed in three zone: a landscape/furnishings zone adjacent to the street, a pedestrian circulation zone, and a flexible landscape or amenity zone adjacent to building faces.
- The pedestrian circulation zone shall be a minimum of 5 meters in width, where wider walkways of 8 meters are encouraged in the commercial core.
- Pedestrian circulation zone must continue to all corners, and align with accessible crosswalks.

公共设施
Furnishing

耐用性
公共设施需简单耐用

美观性
公共设施应简约并符合现代城市风貌

风格性
公共设施应根据服务区域的不同在设计间距、材质、色彩上做统一调整

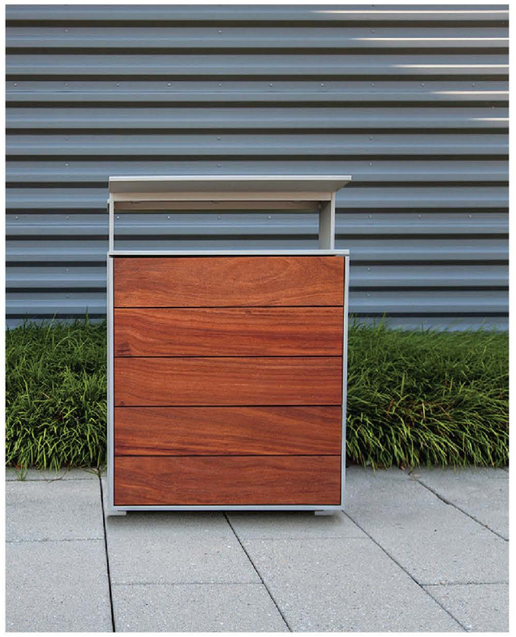
同一性
垃圾回收设施，指示设施应与统一区域内其它座椅、灯具设施统一设计格调

DURABILITY
Site furnishings should be chosen to convey longevity and simplicity.

AESTHETIC
Site furnishings should be modern, minimal and urbane in character.

CHARACTER
Site furnishings should be consistent at each respective zone, in order to provide a cohesive character to the neighborhood, with a consistent spacing, materials, a color scheme and patterns.

DESIGN VOCABULARY
Trash and recycling receptacles and bollards should use a consistent design vocabulary throughout the neighborhood.



照明设施
Lighting

照明设施应造型优美，起到提升公共安全及武汉城市形象的功能。灯具设计风格应简约、现代。本页图片中所示照明设施均为意向图，具体高度、间距及功率设计需根据设计功能定位和服务环境的不同而调整。同时设计应在符合照度规范前提下最小化光污染。景观照明设计还应做到以不破坏动植物生长、生活规律为原则。例如生态溪流、湿地等场所的夜间照明应适当调低照度以营造更舒适动植物栖息地。

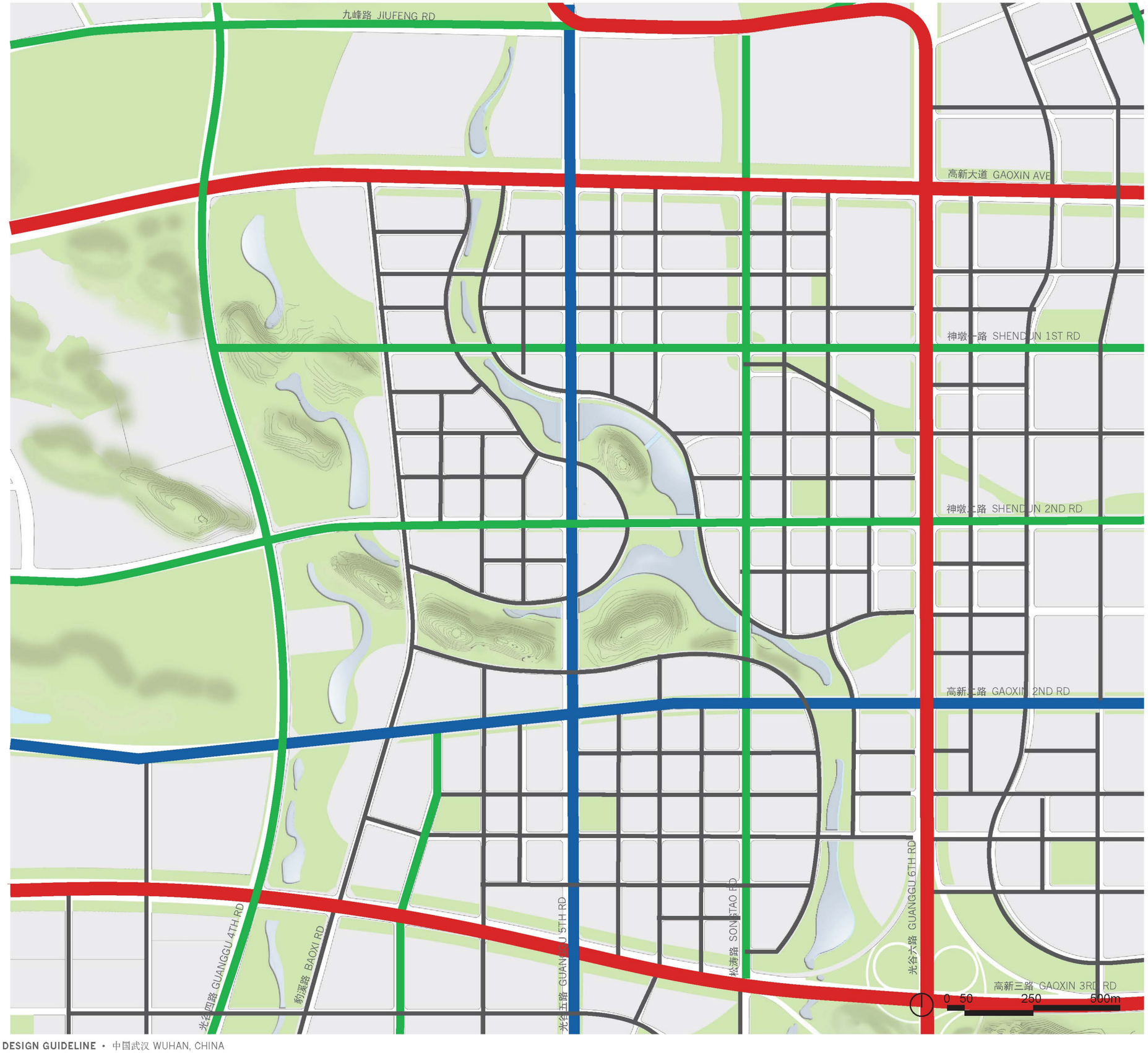
Lighting is intended to be attractive and visually engaging,while providing public safety and enhancing the character of Wuhans. Lighting designs are meant to be modern and simple. All lighting shown in this section is conceptual only, and critical analysis and photometric studies are required to specify the exact light fixture, lamping, wattage and fixture spacing. Night sky pollution is meant to be minimized while still providing safe lighting levels. Certain areas of Wuhan neighborhoods are intended to have lower lighting levels, such as the stream corridor, where it is important to minimize light pollution so as not to disturb wildlife and maintain a natural setting.

街道与公共交通

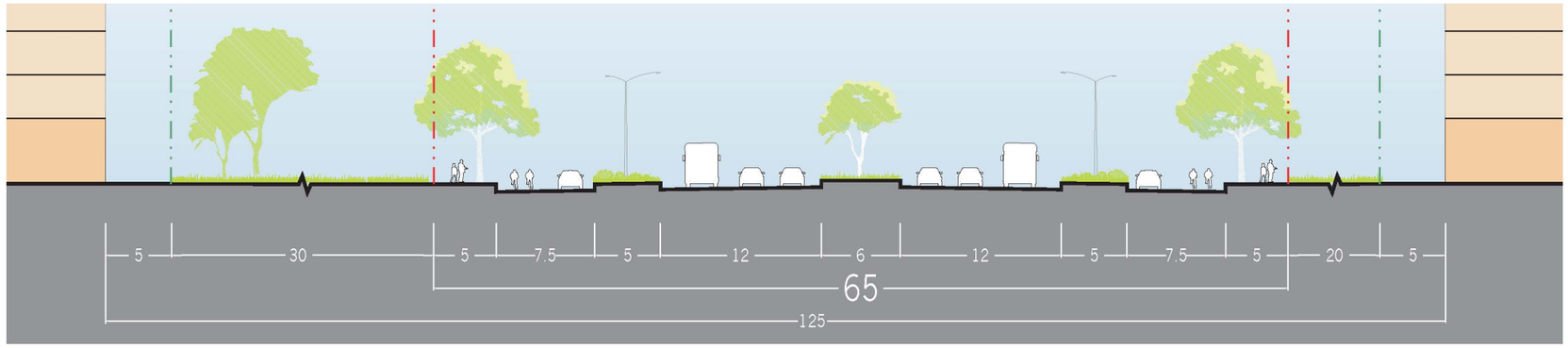
Streets & Public Transportation

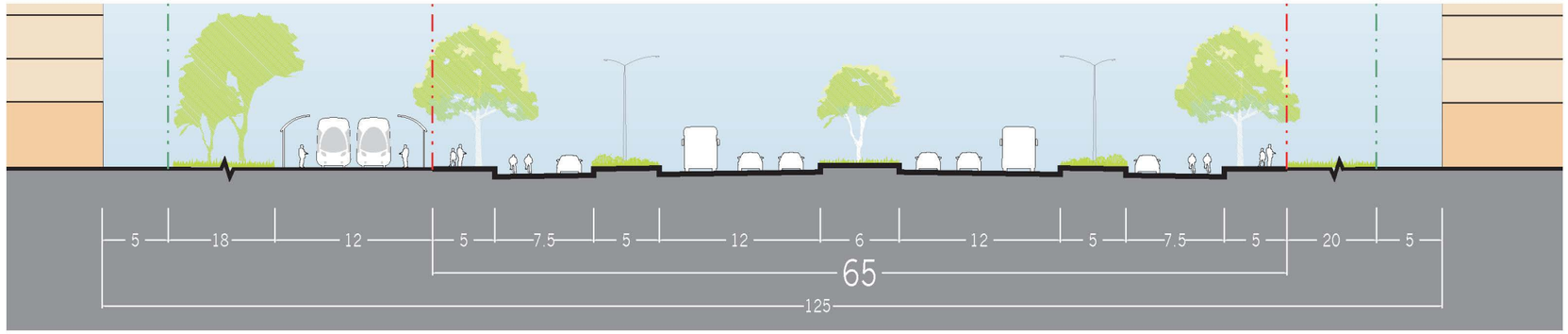
街道层级与断面
Street Hierarchy & Section

街道层级
Street Hierarchy



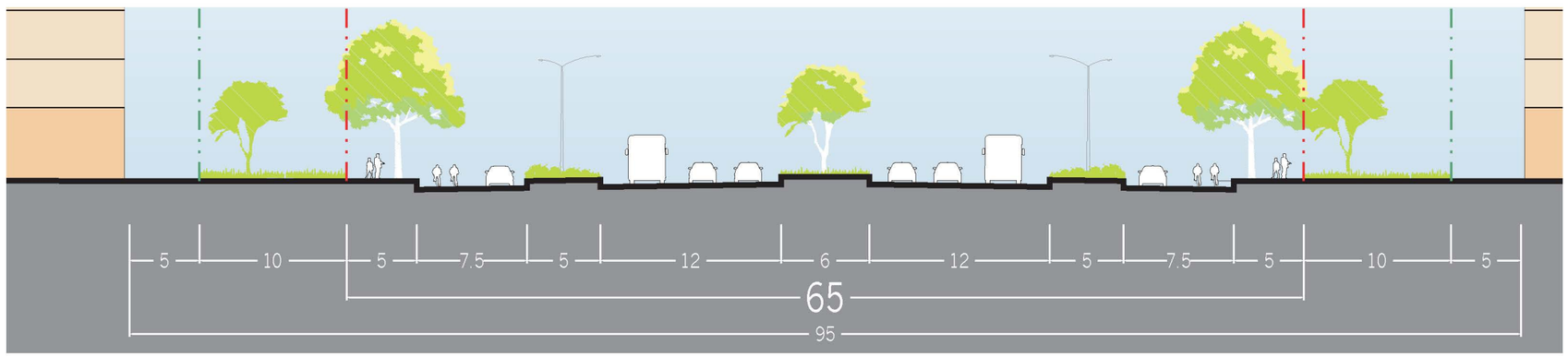
街道剖面
Street Section





高新大道剖面

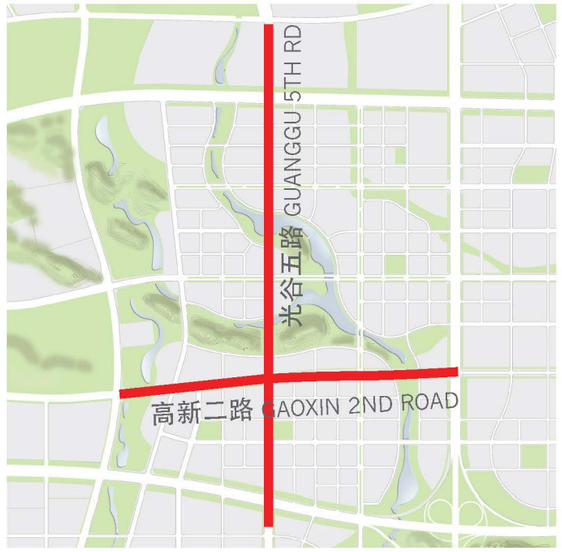
GAOXIN AVENUE SECTION WITH TRAM

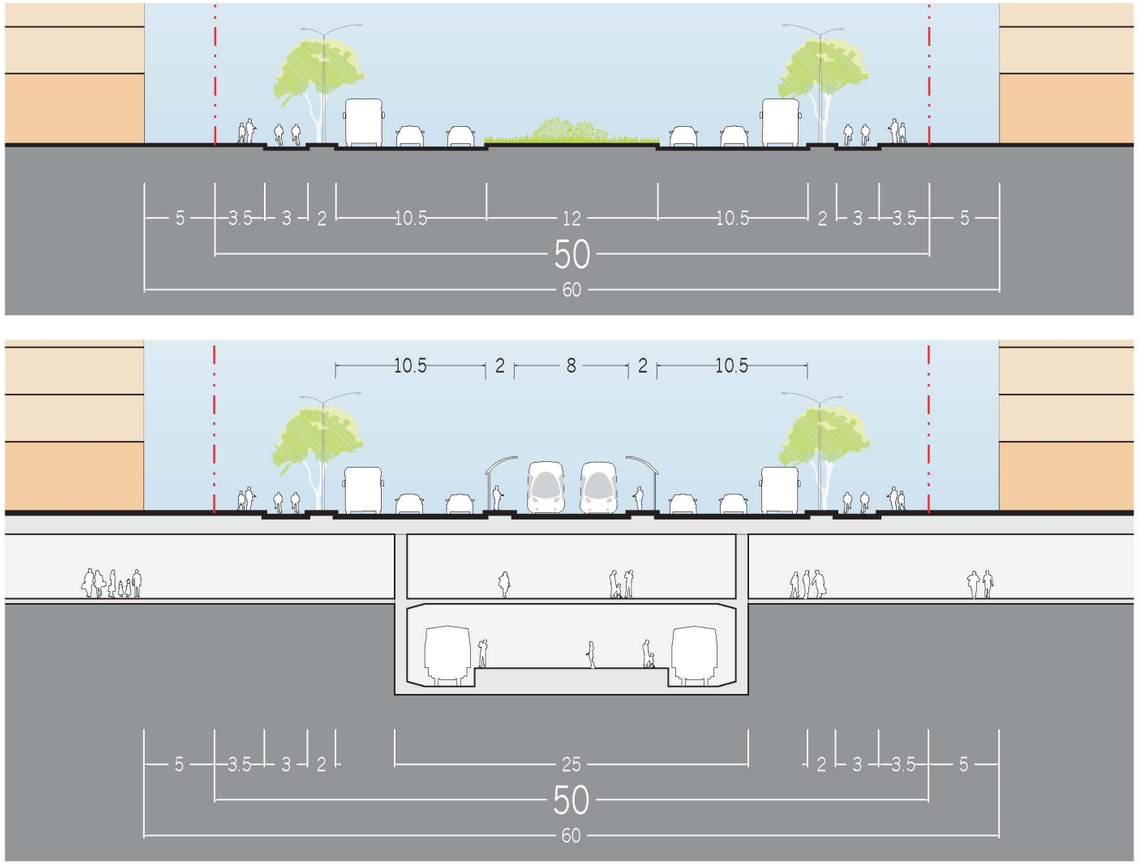


光谷六路剖面

GUANGGU 6TH RD SECTION

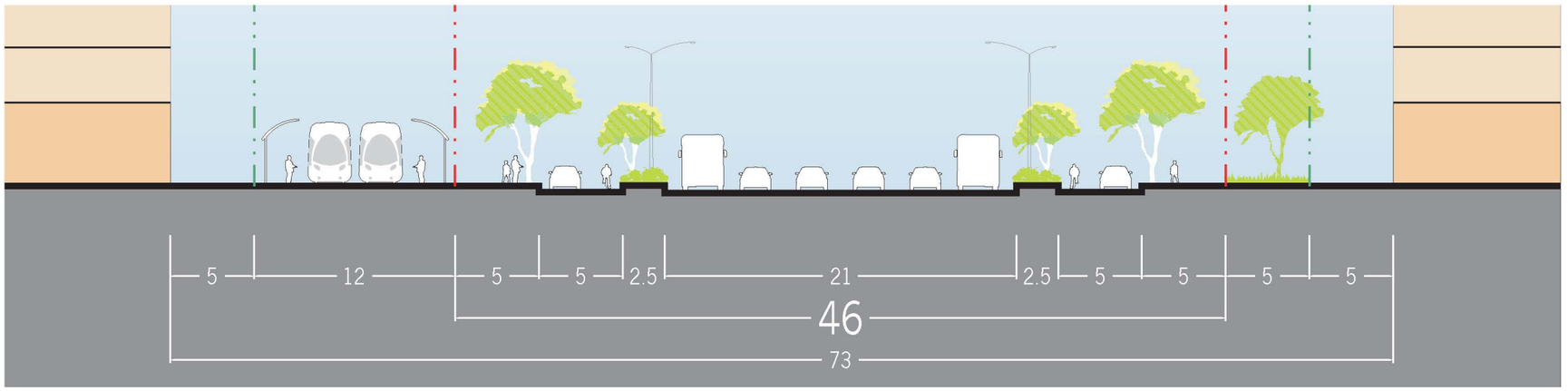
街道剖面
Street Section





光谷五路-远期

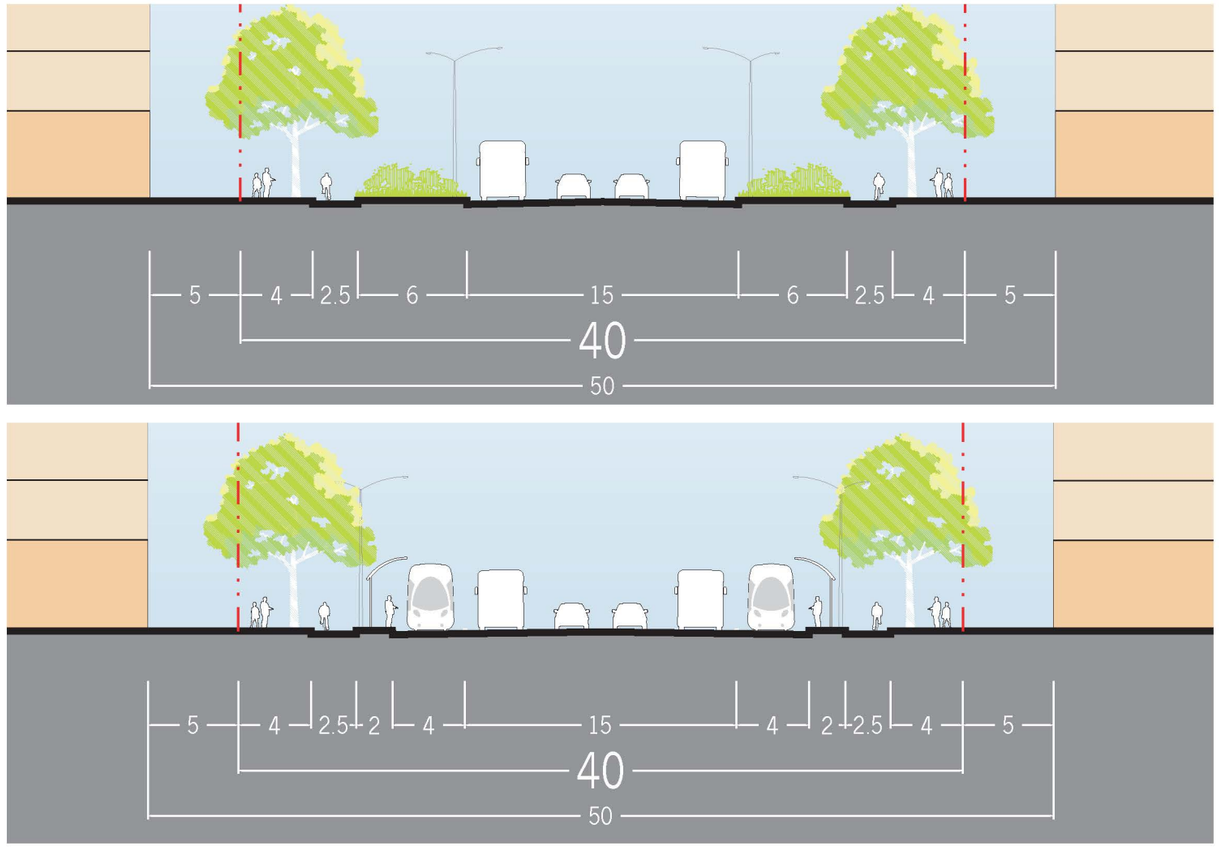
GUANGGU 5TH RD – LONG TERM



高新二路剖面

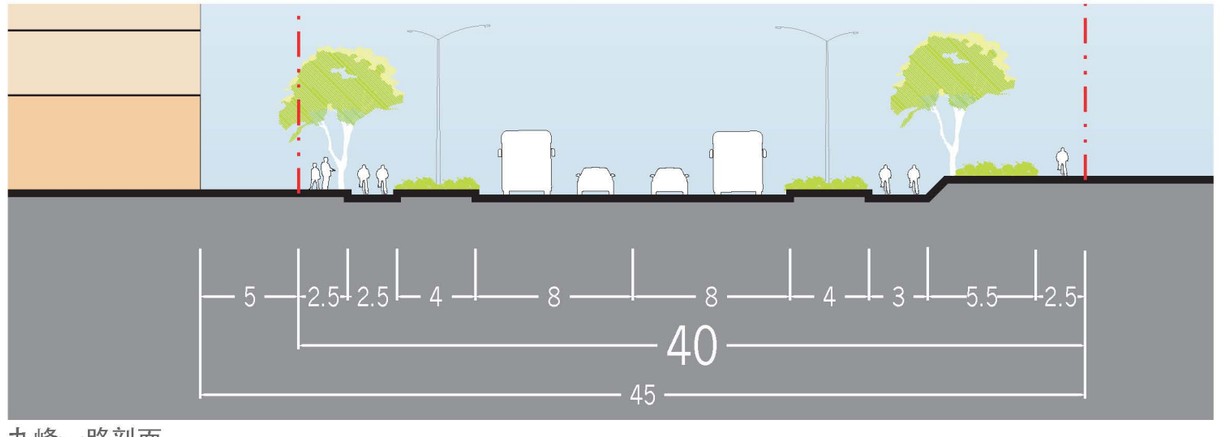
GAOXIN 2ND ROAD SECTION

街道剖面
Street Section



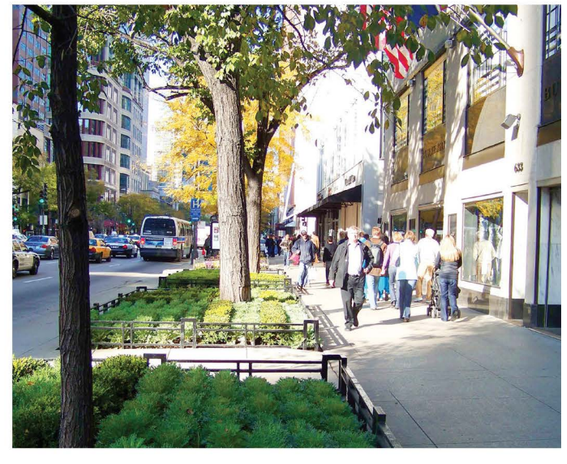
松涛路剖面

SONGTAO RD SECTION

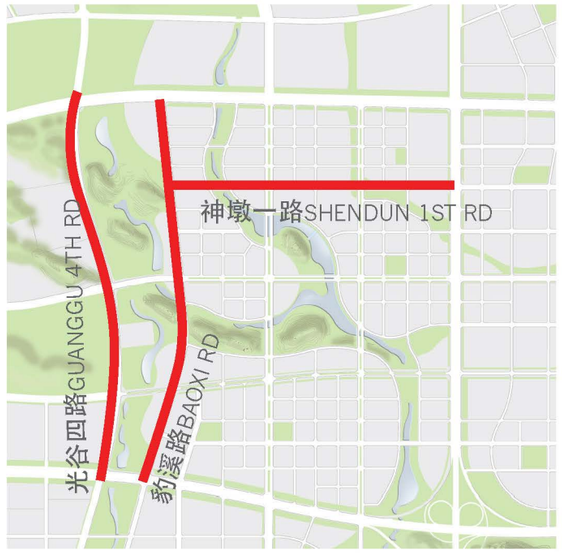


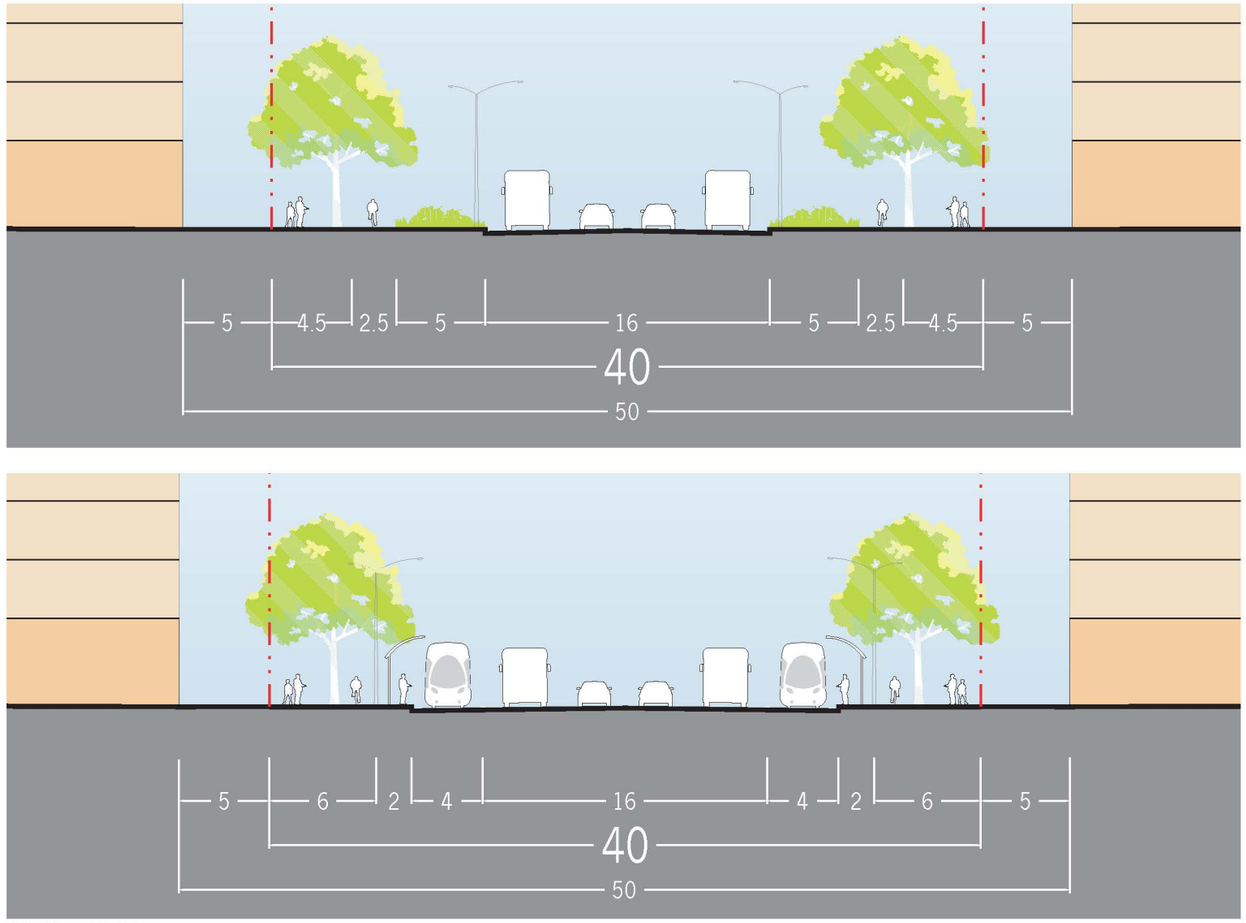
九峰一路剖面

JIUFENG 1ST RD SECTION



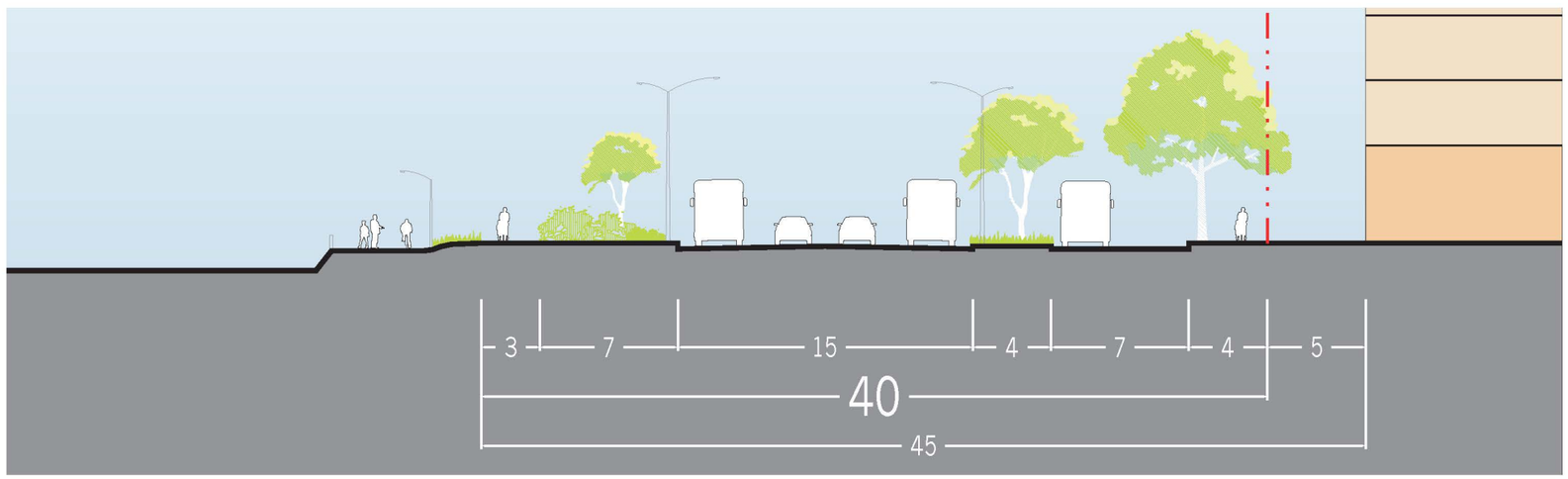
街道剖面
Street Section





神墩一路剖面

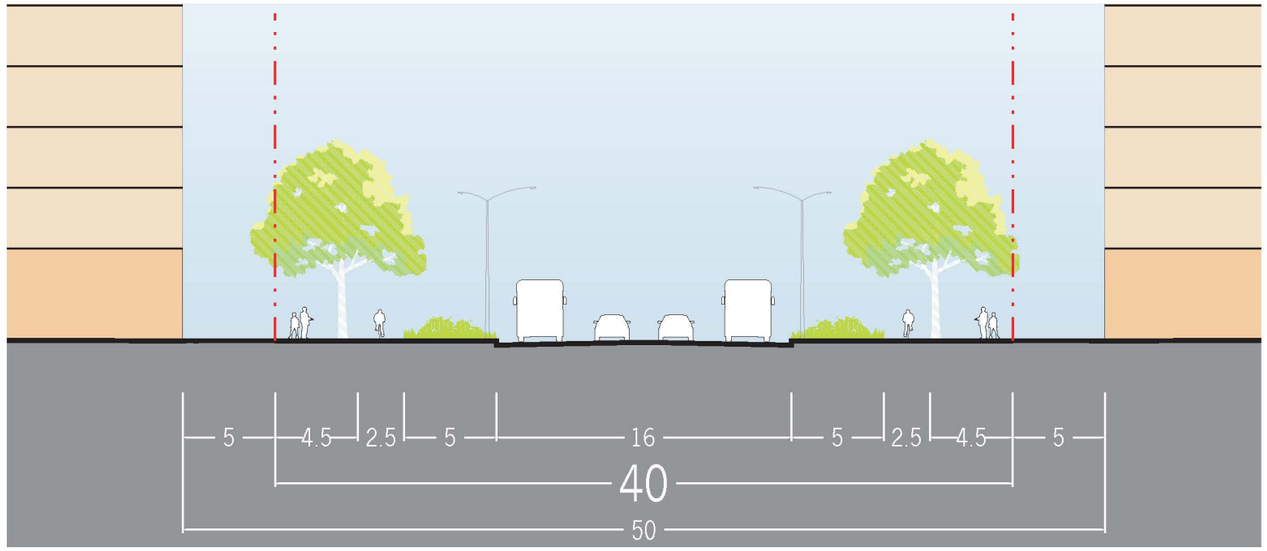
SHENDUN 1ST RD SECTION



光谷四路+豹溪路剖面

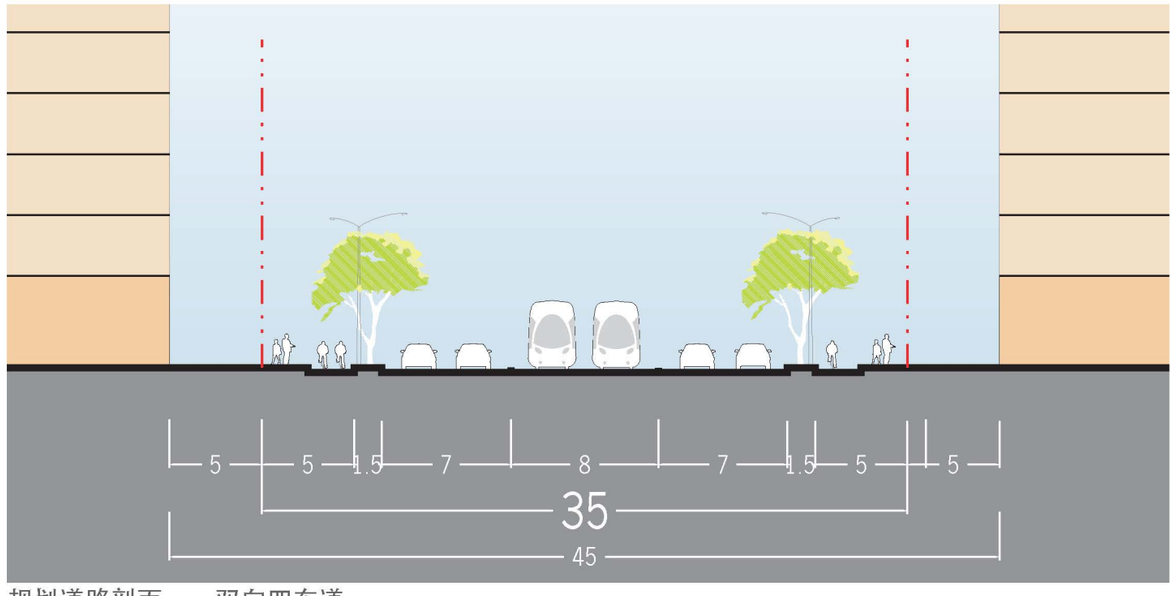
GUANGGU 4TH RD + BAOXI RD SECTION

街道剖面
Street Section



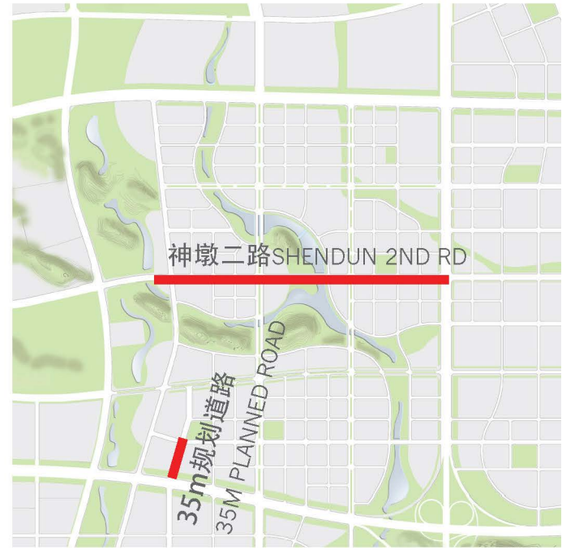
神墩二路+40m规划道路典型剖面

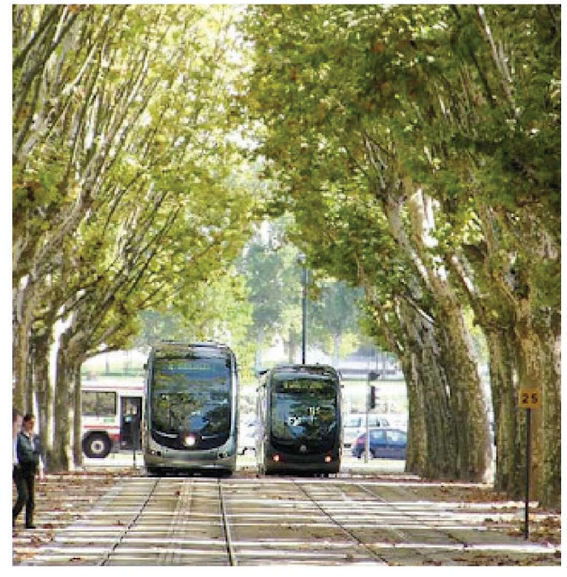
SHENDUN 2ND RD + 40M PLANNED ROAD TYPICAL SECTION



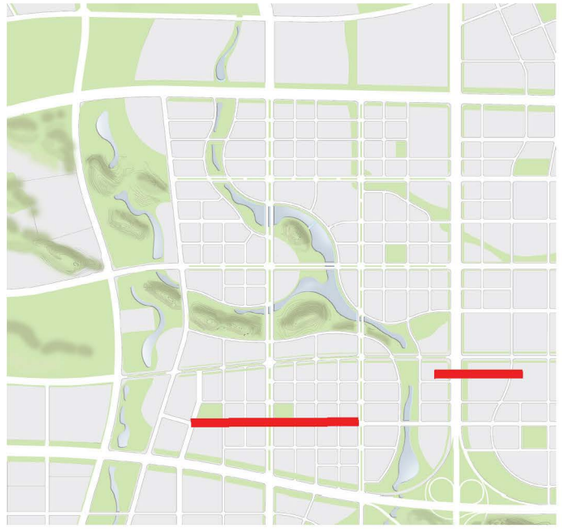
规划道路剖面——双向四车道

PLANNED ROAD SECTION – FOUR LANES ROAD



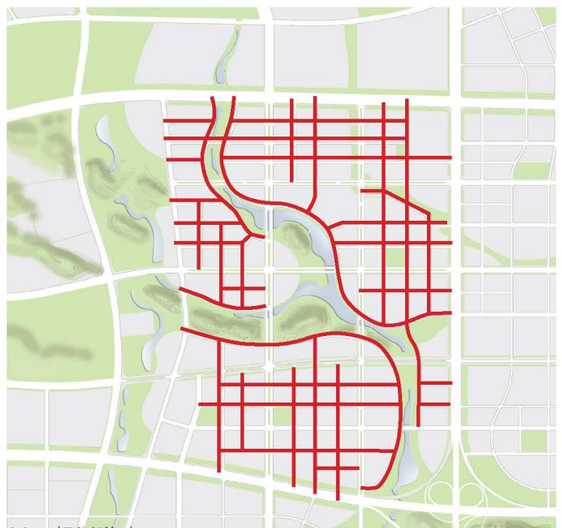


街道剖面
Street Section



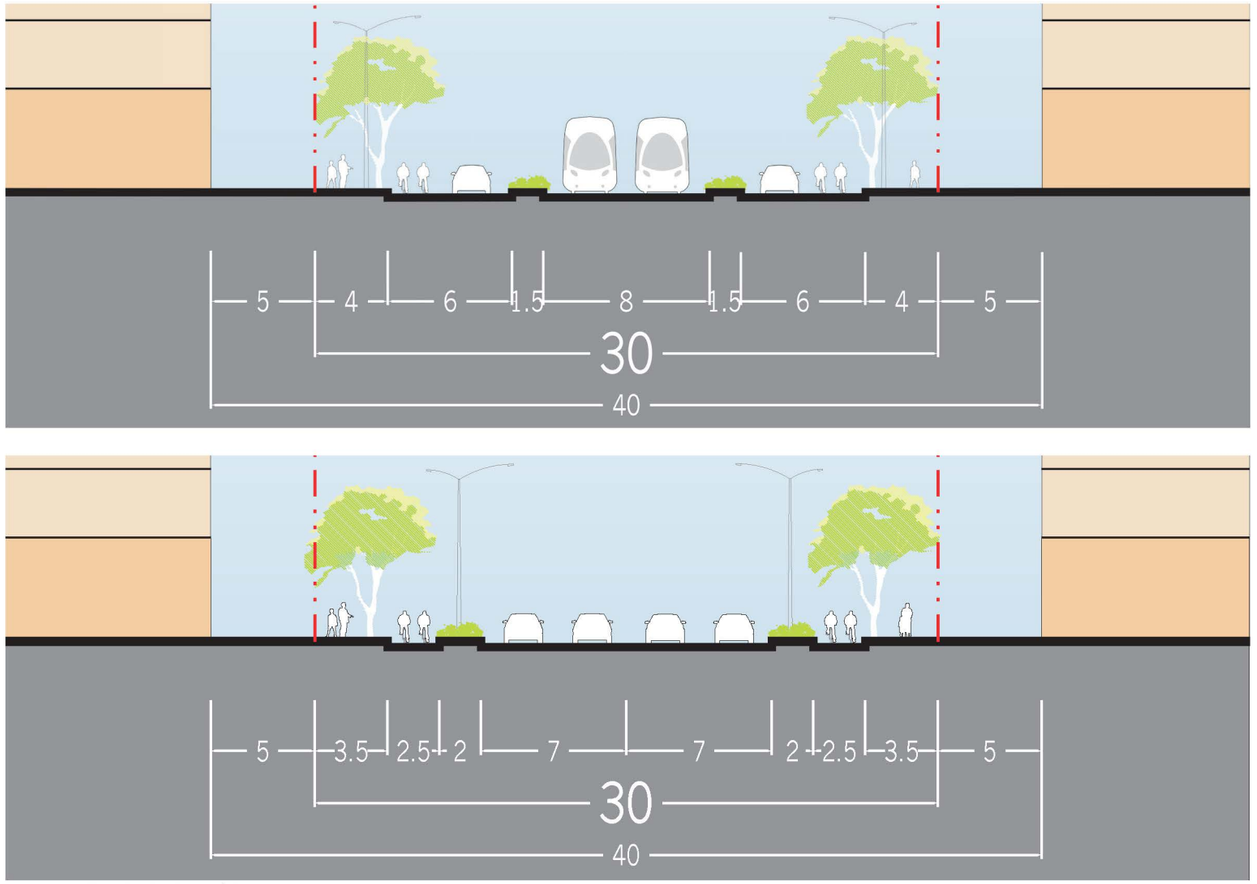
30m有轨电车规划道路

30M PLANNED ROAD WITH TRAM



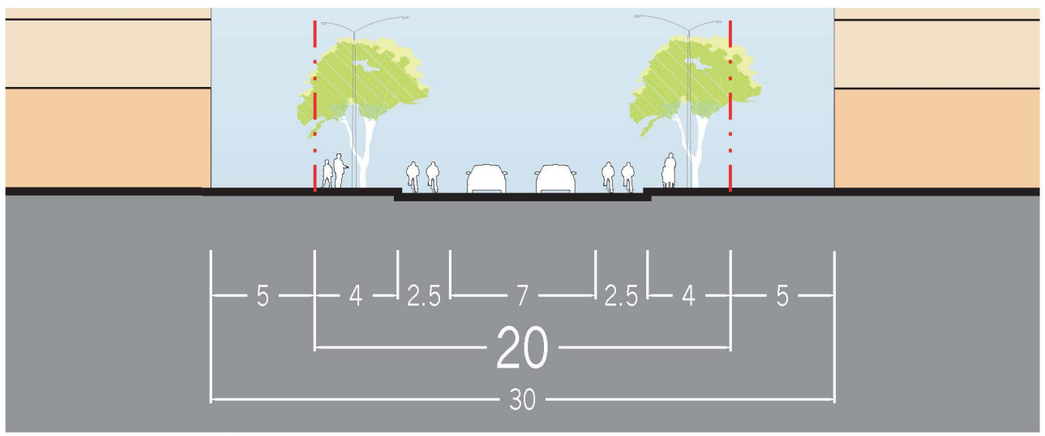
20m规划道路

20M PLANNED ROAD



30m规划道路典型剖面

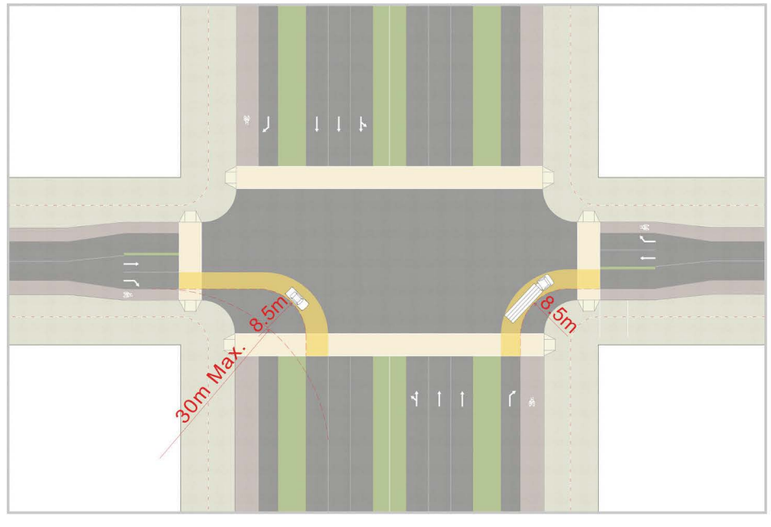
30M PLANNED ROAD TYPICAL SECTION



20m规划道路典型剖面

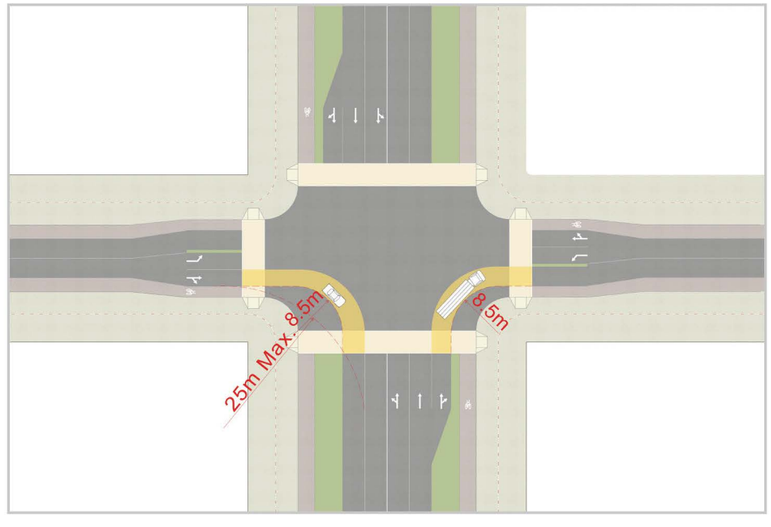
20M PLANNED ROAD TYPICAL SECTION

道路转角设计
Parcel Corner Design



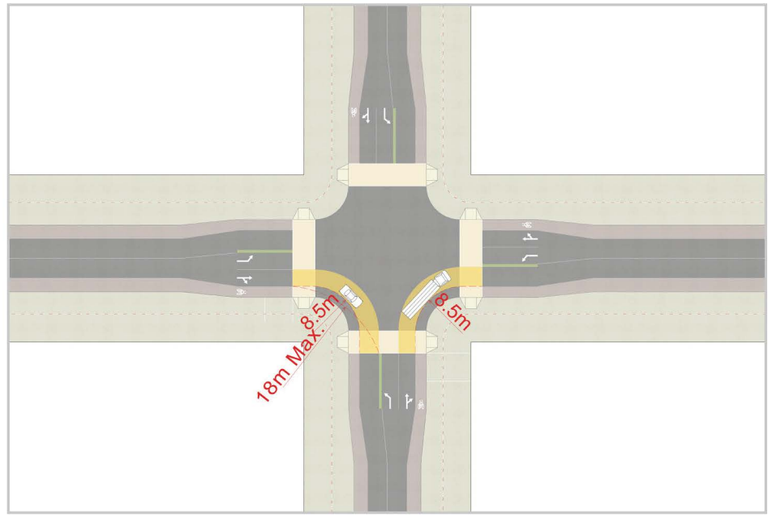
主干道与支路交叉口
MAJOR ROAD AND LOCAL STREET INTERSECTION

退红线 RED LINE SETBACK	5M
红线转弯半径 RED LINE RADII	5M
路缘转弯半径 CURB LINE RADII	6M
设计车辆转弯半径 DESIGNED TURNING RADII	8.5M
实际最大允许有效转弯半径 ALLOWABLE MAXIMUM EFFECTIVE TURNING RADII	30M



次干道与支路交叉口
SECONDARY ROAD AND LOCAL STREET INTERSECTION

退红线 RED LINE SETBACK	5M
红线转弯半径 RED LINE RADII	5M
路缘转弯半径 CURB LINE RADII	6M
设计车辆转弯半径 DESIGNED TURNING RADII	8.5M
实际最大允许有效转弯半径 ALLOWABLE MAXIMUM EFFECTIVE TURNING RADII	25M

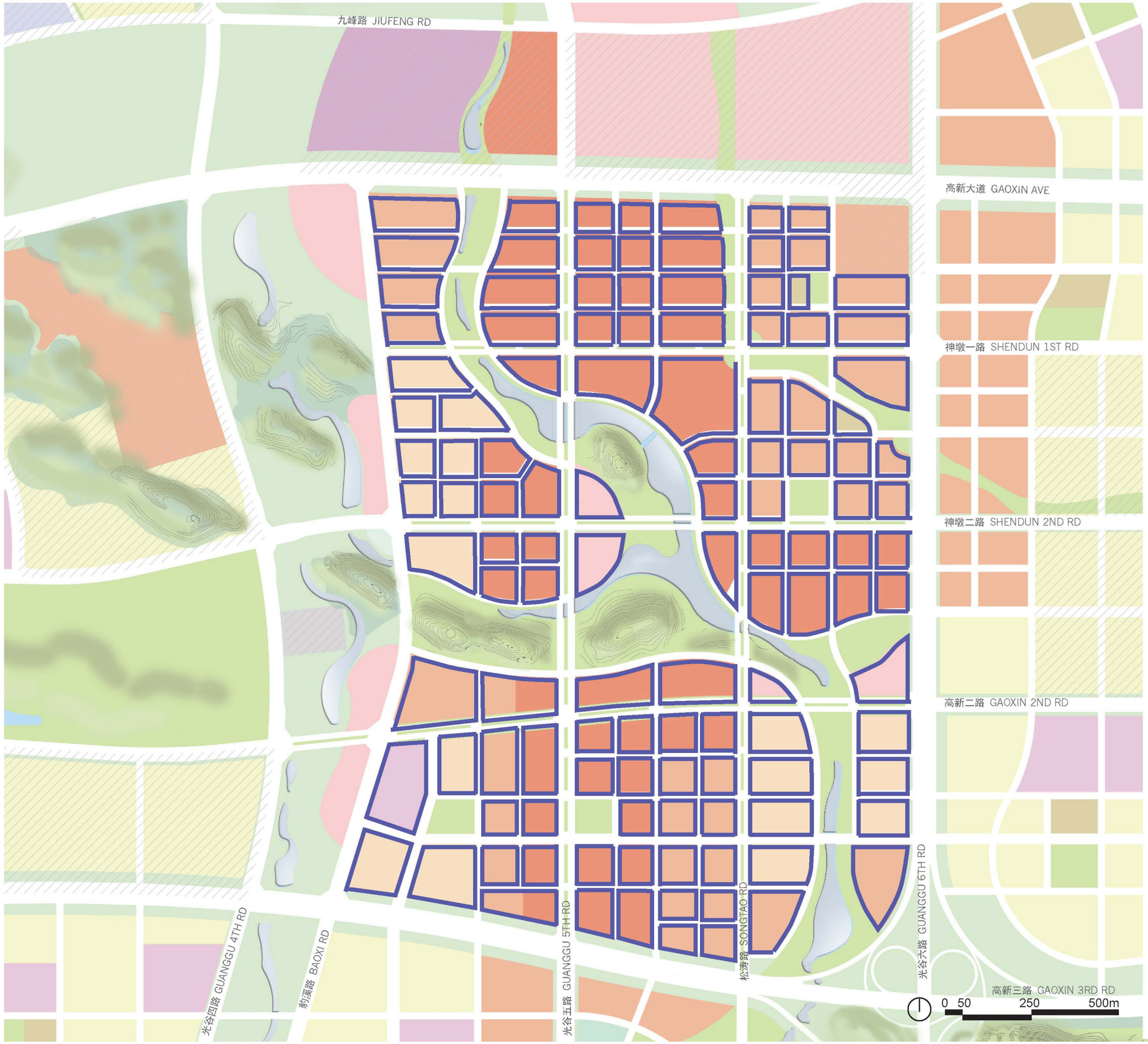


支路与支路交叉口
LOCAL STREET AND LOCAL STREET INTERSECTION

退红线 RED LINE SETBACK	5M
红线转弯半径 RED LINE RADII	5M
路缘转弯半径 CURB LINE RADII	6M
设计车辆转弯半径 DESIGNED TURNING RADII	8.5M
实际最大允许有效转弯半径 ALLOWABLE MAXIMUM EFFECTIVE TURNING RADII	18M

退界
Setback

退界控制
Setback

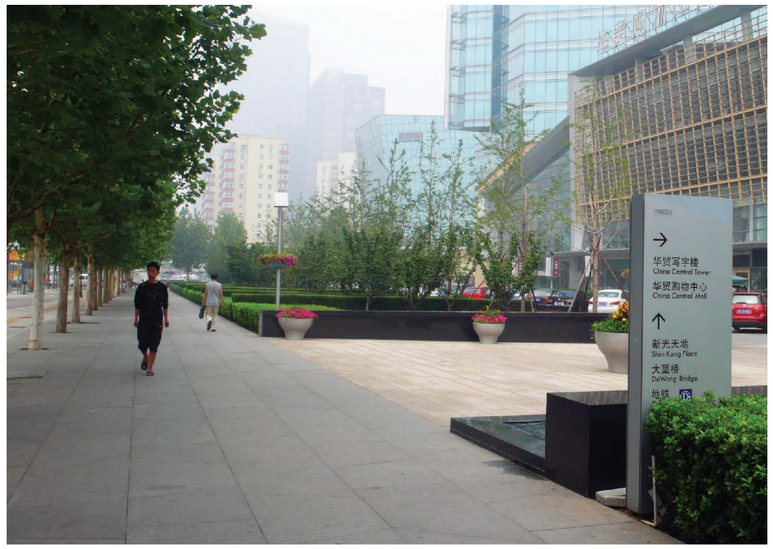


5m 退界 Setback

商业地块退界
Commercial Parcel Setback

- 办公及商业一般设置为该类型
- 退界部分作为人行道的延伸部分
- 公共道路边缘将退界作为人行道的延伸，从而形成更大的“公共”区域及更城市化的特点。办公及商业界面布置公共道路边缘。
- 退界区也就是道路红线到建筑线的距离范围，应作为禁建区。以下元素不能位于禁建区内：公交站、自行车停车位、伫立式广告牌、机动车停车位、围墙或栅栏等。
- 有效的人行道宽度不应小于5米，净空高度不小于4米，包括对阳台、遮蓬和其他设备的净空限制。

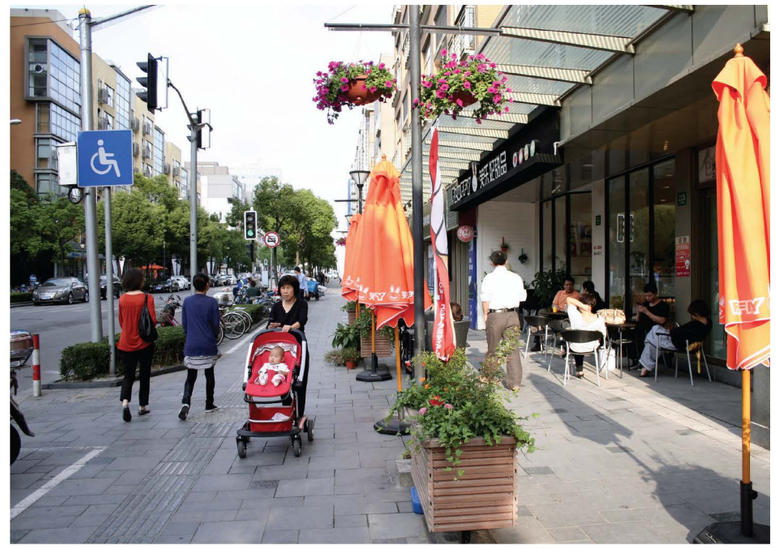
- Typical condition for Office and Retail frontages.
- Setback is treated as an extension of the sidewalk.
- Public Street Edges treat the setback as an extension of the sidewalk, creating a larger “public” zone and a more urban character. Public Street Edges are located along office and retail frontages.
- The setback zone, from building face to redline, is a Clear Zone. The following elements are not to be located in the Clear Zone: bus shelters, bicycle parking or storage, free-standing advertising, vehicle parking, fences or walls. Street retail, seating and furniture is permitted as long as it is removable.
- The effective sidewalk width should be no less than 5m, with an effective clearance between grade and any overhead building structure of no less than 4m. This includes balconies, awnings and equipment.



办公/酒店地块退界
Commercial Parcel Setback

- 用于办公和商业界面，作为绿化缓冲或公共空间
- 建议绿化带内设置步行小径，结合人行道设计景观与铺装
- 退界区的景观种植应采用低矮植物，避免遮挡商业立面

- Condition for Office and Retail frontages at Green Buffer or Open Space.
- Suggest pedestrian path in greenbuffer with landscape design integrated with the sidewalk.
- Plantings in Setback should be kept low so as not to block retail signage.



住宅/服务公寓地块退界
Residential/SA Parcel Setback

- 用于带底层商业的住宅区
- 退界部分视为人行道延伸

- Condition for Residential Blocks with Ground Floor Retail.
- Setback is treated as an extension of the sidewalk.

退界控制
Setback

退界设置为道路与建筑底层之间形成舒适缓冲区。各地块开发退界必须符合退界控制及地块具体导则规定。

后退红线：垂直于红线测量为5米
塔楼退界：垂直于建筑裙房不超过4-8米。建筑裙房必须满足适用的街墙规定。
商业退界
商业退界提供公众活动，应处理为人行道的延伸部分
酒店/服务公寓退界
研发退界属于半公共化，处理为景观区；退界部分仍可以允许公众进入，但无需按照商业退界处理
住宅退界
住宅退界为私人化，可设置一些花坛，分隔公共人行道及私人地块，沿地块红线设置

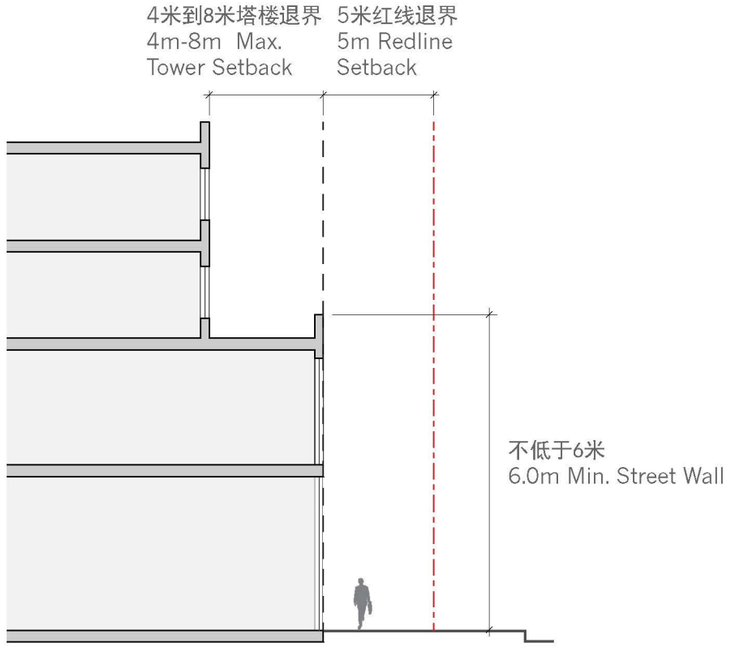
Setbacks are intended to provide a comfortable buffer between the street and the ground floor of buildings. The Development of every parcel must adhere to the required setbacks per the Setback Controls plan and the Parcel Specific Guidelines.

Redline Setbacks: 4m measured perpendicularly from Redline.
Tower Setbacks: 4m-8m Max. measured perpendicularly from building base. Building Base must meet Street Wall Requirements if applicable.

Setbacks Commercial
Commercial setbacks are meant to be publicly accessible, they are intended to be treated as an extension of the public sidewalk.

R&D Setbacks
R&D setbacks are semi-private, they are intended to be treated as a landscape zone, setbacks may remain publicly accessible but they do not need to allow pedestrian traffic as commercial setbacks do.

Residential Setbacks
Residential redline setbacks are private, they can accommodate a planter, separating the public sidewalk and the private parcel, constructed along the parcel redline.




北京北京金融街 Beijing Finance Street, Beijing

推荐：建筑退界和街道尺度相宜，地面层活跃
Desirable: Building setback is appropriate to the street size and activity level.

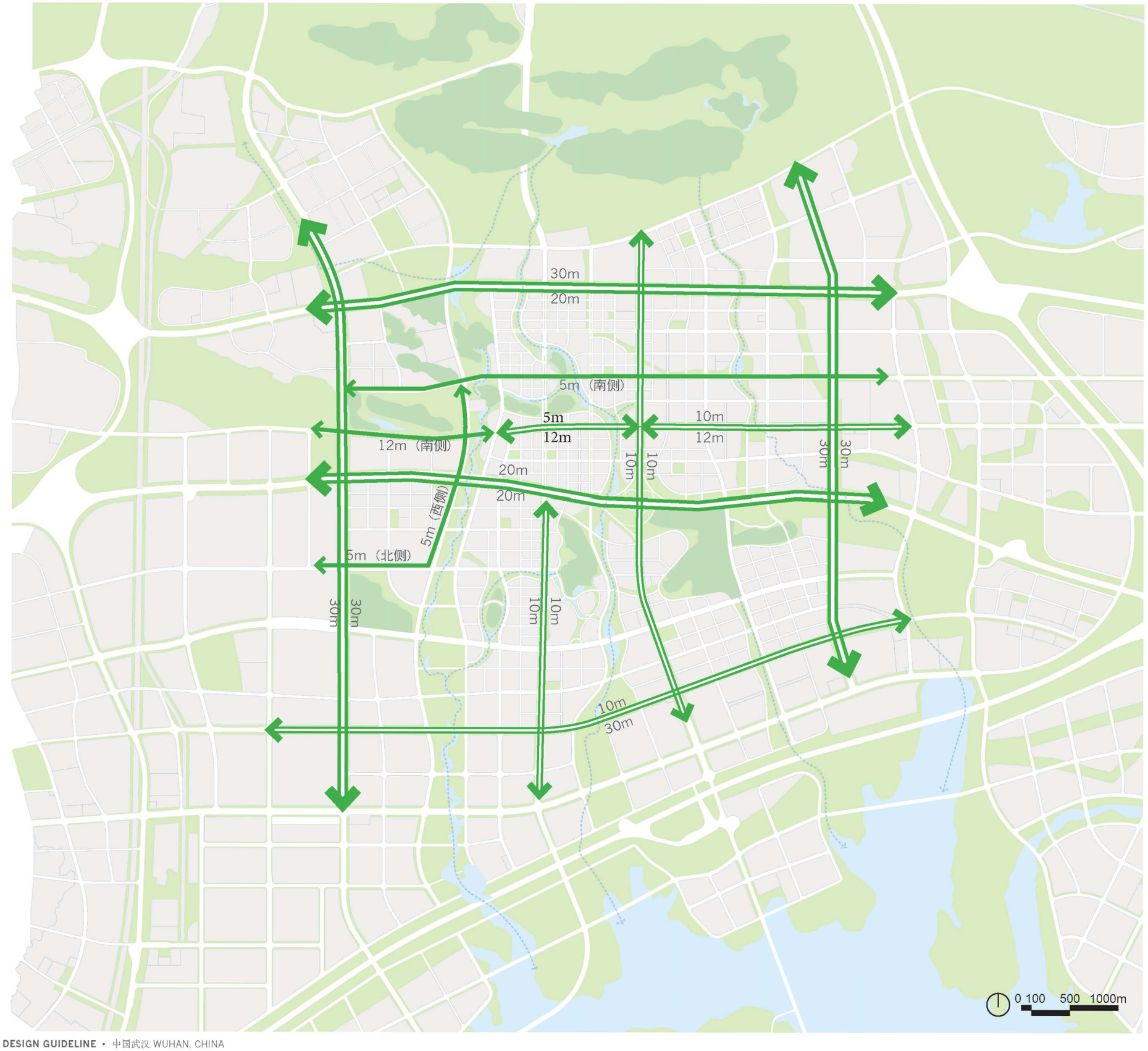
推荐：建筑退界和街道尺度相宜，地面层活跃
Desirable: Building setback is appropriate to the street size and activity level.

不推荐：建筑过大退界导致人行道尺度过宽
Undesirable: Buildings are set too far back from the street making the sidewalk scaled uncomfortably large.

不推荐
Undesirable

推荐
Desirable

绿化退界
Green Setback



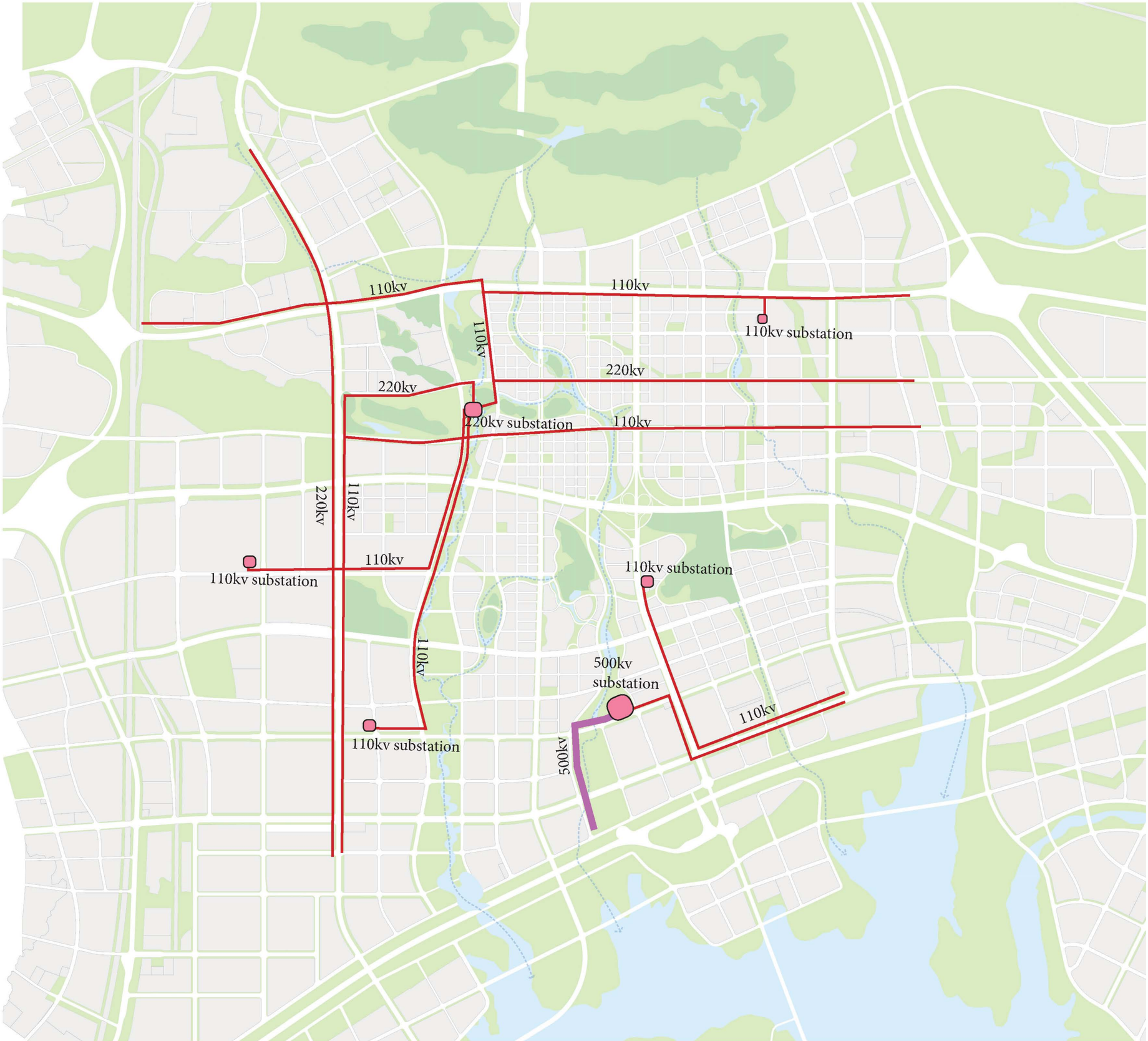
双侧退界
Setback on both sides of the road

单侧退界
setback on one side of the road

高压线廊道
Powerline Corridor

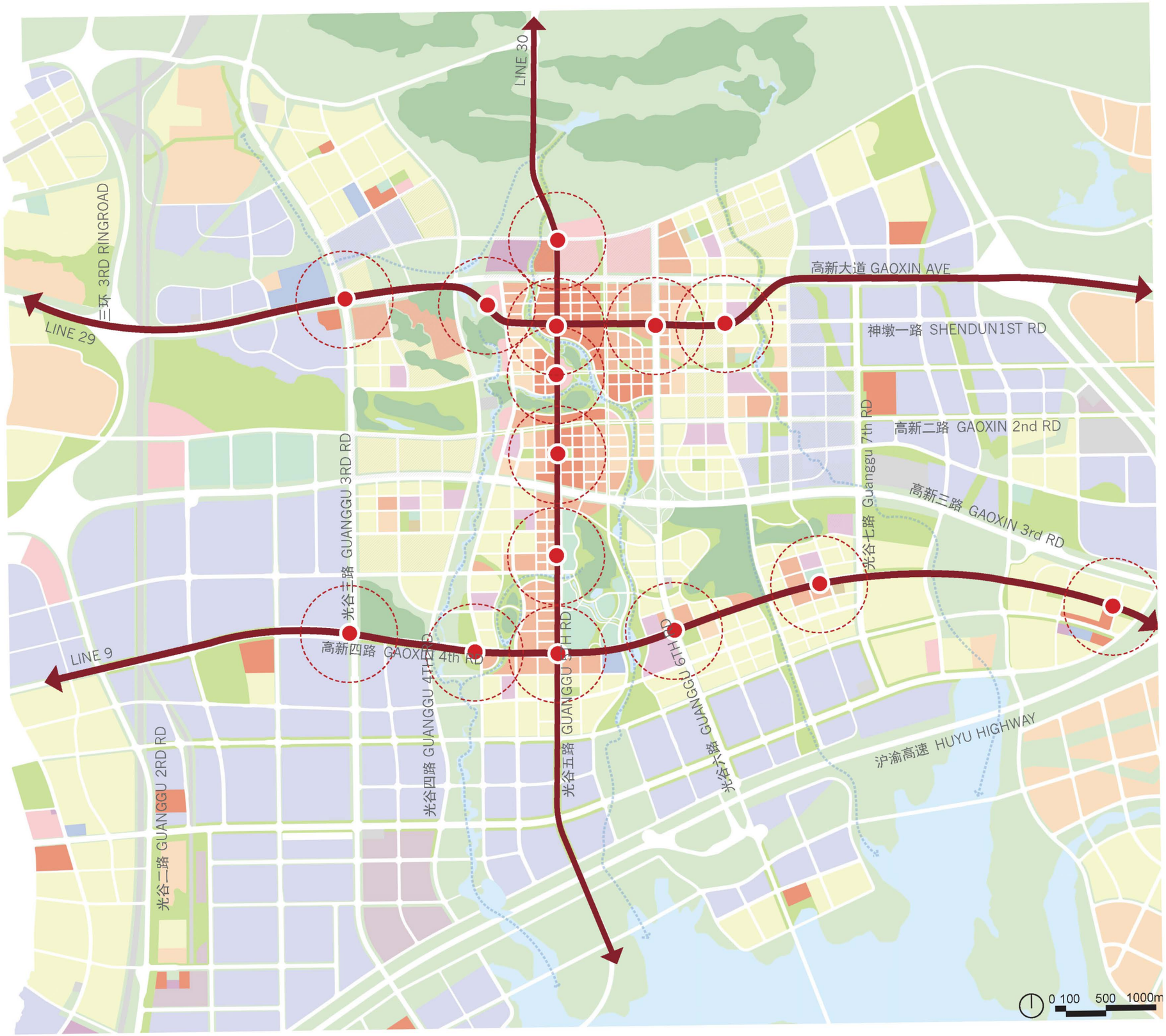
建议设置高压线埋地，沿道路设置5米绿化带作为埋地的基础设施预留。

Suggest to bury the power line underground. Reserve 5m greenbuffer for the utility easement.



公共交通
Public Transportation

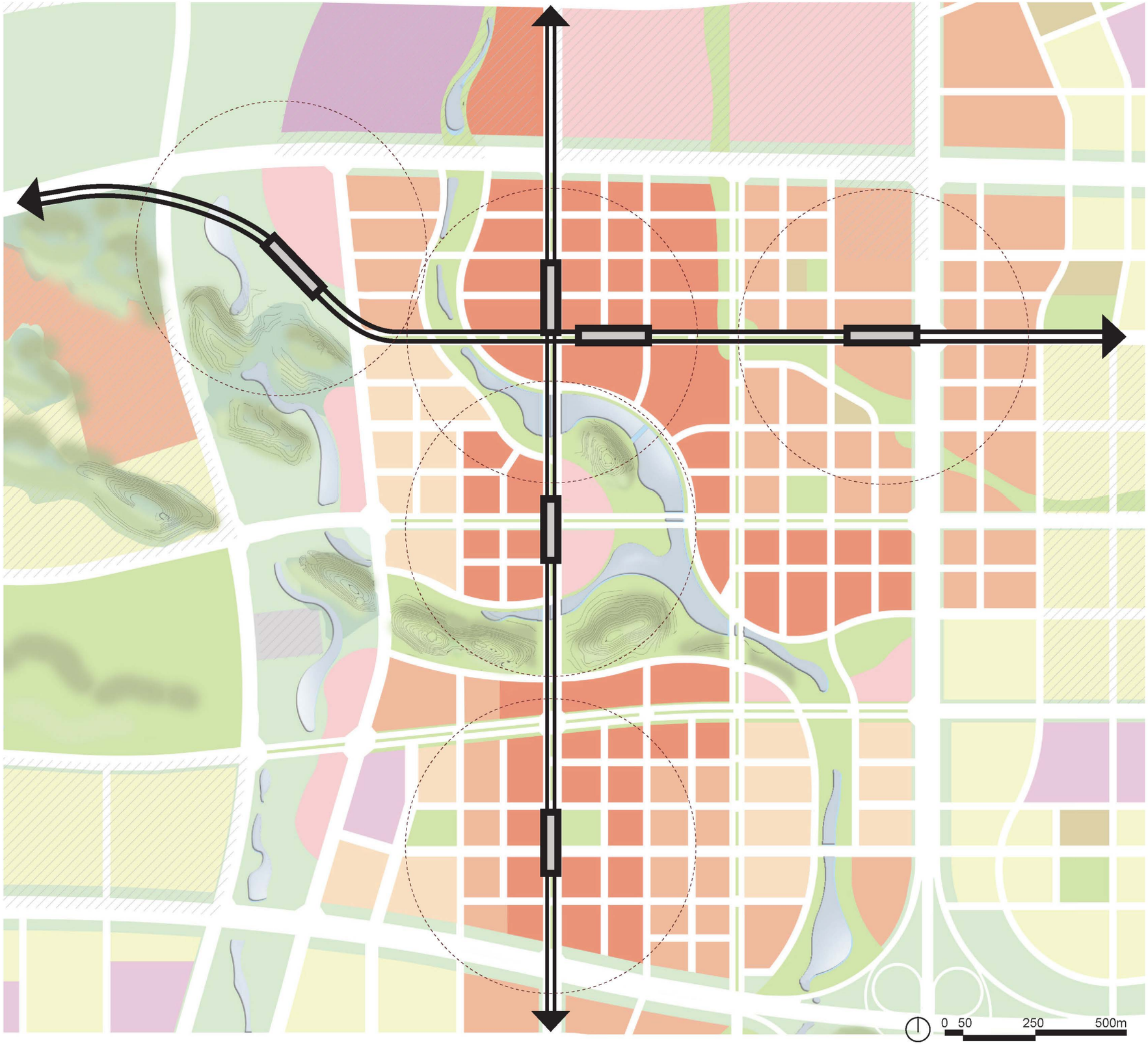
地铁方案
Metro Scheme



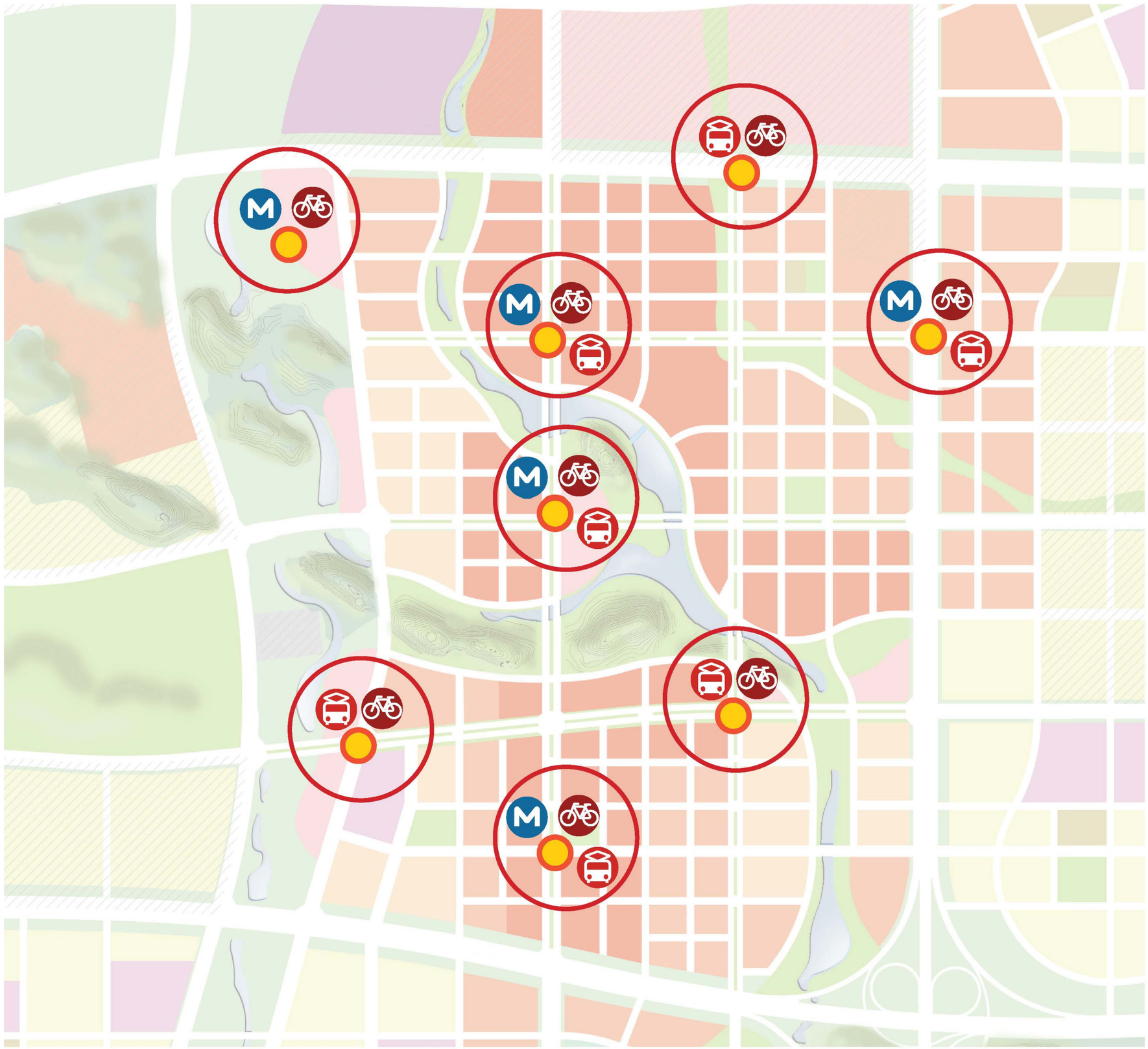
地铁线路 METRO LINE

地铁站点 METRO STATION

商务核心区
有轨电车建议
Tram



交通模式换乘中心
Mobility Hub



交通模式转换中心 Mobility Hub

地铁 Metro

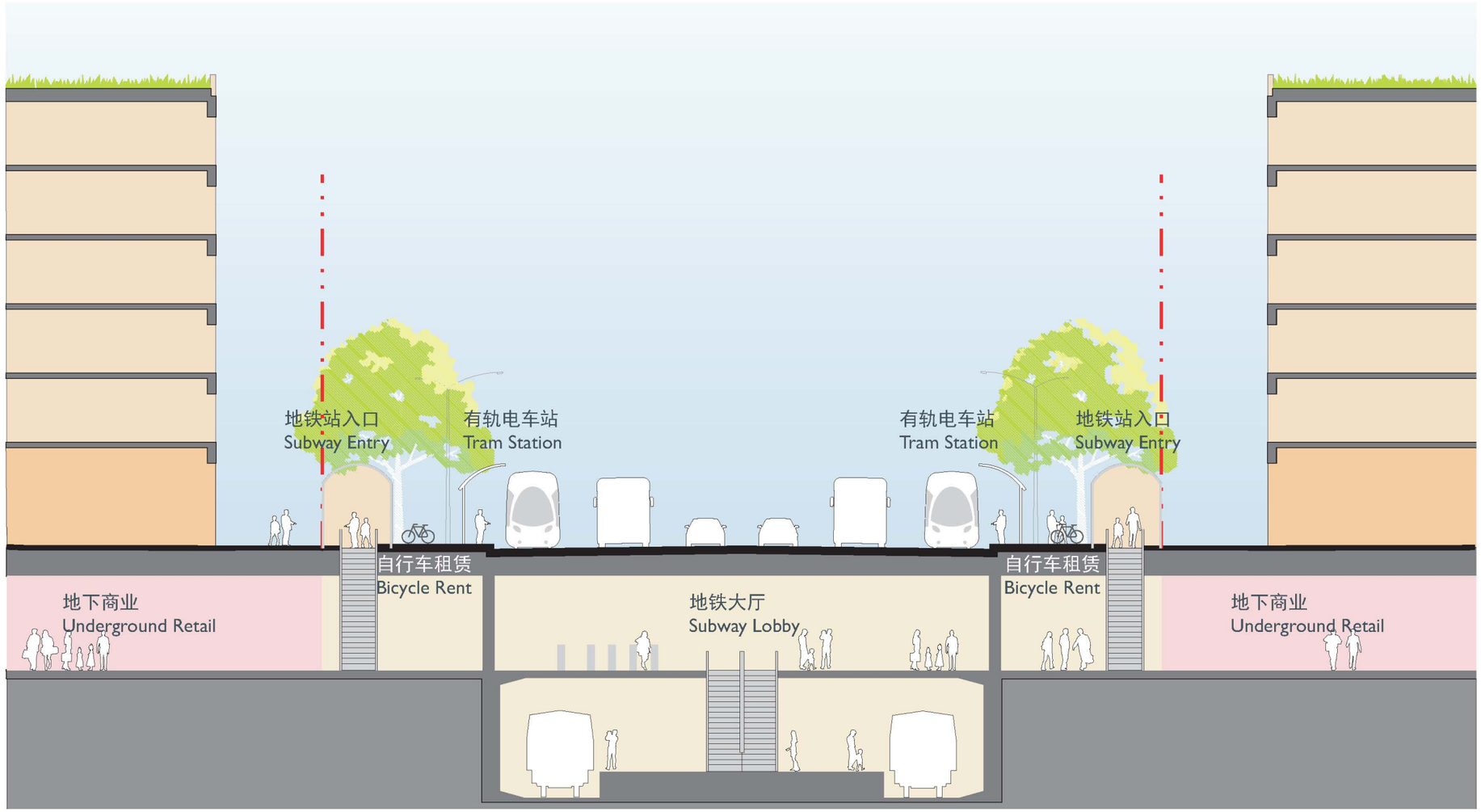
有轨电车或公交 Tram/BRT

自行车租赁 Bicycle Rental

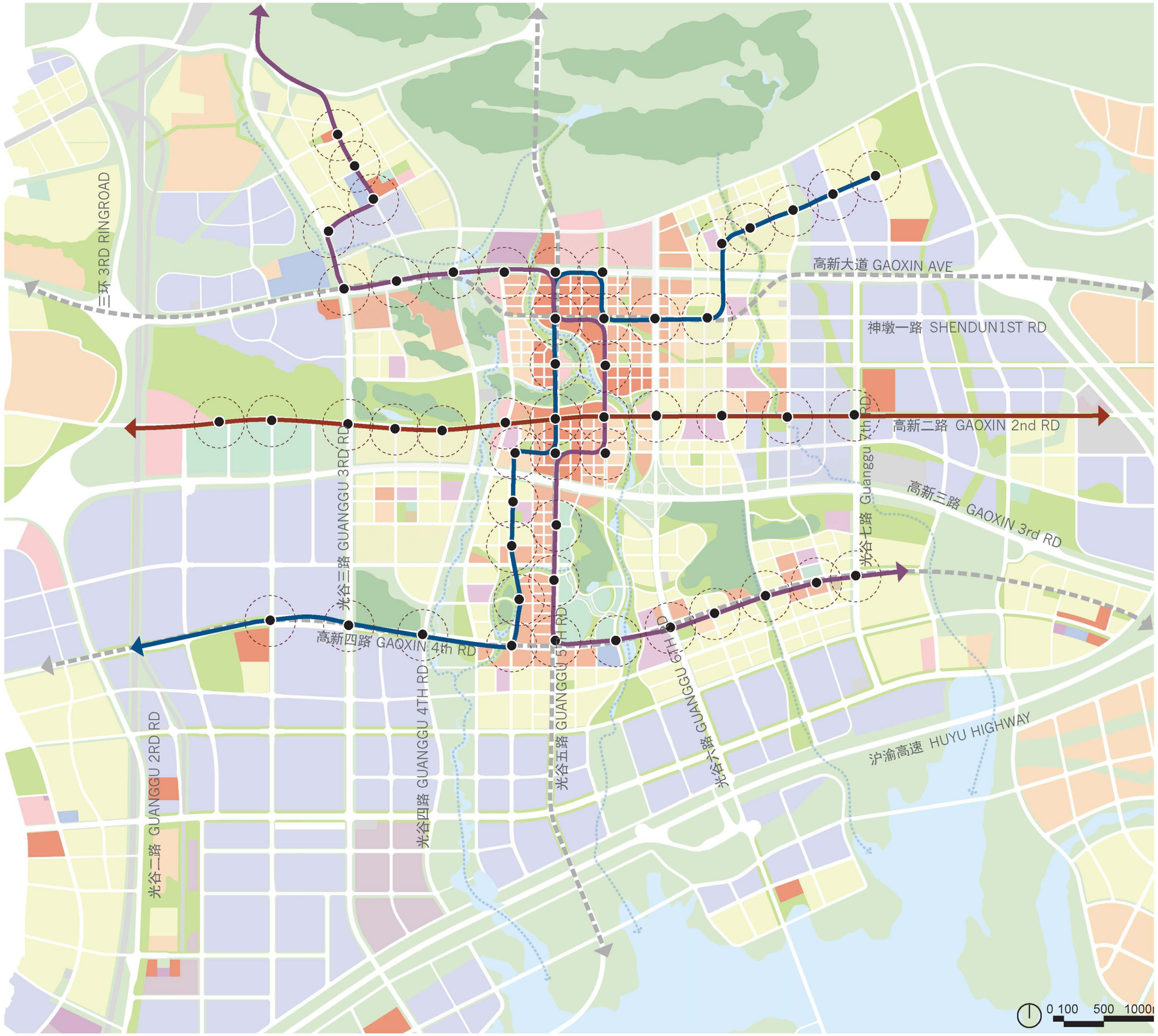
交通模式换乘中心
Mobility Hub

交通模式转换中心将为该区域提供全面的、便捷的综合交通转换功能。

Mobility hubs will provide comprehensive and convenient transfer service for this whole region.



有轨电车
建议规划
Tram
Proposed Plan



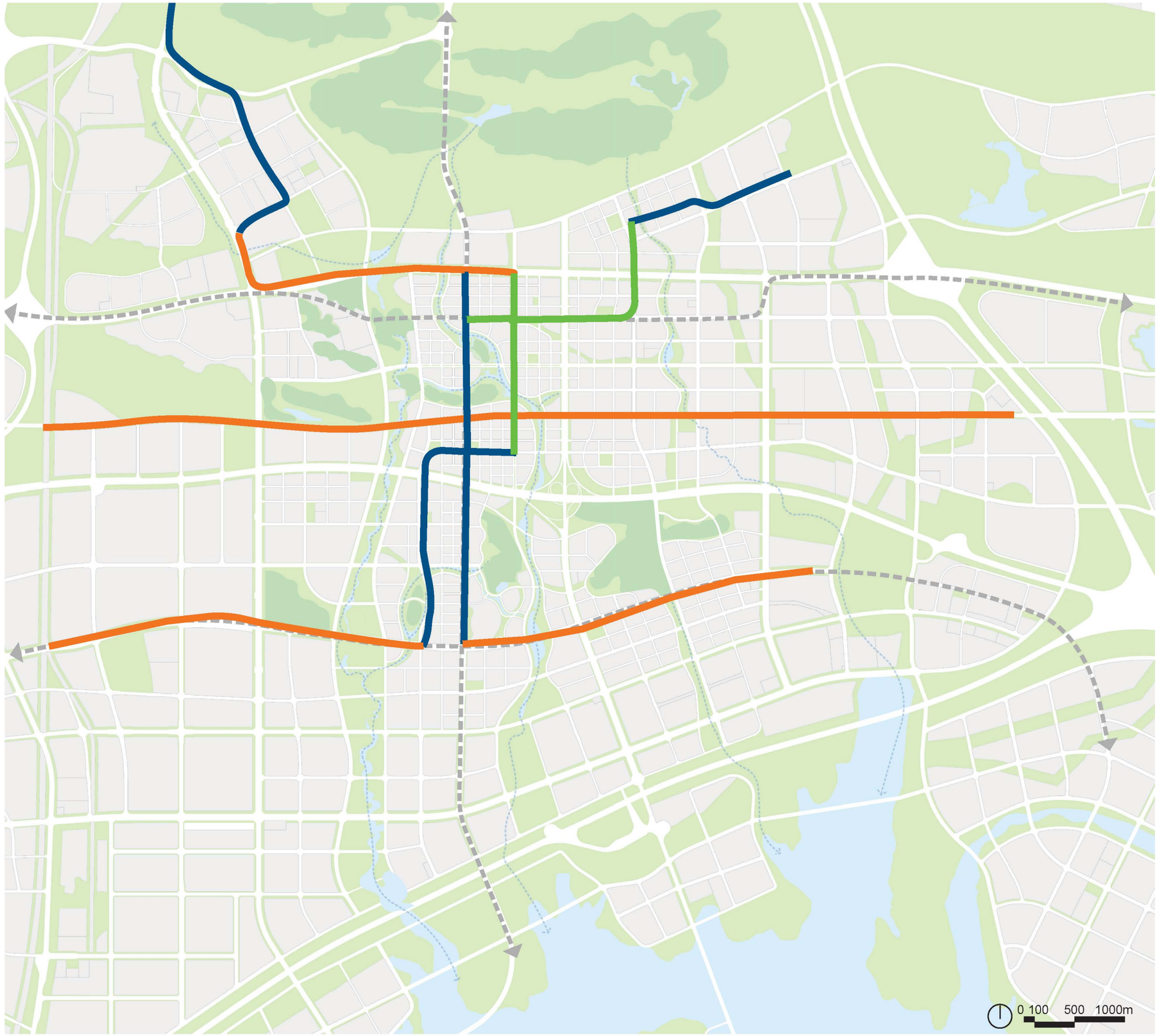
T1

T2

T3

电车站点 Tram Station

有轨电车
线路位置
Tram Alignment

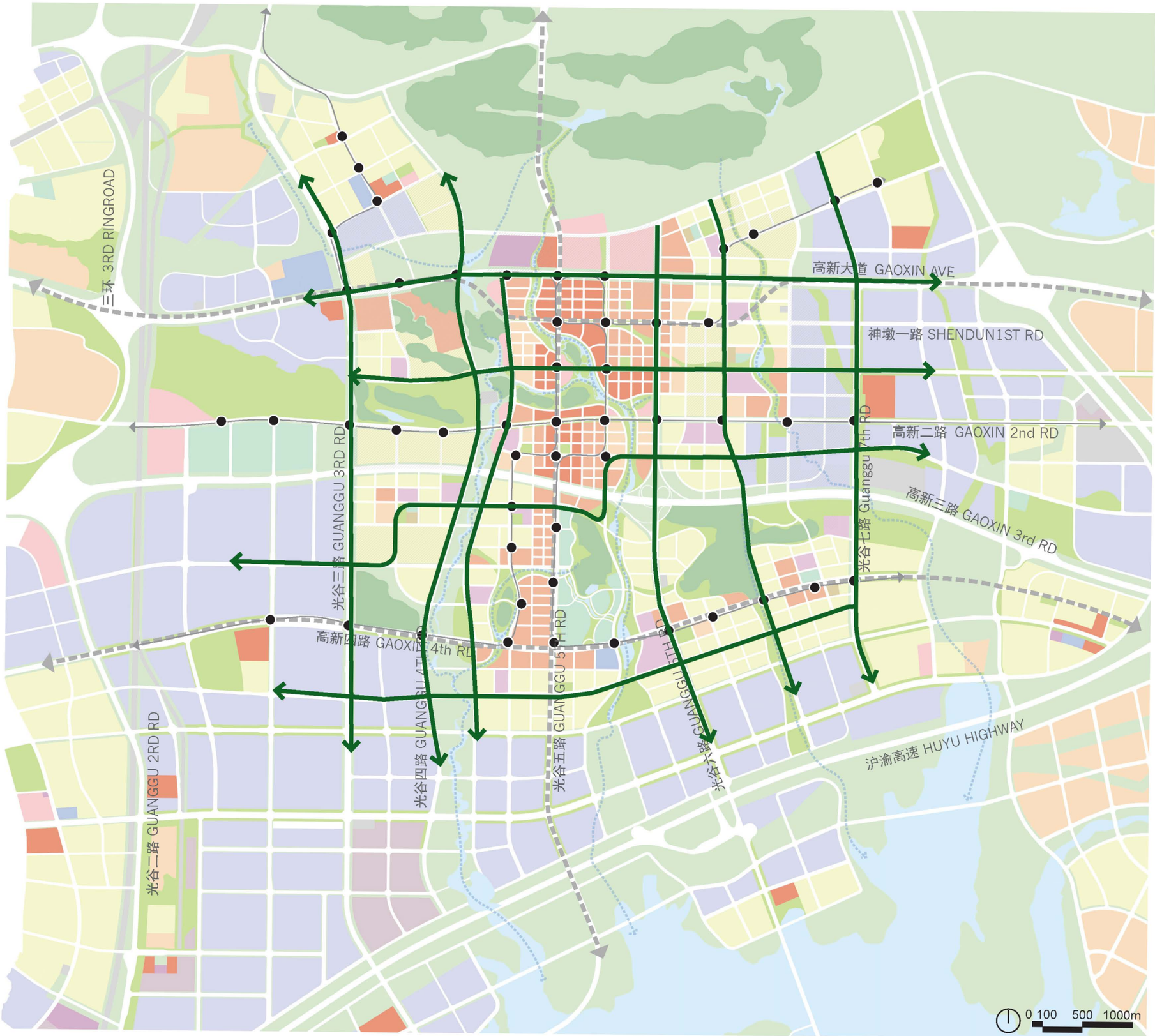


道路当中 Middle of the road

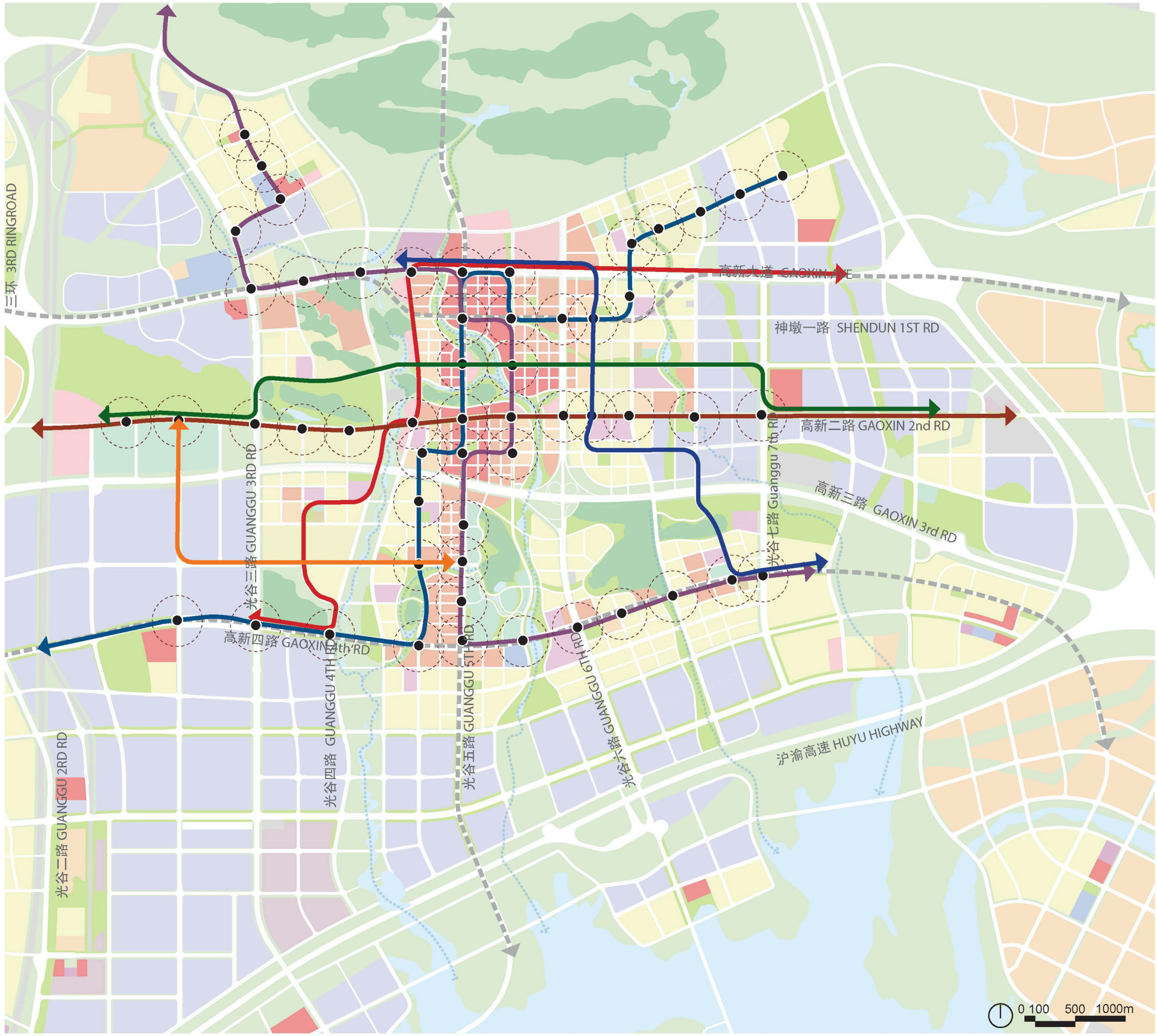
道路一侧 One side of the road

道路两侧 Two sides of the road

远期模式1——
有轨电车骨干模式
Long Term Model I—
Tram system as the main structure



远期模式2——
有轨电车主体模式
Long Term Mode 2—
Tram-oriented system



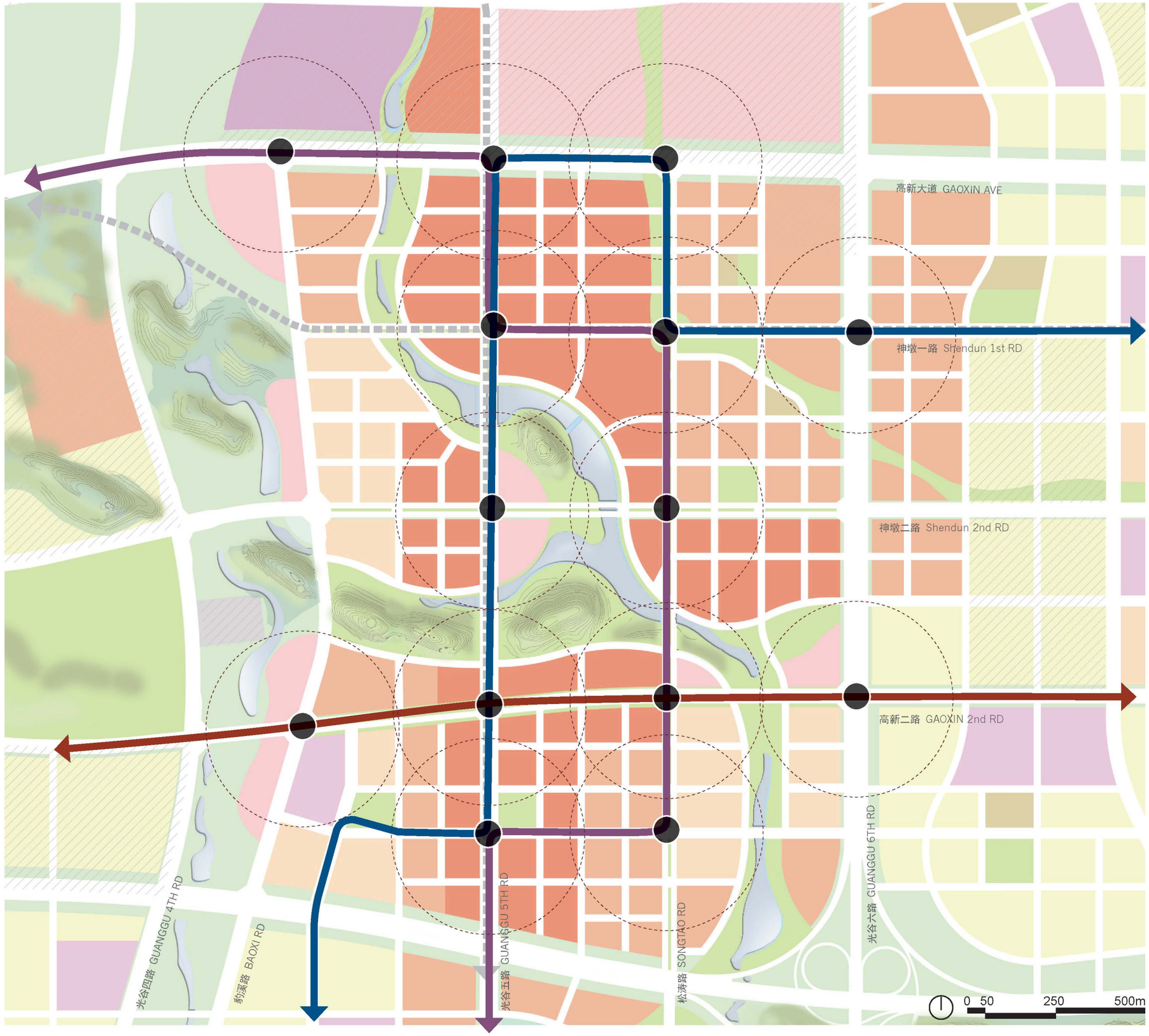
T1
T2
T3
T4
T5
T6
T7

电车站点 TRAM STATION

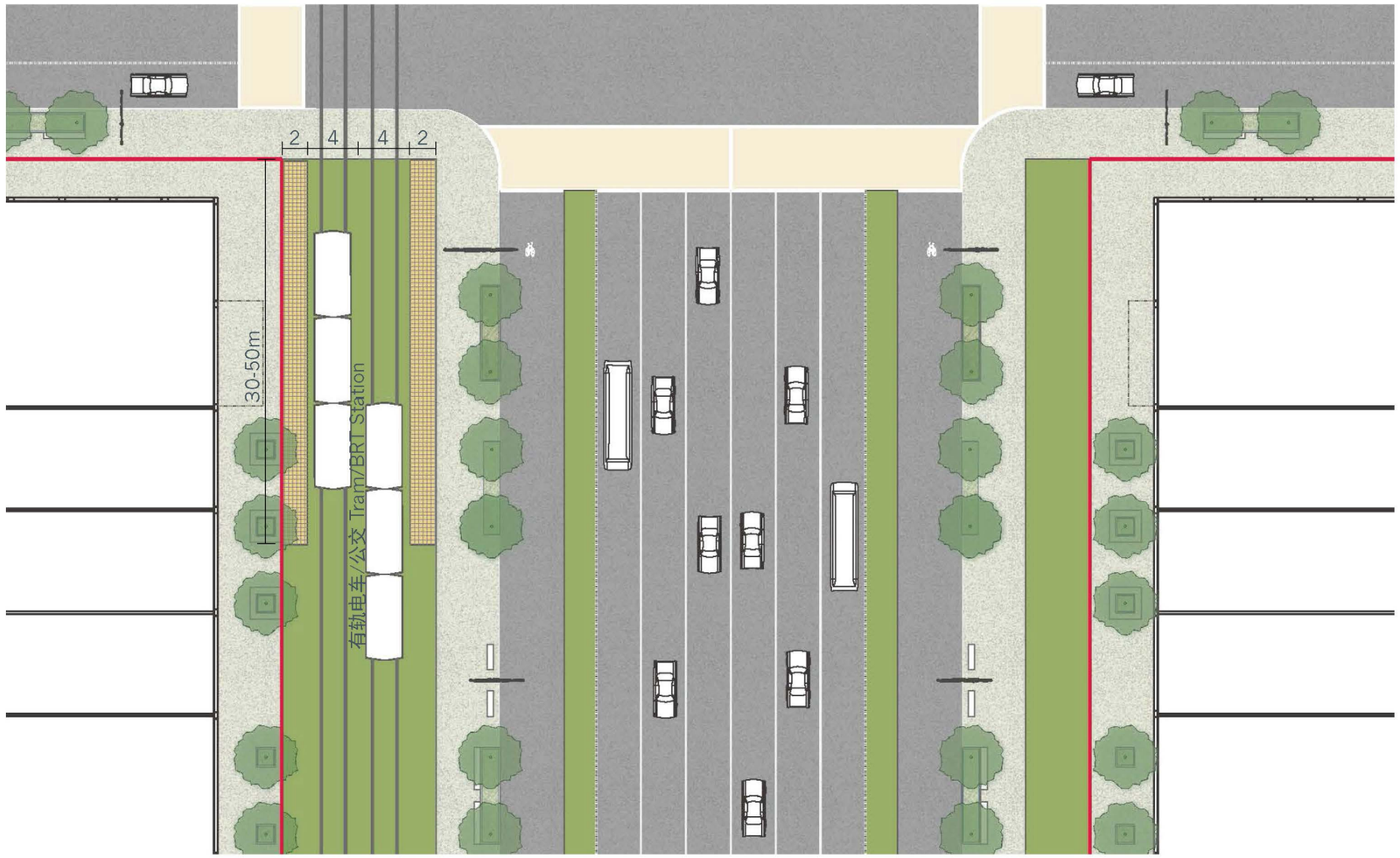
有轨电车/快速公交
Tram/BRT System

公交专用道的设置是公交优先的保障. 规划道路用地内预留有12米绿带作为未来有轨电车或快速公交的公交专用通道，具体采用何种快速公交系统可以结合未来的公交专项规划进一步确定。

Dedicated bus lane guarantees the priority of public transportation. Suggest to reserve 12 metres green belt within planned roads zone for future tram or bus rapid transit corridor.
The exact form to implement in the future depends on the special public transportation feasibility analysis.



有轨电车/快速公交一侧布置
Tram/BRT on One Side of the Road



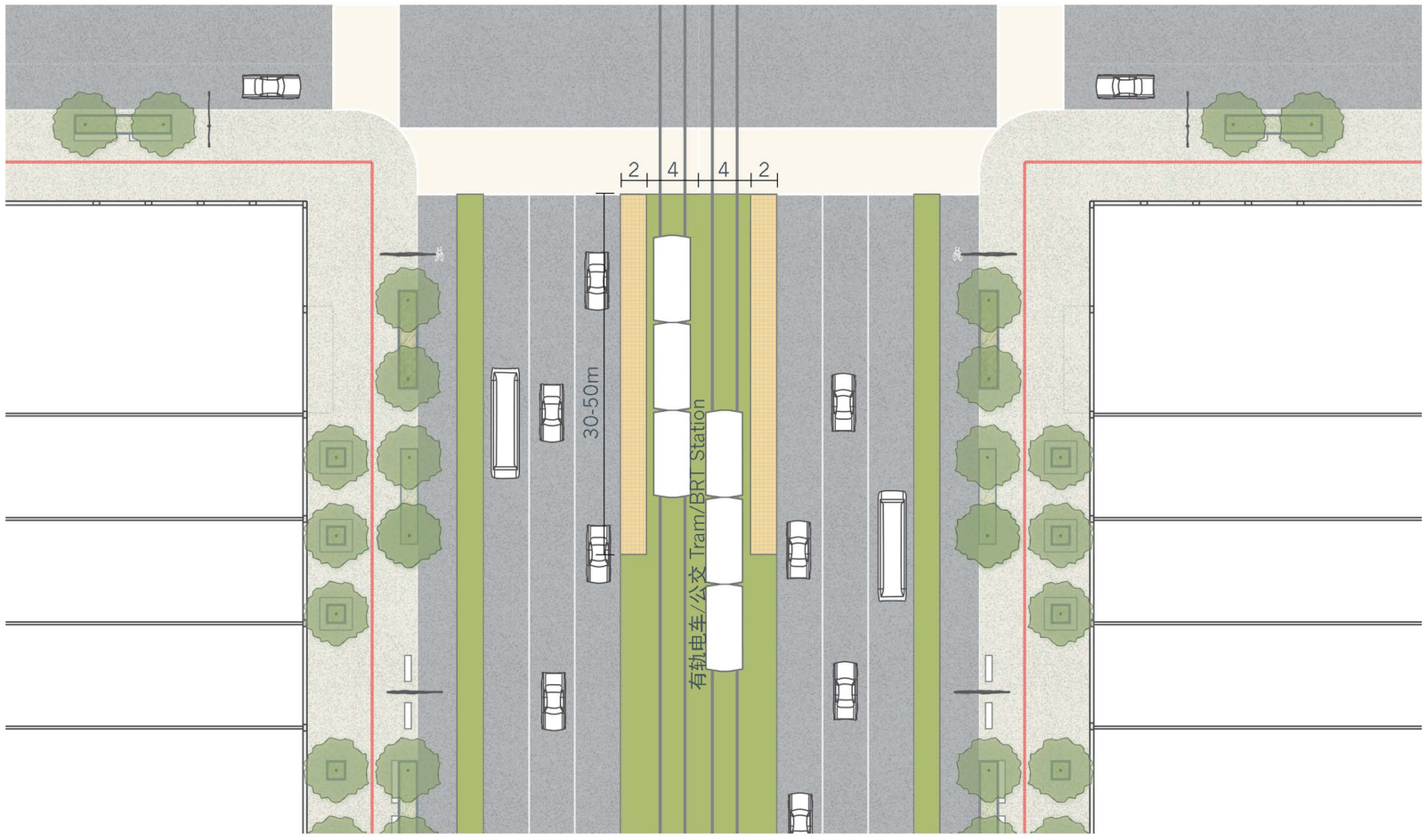
有轨电车 Tram

快速公交 BRT

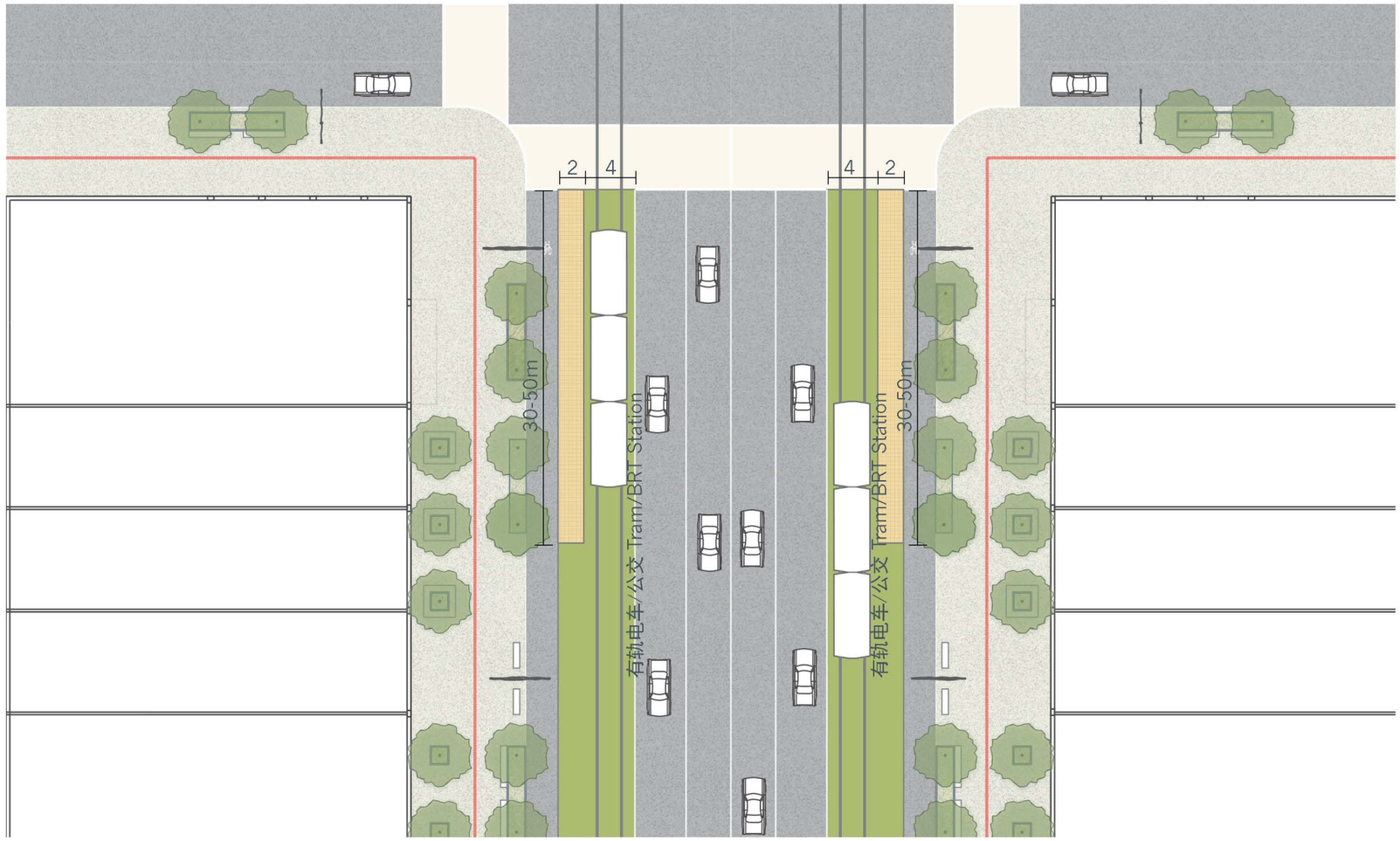
有轨电车/快速公交路中布置
Tram/BRT in the Middle of the Road

有轨电车 Tram

快速公交 BRT



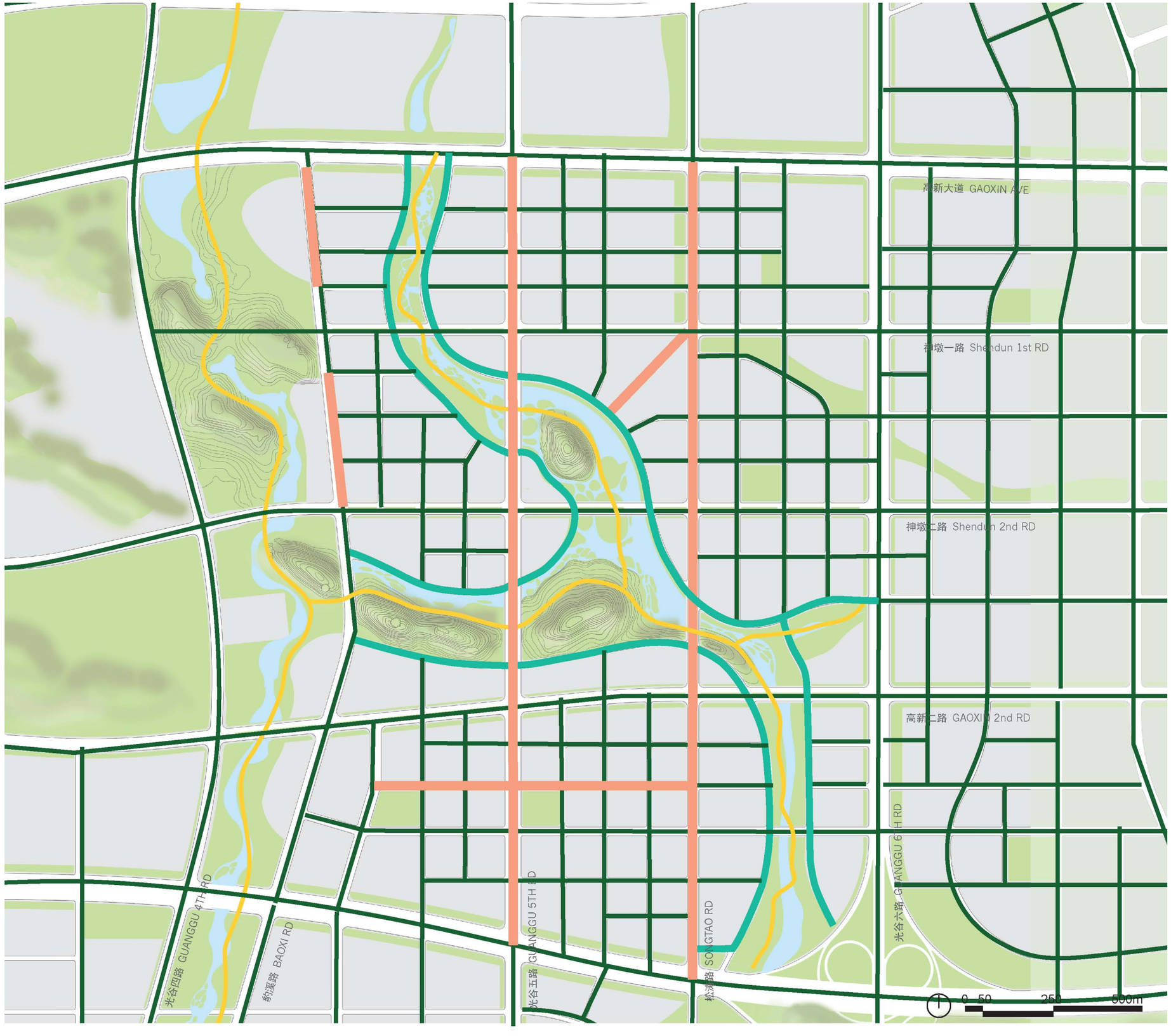
有轨电车/快速公交两侧布置
Tram/BRT on Two Sides of the Road



有轨电车 Tram

快速公交 BRT

人行系统
Pedestrian System



典型人行道
TYPICAL SIDEWALK

新月公园滨水步道
CRESCENT WALK

商业道路
REATIL ROAD

公园小径
PARK TRAIL

典型人行道
TYPICAL SIDEWALK

项目范围内的人行道尺度应结合人流量来设计。

有效的人行道宽度不应小于3米，净空高度不小于4米，包括对 阳台、遮蓬和其他设备的净空。

建筑退界区应作为道路人行道的延伸部分。退界区也就是道 路红线到建筑线的距离范围，应作为禁建区。以下元素不能 位于禁建区内：公交站、街道家具、自行车停车位、伫立式广 告牌、机动车停车位、围墙或栅栏等。

在道路转角区将设禁建区来容纳大流量的步行交通，只有交 通信号灯、街灯和路标可以设置在这个区域内。不允许设置树 木和街道家具。

人行道应有一定的坡度来允许雨水流入排水管道，但坡度要 适宜，必须创造一个无障碍的行人环境。

新月公园滨水步道
CRESCENT WALK

Sidewalk size should reflect the volume of pedestrian traffic that will be expected to convey.

The effective sidewalk width should be no less than 3m, with an effective clearance between grade and any over- head building structure of no less than 4m. This includes balconies, awnings and equipment.

The setback area of all buildings is intended to be treated as an extension of the public sidewalk. The setback zone, from building face to redline, is a Clear Zone. The fol- lowing elements are not to be located in the Clear Zone: bus shelters, street furniture, bicycle parking or storage,

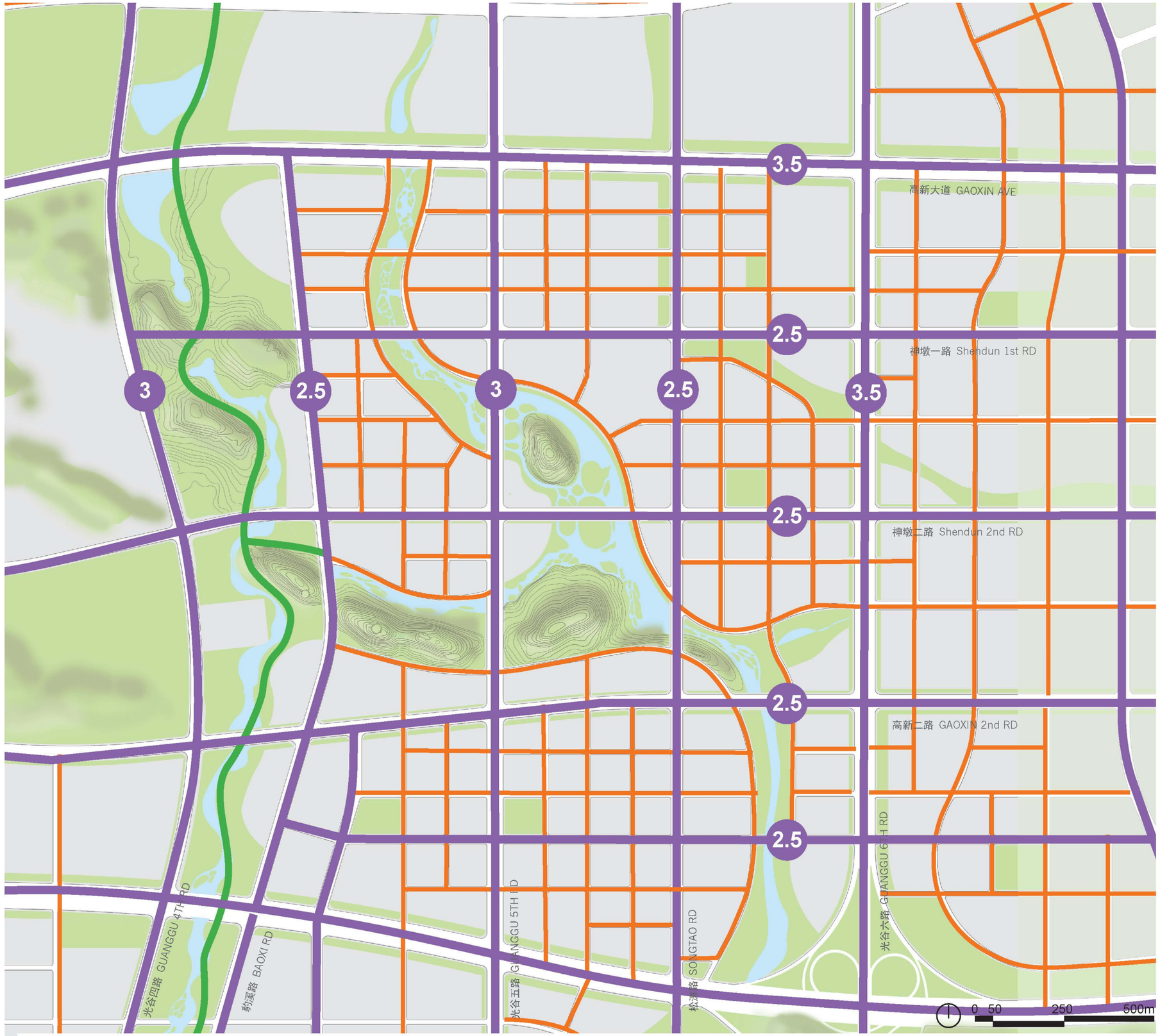
A Clear Zone will be located at corners to accommo- date the typically high volumes of pedestrians located in these areas. Only traffic signals, lighting and street signs should be permitted in Clear Zones. Trees and sidewalk furniture are specifically not be permitted in Clear Zones.

Sidewalks should be graded to provide rainwater drains to appropriate locations, while the resulting slope must create a barrier free pedestrian environment.

商业道路
RETAIL ROAD

公园小径
PARK TRAIL

自行车系统
Bike System

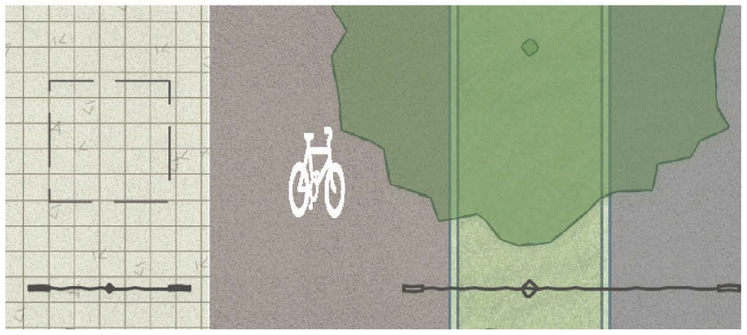


景观休闲自行车道
LANDSCAPE BIKE LANE

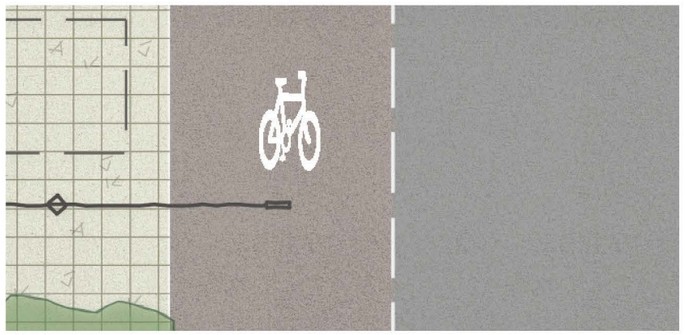
设绿化隔离的自行车道
BICYCLE LANE/WITH SEPERATION
WITH VEHICULAR LANE

与机动车共板自行车道
BICYCLE LANE/NO SEPERATION
WITH VEHICULAR LANE

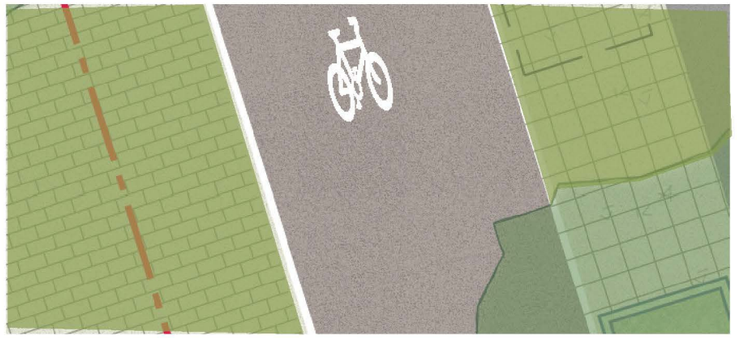
2 单向自行车道宽度
ONE WAY BICYCLE LANE WIDTH



设绿化隔离的自行车道
Bicycle Lane/With Seperation with Vehicular Lane

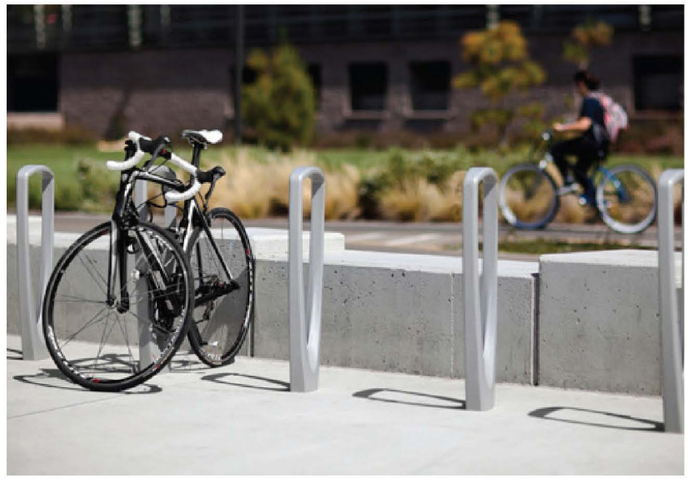


与机动车共板自行车道
Bicycle Lane/No Seperation with Vehicular Lane

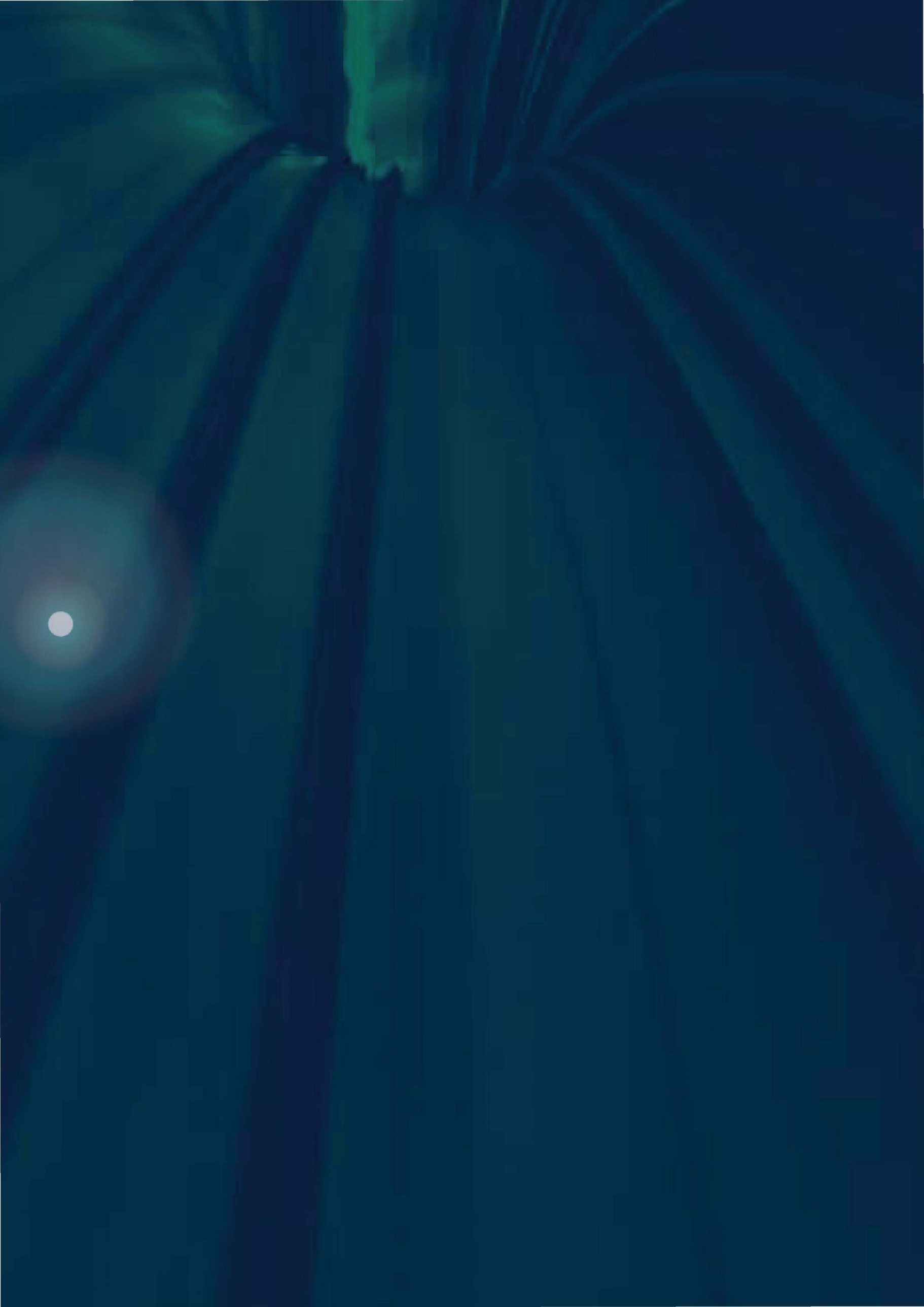


景观休闲自行车道
Landscape Bike Lane

自行车共享系统
Bicycle Share System



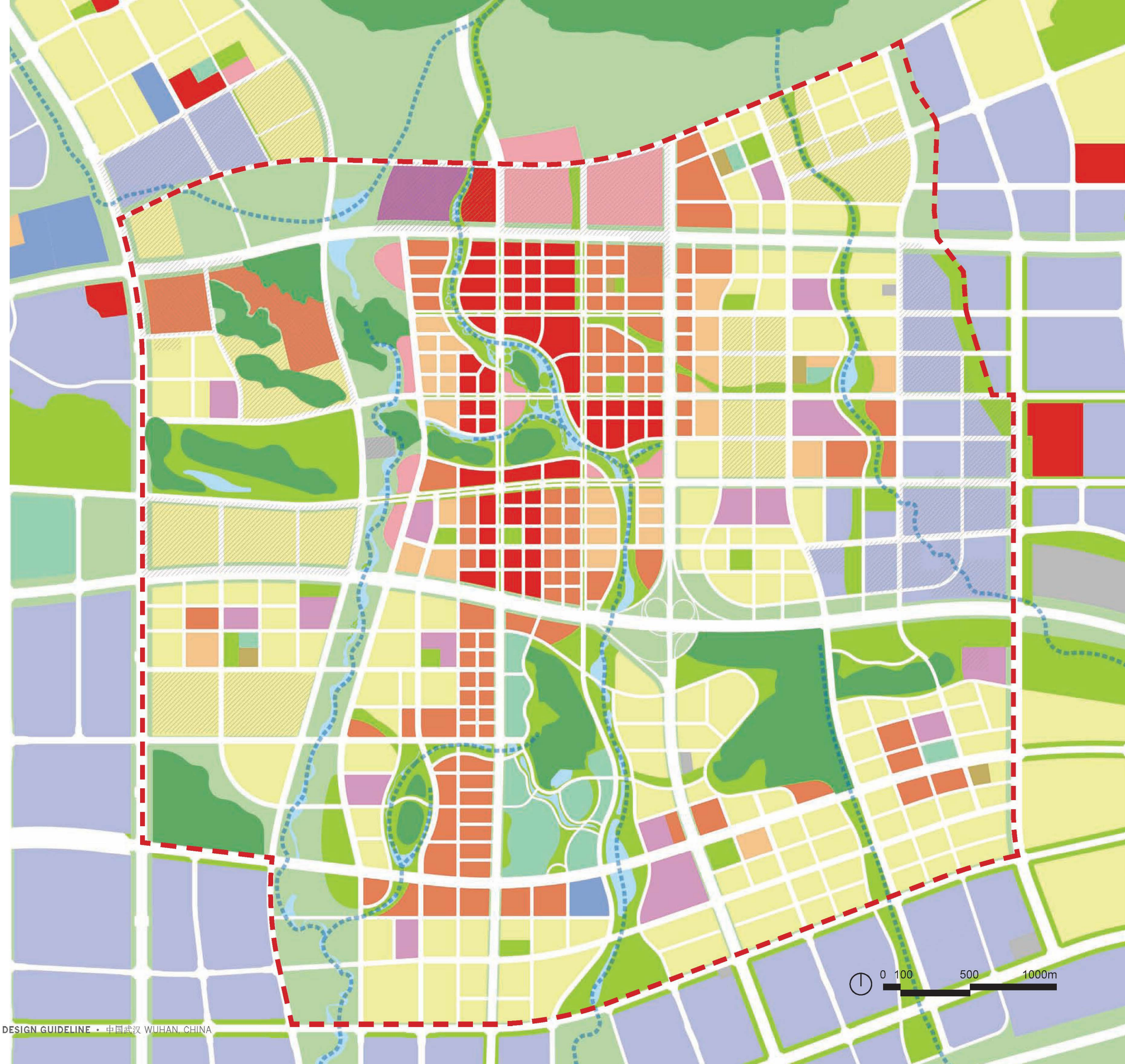
自行车架和车篷
Bicycle Racks and Shelters



用地性质与功能

Land Use and Program

用地性质
Land Use



克尔瑞对地块建筑面积预测（23.5平方公里）
CRIC Assumption for GFA (23.5sqkm)

商业建筑面积预测
Commercial GFA Assumption

2030年规划人口规模（万人） Planning population size (X10,000 people)		**2030**
2020年高新区常住人口规模 2020 The permanent residents in high-tech district	150	
2030年高新区人口规模 2030 The permanent residents in high-tech district	1.10%	167.5
核心商圈人口规模（高新区） The population in core commercial district (High-tech Zone)	167.5	
次要商圈辐射人口规模 The population in secondary commercial district (洪山、江夏、青山、武昌，不包括高新区） (Hongshan、 Jiangxia、Qingshan、Wuchang, which is no included high-tech district)	365.8	
边际商圈辐射人口规模（武汉其它各区） The population in marginal commercial district (other districts)	1104.4	
2030年人口消费总额（万人） 2030 The total consumption amount (X10,000 people)		
2011年武汉人均消费性支出（元） 2011 Wuhan per capita consumption expenditure (Yuan)	17140.96	
11-20年人均消费性支出复合增长率 Compound growth rate of per capita consumption expenditure during 2011 to 2020	13%	
20-30年人均消费性支出复合增长率 Compound growth rate of per capita consumption expenditure during 2020 to 2030	7%	
2030年人均消费性支出（元） 2030 Wuhan per capita consumption expenditure (Yuan)	101267.8	
预测核心商圈人口消费总额 Forecast the total population consumption of the core commercial district	1696.34	
预测次要商圈人口消费总额 Forecast the total population consumption of the secondary commercial district	3704.87	
预测边际商圈人口消费总额 Forecast the total population consumption of the marginal commercial district	11183.6	

2030年高新区消费总额（亿元） 2030 The total consumption of high-tech district (XRMB100 million)		
预测核心商圈消费总额高新区渗透 Forecast the total consumption of the core commercial district in high-tech district	50%	848.17
预测次要商圈消费总额高新区渗透 Forecast the total consumption of the secondary commercial district in high-tech	20%	740.97
预测边际商圈消费总额高新区渗透 Forecast the total consumption of the marginal commercial district in high-tech district	5%	559.18
2020年光谷中心区消费总额（亿元） 2020 The total consumption of Optical Valley center district(XRMB100million)		
预测核心商圈消费人口本案消费额 Forecast consumption of the core area	50%	424.09
预测次要商圈消费人口本案消费额 Forecast consumption of the secondary commercial district of the core area	20%	148.19
预测边际商圈消费人口本案消费额 Forecast consumption of the marginal commercial district of the core area	15%	83.88
656.16		
2030年光谷中心区商业坪效预估（万元/平方米） 2030 The estimated commercial efficiency per sqm of Optical Valley core area (10,000 Yuan / sqm)		
2011年武汉市商业坪效 2011 Wuhan Commercial efficiency per sqm	2.75	
商业坪效增长率≈商品零售价格增长率 The growth rate of commercial efficiency per sqm ≈ the growth rate of retail price	2.40%	
4.31		
2030年光谷中心商业体量需求（万平方米） 2030 Optical Valley Center Commercial GFA demand (X10,000 square meters)		
152.25		
2030年光谷中心商业体量预测（万平方米） 2030 Optical Valley Center Commercial GFA forecast (X10,000 square meters)		
光谷中心区现有商业供应量 Optics Valley core area existing commercial GFA	0	
152.25		

酒店/服务公寓面积预测
Hotel/Service Apartment GFA Assumption

2030年高新区过夜旅游人次（万人） Overnight visitors in the high-tech district in 2030 (X10,000 people)	
1847.55	
总床位预估（万个） Hotel/SA Beds in total estimated (X10,000 beds)	
平均过夜天数（天） Average overnight days (days)	2
3695.09	
高新区酒店总房间数预估（间） The total number of rooms estimated in high-tech district (rooms)	
50618	
高新区酒店总房间数需求（间） The total number of rooms demanded in high-tech district (rooms)	
入住率 Occupancy rate	70%
72311	
高新区已有及规划酒店房间数（间） The number of existing and planning hotel rooms in high-tech district	
已有酒店房间数 The number of existing hotel rooms	5,424
规划酒店房间数 The number of planned hotel rooms	1,700
高新区未来酒店房间数预估（间） The number of rooms estimated in the future in high-tech district (rooms)	
65187	
光谷中心区未来酒店房间数预估（间） The number of rooms estimated in the future Optical Valley core area (rooms)	
市场占有系数 Market percentage	15%
9778	
光谷中心区未来星级酒店数预测（个） Star hotels forecasted in the future Optical Valley core area (number)	
星级酒店数量 The number of star hotels	65

办公（包括研发）面积预测
Office (including R&D) GFA Assumption

2030年高新区现代服务业收入（亿元） 2030 revenue of modern service industry in high-tech district (XRMB100million)	
2020年高新区企业总收入 Gross revenue of companies in high-tech district in 2020	30000
参考：2002-2020年总收入复合增长率 Reference: Compound growth rate of gross revenue during 2002 to 2020	27%
假定2020-2030年总收入复合增长率 Assumed compound growth rate of gross revenue during 2020 to 2030	15%
2030年高新区企业总收入 Gross revenue of companies in high-tech district in 2030	121366.7
2030年高新区现代服务业收入占企业总收入比值 2030 revenue of modern service industry in high-tech district accounting for the gross revenue of companies	25%
2030年高新区现代服务业收入 2030 revenue of modern service industry in high-tech district	30341.68
假设中心区占高新区现代服务业比值 Assumed ratio of modern service industry revenue between Wuhan Midcontinental CBD and high-tech district	20%
6068.34	
2030年中心区单位收入所需办公面积（万平方米/亿元） Office area required by unit revenue in Wuhan Midcontinental CBD by 2030 (X10,000sm/RMB100million)	
0.1	
2030年光谷中心区办公需求（万平方米） Office requirement in Wuhan Midcontinental CBD by 2030 (X10,000sm)	
606.83	

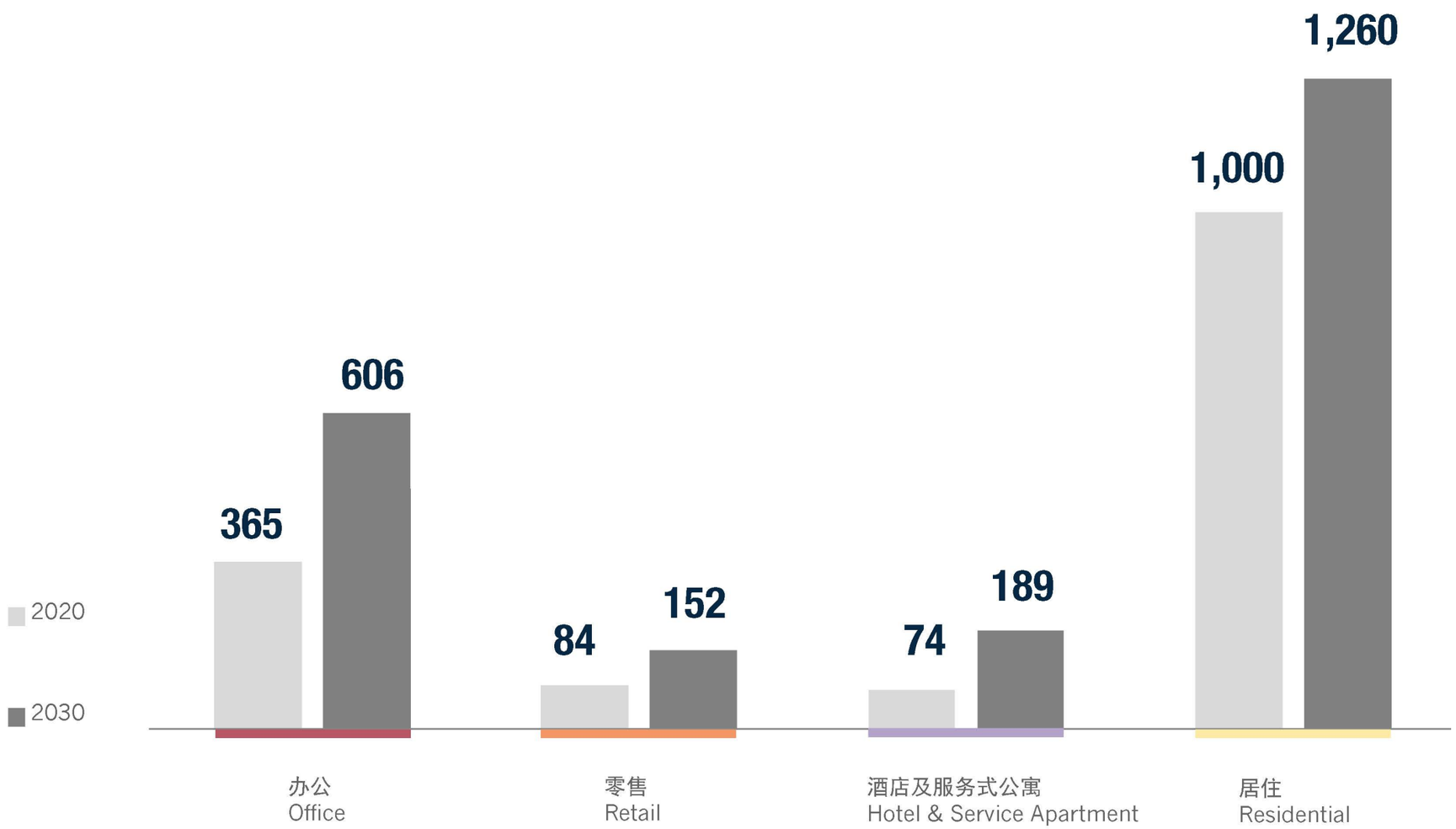
克尔瑞对地块建筑面积预测（23.5平方公里）
CRIC Assumption for GFA (23.5sqkm)

商业商务（包括产业）总建筑面积
Total Commercial (Includeing R&D)
GFA: 9,470,000 m²

预测办公人口：40万人
Assumed workers: 400,000 people

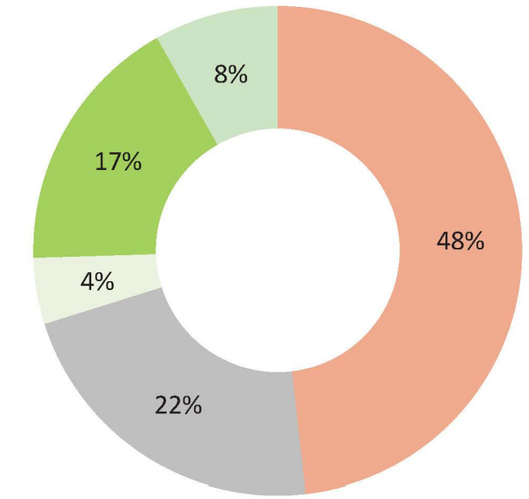
居住总建筑面积
Total Residential
GFA: 12,600,000 m²

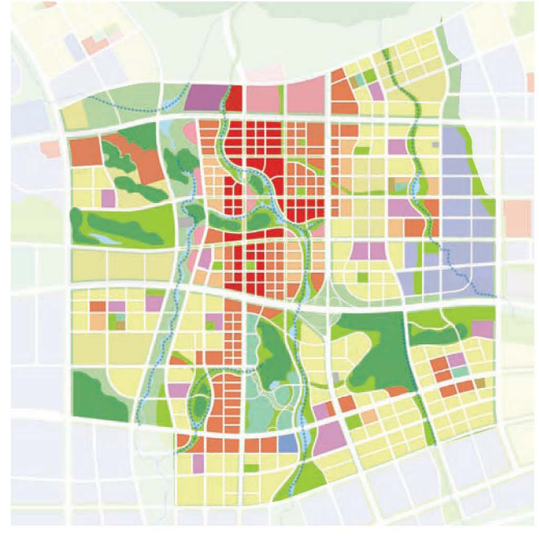
预测居住人口：25万人
Assumed residents: 250,000 people



SOM建议的功能配置（23.5平方公里）
SOM Proposed Program (23.5sqkm)

		方案 overall Scheme			
用地编码 Land Code	用地功能 Land use	用地面积 Land area	用地比例 Land Ratio	容积率 FAR	建筑面积 GFA
B	商务 Commercial	699,605		5.3	3,701,320
	商业混合功能 Commerial Mixed use	1,824,231		2.9	5,221,233
A	行政 Administration	143,000		1.0	143,000
	文化/展览/公共设施Cultural/Exhibition/Pub	462,336		1.0	474,800
	医院 Hospital	45,891		1.5	68,837
	体育 Sport	418,483		0.8	315,512
	教育 Education	568,419		0.7	397,893
R	居住 Residential	5,953,409		2.1	12,513,727
M	工业 Industry	993,590		1.5	1,490,385
U	市政 Utility	117,952			
	可开发用地 Developable Land Area	11,226,916	48%	2.2	24,326,706
S	道路 Road	5,261,884	22%		
	道路绿化退界Road Green Setback	1,025,200	4%		
G	绿地公园 Open space	4,058,700	17%		
	保育用地 Preserved Green	1,928,700	8%		
	Total Green Area	7,012,600	30%		
	总计 **Total**	**23,501,400**			





SOM对商务核心区商业商务建筑面积的假设（3.2平方公里）

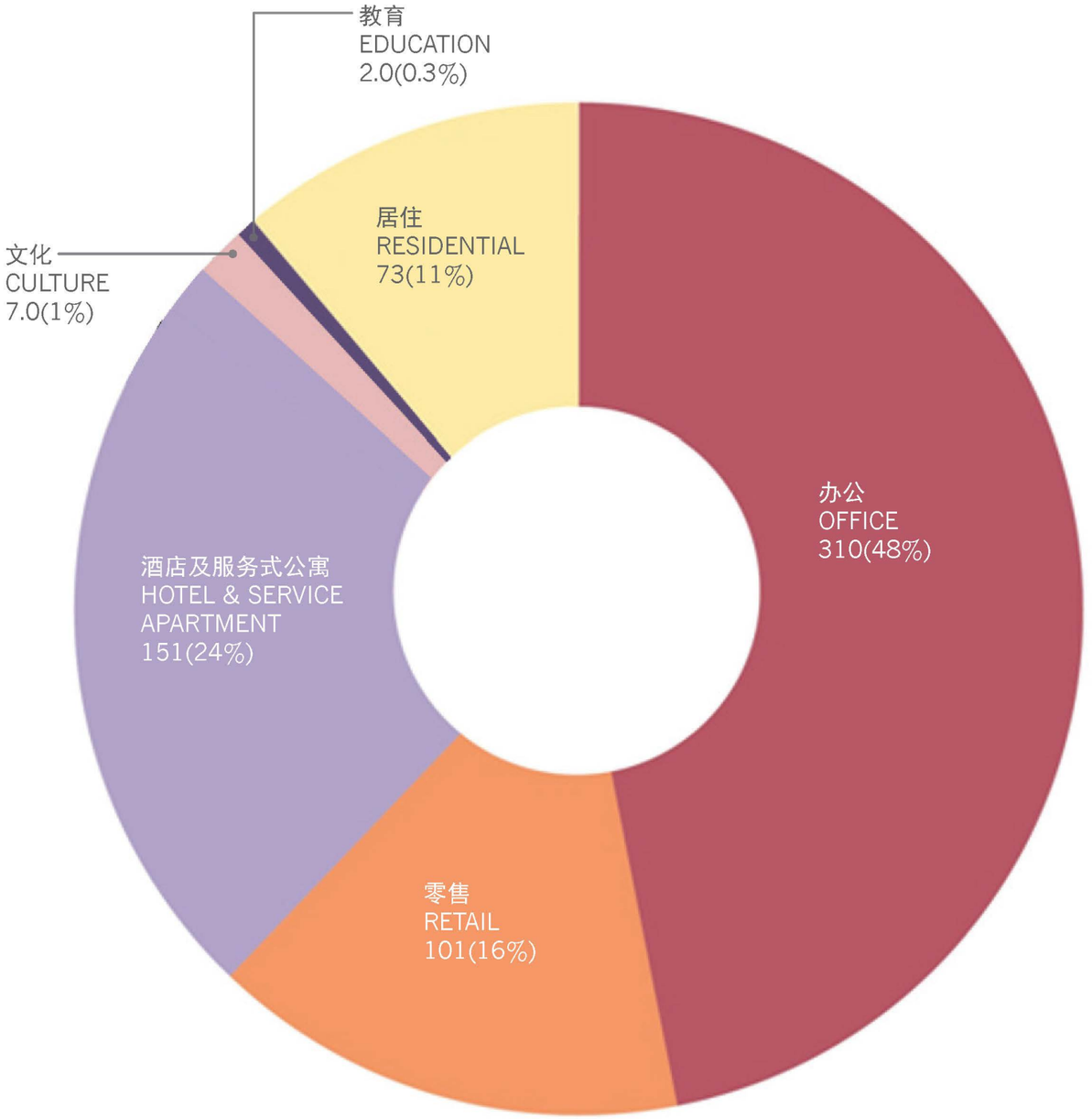
SOM Assumption for Commercial in North Core Area 3.2 sqkm

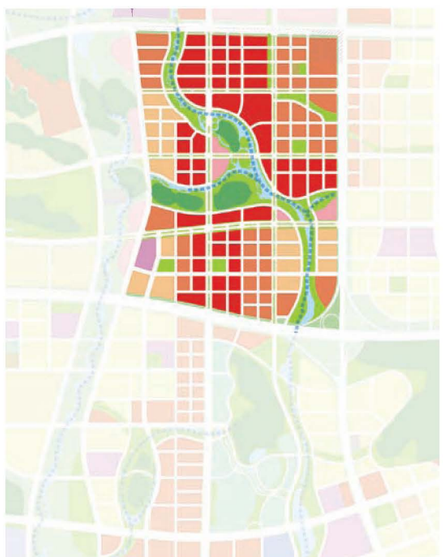
商业商务总建筑面积
Total Commercial GFA:5,636,000 m2

注：假设约65%的商业商务功能会集中在商务核心区布置
Note:Assume ~65% of commercial will located in the north core area.

总建筑面积
Total GFA: 6,453,000 m2

毛容积率
Gross FAR: 2.0

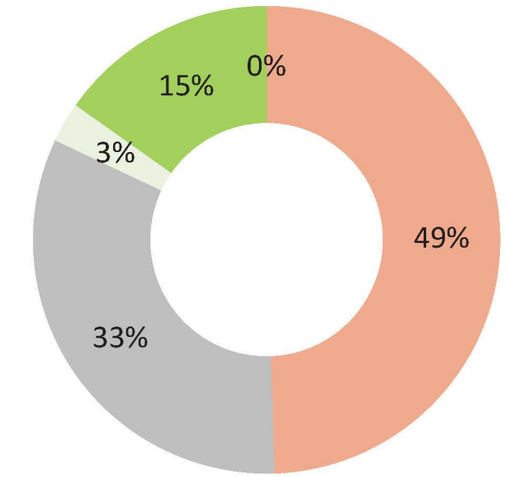


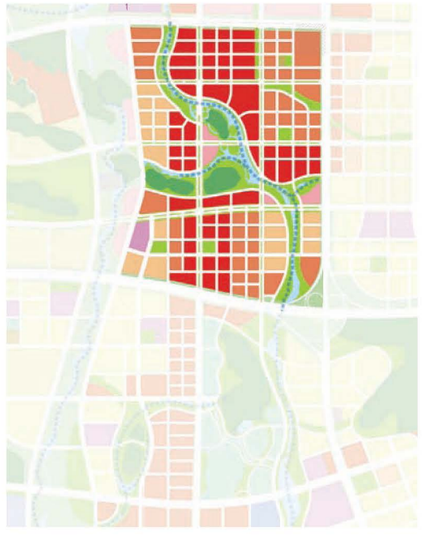


SOM对商务核心区用地面积的比例的分配 (3.2平方公里)

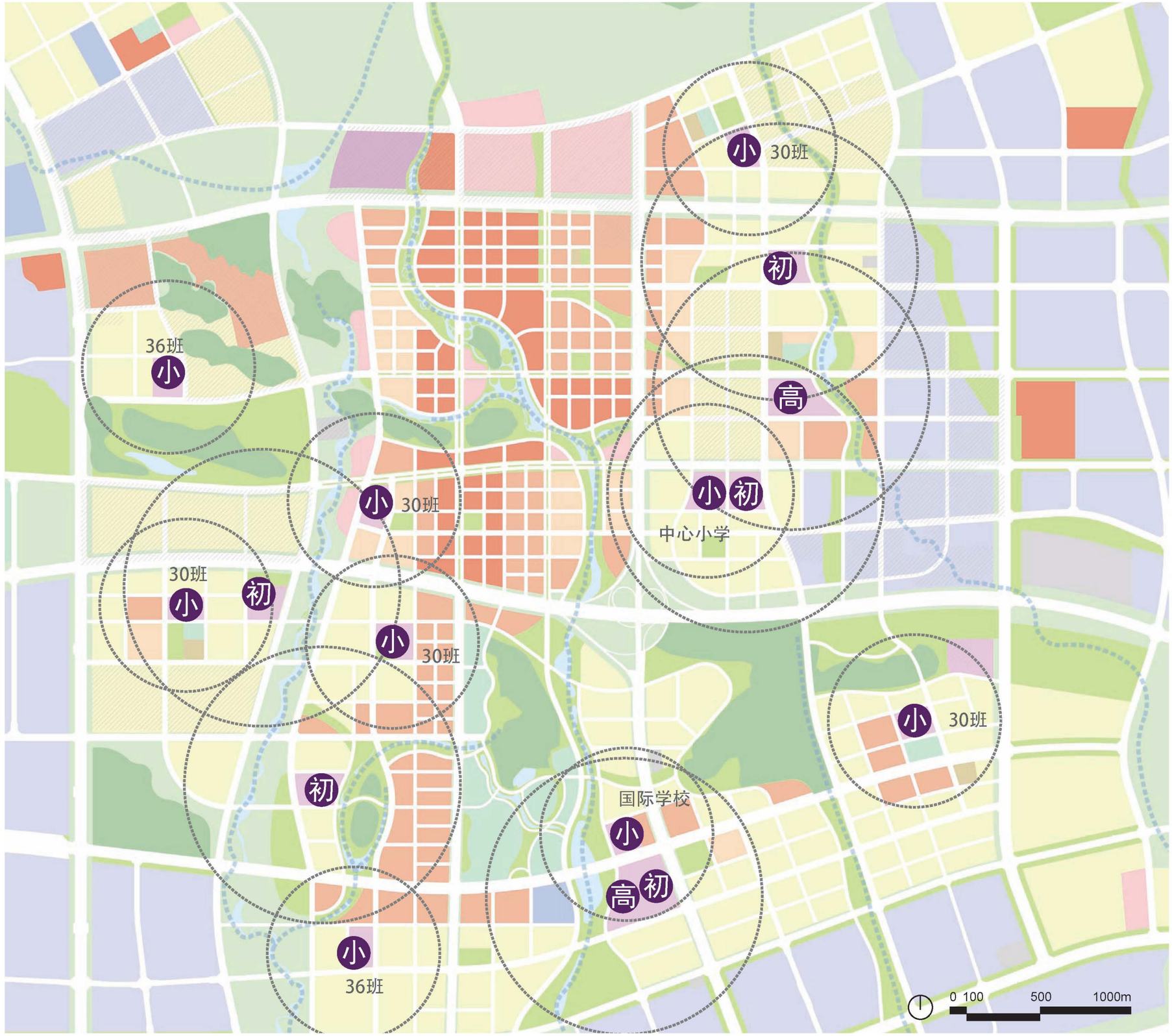
SOM Proposal for % of Land Use in North Core Area 3.2 sqkm

		核心区3. 2sqkm Core Area			
用地编码 Land Code	用地功能 Land use	用地面积 Land area	用地比例 Land Ratio	容积率 FAR	建筑面积 GFA
B	商务 Commercial	643,328		5.7	3,672,720
	商业混合功能 Commerial Mixed use	513,286		3.8	1,963,015
A	行政 Administration	0			
	文化/展览/公共设施Cultural/Exhibition/Publi	28,000		2.5	70,000
	医院 Hospital	0			
	体育 Sport	0			
	教育 Education	29,103		0.7	20,372
R	居住 Residential	265,508		2.7	726,442
M	工业 Industry				
U	市政 Utility				
	可开发用地 Developable Land Area	1,479,225	46%	4.4	6,452,549
S	道路 Road	1,180,375	36%		
	道路绿化退界Road Green Setback	89,000	3%		
G	绿地公园 Open space	486,700	15%		
	保育用地 Preserved Green	0	0%		
	Total Green Area	575,700	18%		
	总计 **Total**	**3,235,300**			



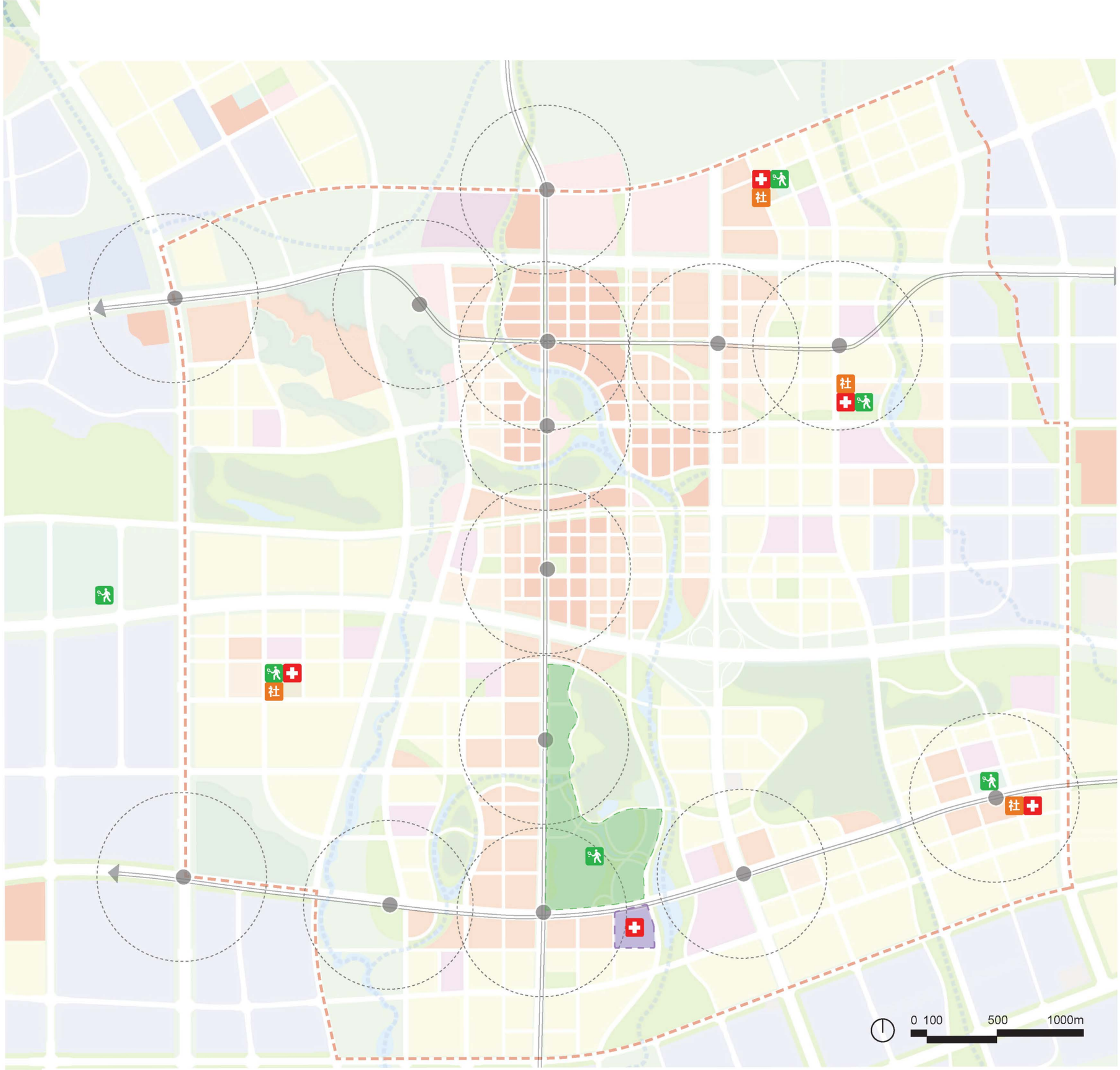


公共配套设施
Public Facility



小 小学 PRIMARY SCHOOL
初 初中 MIDDLE SCHOOL
高 高中 HIGH SCHOOL

公共配套设施
Public Facility



体育 SPORT

医疗 MEDICAL CENTER

社区及服务中心 COMMUNITY SERVICE CENTER

公共配套设施
Public Facility

- 变电所 Substation
- 污水泵站 Existing pump station
- 垃圾转运站 Garbage transfer stations
- 消防站 Fire stations
- 加油站 Gas stations
- 邮局 Post office
- 通信机楼 telecommunication buildings
- 公交首末站 Bus Terminal
- 公交枢纽 Bus Interchange Hub

高性能设计

High Performance Design

基础设施可持续化设计及建筑的环境效益
Sustainable Infrastructure & Building Efficiency

为实现中国十二五发展计划和湖北工业第十二个五年计划，光谷中心区城市设计建议使用智能可持续化基础设施联系高性能建筑。
In order to plan a city that adheres to China's 12th 5 year-plan and the 12th five-year plan for Hubei Industry, the China Optics Valley Central Area Master Plan proposes the introduction of smart sustainable infrastructure systems that link high performance buildings.

基础设施网络将利用地下空间直接服务建筑物。中央采暖制冷分布系统、水资源及固体垃圾的循环利用设施、快速网络设施、智能电网等基础设施可实现规模性节能，并且真正地实现可持续化发展，在开发地块上实现能源、水源高度节省。本规划的初步发展目标包括：
This infrastructure network will utilize the underground realm to provide services directly to buildings. A central heating and cooling distribution system, provisions for the recycling of water and solid waste, fast network infrastructure, and smart grid can all provide economies of scale and enable a truly sustainable development that allows parcels to achieve higher levels of energy and water savings. Preliminary goals for the plan include:

高质量并均衡的生活环境
Quality and Balanced Environment

水之城
City of Water

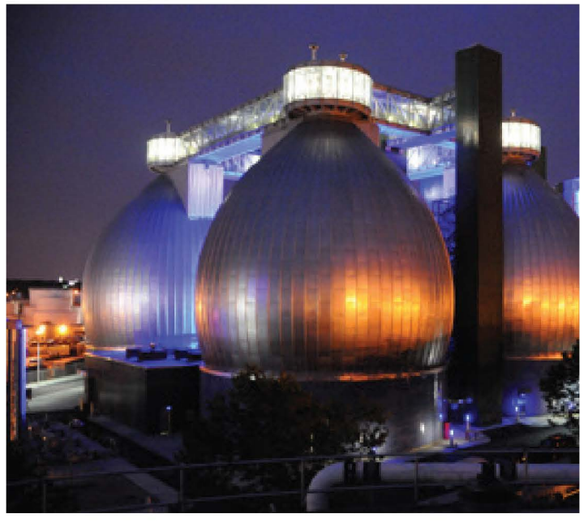
减少二氧化碳排放量
CO_2 Emissions Reduction

灵活的能源系统
Flexible Energy Systems

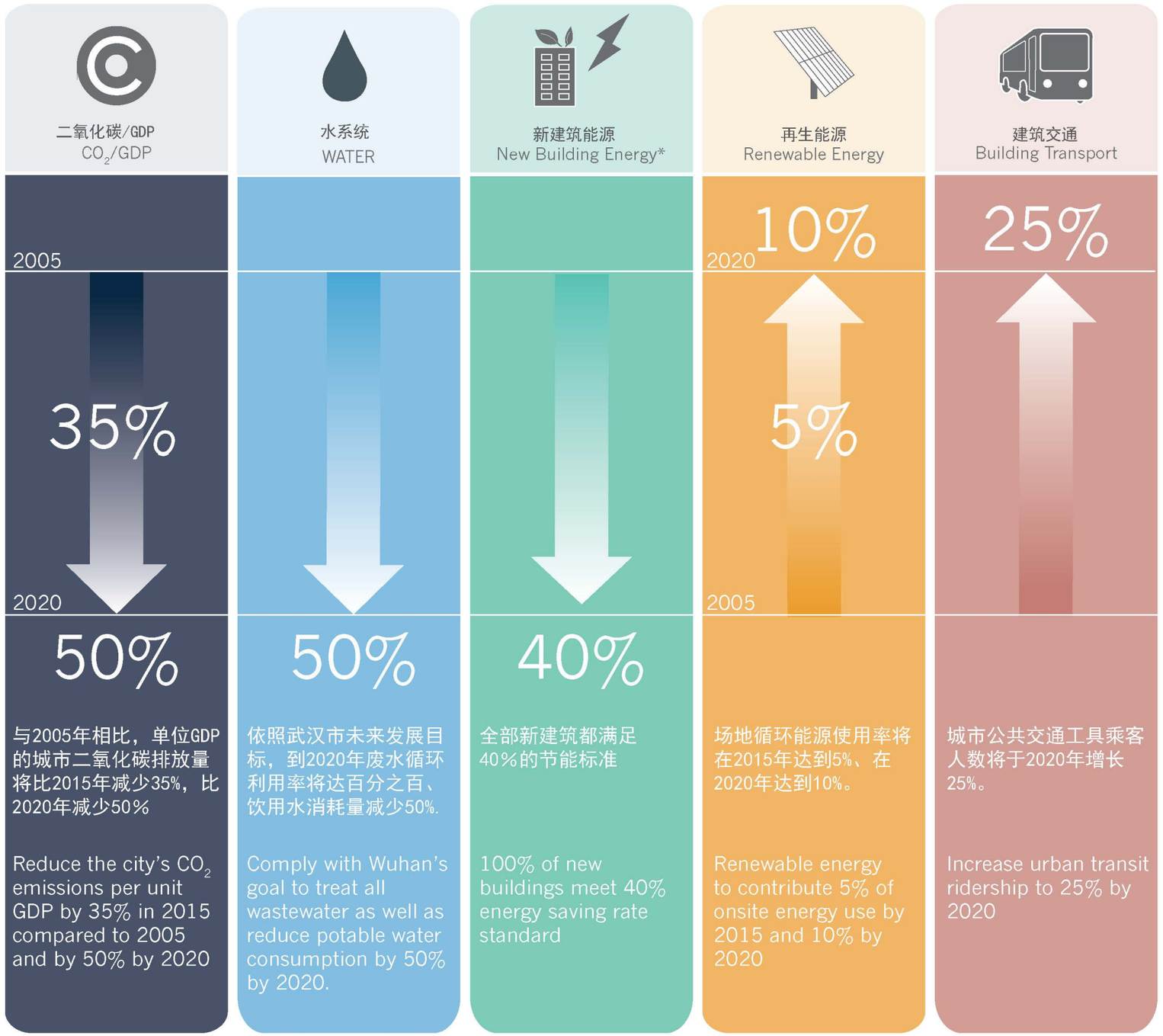
使用再生能源
Utilize Renewable Energy

回收废物
Recycle Waste

建筑层面的城市设计导则
Building Level Urban Design Guidelines



光谷中心区
低碳行动
Optics Valley
Low Carbon Action Plan



* 相对于中国能源规范所节约的能源
Energy savings compared to Chinese Energy Code

光谷中心区城市设计将符合中国持续推广低碳城市计划的发展要求。

过去8年内中国政府倡导实现“国家环保模范城市”计划，部分指定城市包括保定、成都、贵阳、香港、南昌、天津、无锡、厦门等地被要求减少其二氧化碳排放量。本计划中所有城市已经设定重点绩效标准，利用现有的基准（2005年），制定 2020年乃至更远的未来的城市发展计划。

光谷中心区城市设计将按照国家计划的发展蓝图，利用自身环境发展取得最佳环境绩效，在低碳减排的大趋势中保持发展高竞争优势。

The China Optics Valley development has been designed to support the continued efforts of Low Carbon City Plans being developed throughout China.

In the last 8 years, since being designated by the Chinese Government as a “National Example City of Environmental Protection”, the following cities have developed and implemented key goals and targets to reduce their carbon footprints: Baoding, Chengdu, Guiyang, Hong Kong, Nanchang, Tianjin, Wuxi, and Xiamen. Each city that is part of this program has developed key performance metrics that utilize existing benchmarks (2005) and plan for continued improvement through 2020 and beyond.

It is proposed that China Optics Valley utilize this program as a road map for their own environmental aspirations to achieve the highest environmental performance and to remain competitive in an increasingly Carbon conscious market.

互联的基础设施
Interconnected Infrastructure

域增强型管网系统将密切关注每一个能量的来源、每一条废弃物排放的渠道，以扩展能源的最大化使用，优化冗余的系统环节，减少能源使用。区域层面可以提供较以往建筑层面更好的服务以达到规模性节能效果。

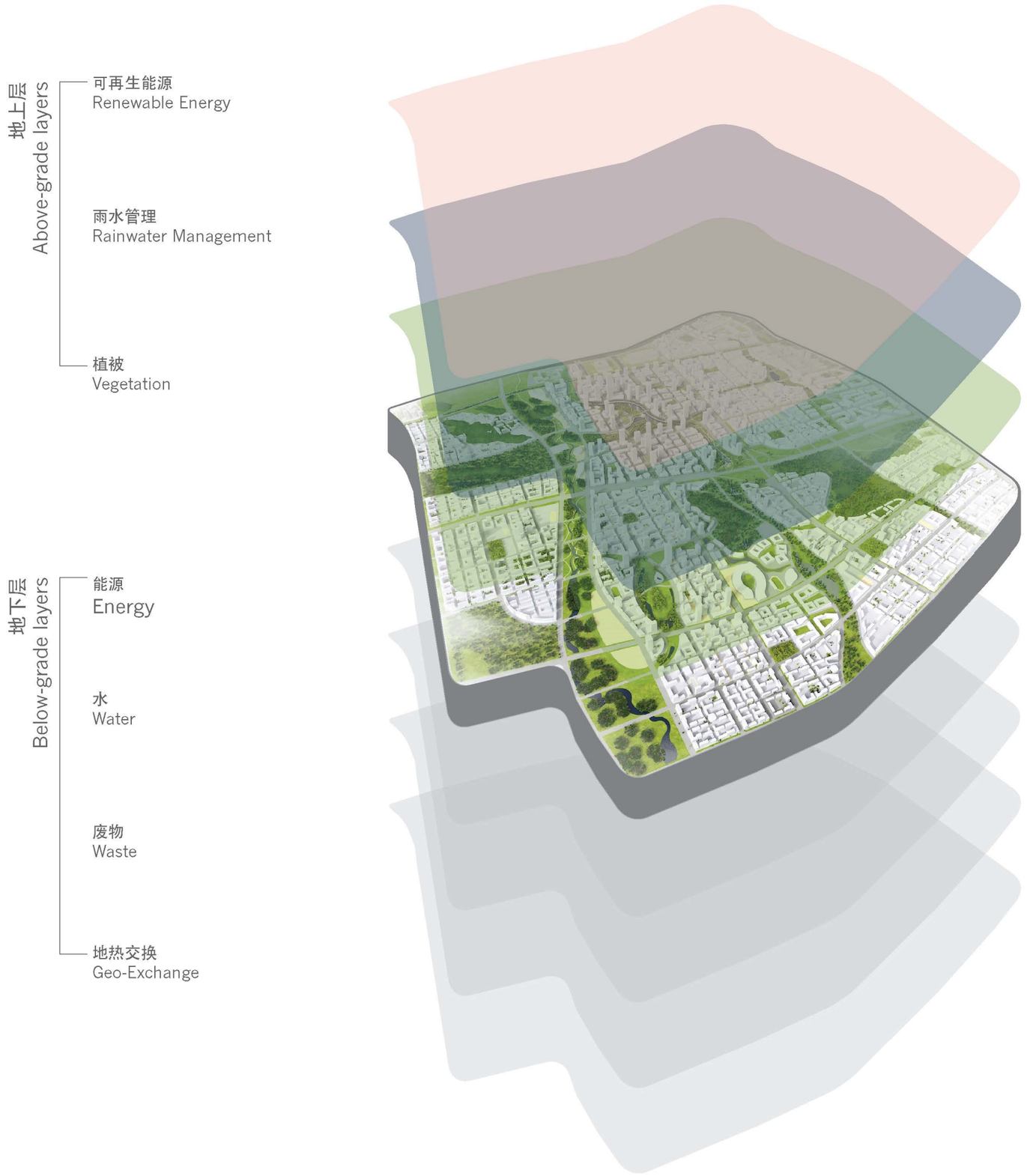
区域增强型管网系统将提供互联的区域能源节点，提供以下：

- 为商业区域提供区域制冷、为高密度住宅区提供区域供暖
- 热电联产系统将使用天然气作燃料并且承担部分发电，系统余热可用于夏季吸收式制冷、冬季暖气/热水供应
- 提高能源使用效率
- 优化冗余能源

An enhanced district utility network looks more closely at each utility provided, as well as each waste stream, to discover expanded uses for each resource, optimize redundancies, and minimize energy use. Services that are traditionally produced at the building level can be better served at the district level achieving economies
of scale.

An enhanced building utility network with interconnected district energy nodes provide:

- District cooling in commercial areas, and heating in high density residential
- Cogeneration can be utilized using natural gas to generate a percentage of electricity. Waste heat from this process can be utilized for absorption cooling in the summer and district heating/hot water in the winter
- Efficient use of energy resources
- Optimization of redundancies



充分利用武汉的战略优势
Leverage Wuhan's Strength

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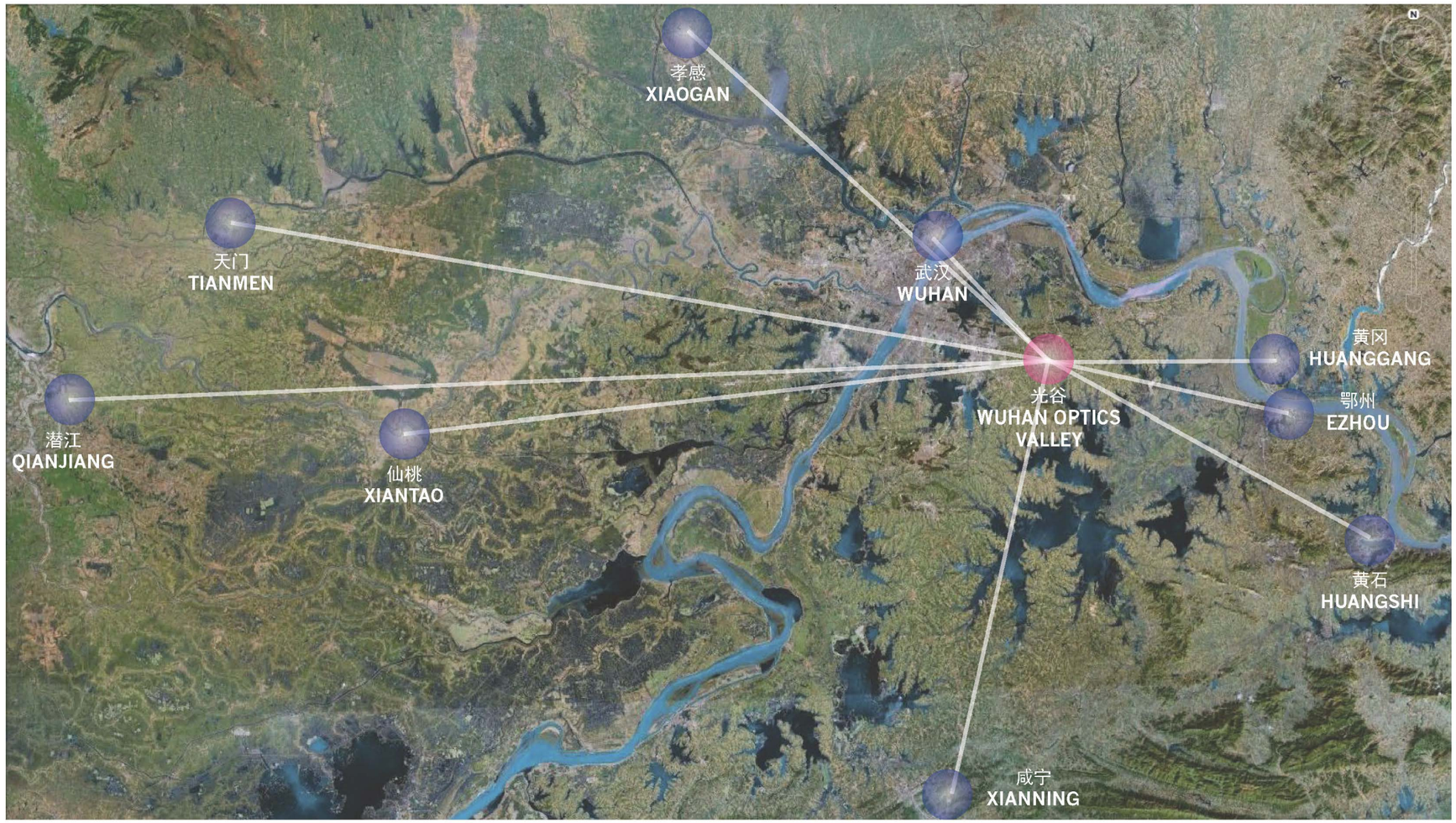


2012湖北工业第十二个五年发展计划
12TH FIVE-YEAR PLAN FOR HUBEI INDUSTRY 2012

1. 新一代信息技术产业 Next-Generation Information Technology
2. 高端装备制造产业 High-end Equipment Manufacturing
3. 新材料产业 New Materials
4. 生物产业 Bio-Technology
5. 节能环保产业 Energy Conservation
6. 新能源产业 Clean Energy
7. 新能源汽车产业 Alternative Energy Vehicles

光谷中心区城市设计将积极提高制造业技术水平，实现低碳减排的重大目标。武汉原本是一座传统制造业中心，近年来由于三座国家级发展基地的建立、并且超过350所科研机构入驻，如今的武汉已旧貌焕新颜。此外，湖北地区工业发展的第十二个五年计划也将促进区域共同进步，重点发展以下城市的科研产业和工业：
武汉
黄石
鄂州
孝感
黄冈
咸宁
仙桃
潜江
天门

左边图示的调查结果总结了未来武汉低碳计划发展过程中能够将持续增长的技术和服务领域。设计团队将结合列出的产业和其他可应用产业共同实现武汉低碳规划发展前景。

The China Optics Valley Central Area development has the ability to leverage a considerable amount of manufacturing expertise to enact aggressive Low Carbon goals. Traditionally Wuhan has been a manufacturing hub, but has been changing this image with three national development zones, and over 350 research institutes. In addition by developing a 12th five-year plan for industry in the Hubei area Wuhan is participating in a regional and strategic development of research and industry partnerships in the following cities:
Wuhan
Huangshi
Ezhou
Xiaogan
Huanggang
Xianning
Xiantao-
Qianjiang
Tianmen

The adjacent table summarizes the findings of technology fields and services that are anticipated to grow to support a low carbon future for Wuhan. The design team proposes collaborating with these, and other applicable industries, to realize the team's Low Carbon Vision.

保护水资源
Water Conservation

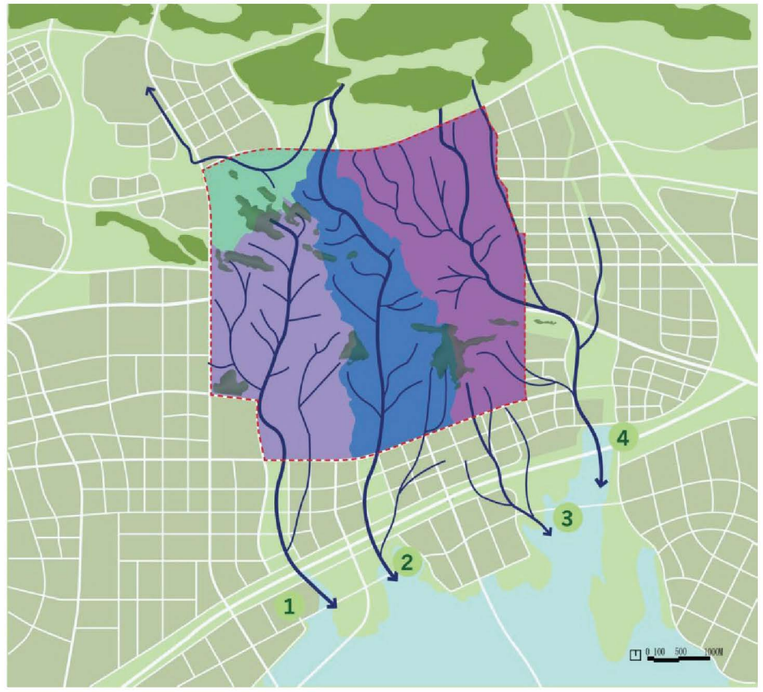
虽然武汉拥有丰富的年降雨量，但为了保障蓄水层补给和未来水源的供应，必须保护光谷中心区的水资源。此外，武汉近年来的迅速发展也突出了水资源的重要性。

光谷中心区城市设计将通过以下途径来管理基础设施层面的水资源节约：
- 使用连续性河坝提供整个场地的防洪措施
- 耦合雨水及卫生用水网络
- 地表径流优化和治理、保障蓄水层补给
- 下一页将介绍市政再生水资源的供应

Although Wuhan receives adequate rainfall during the year, in order to ensure aquifer recharge and future water supplies it is important to protect and maintain China Optics Valley Central Area's water. In addition, the rapid growth of Wuhan increases the importance of this precious resource.

The China Optics Valley Central Area proposal includes water savings at an infrastructure level in several ways including:

- A series of weirs that provide flood control for water courses throughout the site
- De-coupled storm and sanitary water network
- Surface water management and treatment while promoting aquifer recharge
- Municipal reclaimed water supply as proposed on the adjacent page

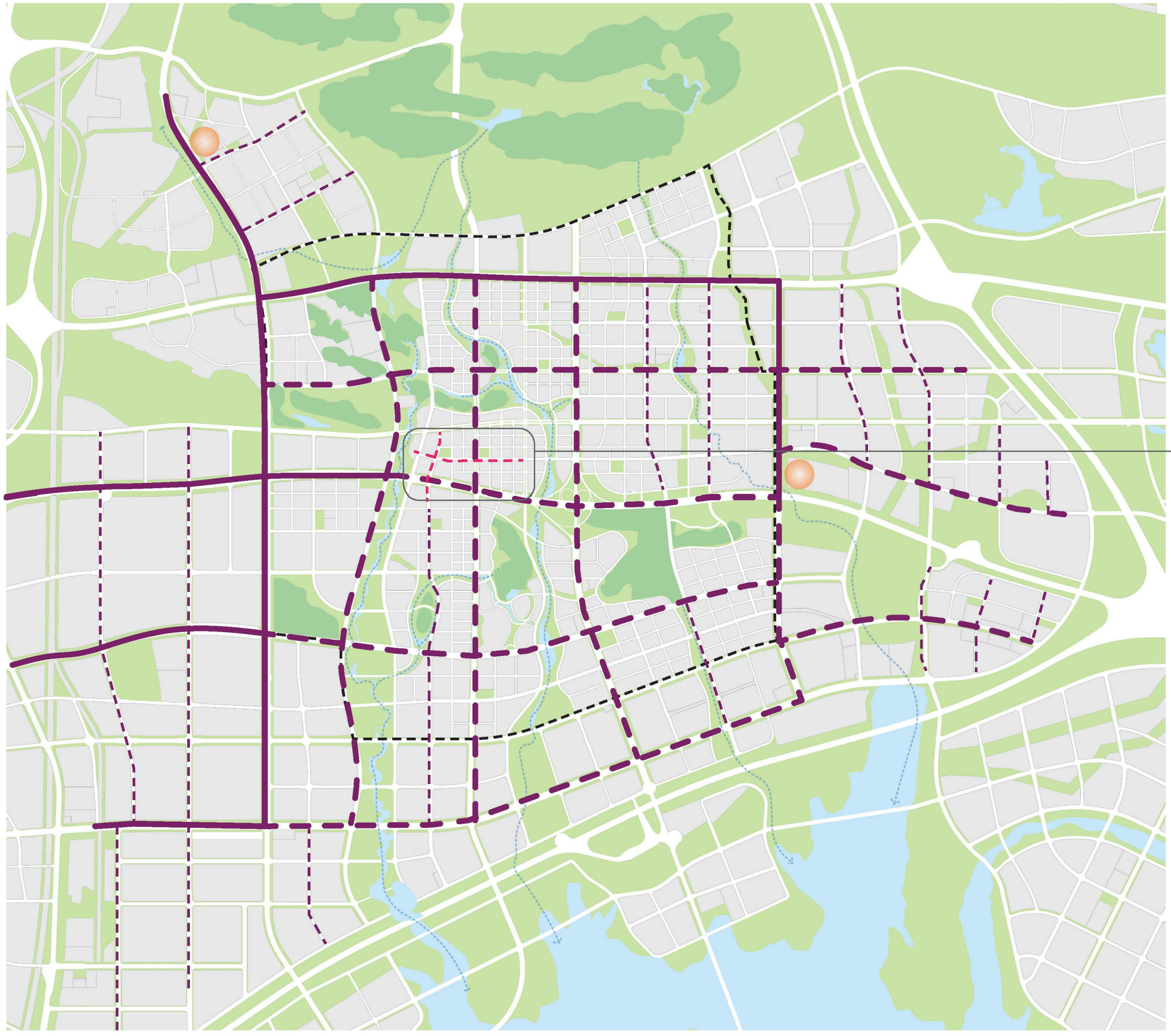


流域
Watersheds

自然水流路径
Waterways

地表径流优化技术
Surface Water Management Techniques

灰水利用
Greywater Management



建议细化管道网络并延伸至中央商务区，确保循环水可输送至每个街区。
Recommend extending into a finer grain network for the CBD to allow recycled water service to each block.

近期中水管线
NEAR TERM RECLAIMED WATER PIPELINE

远期中水管线
LONG TERM RECLAIMED WATER PIPELINE

远期二级中水管线
SECONDARY LONG TERM RECLAIMED WATER PIPELINE

建议远期二级中水管线
RECOMMENDED SECONDARY LONG TERM RECLAIMED WATER PIPELINE

污水处理和水质监测
WATER TREATMENT AND TESTING

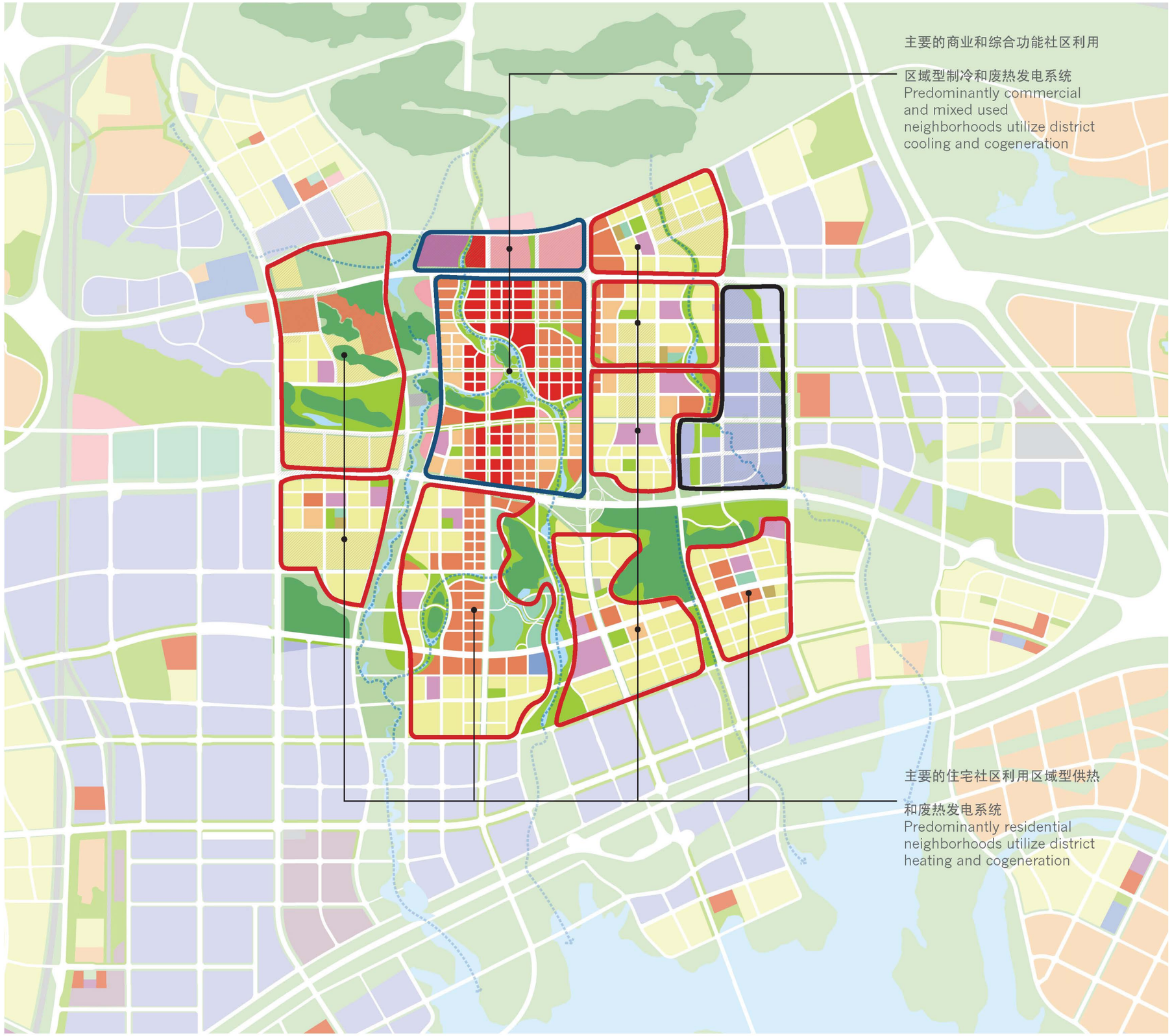
区域供暖和制冷
District Heating & Cooling

中央冷暖站
Combined Energy and Cooling Central Plants

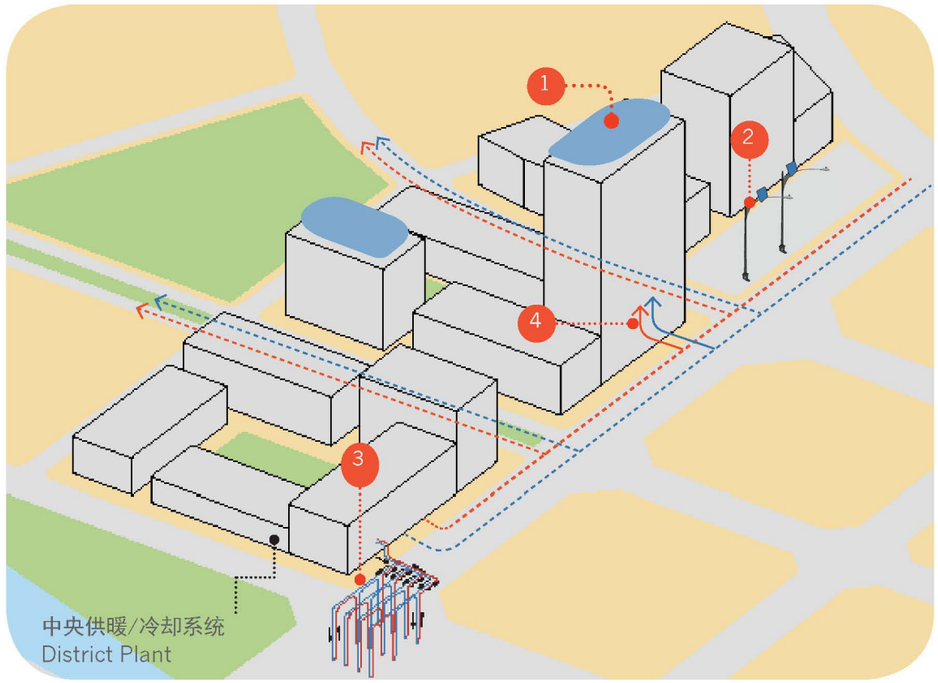
传统发电厂高污染、低效率，能源的平均利用率仅为40%。此外，传统的输电网的传输和转化损耗高达7%的能量。利用热电联供方案，能量产生过程中的余热可用于吸收式供冷或空间供暖。热电联供系统的效能可达90%。
结合各种楼宇中办公、商业、酒店和住宅等不同项目的用电和制冷要求，区域型为人口密集的社区供电和制冷的效率将由于在各建筑物中安装独立系统。这是由其较高的设备性能参数、利用错峰时间安排和能量需求量、以及发电过程中产生废热的吸收利用方式所决定的。

Traditional power plants are highly polluting and inefficient, with an average of 40% efficiency. In addition, traditional grid transmission and conversion can have up to 7% in energy losses. By using combined heat and power solutions, waste heat from energy generation can be utilized for absorption cooling or space heating. Efficiency ranges for a combined heat and power system can be as high as 80-90%.

By combining the power and cooling demands from a number of buildings with different programs, such as office, retail, hotel and residential, the district cooling and power plant provides energy and cooling for densely populated communities more efficiently than equipment installed in individual buildings. This is due to a greater coefficient of performance of the equipment, the ability to take advantage of diverse schedules and power needs and due to otherwise wasted heat energy from the generation process utilized for absorption cooling.



可再生能源
Renewable Energy



太阳能
Solar Power

光电系统能够被纳入楼宇设计，并且安装在屋顶面或是建筑正面。建筑综合光电模板与遮阳装置、雨棚、不透明建筑构件、以及玻璃相结合，有助于产生能量，并减少建筑能耗。街道和社区内建议使用太阳能路灯和艺术灯光雕塑。

Photovoltaic system should be integrated into the design of buildings and installed either on the roof surface or on the building facade for all commercial, institutional and mixed use blocks. Building integrated photovoltaics can be incorporated in shading devices, canopies, building opaque elements, and glazing to help generate energy. Solar energy should be used to power public street lights and light sculptures.

使用太阳能，满足20%–30%的热水需求
20-30% Hot Water Generation by Solar Energy

太阳能热水系统是最有效的太阳能吸收技术之一。在建筑中考虑应用诸如太阳能真空管之类的太阳能热水系统。太阳能水加热系统可以安装在建筑屋顶上，尤其是住宅和酒店建筑，可满足20%以上的热水需求。商业和零售建筑须引入太阳能热水系统，以满足20%以上的热水需求。

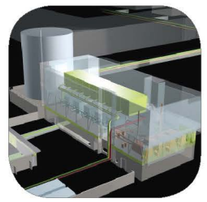
Solar hot water systems are one of the most efficient solar absorption technologies. Residential and hotel buildings are strongly encouraged to incorporate a solar hot water system such as evacuated solar tubes on roof surfaces to meet at least 20% of the hot water requirements. Commercial and retail buildings must integrate solar hot water systems to meet at least 20% of the hot water requirements.

1 太阳能热水生成

20-60%的需求
Solar Hot Water Generation - 20-30% Demand

2 光电系统—供基地和景观照明使用
Photovoltaic Systems for Site and Landscape Lighting

3 地熱采暖和製冷
Ground Source Heat Exchange



4 中央供暖/冷却系统
Centralized District Heating/Cooling Systems

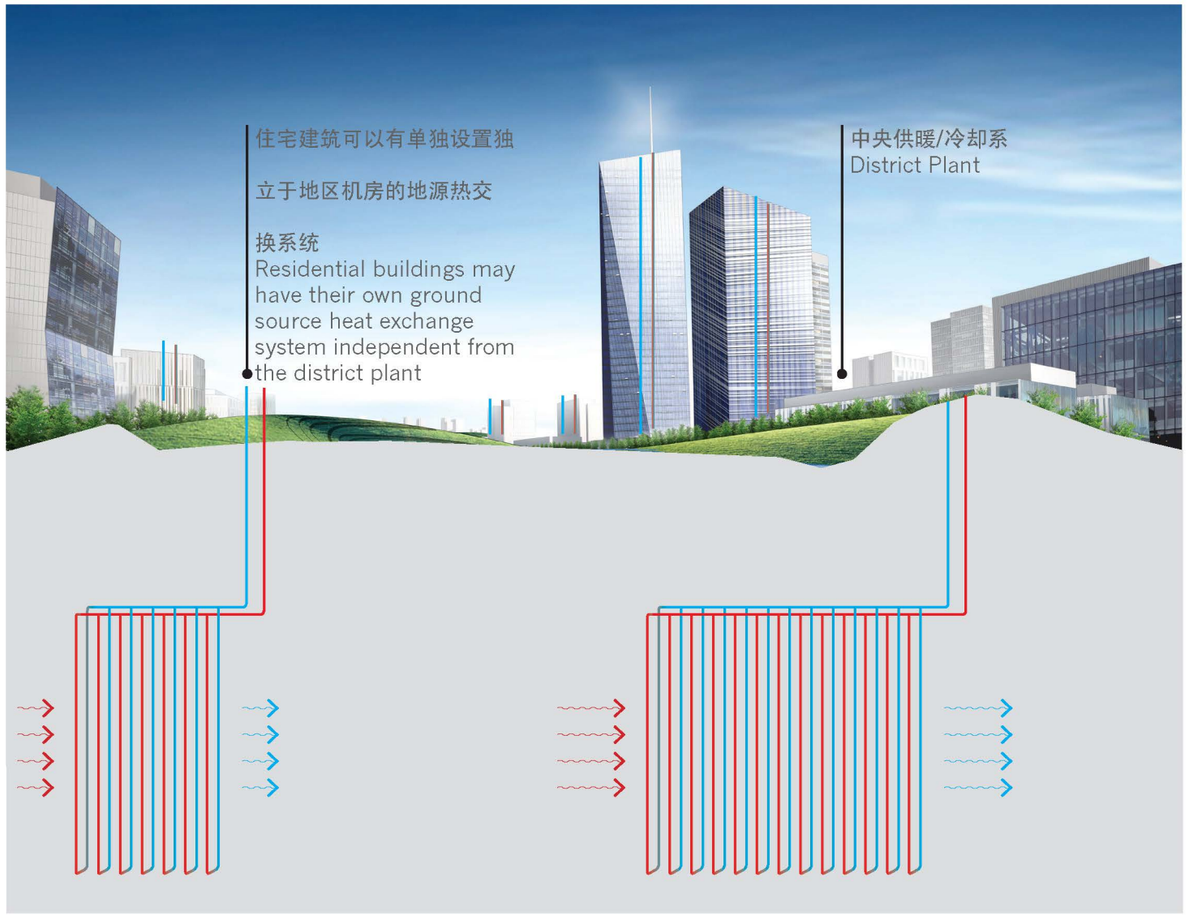
地源热泵交换
Ground Source Heat Exchange

地源热泵(GSHP)就是在加热模式下将地球作为热源时的热力泵或在冷却模式下将地球作为吸热设备的热力泵。这种技术减少了室内气温舒适所需的机械系统能量，可以作为一个独立的镗孔或整合在楼宇地基之内来安装。 建议利用中央公园设计区级地源热泵，以供中央热电厂使用。

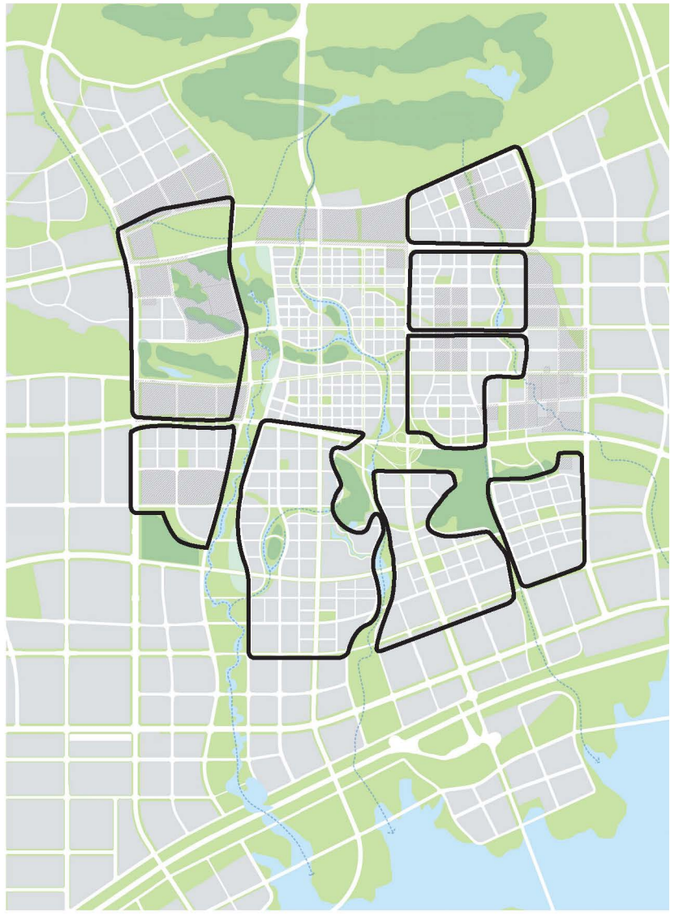
地源热泵的最大益处在于其低能耗：比传统的供暖和冷却系统能耗降低25%~50%。即地源热泵可利用1单位的电力从地球上获得3单位的热量。

A ground source heat pump (GSHP) is a heat pump that uses the Earth as either a heat source, when operating in heating mode, or a heat sink when operating in a cooling mode. This technology reduces the energy required by the mechanical systems to accomplish comfort in occupied spaces. It can be installed as independent borings or integrated within the building foundations. The design proposes that the central park system be used as a district level ground source heat pump that can be utilized by the central plants.

The biggest benefit of GSHPs are their low energy consumption: 25%–50% less than conventional heating or cooling systems. This translates into a GSHP using one unit of electricity to move three units of heat from the earth.

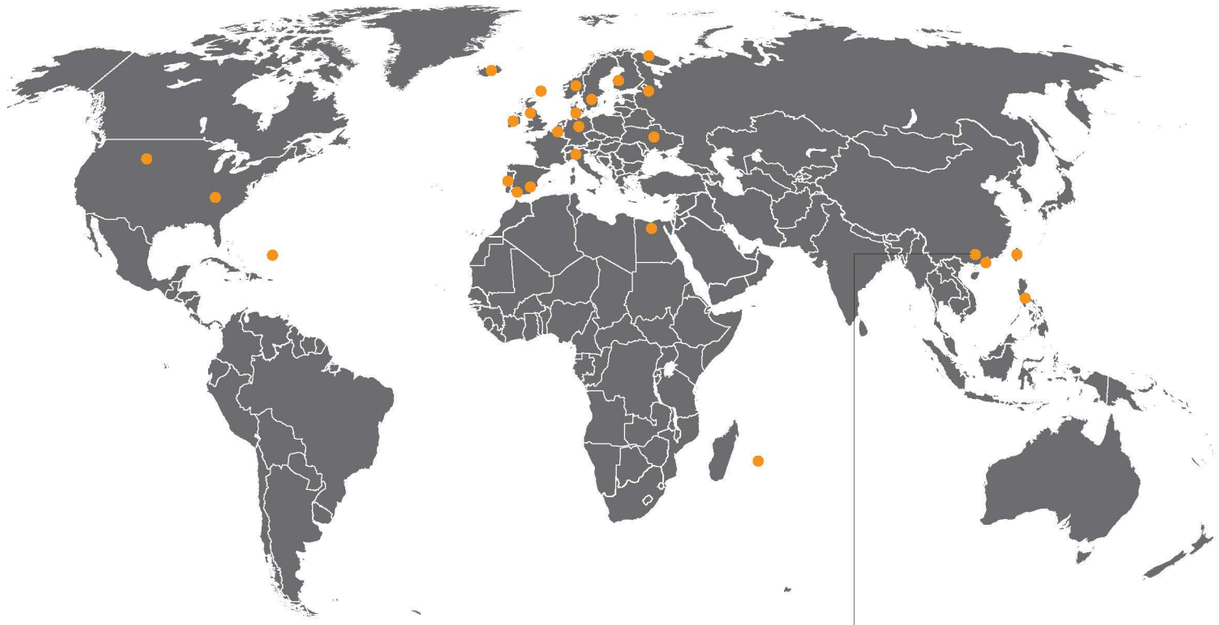


地源热泵交换
GROUND SOURCE HEAT EXCHANGE



建议应用于住宅区域
RECOMMEND UTILIZING IN RESIDENTIAL DISTRICTS

废物回收利用
Waste to Energy



广州李坑垃圾焚烧发电厂

投产时间：2006年

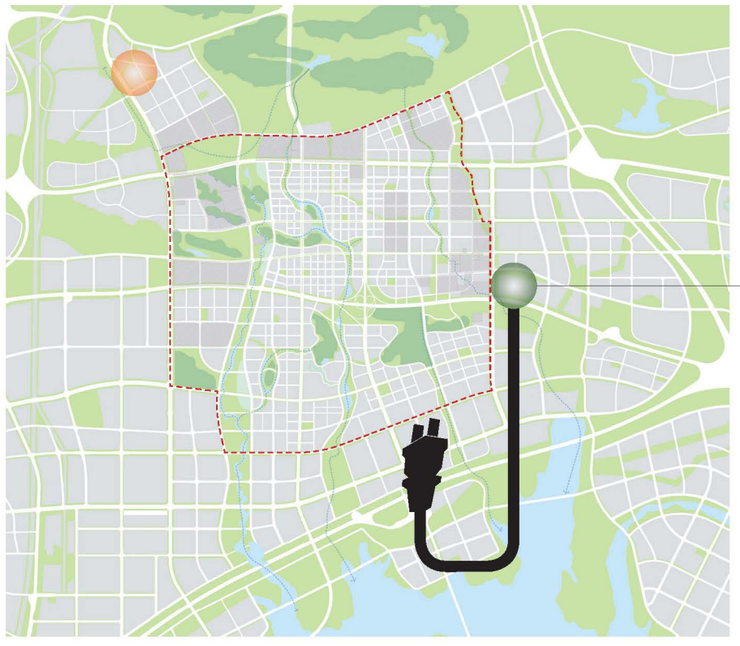
处理能力：322,000吨/年

服务人数：100万

生产能源：年平均发电量约为110,000兆瓦时

Guangzhou Likeng
Waste to Energy Plant

Opened: 2006
Capacity: 322,000 tons waste/year
Serves: 1 million people
Energy Produced Annually: 110,000 MWh



废物回收利用设施将与规划的污水循

环设施相结合
Couple waste to energy plant with planned sewage and reclaimed water plant

利用厌氧沼气池的沼气用来发电
Biogas from waste to energy plant used to generate electricity

污水治理、水质监测及废物回收利用
WATER TREATMENT, TESTING, WASTE-TO-ENERGY

污水治理和水质监测
WATER TREATMENT AND TESTING

目前，欧洲垃圾变能源设施可以满足两千万人口供电和三千二百万人口供暖要求。这项技术是降低碳排放、节约石化资源最环保有效的能源措施。

——《国际固体废物协会意见书》有关垃圾变能源技术

Currently , Waste -to -Energy plants in Europe can supply 20 million people with electricity and 32 million people with heat. The technology is one of the most robust and effective alternative energy options to reduce CO_2 emissions and to save limited fossil fuel resources."

– *International solid waste association position paper on waste-to-energy*

废物回收利用
Waste to Energy

废物循环能源厂是环保的废物管理方式，同时也创造出有价值的产品，包括电力，集中供热，工业生产过程中的蒸汽或区域制冷等。以项目废物来作为废物能源厂的原料将显著减少总体规划的浪费和碳排放。

根据武汉城市发展计划，需建设13个废水处理厂才能满足中央城市区域的需要。

光谷中心区规划建设两座水处理厂来处理区域内所有的废水，处理水容量达2,400,000m3。规划之一为南方水处理厂，拥有较高的污水治理和循环水处理容量，结合厌氧消化器来产生沼气，可用于发电。沼气产生器还能够减少水处理过程中产生的软泥，最后的污泥合成物可用作农业化肥。

Waste to Energy facilities are an environmentally friendly method of managing waste while creating valuable outputs that can include electricity, district heating, steam for industrial processes, or district cooling. Utilizing an on site waste to energy plant will allow the master plan to significantly reduce both waste and carbon emissions.

According to the Wuhan's city plan, 13 wastewater treatment plants need to be built to meet the wastewater processing demand from central urban districts1 .

China Optics Valley Central Area currently has plans to treat 100% of their wastewater in two water treatment plant locations with an annual capacity of 2,400,000 m3 of water. It is proposed that the southern water treatment facility, which has a higher water treatment and reclaimed water capacity, is coupled with an anaerobic digester to generate biogas. This biogas can then be utilized to generate electricity via cogeneration resulting in lower CO2 emissions compared to grid generated electricity. Bigoas generation also reduces the quantity of sludge by-product from the water treatment plant the resultant sludge can be used as an agricultural fertilizer.

气候响应设计
Climatic Responsive Design

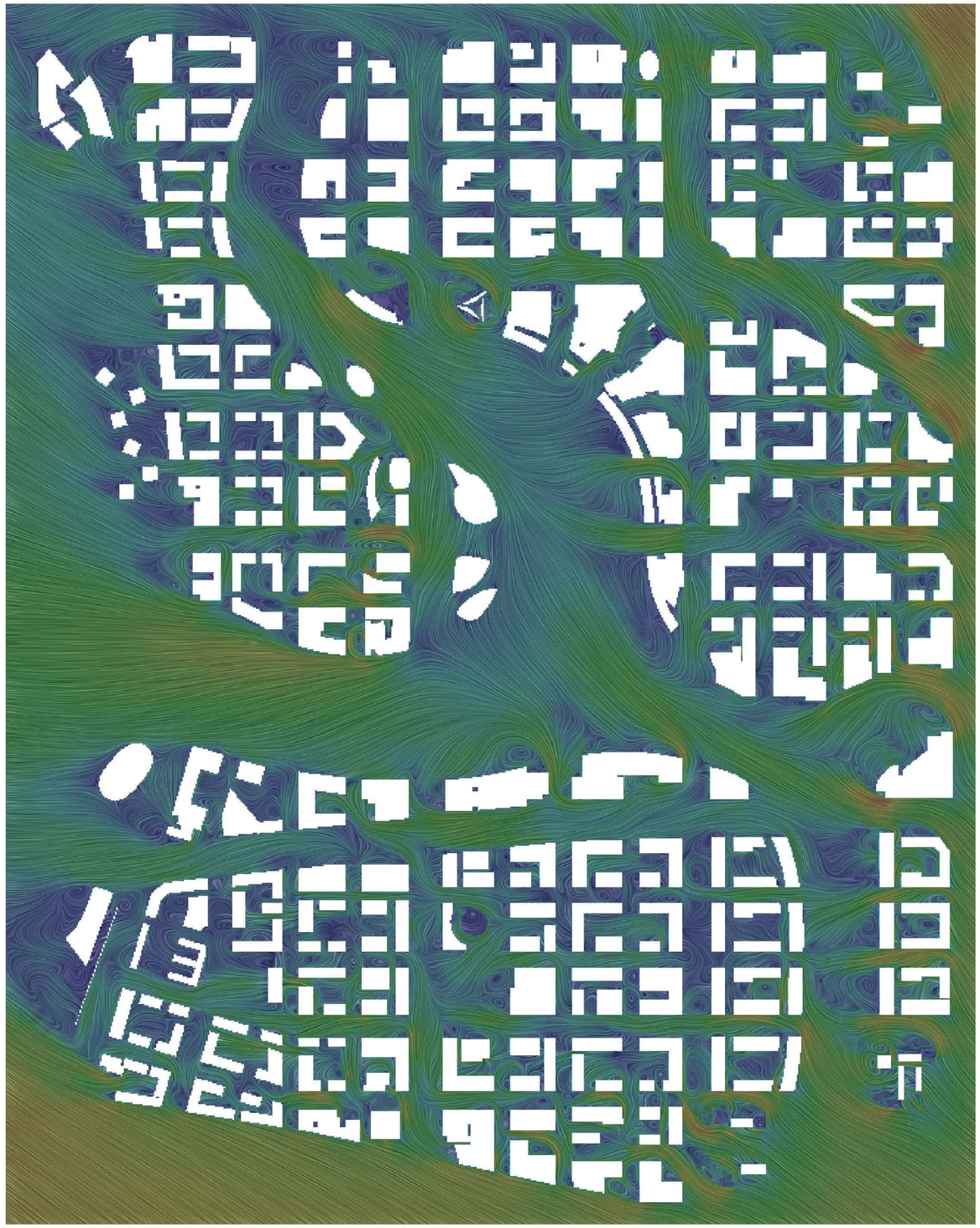
建筑体量和城市中心规划的设计过程中研究了若干气候环境指标。研究成果将便于理解设计过程中的环境性能、热舒适度和气流等因素。
Several climatic indicators have been studied during the development of the overall massing and city center development. This knowledge was then utilized to better understand performance, thermal comfort, and airflow during design iterations.

风力模型
Wind Streamlines

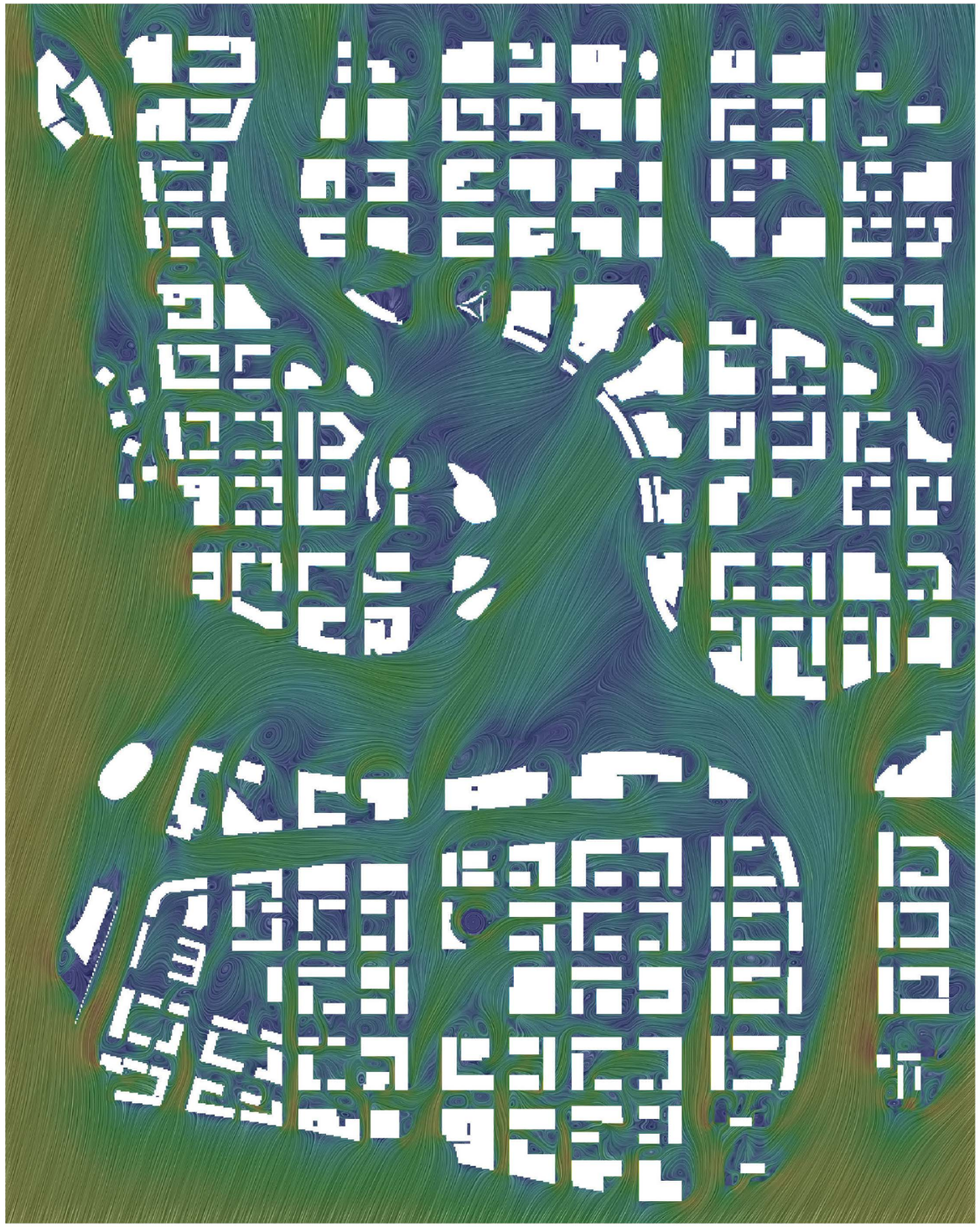
图示分别展示了地上5米的风力分布模型 （红色转绿色代表良好通风，深蓝色代表风力较弱。）

The adjacent simulations are streamlines of simulated wind distribution at 5 m above grade (red to green indicates good exposure, dark blue indicated reduced wind exposure.)

北/东北风
NORTH/NORTHEAST WIND



东南风
SOUTHEAST WIND

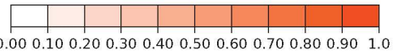


南/东南风
SOUTH/SOUTHWEST WIND

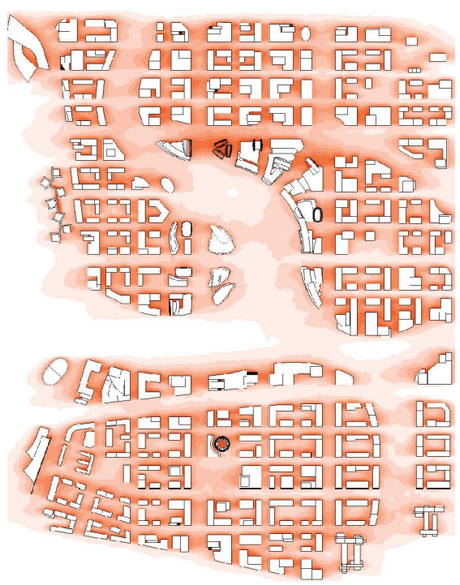
季节性日照频率
Seasonal Solar Shading Frequency

考虑到建筑位置，日照时间长度将用颜色深浅表示。例如，0.8代表每年80%白天的时间将完全没有日照。将不利于冬季取暖，但利于夏季乘凉。

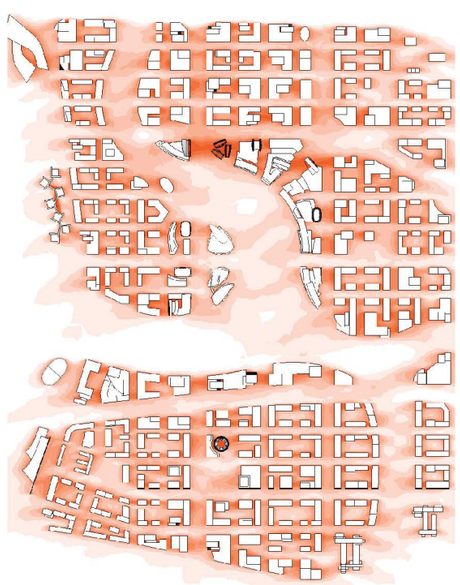
Fraction of time given location is shaded during the day. e.g. 0.8 means 80% of daylight hours over a year are fully shaded. Shading can be detrimental on cool days and vice versa in summer.



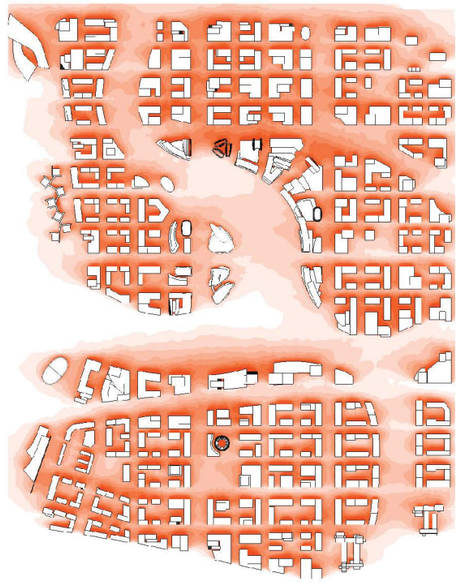
冬季全天日照频率
SOLAR SHADE FREQUENCY
WINTER ALL DAY



春季全天日照频率
SOLAR SHADE FREQUENCY
SPRING ALL DAY



夏季全天日照频率
SOLAR SHADE FREQUENCY
SUMMER ALL DAY



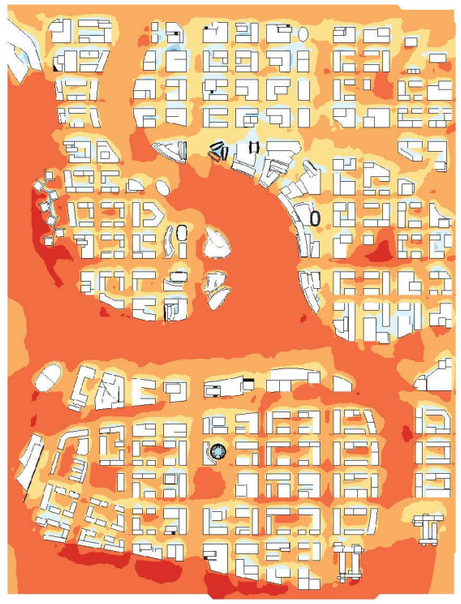
秋季全天日照频率
SOLAR SHADE FREQUENCY
FALL ALL DAY

热舒适度平均值
Thermal Comfort Mean

冬季全天热舒适度平均值
THERMAL COMFORT MEAN
WINTER ALL DAY

春季全天热舒适度平均值
THERMAL COMFORT MEAN
SPRING ALL DAY

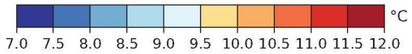
夏季全天热舒适度平均值
THERMAL COMFORT MEAN
SUMMER ALL DAY



秋季全天热舒适度平均值
THERMAL COMFORT MEAN
FALL ALL DAY

季节性通用热舒适度平均值指标(UTCI) 取值c。例如，26C，代表在风力、日照、室温和湿度的共同作用下，人能感受到与UTCI等量气温26C相同的温度。

Average or mean seasonal universal thermal climate index (UTCI) values in C. e.g. 26C means an average UTCI equivalent air temperature of 26C will be perceived due to the local combination of wind, solar, ambient temperature and humidity exposures.



建筑层面设计准则：能源
Building Level Guidelines: Energy

能效
Energy Efficiency
建筑排碳量占了人类排碳量的百分之七十，其中很大一部分与能效高低有关。高能效是当今最有价值的资源。建筑的节能必需与有效的基础设施协同工作。同时，建筑节能优化可以减少市政基础设施的规模和造价。
光谷中心区城市设计提出下列措施以发展节能建筑和基础设施:

- 与 ASHRAE 90.1-2010相比，建筑节能百分之四十
- 在开发项目中使用占屋顶25%面积的光伏组，可提供5%的项目再生能源
- 使用热电联产系统的地区机房可以产生15%的项目能源

- 设置在公园里的地热交换系统

Buildings account for approximately 70% of all human-generated carbon emissions, and a large portion of that percentage is related to energy consumption. Energy efficiency is considered to be the single most valuable resource. Energy savings at the building level must work in tandem with efficient infrastructure. Optimized buildings allow the utility infrastructure to be smaller and less expensive.

China Optics Valleny Central Array Master Plan proposes the following measures for energy efficient buildings and infrastructure:

- 40% Energy Reduction in buildings compared to the Chinese Design Standard for Energy Efficiency of Public Buildings (GB 50189)
- 5% Onsite Renewable Energy Generation for the development using photovoltaics roof arrays on 25% of building roofs.
- 15% Onsite energy generation at district plants using cogeneration systems.
- Geo-exchange systems implemented in the parks

建筑层面设计准则：水
Building Level Guidelines: Water

水管理系统
Water Management Systems

武汉虽然具有丰富的水资源，但人们逐渐意识到这一宝贵的资源应得到充分保护。近年来，随着城市迅速发展，产生的废水在排放至河道前并未治理充分，导致了水资源质量逐渐下降。项目对非饮用水的利用将结合节水装置、灰水以及再生水循环，光谷中心区城市设计将节约50%的建筑内饮用水。其他节水策略包括将生物过滤池与景观绿地相结合以补给蓄水层，并减少冷冻塔的使用水量等技术。

Despite an abundance of water in Wuhan, there is a growing awareness that this is an extremely valuable resource that should be protected. Recent growth has impacetd water quality, as not all wastewater has been treated before being discharged into local water ways. By a combination of fixuture efficiency, grey water harvesting, and treated and recyled water reuse for non-potable needs, China Optics Valleny Central Array Master Plan has the potential to achieve 50% Potable water Savings in buildings. Other water savings strategies being utilized include biofiltration incorporated into landscape features for aquifer recharge and techniques to reduce the water required for cooling towers.