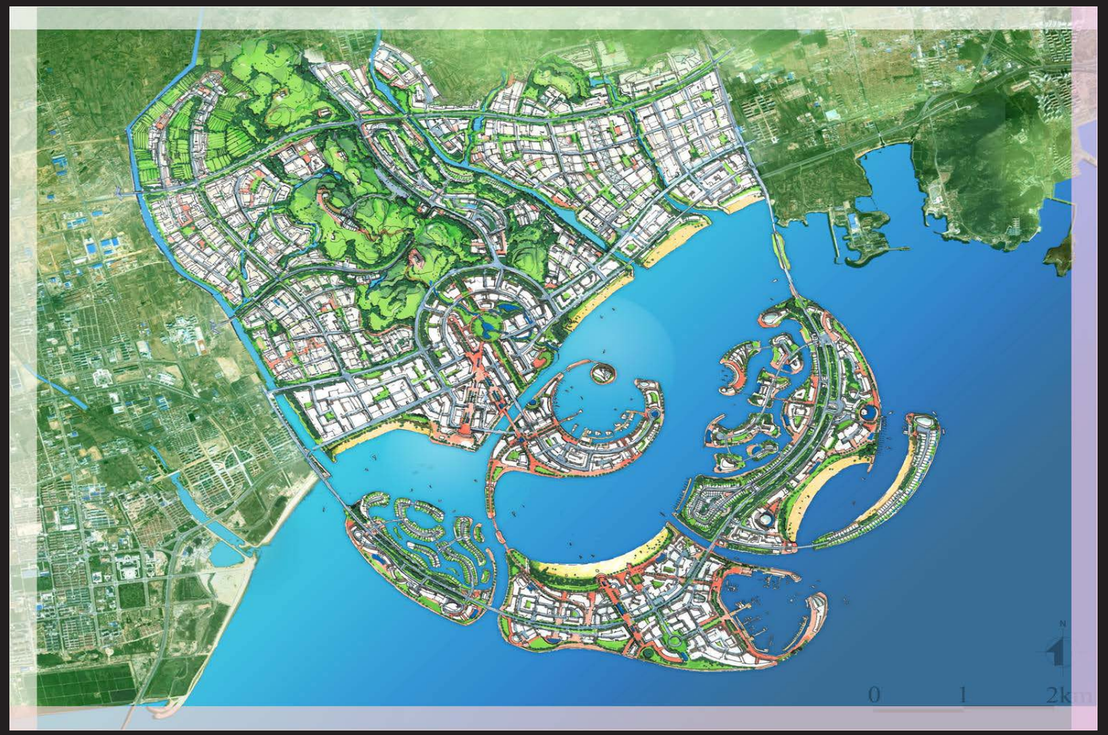
合乐十年

合乐在中国的规划创新与实践

合乐在中国的规划创新与实践

Practices in Urban Planning in China: Halcrow Experience 2002-2012



Asad Shaheed、焦民 著　汪蓓、缪秋思 译

ISBN 978-7-5618-4086-3
9 787561 840863 >
定价：298.00元

时代出版传媒股份有限公司
安徽科学技术出版社

前言

Preface

总体规划咨询师的工作可以作为服务于城市规划领域的风向标。通过参与委托于他们的项目，规划师们直面当今由社会公共与私人带动投资开发的项目产生的各种城市问题。

2007年，合乐出版了《打造全球化城市》一书。书中运用大量合乐参与的国际案例，列出并阐明了各类暴露于城市开发中的问题，反映了城市规划领域的国际发展趋势。书中涉及的项目大部分是在2007年之前的十年中进行并完成的。在宽松的城市政策环境下，这十年间全球各地的新建开发项目如雨后春笋般出现。书中的案例也反映了这一全球趋势。这些项目大多集中在城市中心的综合改造与提升，高端住宅开发，和以跨国投资置业为目标的旅游项目开发等方面。由于这些趋势是全球性的，其带来的负面结果是不同国家的城市自然环境呈现出令人堪忧的现象。每个国家新开发的度假区、公寓、酒店、办公楼，甚至于一座城市的规划，都差不多与其他国家中的同类开发如出一辙。从我们的观察角度得出的结论有两点：第一，2007年之前的十年中大部分项目是以经济较富裕的人为目标群体开发的；第二，世界各地业主的期望值雷同导致了设计的同化，项目之间互相模仿的现象严重，缺乏对当地环境和文化差异的关注。

The work of master planning consultants can serve as a barometer of trends in urban planning. Through the projects they are commissioned to deliver, consultants come face to face with current urban issues that inform public investment and drive private initiatives.

In 2007, Halcrow's urban planning projects were showcased in a book entitled "Planning for the International City"written by myself and Dr John Yarwood. The book mapped global trends in urban planning, using the company's international projects as exhibits to illustrate perceived urban issues. The projects highlighted were on the whole, conceived and commissioned in the ten year period that led to 2007. This decade saw seemingly endless credit for new development, which when coupled with deregulated urban policy, stimulated a mushrooming of new development across the world. The projects reflected this new found global affluence. They often focussed on the comprehensive renewal and "beautification" of inner city areas, on luxury housing and on tourism projects that catered for an international traveller with means to invest in secondary and tertiary property in countries other than their own. As these trends were global, a negative by-product was that physical urban environments in different countries started to look disturbingly similar. Resorts, condominiums, hotels, offices-even urban plans in one country took on the appearance of like developments in any other country. So, the two key observations from our perspective in 2007 were that projects commissioned in the preceding decade were geared largely for the affluent, and that client aspirations across the world had led to uniformity of design where projects mimicked each another with little regard to local environmental and cultural differences.

在本书中，合乐分享了从2007年至2012年间的新观点和新经验。这五年间，城市规划领域的发展趋势发生了巨大的转变。其中的重要原因之一是2007年的全球金融危机给大多数国家的经济都带来了较为深远的影响，甚至许多国家至今尚未从中恢复。另一方面的影响来自于世界各地接连不断发生的自然和环境灾害，这从某种程度上引起了人们对城市保护和可持续发展的关注。受这些因素的影响，私人开发商在开发过程中开始采取更为灵活和应变的策略，并把眼光投向了经济崛起中的中国、印度和一些拉美国家；而政府部门继续对主要基础设施项目进行投资开发，但态度更为审慎，并优先考虑那些对区域经济发展有刺激和推动作用的项目。目前大多数国家的城市规划政策中，针对项目的构思、操作和维护等不同阶段，都强调了可持续发展（在经济、环境、社会、文化等诸多方面）的重要性。

作为规划咨询师，我们发现相对于再开发项目来说，城市更新项目和对现有基础设施的升级项目正在日趋增多，而且项目的成本效率和长期运作效益正成为衡量开发质量的重要指标。以打造可持续城市为目标的开发项目在过去五年中地位愈发凸显， 以生态城市、智能城市、农业城市、高科技城市、未来城市等各种形式出现。叫法虽不同，但这些项目的共同之处在于追求经济、环境和社会效益的最佳平衡以及成本效率最大化，以达到可持续发展的最终目标。

In the present publication, Halcrow shares its experience in the intervening years between 2007 and 2012. This half decade has seen dramatic change in urban planning trends, resulting largely from the economic recession of 2007 which left few countries unscathed and from which many countries have still not emerged. Another influence was the natural and environmental disasters that took place indiscriminately across the world, reawakening a consciousness for conservation and sustainability. Private developers cut back their initiatives to assume a more reactive stance in the development process, with notable exceptions in the emerging economies of China, India and certain countries of Latin America. The public sector continued its investment programmes in primary infrastructure but with caution, and prioritised those projects that may stimulate regional economies. Urban planning policy in most countries has underscored the importance of sustainability (in its widest economic, physical, environmental, social and cultural sense) in the conception, execution and maintenance of all projects.

As consultants we have witnessed a rise in projects addressing urban regeneration and consolidation of existing infrastructure rather than redevelopment, and an inevitable criterion in the development briefs for projects has been cost saving and long term operational efficiency. Projects aiming to deliver sustainable cities variously referred to as eco-cities, smart cities, agro-cities, high-tech cities, future cities etc… have taken prominence in the last five years. Their titles may differ, but they all aspire to a common objective of delivering sustainable development with an optimum balance of economic, environmental and social attributes, and cost efficiency in both the building and maintenance of new development.

随着世界经济重心的转移，规划项目的类型也在悄然发生变化。单一功能定位的开发，如城市金融中心规划，正变得越来越少；相反，以高效的公共交通体系为基础，集就业、居住、公共服务、娱乐等功能为一体的综合性复合开发项目则越来越多。同时，制造业作为国内重要的经济支柱，对摆脱经济衰退的影响有着重要作用，因此产业开发项目也出现增长趋势。目前，无论是新建和重建项目中，国家政策扶持的经济适用房开始成为新的热点，但这并未完全取代高端住宅的开发需求，高端住宅仍有一定的市场。过去五年中以高端群体为目标客户开发的项目主要有以下几种：滨水住宅区和游轮码头，城市中心区的豪华住宅，以及高端旅游度假区等。但与以往相比，这些项目又呈现出一些新的特点，例如：可持续性和环境保护的重要性愈发突出，在项目内部或周边增加公共居住功能以加强社会融入性，通过公共交通系统整合创造更高效便捷的就业和生活环境等。

本书以过去五年为背景，针对城市规划领域相关的八个主题进行了探讨，每个主题以论文的形式出现，由上海合乐的各位高级规划师撰写，运用合乐在2007年至2012年间参与的项目为例来阐述观点。这八篇论文包括：

1. 人性尺度的滨水城市空间
2. 城市更新与提升规划的探索
3. 合乐在大都市地区新中心的规划实践
4. 合乐的生态城市规划探索
5. 合乐旅游地产策划实践与思考
6. 浅谈城市综合体的设计
7. 绿色交通
8. 城市综合客运交通枢纽规划研究

这些论文从选题和提出问题入手，通过研究相关案例以及合乐近期参与的项目，明确了当前和未来的行业发展趋势。

这本书并不仅仅是一本集合了以上各个主题的综合学术研究论文集，更重要的是，它融合了个人经验和企业案例，以从业者的角度记录了近五年来城市规划领域的发展趋势。

Asad Shaheed

2012年9月 于伦敦

Asad Shaheed，资深建筑师，英国皇家特许城市规划师和地理学者 。至2012年，他担任合乐集团业务总监，管理集团旗下规划、建筑和景观业务板块的国际团队。本书所涉及的项目中，相当一部分由他主持完成。

In response to the changing emphasis in the world’s economy, there has also been a shift away from projects that would have catered solely for financial services such as new financial centres. This has given way to integrated projects that have a more balanced provision of employment, housing, community facilities and recreation that is well serviced by public transportation systems. We have also seen a rise in projects that cater for industrial growth, with manufacturing being perceived as an important engine of wealth creation and a means to escape economic recession. Affordable housing often with state assistance has become a key ingredient in both new and regeneration projects. This has not however replaced the demand for luxury housing for which there is still a market, albeit reduced from its former prominence. Projects catering for the affluent have been initiated in the last five years in the form of marinas with waterfront housing, luxury housing in city centres and exclusive new tourism resorts. But this time with a difference- Their development briefs place a notable importance on sustaining and enhancing the environment, catering for social inclusion by adding public housing near or within these developments, cost efficiency and efficient access to employment and services by integrating public transportation systems.

Eight topics of urban planning are examined in this book against the background of the above five-year period. It is presented as a set of papers on each theme, and has been written by senior urban planners at Halcrow’s Shanghai office, who have used projects prepared by the company between 2007 and 2012 as case studies to illustrate their point. The eight papers are:

1. Bringing Human Scale to Urban Waterfronts
2. Exploring Urban Renewal and Upgrading
3. Halcrow’s Experience in the Planning for new Urban Centres
4. Halcrow’s Experience in Eco-City Planning
5. Halcrow’s Experience in Planning for Tourism Estates
6. Discussion on the Design of City Complexes
7. Planning Principles and Practice in Green Transport
8. Planning for Integrated Transportation Hubs

Each paper sets out to examine the subject matter by first describing and defining the term and its objectives, then charting the current and possible future trends by researching case references- including case references from Halcrow’s portfolio of recent projects.

This book thus records trends in urban planning over the past five years as observed from the practitioner’s view point using personal and corporate experience as examples. It is not intended as a comprehensive academic review of each subject.

Asad Shaheed

London September 2012

Asad Shaheed is a trained Architect, a chartered Urban Planner and a chartered Geographer. He is a Director at Halcrow and has held the position of Global Group Leader for the company’s Planning, Architecture and Landscape Department until 2012. He has led the design of many projects described herein.

目录

Contents

简介

Introduction

崇明农业城，中国
Chongming Agro-City,China

1. 可持续发展规划　　1.Planning for Sustainability
2. 成功的城市更新　　2.Successful Urban Regeneration
3. 用地和交通整合　　3.Land Use and Transport Integration
4. 城市综合体　　4.The Mixed Success of Urban Complexes
5. 滨水城市规划　　5.Planning for Waterfront Cities

可持续发展规划

可持续城市或生态城市意味着既满足现有居民的需求又不损害子孙后代的利益。尽管“生态城市”这个概念在20世纪80年代才出现，“可持续发展”却一直是城市规划领域中不变的主题。这种观念牢牢扎根于城市规划师、建筑师和景观设计师所接受的基础教育和专业培训中。大多数规划项目将可持续发展作为核心目标，并试图在居住、就业、交通等多种城市功能和环境保护之间达到平衡。

战略层面上，城市规划是一项指导区域或国家范围内的城市增长的工作，寻求因人口增长和经济发展产生的竞争需求与保护农业用地和自然环境两者之间的平衡。在用地有限而自然环境较为敏感的地区，或者环境容量受到限制的地区（例如岛屿）， 这种平衡显得尤为重要。

从项目层面上看，大部分开发规划和城市重建规划都强调了可持续发展。经济活动与保障性住房的有效整合，以及社会融入原则和环境保护的有机结合，都已成为全球各地共同的发展目标。

东滩生态城，中国
Dongtan Eco-City, China

天津生态城，中国
Tianjin Eco-City, China

在中国有一大批以可持续发展为目标的开发计划，它们被冠以不同的名称，如生态城市、智能城市、绿色城市或可持续城市，各自受到当地特有的社会经济状况、环境条件和政策条件的影响，但它们有着共同的发展目标，即创造可持续的城市环境。以下是一些大规模新城开发的案例：

a. 东滩生态城：位于上海周边的新城开发，规划人口500万，用地面积为曼哈顿岛的三分之一；

b. 天津生态城：位于天津周边的新城开发，用地面积30平方公里，规划人口250万；

c. 崇明岛生态农业开发

d. 廊坊生态城：位于北京周边，用地面积30平方公里，规划开发全球最大的主题公园；

e. 曹妃甸生态城：位于河北唐山，用地面积30平方公里，规划人口40万，预计于2020年完成开发。

Planning for Sustainability

A sustainable or “eco-city” is one that meets the needs of its present inhabitants without compromising the needs of future generations. The term “Eco-city” may have been coined in the 1980’s but the principles of sustainability have always been integral to urban planning. The concept is firmly rooted in the basic education and training received by urban planners, urban designers, architects and landscape architects. Most planning projects will aim to place sustainability at their core, and attempt to provide equilibrium between places of shelter, work, transport systems, and the environment in which these urban functions operate.

At a strategic level, urban planning advises on the management of urban growth at a regional or national scale, seeking to balance competing demands of population and economic growth on one hand, with the need to safeguard agricultural land and natural landscapes on the other. This balance is especially relevant where land is finite, where natural landscapes are fragile, or where environmental capacity is restricted such as in island settings.

At the project scale, most master plans for new development and regeneration plans for derelict urban land place strong emphasis on sustainability. The efficient integration of economic activity with affordable housing and principles of social inclusion and environmental protection are now common objectives across the world.

China boasts a large number of initiatives which promote sustainable development. Variously called eco-cities, agro-cities, smart cities, green cities, or sustainable cities, each of these have been influenced by unique local socio-economic and environmental conditions and local government policy. However the underlying premise of creating sustainable urban environments is common to all. Examples of large scale new towns include:

a.Dongtan Eco-City: A planned new city with a population of ½ million, located outside Shanghai on a site one third the area of Manhattan island

b.Tianjin Eco-City: A new town outside Tianjin on 30km2 of land, with a population of around ¼ million

c.Chongming Island- An Eco-Agricultural development on an uninhabited island near Shanghai

d.Lanfang Eco-city: A new development outside Beijing on a 30km2 site, which will accommodate the world’s largest theme park

e.Caofeidian Eco-city: A project covering 30km2 and planned to open in 2020 in Tangshan Region, the project will cover 30km2 and house 400,000 people

小型开发项目有：

a. 南河生态城：位于天津西南，用地面积13平方公里，规划人口75000人；

b. 门头沟地区：位于北京西南50公里处的历史村落群，将以生态农业和旅游功能为主进行低碳开发；

c. 贵阳循环经济生态城：项目位于贵州省境内，旨在促进经济、社会、环境的同步发展。

在大部分新项目和重建项目的总体规划中，可持续发展的重要性也愈发突出。经济活动与保障性住房的有效整合，以及社会融入原则和环境保护的有机结合得到了进一步的发展，体现在以下项目案例：

d. 广州科技城：对原有工业区进行重新规划和改造，发展成以高科技产业为主导的新园区。项目用地面积37平方公里，可容纳20000名工人就业；

e. 宁波高科技产业园区开发：对位于宁波的废旧工业用地进行改造，打造高新科技产业区以及配套住宅、教育、文化和公共设施；

f. 上海漕河泾高科技园区：项目位于海宁，在原有农业用地上进行高科技产业园区开发，配套经济适用房和相关服务设施；项目还包括一个占地15平方公里的自然生态保护区。

Smaller scale examples include:

f.Eco-Nanhe Town: A new town outside Tianjin on 13km2 of land for a population of 75,000 people

g.Mentougou District: A collection of historic hill villages situated 50km from Beijing, will draw together agricultural and tourism activities within a low carbon environment

h.Guiyang Cyclical Economic Eco-City: A development in Guizou Province promoting simultaneous economic development, environmental protection and social advancement

Most master plans for new development and regeneration plans for derelict land also place a pivotal emphasis on sustainability. The efficient integration of economic activity with affordable housing and principles of social inclusion and environmental protection are being promoted. Examples include:

i.Guangzou Science City: The re-planning of a former industrial zone for new high-tech industries on 37km2 of land for 20,000 workers

j.Ningbo High Tech Industrial Development: A revamping of derelict industrial land in Ningbo City for new high tech industry with related housing, education, social and cultural facilities

k.Shanghai Caohejing High Tech Park: In Haining Province, a development on former agricultural land catering for new high technology industry with integrated affordable housing, a new town centre and a nature conservation area on 15km2

漕河泾高科技园区，中国（合乐）
Caohejing High Tech Park, China (Halcrow)

尽管这些项目都有长期的实施计划，但其中一部分在开发过程中还是遭遇到各种困难和挑战。例如东滩生态城和天津生态城两个项目都在地产开发阶段受到了阻力，而这些项目是否能够达到它们既定的碳排放目标，也成为了社会关注的焦点。但这并不意味着这些项目在长期不能获得成功。大型项目可能在初始阶段经历不可避免的挫折，但从长远来看，还是能够很好地实现发展目标；相对而言，中小型项目由于更贴合现有的体制，在项目实施方面将更容易一些。

以上这些项目的共同之处在于，它们都符合中国政府促进可持续发展的城市发展战略。

无论在世界的哪个角落，维持人类社会和自然环境的和谐平衡自古就是人们的根本愿望。现今对规划的可持续形式的诉求来源于人们从自然资源过度开发和过度城市化等错误中吸取的教训，而全球各地接连不断的自然灾害也重新引起了人们对平衡发展的关注。

中国作为世界上人口最多的国家，在满足人口不断增长的城市的建设需求和有限的环境资源面前，面临的挑战尤为严峻。因此城市规划政策必须体现其引导作用，鼓励未来开发围绕可持续发展的目标进行。

Notwithstanding their long completion schedules, a number of the above projects and in particular the more radical initiatives, are suffering setbacks. For example Dongtan and Tianjin Eco-city are experiencing delays in the take-up of real estate and there is public concern that they may not meet their stated carbon-emission targets, at least in the short and medium term. This is not to infer that these projects will be unsuccessful in the long term. Large projects may simply be suffering from “teething” problems and may well achieve stated objectives over time. In any event, smaller projects and less ambitious initiatives which more closely follow existing delivery systems for urban development are likely to see quicker implementation.

The common theme linking the above is that all above projects are compliant with Chinese central government policy which now promotes sustainability in all future urban development.

The fundamental desire to ensure harmony between human settlements and the environment is ancient and common to all cultures of the world. The current movement to return to a sustainable form of planning is in response to past mistakes (overexploitation of natural resources, excessive urbanisation, etc…), and a series of recent natural disasters across the globe that have triggered a renewed interest in balanced development.

China as the world’s most populous nation is particularly vulnerable and needs to balance the competing demand for new cities that cater for a growing population and accelerated economic growth, with environmental assets which are fixed and absolute. Urban planning policy must therefore encourage plans for all future development to revolve around the foundations of sustainability.

漕河泾中心区详细设计，中国（合乐）
Caohejing Town Center Detail, China (Halcrow)

成功的城市更新

广义上来说，城市更新指的是对城市范围内未充分利用的、闲置的或废弃的用地进行有效的再利用。城市更新的过程包含不同的层面，小到表面的翻新和优化，大到全面综合的改建和再开发。

城市更新用地的产生和来源较为复杂，且每个城市不尽相同。战争破坏、自然灾害、废旧工业用地（包括码头、工厂和仓库等）、社会经济条件和人口政策引起的人口迁移、以及洪水等自然现象，这些都是造成城市中心用地未被充分利用的原因。

无论是如何产生的，这类用地都拥有其内在的价值，而这种价值体现在四个方面：

• 用地靠近城市中心，享有各类城市基础设施资源，开发成本相对较低；

• 这类城市中心地区的人口往往在社会和经济层面上压力较大，城市更新和再开发可以通过提供就业机会和公共服务设施等修正社会经济中不平衡的方面；

• 如果这类用地在过去承担了历史性的城市功能，对其进行翻新或再开发（在有一定建筑存量的条件下）将有助于完善该城市的历史结构和创造旅游价值；

• 对城市用地的更新有助于进一步划定城市扩展范围；

城市更新项目的成功与否取决于开发后城市形态、经济和社会状况是否仍旧保持平衡。高水准的城市更新，不仅应当提高城市基础设施、景观和建筑的品质以吸引人们前来投资和居住，同时也要保证现有人口在就业机会、公共服务设施和保障性住房等方面的需求得到满足。如果没有这样的平衡，那么城市更新并不能成功地解决城市居民面临的问题，而仅仅是转移了这些问题。（这通常会导致现有人口被迫从城市中心迁出到周边地区生活的局面。）

英国在城市更新的过程中最为注重的方面就是消除社会不平衡。英国的“企业区”开发计划中，创造就业机会是核心任务。由英国政府为位于全国各地的重建区提供款项进行再开发，开发目标是加快社会贫困地区的城市和经济发展，实现城市、社会、经济的三重效益。

20世纪80年代初伦敦码头区的成功改造是世界上最大型的城市更新项目之一。为了对占地8.5平方英里的伦敦码头区和其周边地区进行改造，英国政府设立了伦敦码头区开发公司（LDDC）。伦敦码头区始建于1802年，在其一个半世纪的运营历史中，它是世界上最大和最成功的码头区之一。LDDC公司改造计划中的核心项目是位于西印度码头区内的金丝雀码头项目。该改造工程始于1988年，主体建筑竣工于1991年，其中包括了当时英国最高的建筑One Canada Water大楼，而这栋大楼也成为了LDDC公司在城市改造方面的里程碑。

Successful Urban Regeneration

In its broad definition Urban Regeneration is about the efficient re-use of land that falls within urban boundaries but is considered underutilised, or decommissioned from its former use, or blighted or deemed derelict. The process may involve any level of intervention from superficial enhancement at a minimum to comprehensive demolition and redevelopment at a maximum.

The underlying reasons behind the land having become available in the first place are complex and quite specific to different cities. War damage, natural disaster, decommissioned industry (including docks, manufacturing and warehousing), socio-economic and demographic incentives that have triggered migration from city centres to suburban locations, recurrent natural phenomena such as flooding etc… are a few reasons for the incidence of underused city centre land.

However it may have originated, this land holds intrinsic value, and its value lies in four key areas:

·This land's proximity to city centres means that it has access to the city's physical infrastructure and it can be developed relatively cost-effectively

·The population in and around these inner city areas is often economically or socially disenfranchised, and redevelopment can often redress socio-economic imbalances by presenting employment opportunities, services and public amenity

·This land would have once fulfilled a historic urban function. Its refurbishment (if significant building stock remains) or its eventual redevelopment will provide a completeness to the city's historic fabric and provide cultural and touristic reference for residents and visitors

·Finally renewal of urban sites will help to delimit further proliferation of the urban footprint if land within municipal boundaries is first salvaged

The success of urban regeneration projects will however be measured by how well the physical, economic and social improvements remain in balance. High quality improvements to physical infrastructure, with landscape and buildings designed to attract investment and draw in new residents and visitors must ideally go hand in hand with employment opportunities, provision of community facilities and affordable accommodation to ensure that the needs of incumbent populations are also catered for. Without this balance, the urban renewal effort is likely to simply shift rather than resolve the difficulties that face inner city inhabitants. (This often results in indigenous populations being pushed to neighbouring areas or out of urban centres altogether).

The UK's regeneration effort as a result is focussed squarely on redressing social imbalance. Employment creation lies at the heart of the UK's Enterprise Zone initiative whereby central government budgets have been earmarked for designated regeneration zones across the country. The objective is to inject mixed packages of physical, social and economic benefits that will both physically and economically enhance socially deprived areas.

An early regeneration project with mixed success is London Docklands which in the early 1980's, was one of the largest urban renewal initiatives in the world. The London Docklands Development Corporation (LDDC) was set up by central government, to fundamentally transform 8.5 square miles of the London Docks and their hinterland. These were originally built in 1802 and served for a century and a half as one of the world's largest and most successful dockyard. The centrepiece of the LDDC regeneration initiative was the Canary Wharf project on the site of West India Dock. This large mixed use development was started in 1988 with major buildings completed in 1991, including One Canada Water, which at the time stood as the UK's tallest building and became the iconic symbol of LDDC's regeneration effort.

金丝雀码头，伦敦 － 运营中（20世纪50年代）
Canary Wharf LDDC, London- Operational c.1950

金丝雀码头，伦敦 － 闲置中（20世纪80年代）
Canary Wharf LDDC, London- Decommissioned c. 1980

金丝雀码头，伦敦 －标志性建筑 “One Canada Water”大楼（20世纪90年代）
Canary Wharf LDDC, London- Ground and Aerial Views of the redeveloped project showing the pyramid roofed iconic building “One Canada Water” c.1990

然而，按照当时的规划，金丝雀码头将建成伦敦新的金融中心。这意味着高品质的写字楼、昂贵的住宅将被引入该地区，以及为特定人群创造的数量可观的就业机会，而这些人中的大多数将是来自码头区以外的外来人口。

开发中遇到的其他主要问题有：改造工程必须在公路和公交线路建成前动工，造成了进出该地区的不便；大部分人（即使是金融行业从业人员）无法承担该地区的居住成本；缺乏配套的休闲娱乐设施，导致在工作时间以外该地区几乎成为空城，而且这种现象持续了数年之久。

由于开发并未有效地改善当地居民的就业、住房、交通出行等方面，整个20世纪90年代，当地社会对该城市改造计划持强烈的反对态度。1997年，道格斯岛的居民甚至向开发商提起了法律诉讼。事件表面上是居民对施工噪音的抗议，而更深层次的原因，是当地社会对这项政府推行的花费高昂的改造工程的不满，因为当地居民的需求并没有受到重视。过了将近20年以后，随着本土就业计划的推行，这个问题才逐步得以部分解决。约有7000名当地居民目前在金丝雀码头金融中心就业。

However, Canary Wharf was planned as a new financial district for London. This meant the introduction of high quality offices, expensive housing and the creation of jobs for a skill group that for the most part, lived outside the local boroughs of the Docklands site.

A further setback was that the development had to be launched before its enabling highway and public transport linkages were constructed. Travel to and from the area was thus restricted, the limited residential accommodation was unaffordable to most workers- even those in the financial services, and a lack of evening destinations meant that for years, the after office hours, the city remained lifeless.

Throughout the 1990's local communities manifested their opposition to the scheme as it did little to improve work, housing and transport for the local population. There was even a court case taken out by residents of the Isle of Dogs against the developers in 1997. This was ostensibly in protest at noise nuisance from construction but at its root, the protest was targeted at the exclusion of these communities from what was a costly regeneration effort, effectively promoted by central government. After almost two decades, the problem has been partially remedied with further local employment initiatives. Some 7000 residents from the local borough of Tower Hamlets now work in Canary Wharf's financial centre.

在城市更新领域，中国总结了全球各地的开发经验，也从伦敦码头区等项目中吸取了教训。全面的城市更新在中国的各个城市大范围展开，以更有效地利用城市中心的宝贵用地。上海的外滩地区就是一个典型的案例。十年前，合乐为该地区的整体改造项目制定了战略规划。

以标志性的滨江长廊和恢弘的历史建筑为特色，外滩地区是上海老牌的中央商务区，彰显着这座城市的魅力和商业活力。20世纪初期，外滩曾是上海著名的国际区之一，也是金融家和贸易家的乐园。然而在城市更新项目的研究阶段，我们发现外滩中央商务区（包括了滨水区和内部三个街区）正面临着其他商业中心快速发展的严峻挑战，尤其是一江之隔当时正在建设中的陆家嘴金融贸易区 。

在2000年以前，外滩大部分历史建筑（原金融机构）就已退出其原有职能，仅作为参观和展出使用，内部很少举行活动；占地103公顷的内部地块内的建筑年久失修；著名的滨江长廊被一条交通极为繁忙的道路隔离；缺乏居住和休闲娱乐设施使该地区在工作时间以外显得活力不足。

为此，上海市黄浦区政府于2003年进行了外滩地区城市更新规划设计国际竞赛，委托三家国际知名公司进行独立的规划和方案设计。这三家公司各有所长：合乐在总体规划和交通规划方面堪称专家，另两家公司则分别以现代建筑与经典欧洲建筑保护和城市环境见长。

合乐通过上海和伦敦的类比进行研究。分析了伦敦新老中央商务区（伦敦城和伦敦码头区）以及上海新老中央商务区（外滩和陆家嘴）之间的竞争关系。研究总结了伦敦城在应对来自码头区的挑战时采取的策略，在保护历史特色的前提下扩大办公、住宅和商业的面积，然后对外滩项目提出了相似的策略。

China has drawn on worldwide experience in regeneration including lessons learned from the London Docklands project. Holistic regeneration efforts are now taking place across Chinese cities in an attempt to re-use precious city center land. One such project is the Bund district of the Huangpu District of Shanghai. Ten years ago, Halcrow prepared a regeneration strategy that would fundamentally transform this area.

The Shanghai Bund with its notable waterfront promenade and imposing historic buildings had traditionally served as the city's CBD, and provided a lasting symbol of the city's dynamism and commercial vigour. In the early 20th Century, the Bund formed part of the International District of Shanghai and was home to international financiers and traders. At the time of the regeneration study however, the CBD (made up of the riverfront and three blocks inland), was under serious threat from rival commercial hubs, and particularly from the new CBD being constructed across the river in Lujiazui.

By 2000 most of the Bund's historic buildings (former financial institutions), had been reduced to serving as mere museum pieces with little internal activity, the mid-block buildings within the 103 hectare site were in poor repair, the famous waterfront promenade was severed by a heavily trafficked highway and a lack of adequate housing and entertainment venues gave the area an uninviting and lifeless character after office hours.

The local government of Huangpu District launched an international competition in 2003 to redress these shortfalls. They commissioned three international consultants to prepare separate planning and design ideas. Each firm was selected for their respective strengths: Halcrow for master planning and transportation expertise and the others respectively for their expertise in modern architecture and conservation of classical European buildings and their related urban environment.

The Halcrow study drew comparison between London and Shanghai. It compared the rivalry between the old and new CBD's of London (respectively “The City” and “London Docklands”), and those of Shanghai (respectively “The Bund” and “Lujiazui”). The study demonstrated how the City of London was able to address the challenge posed by Docklands by expanding its office, residential and commercial floor space without damaging its historic character, and proposed similar action for the Bund.

规划研究还包括对用地、建筑形态、交通预测等方面的详细研究，确定了如何增加额外的面积和具体的增量范围，并提出了一系列综合改造行动计划：

- 用地计划：新增办公空间、居住和接待设施，恢复地区活力；
- 形态优化计划：对建筑形态进行优化，确定内部开发和再开发的场所；
- 交通策略：将过境交通移入新建地下隧道，对剩余的地面交通采取有效的交通缓解措施，增加地下和地面停车空间；
- 行人和标识系统策略：为游客、购物者、居民和上班族提供无车辆干扰、环境优美的步行环境，创造良好的步行体验。

The study which involved detailed survey of land use, building form and traffic forecasts, identified the extent to which additional floor space could be added to the area, and proposed an integrated set of actions for regenerating the zone:

·land use proposals for new office space, housing and hospitality venues to revitalize the area

·physical improvement proposals for the built form including the identification of sites for infill development and redevelopment

·a traffic strategy that would move through traffic into a new tunnel, introduce traffic calming measures for the remaining local surface traffic and provide for new underground and surface parking, and…

·a pedestrian and way-finding strategy that would allow tourists, shoppers, residents and office workers to enjoy this iconic site on foot through a traffic free and landscaped pedestrian environment

上海外滩，中国－滨江地区（合乐）
Shanghai Bund, China- The waterfront (Halcrow)

上海外滩，中国 － 建筑体量研究（合乐）
Shanghai Bund, China- Building Mass Study (Halcrow)

上海外滩，中国 － 步行优化方案（合乐）
Shanghai Bund, China- Pedestrian Improvement Proposals (Halcrow)

经过十年的建设，目前项目已竣工，外滩地区在上述各方面都处于顺利运行阶段。项目的成功在于采用了综合全面的城市更新方法，达到了城市、经济和社会效益的平衡。

After ten years the construction work is now complete and the area is operating successfully in all the above sectors. Its success lies in its holistic approach to urban regeneration with a balance of physical, economic and social improvements.

用地和交通整合

城市蔓延和侵占绿地问题是城市飞速发展产生的副产品。在英国和欧洲许多地区，城市蔓延主要源于三大方面：一，对住房的绝对需求和对低密度开发的特定需求；二，弹性的用地政策通常可满足这种需求；三，私家车的无限制自由使用无形中增加了人们的通勤距离。

一些城市已经采取了相应措施来遏制这种城市蔓延的趋势，这些措施包括：对城市中心进行再利用和再开发，增加住宅开发密度，鼓励人们减少私家车的使用，提供与城市用地模式相匹配的公共交通网络，促进以交通枢纽为中心的城市功能集聚（TOD开发模式）等。

早期的城市公交导向开发（TOD）以巴西库里提巴和加拿大蒙特利尔为典型代表。在20世纪70年代，巴西库里提巴市规划了高密度的城市轴线，并沿这些轴线布置了快速公交系统。这些多功能轴线对城市中心地区的形态保持有着积极作用，使更多的城市用地用于公共设施建设和低密度开发。蒙特利尔市在60年代建造了一个地下城市轨道交通网络，并由此形成了这个城市几何形状的城市结构。该轨交网络总长超过32公里，将地下空间与各种车站相关功能相结合，如商店、公共汽车站、办公、电影院、百货公司、酒店、画廊、教堂、会议中心、奥运公园以及世界博览会会址等。该网络不仅方便人们穿梭于城市的各个角落，引导和保持城市的空间结构，并且这个庞大的地下空间体系也解决了这个城市的人们在寒冬中的出行问题。

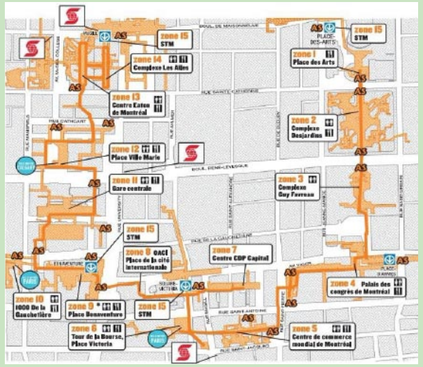
Land Use and Transport Integration

Urban sprawl and encroachment into green belt land are by-products of numerous dynamics. In the UK and across many parts of Europe three factors have contributed significantly to this sprawl: The absolute demand for housing and the particular demand for low-density development, elastic land use policy which has routinely catered for this demand, and the liberal use of private vehicles which both facilitates and legitimises lengthy travel between the home and places of work.

A number of measures have been used in different cities to curb this trend including: re-using derelict city centre sites, increasing residential densities, discouraging the use of private vehicles and providing public transport networks that closely match the city's land use patterns and encourage clustering of urban functions around transportation hubs (or transit oriented development-TOD).

Early examples of city-wide transit oriented urban planning include Curitiba and Montreal. In the 1970's the City of Curitiba in Brazil created high density linear axes along which a bus rapid transit system could be aligned. These multi use axes help to contain the urban centre, allow for cost-effective mobility between places of business and housing, and enable large urban areas to be given to parkland or low density development. The City of Montreal in the mid-1960's created an underground urban rail network, which has since informed the city's structuring geometry. The network stretching over 32 km, incorporates a host of underground and station-related uses including shops, bus stations, offices, cinema theatres, department stores, hotels, art galleries, places of worship, convention centres, the Olympic park and of course the World's Fair site for which the network was first built. This network allows efficient mobility between urban destinations, guides and contains the spatial structure of the city, and its expansive underground system (the "underground city") mitigates the city's severe winter conditions.

蒙特利尔，加拿大 － 高效利用城市空间的地下城市
Montreal, Canada- An underground city aligned with the metro network spans 7 km and ensures efficient use of urban space

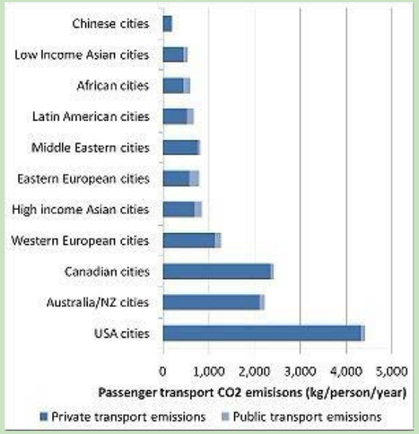


库里提巴，巴西 － 高密度走廊创造出大面积开放空间
Curitiba, Brazil- High density corridors allow unhindered open space

在防止私家车的过度使用时，通常配合各种积极有效的措施，如高效的基础设施的引入等。新加坡在20世纪70年代开始采取收取交通拥阻费的措施，以减少私家车对道路系统的占用，鼓励公共交通出行，减少市中心的碳排放量。伦敦于2002年也加入了这一行列。根据对二氧化碳排放量的计算，令人惊讶的是，在以私家车为主要交通方式的美国，其私家车的二氧化碳排放量却并非最高。有意思的是，中国的私家车使用率在工业化国家中最低（见表1），然而我们应当以谨慎的眼光来看待上述数据。因为数据是将中国的所有城市作为对象来计算的，如果针对中国的大都市地区而言，这个数据将会高得多。

Positive action such as the introduction of efficient infrastructure has often gone hand in hand with deterrents to the use of private vehicles. Traffic congestion charges were introduced in Singapore in the late 1970's and in London in 2002 to deter private cars from using the limited capacity highway networks, to encourage use of public transport, and to reduce carbon emissions within the city centre. Emissions from private cars, based on a measure of CO2 per car passenger are not surprisingly highest in the US where the use of private cars remains the principal mode of transport. Interestingly, the use of private cars in Chinese Cities is lowest of a group of industrialised countries (Table 1). However, this statistic should be viewed with some caution, because it incorporates all cities in China. The figures may be higher when examining only the larger conurbations.

表1：客运碳排放量（千克/人/年）
Table 1: Passenger transport, carbon emissions (kg/person/year)



中国已经开始逐渐接受公交导向开发（TOD）以及公交先行的概念。越来越多中国的开发项目明确强调了高效出行规划和促进公共交通建设的重要性。

今年，合乐受业主委托为位于天津北辰区，占地8.6平方公里的新建中央商务区项目进行规划设计。对于基地选址，一条重要的标准是位于两条地铁线路交汇的区域内。该地区规划建设三个地铁车站。项目要求将该地区建成综合性多种用地功能混合的区域，包括行政、办公、高档住宅、保障性住房、配套教育卫生设施、公园、画廊和博物馆等。

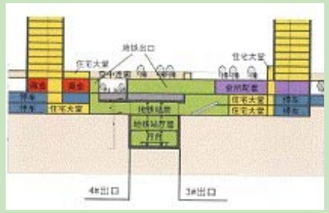
合乐的规划方案主张在未来三个地铁站周边地区采用TOD开发模式，这样这些车站地区不仅承担了交通换乘节点的功能，也成为了集办公、购物、酒店、餐饮等功能为一体的高密度建筑群中的焦点。规划还包括沿河道网络设计的大型公园。步行网络延伸穿过规划的中央商务区并连接各个主要节点。方案中所有的居住区都位于三个交通换乘点的12分钟步行范围内。

在许多西方国家，都存在过于依赖私家车作为出行模式的问题，尽管这种趋势目前正在被扭转，仍有一些规划实践受到负面的影响，导致城市蔓延和环境恶化。 要扭转这种局面，鼓励人们重新使用公共交通、共享交通、以及步行和自行车等绿色工具作为出行方式，是一项艰巨的任务。

中国目前尚处于城市化的进程中，应当避免西方国家在这方面走过的弯路，在规划中应限制私家车的使用，倡导以人为本、保护环境的规划原则。

北辰中央商务区，中国 – 总体方案（合乐）
Beichen Sustainable CBD, China- Overall scheme (Halcrow)

北辰中央商务区，中国 – TOD（合乐）
Beichen Sustainable CBD, China- TOD levels (Halcrow)



北辰中央商务区，中国 – TOD（合乐）
Beichen Sustainable CBD, China- Typical TOD (Halcrow)

China has embraced the concept of transited oriented urban planning and of encouraging the use of public transport. Increasingly, the development briefs for most projects in China explicitly highlight the need to adopt mobility efficient planning and promote public transport.

This year, Halcrow was commissioned to plan a new CBD for the Beichen District of Tianjin on a site of 8.6 km2. One of the essential criteria for selecting the site was that it fell within the confluence of two of the city's metro lines. Three metro stations are planned to be built there. The development brief asked for a rich mix of land uses including administrative functions, private offices, exclusive and affordable housing, supporting educational and health facilities, parks, art galleries and museums.

Halcrow's plan proposed TOD principles to land around the three future metro stations, so that in addition to serving as the as transport interchanges, the TOD sites became focal points for the clustering of offices, shopping arcades, hotels, offices and food outlets in high density buildings. The plan also proposed extensive parkland designed linearly along an informal canal network. A pedestrian priority network extended across all parts of the proposed CBD and linked key destinations. All residential areas of the scheme were planned so as to be situated within a maximum walking distance of 12 minutes from one of the transport interchanges.

Many western cities have been locked into a dependence on the use of private vehicles, and although this trend is now being reversed, it has negatively influenced urban planning practice and led to urban sprawl and environmental degradation. To reverse the trend and encourage people to return once again to using public transport, shared transport or carry out journeys on foot and bicycles is proving both difficult and costly.

In China which is still on its road to urbanization, there is a unique opportunity to avoid the pitfalls of many western cities, to curb the excessive usage of private vehicles and promote integrated planning principles that place priority in people, their environment and their mobility above those of private vehicles.

城市综合体

随着交通运输、建筑技术和建筑服务等方面的科技发展，多功能城市综合体的概念从20世纪六十年代末期到70年代中期开始盛行。科技进步与人们对城市生活的热情推动了一批大型建筑综合体项目的规划建设，这些综合体在单个建筑内实现了居住、办公、娱乐、文化等多种功能的融合。这类城市综合体集合了大多数城市功能，为人们提供便捷的生活服务。在随后的几年里，公众对于这类综合体以及它们所倡导的理念的意见产生了分歧。美国和欧洲许多城市纷纷放弃了城市综合体的开发，认为这是一个失败的概念。反面意见集中在城市综合体的各种自身特点上，例如它们体现的残酷美学，建筑体量过大，幽闭的内部环境，社会阶层化（社会排斥），过于复杂的运营和维护要求，以及由于体量大导致人们无法与自然环境产生接触。而在另一些国家尤其是某些亚洲城市，在传统上和文化上对于高密度生活的接受度更高，城市综合体这一概念受到了肯定和认可，因为它不仅提供了更大的空间，也更节约开发成本。因此在亚洲城市，这种模式被大量复制并应用在许多新的开发项目中。

西方城市中典型的城市综合体开发案例有伦敦巴比肯中心（20世纪70年代末开始进行设计，1982年正式竣工开放）和位于蒙特利尔的“67号栖息地”（建筑大师萨夫迪设计）。巴比肯中心位于伦敦市中心，是一个综合了文化、艺术、娱乐和居住等多种功能的巨型城市结构。67号栖息地创造了一种高密度建筑的新模式，它将高层住宅外部围合进行解构，在每个垂直平面上创造出独特的平面布局，并呈现出自然和雕塑感的外观。位于香港九龙滨水地区的新世界大楼建于20世纪70年代末，集住宅、酒店、娱乐、购物和办公功能为一体。

The Mixed Success of Urban Complexes

The concept of multi-use urban complexes was prevalent from the late 1960's through to the middle 1970's in response to the abundance of technological advances in transportation, communications, building techniques and building services such as district heating and cooling. This technology when combined with a renewed zest for urban living led to the planning and design of large building complexes that offered housing, offices, entertainment, and cultural facilities within a single (generally vertical) urban complex. These were intended to serve as small cities that combined many if not all urban functions and offered a choice of not having to leave the premises at all- at least in theory. In the intervening years, the popular verdict on these complexes and their guiding philosophy has been mixed. Many cities in Europe and the US have abandoned the concept as a failure. Critics have faulted many of their attributes including the often brutal aesthetics, over-imposing building bulk, claustrophobic living conditions, social stratification (and exclusion), excessive operational and maintenance requirements, and because of their size- infrequent opportunity for people to interface with the natural environment. Other places in particular Asian cities that are traditionally and culturally more accepting of high density living, have found this approach to be successful and embraced it not least because it offers both space and cost efficiency. Across Asian cities, this model is being replicated and frequently applied to new development.

Examples in western cities include the Barbican Centre in London designed in the late 1970's and opened in 1982, and Moshe Safdie's Habitat '67 City in Montreal. The Barbican drew culture, art, entertainment and urban housing together in a large mega-structure in the heart of the City of London. Habitat '67 promoted a new model for high density architecture. It deconstructed the envelope of the high rise housing block to create unique floor plans at each vertical level, and offered an organic and sculptural appearance to the vertical mega-structure. The New World Complex in Hong Kong built in the late 1970's on the Kowloon waterfront combined housing, hotels, entertainment, shopping and offices in a single building complex.

蒙特利尔67号栖息地，加拿大
Habitat '67 Montreal, Canada

蒙特利尔67号栖息地，加拿大
Habitat '67 Montreal, Canada

新世界，香港
New World Complex, Hong Kong

伦敦巴比肯中心，英国
Barbican Center London, UK

伦敦巴比肯中心，英国
Barbican Center London, UK

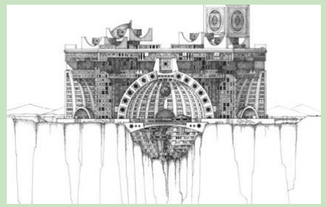
这些项目从某种意义上说是一种乌托邦式巨型城市的缩小版和实践版。它们并非将城市视作进化的有机体，而把城市视作垂直概念上的技术产品，并作为一个工程实体进行设计，设计灵感源自于城市生活的未来主义和科幻元素。

亚高山地城位于美国亚利桑那州，1970年由保罗.索拉尼设计。目前已部分建成，但在原方案上做了很大程度的修改。巴克明斯特.富勒在1967年设计的特莱登漂浮城市以及Archigram集团设计的概念新城市（包括步行城市）都是作为理论概念被提出，并不意味着最终将进行实施。

In a way these projects were the implemented manifestations and scaled down versions of much more ambitious designs for utopian megacities, also being promoted at the same time. This movement saw cities less as evolutionary organisms that grow incrementally and horizontally, but rather as technological products that are vertical in concept, and designed as a single engineered entity. The designs were for self-sufficient communities, and drew inspiration from futurist and science fiction visions for urban living. Few were ever implemented.

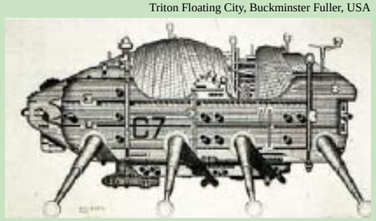
Examples include Paolo Soleri's Arcosanti in Arizona that was designed in 1970 and is now partially built, but is significantly modified from its original intention. Buckminster Fuller's Triton Floating City in 1967 and the Archigram Group's conceptual new cities (including the walking city) were put forward as philosophical thoughts, not necessarily as projects to ever be implemented.

亚高山地城， Paolo Soleri，美国亚利桑那州
Arcosanti, Paolo Soleri, Arizona, USA

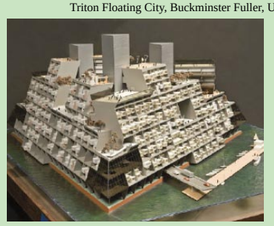


亚高山地城， Paolo Soleri，美国亚利桑那州
Arcosanti, Paolo Soleri, Arizona, USA

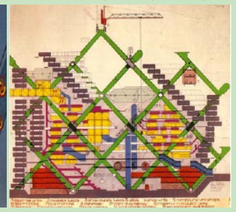
特莱登漂浮城市， Buckminster Fuller，美国
Triton Floating City, Buckminster Fuller, USA



特莱登漂浮城市， Buckminster Fuller，美国
Triton Floating City, Buckminster Fuller, USA



新城市概念研究： Archigram集团，英国
Studies for new city concepts: Archigram Group, UK



所有已实施的城市综合体的相同之处在于垂直方向上的城市功能混合（居住、酒店、商业、娱乐、文化等）以及与交通体系的有机结合（通常以地下轨道交通的形式）。

这些城市综合体的另一个共同特点是大面积的步行网络，由空中走廊和人行天桥衔接不同平面上的建筑和空间。设计从安全角度出发，将行人与机动车和其他交通工具分离，但这些步行系统自身也存在着问题。较少被使用的长距离步行走廊导致了空间的低使用率，也造成人们在使用这些走廊时对人身安全的担忧。伦敦巴比肯中心决定对1987年设计的原步行网络进行调整。合乐受其委托针对优化原有步行网络进行了研究。具体措施包括：关闭一些步行通道，增加或拓宽另一些通道，并沿通道设置一些节点或景观，以提高空间实用效率。

在西方城市，随着时间的推移，许多城市综合体项目都逐渐进行了调整或修正，有些则直接弃用并拆除，将用地用于其他再开发。

然而在中国，大型多功能城市综合体开发项目仍有市场，项目的运作也较为成功。这些成功不仅由于中国土地稀缺，还来自于一些社会原因，如对于高密度生活的文化接受度、低犯罪率和相对较为平均的人口阶层分布等。

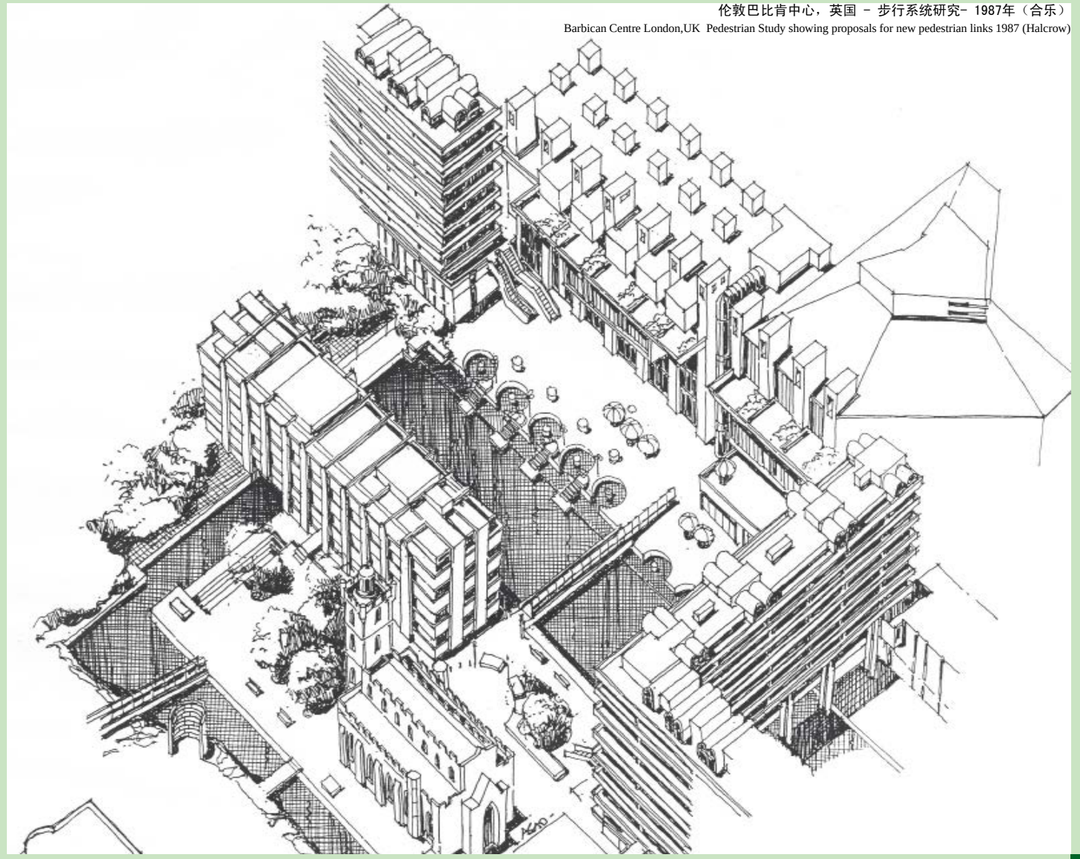
Common to all implemented urban complexes is a vertical mix of uses (residential, hotels, shops, entertainment and cultural venues etc…), and integral links to transportation systems- usually underground rail.

Another feature common to these complexes is an extensive pedestrian network with footbridges and skyways interconnecting buildings and spaces at different levels. Designed for safety and the segregation of pedestrians from motor cars and traffic, these walkways have created their own problems. Long foot journeys through often deserted skyways, has led to dereliction of these spaces and a fear for personal safety. The Barbican Centre in London took measures to adjust the original pedestrian network design in 1987. Halcrow were appointed to undertake a study that would rationalise the complex's extensive pedestrian network by closing some pathways, adding or widening others and creating local attractions and destinations along the paths to deter dereliction along the network.

So in western cities, many urban complexes have been adjusted and corrected over time or simply abandoned, demolished and their sites redeveloped.

In China however there still demand for large multi-use vertical complexes, and these are operating successfully. The reasons behind their success revolve around land scarcity, but also include: cultural acceptance of high density living, a low crime rate, and (when the very wealthy are excluded from the equation) there is a relatively even income spread in the urban population.

伦敦巴比肯中心，英国 - 步行系统研究- 1987年（合乐）
Barbican Centre London,UK Pedestrian Study showing proposals for new pedestrian links 1987 (Halcrow)



滨水城市规划

滨水城市的诞生源自人们对实用性和功能性的追求。人类自古就选择在江河湖海边定居，既满足生活用水和饮水等基本需求，也利用水来进行交通运输等活动。一直到近两百年，人们滨水而居的原因才延伸到满足工业和制造业需求、体育、娱乐和美化城市面貌等其他方面。

水与建筑的结合创造出了优美的城市环境，也造就了许多历史名城，如意大利的威尼斯、荷兰的阿姆斯特丹、中国的周庄等，它们的成功在世界各地激发了新一轮的滨水开发热潮。

Planning for Waterfront Cities

The origins of waterfront cities lie in practicality and function. Settlements have historically located near rivers, lakes and seafronts in order to use water for transportation and as a source for food and domestic water consumption. Only in later years (19th and 20th centuries) have the reasons for locating near water extended to cover industrial and manufacturing needs, sports, recreation and visual amenity.

However, the juxtaposition of buildings and water creates extraordinary urban environments and historic cities such as Venice in Italy, Amsterdam in the Netherlands and Zhouzhuang in China, have inspired a new generation of waterfront development across the world.

威尼斯，意大利
Venice, Italy

水乡周庄，中国
Zhouzhuang Water Village, China

阿姆斯特丹，荷兰
Amsterdam, Netherlands

1966年，法国建筑师Francois Spoerry以创造历史城市的氛围和生活方式为目标，在地中海沿岸设计了格里莫港，用河道取代道路作为主要交通方式。通过疏浚和围垦的方式，成就了第一个现代的滨水城市。在格里莫，Spoerry不仅保证每栋建筑都享有水景，而且每栋建筑都拥有独立的私人船只泊位。他曾这样表述他的设计理念：“我所希望的，是创造出一种能让人们心灵歌唱的建筑风格…”

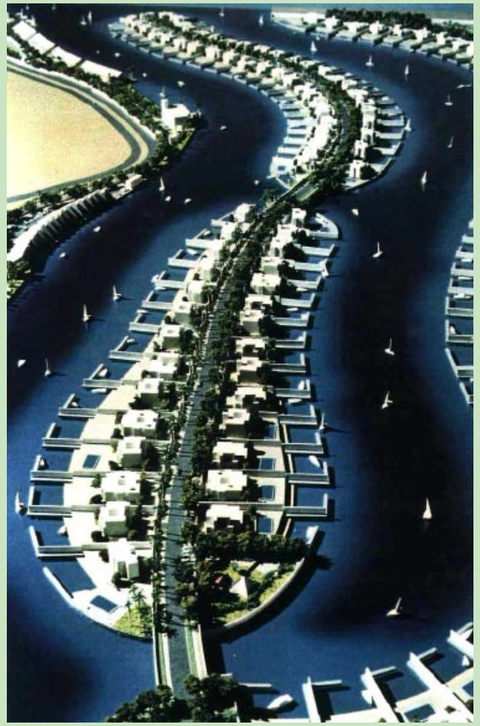
这种滨水而居和私人泊位的设计主题很快在全球风行起来。1991年，合乐为沙特阿拉伯港口内湾Obhur河项目设计了这样的住宅。项目位于红海海岸吉达以北的天然潮汐口Obhur 河的尽头，包含135栋豪华滨水别墅，度假联排别墅区，以及公共游艇码头。

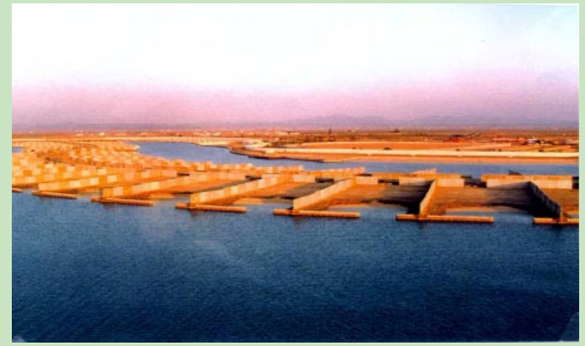
With the express objective of recreating the atmosphere and lifestyle of historic cities where canals rather than roads serve as the main transportation mode, the French architect Francois Spoerry designed Port Grimaud on the Mediterranean coast in 1966. This was arguably the first modern waterfront city, created by a combination of dredging and land reclamation. Being a keen and accomplished sailor, Spoerry also ensured that in his city each building would not only enjoy water views, but also have direct access to a private boat mooring. He expressed his design philosophy as follows: “My ambition has been to produce a style of architecture that makes the heart sing…”

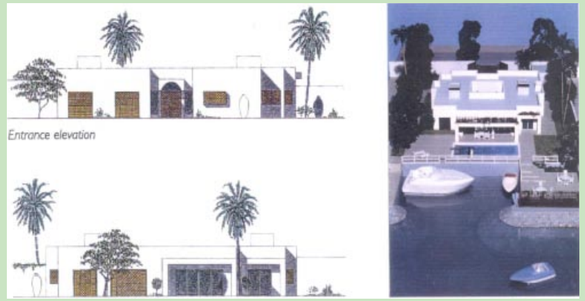
This theme of housing with direct access to water and private moorings was replicated across the world. Halcrow prepared one such housing project in 1991 at Obhur Creek in Saudi Arabia. The project for 135 exclusive waterside villas is situated at the head of Obhur Creek, a natural tidal inlet situated north of Jeddah on the Red Sea coast. The development also included a zone of townhouses for holiday letting, and a communal yacht marina.

格里莫港，法国
Port Grimaud, France

Obhur河项目，吉达，沙特阿拉伯 总体方案和住宅设计（左）建成项目（右）（合乐）
Obhur Creek Jeddah, Saudi Arabia. Master Plan model and housing designs- left, and implemented project –right (Halcrow)







1999年，受迪拜政府委托，合乐与Francois Spoerry工作室合作为迪拜Deira滨海走廊项目进行规划设计，通过在阿拉伯湾建造人工岛来拓展现有中央商务区。该项目最终未进入实施阶段，但它成为了迪拜所有沿海围垦项目的典范。Spoerry工作室负责在本项目中为部分住宅（位于围垦岛屿上的豪华滨水别墅）进行设计。

Francois Spoerry’s office (Atelier Spoerry) later worked together with Halcrow on the Deira Sea Corniche project in Dubai. The project commissioned in 1999 by the Government of Dubai, looked at extending the city’s existing CBD by creating artificial islands in the Arabian Gulf. This project was never implemented, but it served as the precursor of all reclamation schemes now being constructed along Dubai’s coastline. Atelier Spoerry was brought in to look specifically at one residential component of the scheme, which was to provide exclusive waterfront villas in a secluded part of one of the reclaimed islands.

在中东地区，树木、河流、植被和山丘等常规景观资源非常有限，于是海景成为了主要的景观形式，并在景观设计中被广泛地运用，同时有助于在房地产开发中提升用地价值。填海围垦工程可以创造新的岛屿、海湾和海岬；相反地，疏浚工程可以将水引入内陆形成河道、泻湖和内湖。迪拜在两方面都做了尝试。填海围垦工程的案例包括两个通过海岸堤道与内陆连接的“棕榈岛”开发项目，以及只能坐船前往的离岸岛屿开发“世界岛”项目。

迪拜著名的疏浚项目之一是合乐设计的迪拜商业湾开发。该项目的初衷是抑制迪拜的城市蔓延和沿海城市扩张，在传统城市核心地区未充分利用的用地上创造一个商业和旅游新地标。规划通过引入一条10公里长的河道，将现有的迪拜河和开放海域连接贯通，创造高价值的滨海物业以吸引商业投资和旅游者回归传统城市中心。

项目于2005年开始施工，目前已基本竣工，沿海20平方公里的用地上已建成办公、住宅和各类旅游设施等。

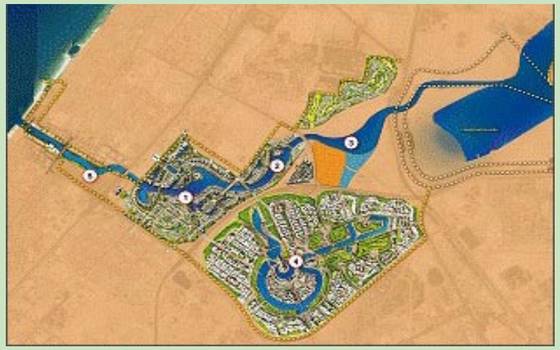
In the Middle East where the customary language of landscape, namely trees, rivers, vegetation and hills are all in limited supply, sea water becomes the prime landscape amenity and is used extensively as the tool to fashion new landscapes and add real estate value to land. Reclamation projects that can create new islands, bays and headlands, and the reverse, dredging projects can bring water inland to create new canals, lagoons and lakes. Dubai has examples of both. Reclamation projects include the two “Palm Island” developments that are connected to the mainland by causeways and “The World”, an offshore development of islands accessible only by boat.

A significant dredged project in Dubai is Halcrow’s Business Bay. The project was conceived to counteract Dubai’s urban sprawl and its seaward expansion. Its goal was to create a compelling location for business and tourism on an underused and land-locked site near the city’s historic core. A key feature of the plan thus became a new 10 km long waterway linking the existing Dubai Creek back to the open sea, thus creating high value waterfront property to draw businesses and tourism back to the traditional city centre.

Started in 2005 the project is now largely complete, with some 20km2 of waterfront land for new offices, housing, and tourism.

商业湾，迪拜，阿联酋 总体方案（左） 鸟瞰图（右）（合乐）

Business Bay, Dubai, UAE. Master Plan- left, and Google Earth satellite image 2009 –right (Halcrow)



海洋工程技术和科学解决方案为设计师对滨水环境进行创新概念设计提供了帮助。当项目位于内陆地区，其开发将面临诸多限制（如现状道路走向、自然景观特征、现有开发项目等），而位于滨水地区的项目则可以根据需求对用地进行重塑，创造新的景观，提升设计水准。

合乐的两个案例很好地证明了这个观点：慈溪海上新世界项目的内陆疏浚和青岛CBD项目的填海建岛，都为提升项目本身的价值做出了贡献。

慈溪项目的基地距离东海杭州湾1.5公里，原先为一片滩地。设计从提升用地价值入手，通过疏浚形成河道和内湖，将杭州湾的水引入基地内部，呈现出独特的世界地图的平面概念。项目被命名为“海上新世界”，其中的各个岛屿象征着世界的各个大陆板块，每个板块设置不同的产品、服务、餐饮、娱乐和体育活动，形成自身特色，反映世界各地不同的风俗和生活方式。

合乐还为青岛28平方公里的沿海用地上新建的CBD项目进行了规划设计。项目要求在海上设置标志性建筑，如歌剧院、豪华酒店或美术馆等。合乐的设计概念是通过塑造多个岛屿，分别体现不同功能，并有效地把公共和私人区域进行分隔。较小的岛屿设置在离岸较近的位置，这样便于用人行桥进行连接，也可以从沿岸的海洋大道上看到大部分标志性建筑。填海建岛的概念不仅在视觉和形态上提升了项目内涵，同时其本身也成为了本项目特有的标志。

Marine engineering and technological solutions allow the designer to conceive and deliver innovative concepts for waterfront environments. Whereas land-locked sites face relatively fixed constraints (such as alignments of existing highways, natural landscape features, existing development, etc…) waterfront sites offer the opportunity to re-shape the land itself and create new landscapes that will enhance design proposals.

Two Halcrow projects illustrate this point: The Cixi project in Ningbo Province which involves dredging of a land-locked site, and the Qingdao CBD which involve the creation of offshore island- Both interventions add value to the respective designs.

In Cixi the site consisted of a flat tidal wetland, situated some 1.5 km distance from the Hangzhou Bay of the East China Sea. The adopted design solution was to maximise the value of the landlocked site by drawing in water from the bay and using dredged canals and lakes to create a unique landform in the shape of the world’s continents. The project was named “Water World” because it was to function as a water city with islands in the shape of continents. Each “continent” would trade in different goods, services, restaurants, entertainment and sporting events to reflect the character and lifestyle of different corners of the world.

The project in Qingdao called for a new CBD to be designed on 28km2 of coastal land. The brief also called for the flagship buildings of the new CBD such as an opera house, luxury hotel and art gallery to be located offshore. The design chose to shape the different islands so that each would accommodate different uses and water would segregate private and public areas. Smaller islands located close to the foreshore, were sized and located so that the most iconic buildings could be easily viewed from the coastal Marine Drive, and were easily accessible by footbridges. The concept of reclamation was therefore not only able to provide new visual and physical references, but serve as a visual icon in itself.

青岛CBD项目，中国 总体方案（左） 近岸岛屿（右）（合乐）

“Waterworld”Cixi, Nanjing, China. Master Plan perspective- left, and inset perspective showing the built form of “America” and “Europe” islands (Halcrow)

青岛CBD项目，中国　总体方案（左） 近岸岛屿（右）（合乐）
Qingdao CBD, Qingdao, China. Master Plan- left, and inset pan showing foreshore islands (Halcrow)

不论是用地布局呈现世界地图形状的慈溪海上新世界项目，还是在海湾、海港、湖泊和河道上进行高端地产开发的青岛CBD项目，这样的创新设计概念只有在滨水项目中才能得以体现，因为滨水项目最能表达设计师的想象力和创造力。

The land formation in the shape of a map of the world at Cixi and the new CBD at Qingdao with high amenity real estate that fronts dedicated bays, harbours, lakes and canals, could only have been designed in waterfront projects of this type where there are practically no restrictions to design imagination and creativity.

（阿萨德 • 沙西德 Asad Shaheed ）

（阿萨德 • 沙西德 Asad Shaheed ）

作为设计协调人和建筑师，1992年获得可汗建筑大奖（约旦城市设计项目）；作为项目负责人和城市设计师，1998年获得英国皇家城市规划协会卓越成就奖（Shrewsbury 商业街规划项目）；作为项目负责人，1999年获得加拿大规划协会卓越成就奖（巴巴多斯可持续发展环境管理及土地利用规划项目）。

阿萨德先生在他30多年的设计经历中，所设计的项目遍及北美，中美，南美，加勒比海地区，欧洲，非洲，中东，中亚，南亚和中南亚。自2001年至今，承担了大量的中国项目，所负责项目获得了多项国际竞赛第一名。

作为合乐集团负责国际性城市规划设计和建筑设计项目服务的负责人，阿萨德先生拥有30多年国际城市规划、城市设计和建筑设计经验。在城市综合开发、旧城改造、总体规划研究、城市设计研究等领域具有丰富的国际经验。

人性尺度的城市滨水空间

Bringing Human Scale to Urban Waterfronts

1 城市滨水空间的演化

I Evolution of Urban Waterfront Space

1.1 问题的提出

水孕育了生命，人类自古就逐水而居，城市大多因水而生、因水而兴，城市的滨水地区总是拥有独特的魅力和不可替代的区位价值。在中国步入城市化快速发展的今天，滨水地区的发展更是成为区域发展的热点，滨水发展已经成为带动城市产业转型、提升城市环境和文化生活水平的动力，展示城市新形象的平台。滨水地段的城市设计也成为规划领域的重要课题。

1.1 Reason for Subject Selection

Water gives birth to life. Since ancient times, human beings have always been inhabiting along the water. Most of the cities attribute their appearance and prosperity to water. The waterfront in a city always has unique glamour and irreplaceable location value. Nowadays, as China steps into the fast process of urbanization, the waterfront development has been the hot issue for regional development. It is the driving force to boost urban industry transformation and to improve the urban environment and culture as well as living standard, and serves as the platform for new image display of a city. The urban design of the waterfront location has also been an important subject in the planning field.

1.2 城市和滨水地区的空间演化

城市空间的发展的经历了三大历史时期，体现了人性回归的历史轨迹。

1.2.1 工业化之前时期

人类依靠自然力为主要生产手段的时期，这段时期延续了几千年，占据了人类有史的大部分时间。由于依靠的是自然力，包括人力、畜力、水力、风力、火力等等，这一时期的建造工艺都是以手工为基础的，因此生产、生活处于一种以人为核心的天然和谐的状态。城市空间也相应体现出和谐的融合状态。主要有以下几个特征：1。人性化的空间规模：古典城市是以人的尺度为标准建造的，城市的规模基本上都控制在步行可达的范围。2。人性化的空间尺度：城市的街道、广场、建筑都有非常良好的比例尺度和城市界面，能够给人以安定舒适的感受。3。人性化的空间场所：古人造城，大多因地制宜，以独到的建筑和景观手法，赋予城市空间独特的场所意义，既反映了建造者对自然环境的独到理解，也塑造了社区的共同理念和文化认同。4。人性化的空间复合：以手工为基础的大多数活动都是天然和谐的，因此生产和生活常常以家庭为单位，呈现高度复合的状态。

1.2.2 工业化时期

古典城市田园牧歌式的格局在工业化时代被彻底打破了。机器的发明对城市空间最直接的影响就是增加了一个尺度——除了人的尺度，还有机器的尺度。人和机器的磨合是一个痛苦的过程。工业化早期，这种尺度的碰撞是鲁莽的，机器固有的速度、大小和污染，硬生生撕裂了原本和谐的人性尺度空间，机器空间和人性空间混杂，城市中的人生活在噪音、烟尘和污水之中，人的权益受到威胁，引发了一系列的社会问题。各种思潮风起云涌，乌托邦理想引发了新型城市规划理论的形成和发展。在某种程度上可以说工业化时期城市的发展就是如何处理好人和机器在城市空间中的关系的过程。

而现代主义的功能分区理论是这个时期城市规划的集大成者。在规划过的城市里，人和机器终于分开了，蓝天白云似乎又回到了人间。但是现代主义的理性光芒却是从机器的角度来安排人的需求的，规划过城市，尺度处于单调的对立之中，人的活动被割裂，生活在空旷、孤立、生硬的城市之中。

1.2.3 后工业化时期

这是一个城市空间的人性回归时期。人类逐渐理清了人和机器的关系，并更聪明地利用机器协调了人和机器的关系。城市空间尺度从单调的对立向多元的协调演变。交通技术和信息技术的发展，让机器和人在更大范围内分配空间资源，产业的升级使工作又回到人的步行范围之内，城市主要的滨水空间又回到了人的掌控之中。经过工业化的洗礼，城市滨水空间在回归人性化价值的同时，表现出了更大的灵活性和多元性。技术的发展为人性的极致滨水体验的实现，提供了几乎无所不能的可能性。

1.2 Spatial Evolution of City and Waterfront

Three historical periods of urban development (return of human nature):

1.2.1 Period before Industrialization

Human beings had been relying on the natural force as the main production means for thousands of years, which occupied most of the human history. In the past, man has relied on the natural force. These included manpower, animal power, hydraulic power, wind power and fire power. This period witnessed its building process based on manual labor. Therefore, production and life were in a harmonious state of man and nature with man as the core. In this period, urban space also exhibited the harmonious state. The urban space mainly has the following features: 1. Humanized spatial size: Classical cities were built on the basis of human scale and urban scale was basically controlled within walking distance. 2. Humanized spatial scale: Urban streets, squares and buildings all had a good ratio scale and urban interface, which could leave people a sense of stability and comfort. 3. Humanized space and place: The ancient people built cities mostly according to circumstances. Taking advantage of original architecture and landscape techniques, they gave urban space a meaning of distinctive place, which not only reflected the builder's unique understanding of natural environment, but also created the common concept and cultural identity of the community. 4. Humanized space blending. Most of activities based on handwork were naturally harmonious, so the production and life presented a highly blending state with the household as a unit.

1.2.2 Industrialization Period

The idyllic pattern of classical cities was completely broken in the industrial era. The most direct influence of machinery invention on urban spaces is to add a scale, namely, machine scale in addition to human scale. Running-in between man and machinery is a miserable process. At the early stage of industrialization, the collision among scales was reckless. The inherent speed, size and pollution of machines abruptly tore the originally harmonious human-scale space. In this period, machine space and human space were mixed. People in cities were surrounded by noise, smoke dust and sewage; the rights and interests of people were threatened, which triggered a series of social problems. Meanwhile, various ideas surged, in which Utopian ideal led to the formation and development of the new urban planning theory. To some extent, the urban development in the industrial era was a process of handling the relationship between man and machinery in the urban space.

The theory of modernistic function division was a comprehensive expression of the urban planning in this period. In the planned cities, man was separated from machinery and it seemed that the blue sky and white cloud returned to the world again. The rational light of modernism, however, arranged the needs of people from the viewpoint of machinery. Here, urban scale was in the single opposition, where people lived in open, solitary and rigid cities because human activities were isolated.

1.2.3 Post-industrial Period

This was a period of human nature return of urban space. Man had gradually clarified the relationship between man and machinery, and more cleverly used machinery to coordinate this relationship. Urban spatial scale evolved from single opposition to multiple coordination. Development of transportation technology and information technology enables the machinery and man to distribute space resources within larger scope; industry upgrading made work return within walking distance again, and the main waterfront space of cities come under the control of people anew. After the industrial period, urban waterfront space showed the greater flexibility and diversity when returning to human nature value. Technology development provides nearly omnipotent possibilities for extreme waterfront experience of human nature.

1.3 多维度城市空间理念

城市的空间理念应该是多维度的，在3维物质空间的基础上，还有代表时间的速度空间维度，以及反映人性需求的活力空间维度。即3维度的物质空间+速度空间+活力空间。

相对应于城市的发展阶段，多维度城市空间也经历了三个发展阶段，包括：多维度空间的天然和谐阶段——多维度空间的冲突共存阶段——多维度空间的多层面和谐阶段。从社会学角度看，分别对应于城市空间的人性和谐阶段——人性背离阶段——人性回归阶段。

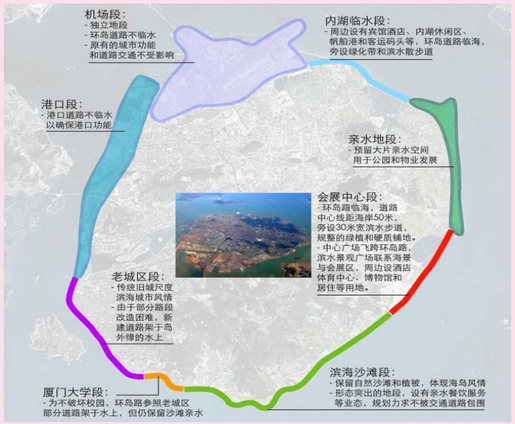
工业化之前的城市，人的活动以地面为主，人的速度和城市的空间天然和谐一体，由于没有真正意义上的高层建筑，城市物质空间呈现出扁平的2维的状态。工业化时期的城市，机器生产代表了先进的生产力，并由于技术的发展，建筑得以向高空发展，交通系统机动化，人和机器的混杂，使城市空间处于冲突和割裂的状态。后工业化和信息化时期，人本尺度和机器尺度在城市的空间中达到了多层面的融合，人性空间得以复兴并向极致发展。如果从回归本原意义来考察，所有的努力都只有一个目的——即怎样才能创造和保持城市的活力，城市滨水空间也不例外。

1.3 Concept of Multi-dimensional Urban Space

Urban space should be multi-dimensional, with speed space representing time and dynamic space representing human needs on the basis of 3D physical space. Namely, 3D physical space refers to speed space plus vigor space.

Corresponding to the urban development periods, the multi-dimensional urban space sees three development stages, including: natural harmony stage of multi-dimensional space, conflict coexistence stage of multi-dimensional space, and multi-level harmony stage of multi-dimensional space. From the viewpoint of sociology, they correspond to the human nature harmony, human nature deviation and human nature return stages of urban space respectively.

For the cities before industrialization, human activities focused on ground activities. Then, since human speed and urban space were harmoniously integrated naturally, urban physical space presented a flat 2D state. For the cities in the industrial period, the scale and speed of man were inherently not in harmony with those of machinery, so the mixture of man and machinery led the urban space into a state of conflict and separation. In the post-industrial and information-based periods, the human scale and machinery scale are integrated at multiple levels in respect of urban space, so human nature space can revive and develop towards the perfect state. If we look at it from the significance of returning to the origin, all of our efforts have only one purpose, that is, how will we create and maintain the vigor of a city, with urban waterfront space being no exception.



滨水空间的演化

城市的滨水空间作为城市空间的一部分，也同样经历了类似的演变过程。古典城市的滨水空间体现了城市生活与水的高度融合，承担着交通、灌溉和水源的基本功能，也体现了古典城市空间的人性尺度的价值理念。到了工业化时期，城市的滨水空间主要用于生产活动，机器占领了滨水空间，人的生活和水之间的关系处于被割裂的状态。在后工业化时期，由于交通技术的发展和产业升级，工业搬离城市核心滨水地区，城市生活又回归滨水空间，并且赋予滨水空间更高更广的意义和更极致的滨水空间体验。

Evolution of Waterfront Space

As part of urban space, urban waterfront space experienced the similar evolution process as well. With basic functions such as transportation, irrigation and water source, waterfront space of classical cities embodied the high integration of urban life and water and reflected the human scale value of classical urban space. In the industrial period, urban waterfront space was mainly used for production activities. Then, machinery occupied the waterfront space, so that people's life was separated from water. In the post-industrial periods, due to the development of transportation technology and industry upgrading, industries moved away from the urban core waterfront. Thus, urban life returned to waterfront space again and the waterfront was given the deeper and broader meaning as well as the extreme waterfront space experience.

2 多维度空间理念在滨水地区的应用

从城市空间的视角出发，人类利用技术的发展，成功地解决了机器和人之间的矛盾。主要矛盾体现在三个方面：功能、尺度和速度。

功能：机器代表了人类先进的生产力，但是并没有带来人性的空间，机器空间通常是硕大、排他、危险的，现代城市规划以功能分区方法，把机器的生产活动和城市生活活动区隔开来，首先在一个大层面上，解决了人和机器的空间矛盾。

尺度：技术的发展使城市构筑物（包括建筑物）越建越大——即建筑单体巨大化，巨大化的尺度怎样和人性尺度协调？这个问题通过两个层面解决，技术层面——通过室内空间室外化，室外空间立体化等手段协调；社会层面——强调混合发展，城市综合体、垂直城市等设计理念应运而生。

速度：由于城市的扩张，快速交通需求日益提升，机器的速度和人的速度就必须要有良好的协调。主要措施包括：1. 通过分级的道路系统，快速路——主次干路——支路，使汽车的速度和流量依次减低到人的尺度；2. 建立交通枢纽——实现不同速度的转换；3. 人车分流的规划手法等。

从城市滨水空间的角度出发，建设多维度、多层面、协调型滨水空间，需要解决三大核心问题：包括滨水空间的共享性、滨水空间的可达性和滨水空间的安全性。这些问题是人和机器在滨水空间矛盾的具体表现。

2.1滨水空间的共享性

共享性的一个核心议题就是混合功能，功能决定了人的活动内容，公共活动的引入，才能保证滨水空间的共享性，从而保证滨水空间的活力。共享性的另一个议题就是空间的开放性，在这一点上，现代工程技术为空间的开放实现提供了强力的支持，包括空间的立体化开发，室内外空间的穿插渗透，异型空间设计等等，都为一个开放、共享、极致体验的滨水空间提供了无所不能的手段。

美国巴尔的摩内港的改造的成功实践，说明了公共活动空间的引入对滨水空间活力的重要性，复合多元的功能布局才能提升滨水空间的共享性。

2. Application of Multi-dimensional Space Concept in the Waterfront

From the perspective of urban space, man successfully resolves the contradiction between machinery and man by taking advantage of technology development. The main contradiction is embodied in three respects: function, scale and speed.

Function: Machinery represents the advanced productivity of human beings, but does not bring human nature space. Generally, machinery space is very large, exclusive and dangerous. Adopting the function division method, modern urban planning separates machinery production from urban life, thereby resolving the spatial contradiction between man and machinery to a large extent.

Scale: Technology progress allows urban structures (including buildings) to become larger and larger, namely, a single building is oversized. Then, how is the oversized scale coordinated with human scale? This problem can be solved in two respects: technological respect - make indoor space part of outdoor space, and have outdoor space become three-dimensional. Social respect - emphasize mixed development. Thus, the concepts of designs such as urban complex and vertical city arise in response to the proper time and conditions.

Speed: due to urban expansion, demand for fast traffic is increasing day by day. In such case, the speed of machinery and that of man must be well coordinated. The main measures include: hierarchical road system, including the express way, trunk road and secondary trunk road, and feeder road, the velocity and flow of automobiles reduce to human scale; traffic hub - transfer center with different speeds; planning methods for shunting pedestrians and vehicles, etc.

From the viewpoint of urban waterfront space, multi-dimensional, multi-level and coordinated waterfront space means returning to the humanized waterfront space. Here, we need to solve three core problems: sharing of waterfront space, accessibility of waterfront space and safety of waterfront space.

2.1 Sharing of Waterfront Space

A core issue of sharing is the mixing function. The contents of human activities are determined by the function. Introducing public activities can ensure that waterfront space is shared and thus is dynamic. Another issue of sharing is the openness of space. In this regard, modern engineering technology provides strong support for realizing the dream space, including 3D development of space, alternation and permeation of indoor and outdoor space, and design of alien space. These offer omnipotent means to the open and sharing waterfront space with extreme experience.

Successful practice of the inner harbor in Baltimore shows that the introduction of public activity space is of importance to the waterfront space vigor, and the composite and multiple function layout can enhance the sharing of waterfront space.

2.2滨水空间的可达性

滨水地区经常是交通要道通过的地区，也是人流活动聚集区，有时还承担水陆换乘的功能，是尺度冲突比较严重的地区。首先必须处理好过境交通和内部交通、步行和车行之间的关系。同时，在滨水地区尽量鼓励和推行公交，代替私人小汽车，以简化交通。不可忽视的是，滨水空间可达性的一个关键议题就是滨水交通干道的设计，滨水交通干道的处理对滨水地区的可达性和价值挖掘有至关重要的作用。厦门环岛路就是一个比较成功的案例。

首先环岛路的选线能够联系主要景观特色地区：包括市区商业中心、港口空港、大学科研区、旅游度假区、商业服务和居住区等，把厦门市最有特色的景观点都联为一体。

其次环岛路通过处理好路和水的关系，有效开发了滨水地段的内在价值。

根据和水体的距离，梳理出环岛路的3种滨水关系，包括临水型、亲水型、和离水型。

（1）临水型——道路距水边<50米

临水型道路主要用于用地限制地段、老城区(历史形成)、特殊地形、特殊工程等，由于临水型道路直接和水接触，占据了人的亲水空间，因此需要进行控制，其设计要点包括：

·道路不宜太宽（<50米），弱化对滨水空间的割裂作用。

·有针对性地采取交通控制措施，保证人流可以更安全有序地穿越道路。

·道路红线范围内要尽量设置人行步道和广场，为人提供安全亲水的步行空间。

（2）亲水型——道路距水边50—300米

在用地充裕地段，通常交通干道后退水体一定距离，以留出亲水地块。这些亲水地块可以用作公园、商业、文化、居住以及生态保护区。设计中要结合用地功能，强化通水走廊和滨水开放空间设计，以获得吸引人的滨水体验。

（3）离水型——道路距水边>300米

离水型道路和水的关系比较薄弱，通常发生在用地保留地段，如大型基础设施用地、生态保护地等。设计中经常运用接入支路或是引进水体的方式，来建立水和道路的联系。

最后环岛路还通过针对性的道路断面设计，合理应对功能和地形的要求，并有序安排了车流、人流、自行车流的活动空间，成功地打造一条集道路交通、风景旅游、岸滩环保整治为一体的城市景观道路。

2.2 Accessibility of Waterfront Space

The waterfront, where vital communication lines often traverse and stream of people concentrate, sometimes also performs the function of transfer between land and water and meets a serious scale conflict. First, we must handle the relationships well between through traffic and internal traffic, between pedestrians and vehicles. Meanwhile, we will try to encourage and promote public transport in the waterfronts to replace private cars and thus to reduce traffic. What is to be noted is that a key issue of waterfront accessibility lies in the design of waterfront trunk roads. The distribution of waterfront traffic trunk roads plays an important role in the accessibility and environmental quality of the waterfront. Xiamen rotary island road is a successful case.

To select the waterfront road route, ensure that it is able to connect the main landscape areas with characteristics, including the business center of the urban area, airport of the port, university scientific research area, tourist resorts, business service and residential areas, namely.

The waterfront road must handle the relationship with water well to maximize the value of waterfront area.

According to the distance between road and water, the rotary island road has three waterfront relationships:

(1)Bordering-the-water type - The distance between road and waterside is less than 50 m.

The bordering-the-water type road is mainly used for the areas with restricted land, old cities (formed in history), special terrains, special engineering, etc. Since this road contacts water directly and occupies water-enjoyable-space, it should be controlled. The key points for design include:

·The road should not be too wide (less than 50 m) to weaken its separation from waterfront space.

·Control the traffic flow. Adopt the traffic control measures specifically to ensure that stream of people can pass through the road more safely and orderly.

·The waterfront should be set with sidewalks and squares, which provide safe, water-enjoyable walk space.

(2) Water-enjoyable type - The distance between road and waterside ranges from 50 m to 300 m.

In the area with abundant land, the trunk road usually recede a distance from the water to leave water-enjoyable land. The water-enjoyable land can be used as the park, business, culture, living and ecological protection zones. According to the land use function, the open space design can be intensified to get the attractive waterfront experience.

(3) Away-from-water type - The distance between road and waterside is more than 300 m.

This section of road, usually located in reserved development areas, e.g. large infrastructure land, eco-preservation zone, has a weak connection with waterside. Branch accesses or the introduction of water are measures often used in the design process to establish connections between water and the road.

The section design for the rotary island road responds rationally to the requirements of function and landform. The road leaves sufficient space for vehicles, pedestrians and bicycles, creating an urban landscape road integrating transportation, tourism and shore environmental remediation functions.

2.3 滨水空间的安全性

安全性是滨水开发的基础，滨水地区开发必须处理好与防洪设施以及环保的关系：开发滨水地区，必须和水文部门密切合作，认真研究开发工程对海水、湖水的潮汛及泄洪能力的影响，因此，开发滨水地区比一般地区需要更多的工程技术支持。采用较多的设计手法是将岸线分成两个不同的竖向标高层，不仅建设了满足防洪要求的防洪堤和防洪墙等防洪工程，更实现了亲水性的营造：高的岸线与新开发的建设用地地面标高相平，低的岸线基本与常年水位相平，并在不同的河段设置堤坝，将四季不同的水位维持在相对一致的高度。另一方面，提高滨水地区及水体的环境质量也至关重要，很多成功的滨水开发都是先从治理水体着手，唯有良好的水环境，才能吸引更多的开发商和投资者。Suntory 美术馆位于日本大阪湾南部的天保山海港村，整栋建筑被置于一个抬高的平台上，建筑与大海之间的护岸处理成渐次展开的台阶广场，使通常将人与海隔开的堤防变成亲水性的公共空间，在这里可以感受到自然的气息、波涛的声响、夕阳的沉落，仿佛是一座海的剧场。

2.3 Safety of Waterfront Space

Safety is the basis for waterfront development. Therefore, relationships between waterfront development and flood control facilities as well as environment protection must be carefully dealt with. Waterfront development must cooperate closely with the hydrological department, and it's necessary to carefully research the influence of development engineering on the tidal flood and flood carrying capacity of seawater and lake water. Therefore, to develop waterfronts requires more engineering technical support than to develop common areas. The frequently-used design technique is to divide the coastline into two different vertical elevation levels. This not only builds the flood control engineering such as dyke and anti-flood wall, which meets the flood control requirements, but also creates the water-enjoyable space: the high coastline and the ground elevation of newly developed construction land are level; the low coastline and the water level in the ordinary year are basically level; different river sections are set with dykes to maintain different water levels in four seasons the relatively same height. Meanwhile, it is crucial to improve the environmental quality of waterfronts and water body. Many successful waterfront development cases begin with water body governance. Only good water environment can attract more developers and investors. Suntory Art Gallery is located in the seaport village of Mount Tempo in the south of Osaka Bay in Japan. The whole building is located on a raised platform, and the bank protection between this building and the sea is arranged as a gradually unfolded step square, so that the dyke between people and the sea becomes the water-enjoyable public space. Here, you can feel the nature smell, sounds of waves and decline of the setting sunset as if it were a theater of sea.

3 合乐项目实践介绍(合乐公司滨水项目解读)

3.1 宁波湾头地区空间形态控制规划

III Halcrow's Practice

3.1 Spatial Regulatory Plan for Wantou Area, Ningbo

湾头地区位于中心城区的北部3.3 公里，是宁波市三江六岸的重要组成部分，同时又位于未来由杭州湾跨海大桥进入宁波中心城区的门户位置，具有十分优越的地理区位和资源优势。随着宁波中心城的快速发展，作为城市后花园的湾头地区面临着前所未有的发展契机。规划以绿色为背景，以水为基调，建设宁波市最高档次的具有商务、居住、娱乐、购物、健身等复合功能的，24小时活力的城市休闲商务区——生态城市滨水RBD。

Wantou area, which is 3.3 km away from the north of the downtown, is an important part of "Three river-six Shore" in Ningbo. Sitting in the gateway area, through which Hangzhou Bay Bridge enters the downtown of this city, this area has a superior, geographical location and resource advantage. As the central urban area of Ningbo grows fast, Wantou faces the unprecedented development opportunity as the rear garden. With green as background and water as keynote, this plan intends to build the top ecological urban waterfront RBD in Ningbo which embraces complex functions such as business, living, recreation and shopping and fitness, and does business all day.

规划理念包括：

（1）RBD 休闲商务区

RBD 是英文Recreational Business District 休闲商务区的缩写。意为城市中以旅游者为对象的购物休闲娱乐之地。是针对城市旅游，为满足涌入城市的季节性游客的需要，在城市内集中布置饭店、娱乐场所、新奇物和礼品商店的街区，即以城市商业中心为基础发展而成，供本地市民和外地游客休息、娱乐、休闲、观光和购物的区域。根据国内外有关城市RBD 的研究，城市RBD 主要包括以下一些内容：广场、公园绿地、步行系统、博物馆、购物中心、历史地段、游乐园、体育场馆、娱乐场所、文化设施等。

（2）垂直城市的构思

垂直城市是大城市扩张而形成的多中心的城市结构模式的衍生产物，它赋予城市各次中心鲜明的地域特色，有效地疏导城市交通，提升城市综合功能和改善城市形象。

垂直城市通常都具有以下几个特征：

- 位于城市的交通节点，交通组织完善，具有区位的优势。
- 现代服务功能集聚，配套完善，涵盖了办公、商业、文化、居住等多功能复合发展。
- 高密度发展，空间利用率高，地上地下充分利用。
- 公共空间开敞，人性化设计，成为社区的地标。
- 协调各方利益，实现资源共享，整体效益最大化。
- 创新的技术和设计，引导发展潮流。

The plan concept contains:

(1)RBD

RBD, the abbreviation of Recreational Business District, means the place of shopping and recreation in a city which serves tourists. To meet the needs of seasonal tourists flocking into a city, it is a city block arranged as home to concentrate restaurants, places of entertainment, and novel articles and gift shops, that is, based on the urban business center, RBD grows as an area for rest, recreation, leisure, tour and shopping of local citizens and non-local tourists. According to the domestic and foreign researches on urban RBD, it mainly includes squares, park greenbelts, pedestrian systems, museums, shopping malls, historic sites, amusement parks, sports venues, places of entertainment and cultural facilities, etc.

(2)Concept of Vertical City

The vertical city is a derivative of the polycentric urban structure model formed due to expansion of large cities. Giving the sub-centers of city clear regional characteristics, it effectively eases the urban traffic, enhances the urban comprehensive function and improves the urban image.

Generally, the vertical city has the following features:

·Located in the urban traffic node, having perfect traffic organization and location advantages.

·Gathering modern service functions and perfect supporting facilities, with composite development of multiple functions such as offices, business, culture and living.

·Achieving high-density development, and providing high space utilization with full use of ground and underground.

·Having open public space and humanized design, becoming the landmark of the community.

·Coordinating the interests of each party, sharing resources and maximizing overall benefits.

·Having innovative technology and design, and leading the development trend.

（3）24小时城市活力区的营造

24小时活力城市的概念是由传统的8小时概念引申而来。在西方发达国家过度的郊区化背景下，传统的城市中心以办公功能为主，功能单一造成夜晚“死城”现象，同时造成许多社会问题，成为最大的症结所在。新都市主义的兴起提出了24小时活力区的概念，即8小时外，原办公区域内仍有跃动生气。设想的关键在于将传统70%办公比例下降到50%，除增加配备文化、商业、娱乐功能外，还要满足一定的居住需求并使其成为核心区内闹中取静的独特场所。同时由于人的活动往往是混为一体的，城市功能也因而应具备极强的混合性，而无法被一一孤立开来。因此，24小时的活力城市是指24小时消费、24 小时经营、24小时活力、24小时不夜城。

（4）滨水生活带

规划基地与城市中心临近，三面环水，加上内部水网发达，进行滨水地区开发条件极为有利。规划充分利用滨水特色，将这一资源价值最大化、最优化。建议将水体引入用地内部，结合生态绿地和城市开放空间，结合该地区主要交通线路，并在中心滨水区注入多重功能混合综合性城市活动区域。同时利用河道与绿色开放空间，创造多种不同形式、或自然或人工水体和滨水岸线，动静结合，收放有序，将地块内部水面与外围江河通连成一体。

设计中应遵循以下原则：

1）考虑滨水岸线足够的发展腹地，避免薄型带状发展

2）保持滨水岸线及公共活动的连续性

3）最大限度地提供看水、近水、玩水的设施与条件

4）考虑防洪堤的设置，稳定水体的常年水位

5）与旅游、游憩规划结合，协调用地与功能，中心紧凑、适度混合。

6）创造和谐高效的交通与步行系统，与观光游览系统相结合，人车分流。

7）尊重传统文化，突出对人的关怀，营建广场、公园等帮助人交流的空间，限制机动车的使用，创造生活氛围。

8）注重环境营造，注重外在形象，营建具有地标作用的特殊建筑物。

9）与原有社会及城市肌理相融合，创造尺度适宜的社区单位。

(3) Creating 24-hour Dynamic Urban Area

The concept of 24-hour dynamic city is derived from the traditional 8-hour concept. Under the background of excessive suburbanization of the western developed countries, traditional urban centers focus on the office function, and thus their single function results in the “dead city” in the night-time, and cause many social problems, thereby presenting the greatest crux. As new urbanism rises, the concept of 24-hour vigorous area is put forward, that is, beyond 8 hours, the original office area remains vigorous. The key of this concept is to reduce the traditional office proportion from 70% to 50%. In addition to adding the culture, business and recreation functions, this concept also needs to meet the living demand and to make this area a distinctive place which remains quiet in the noisy core district. Given that people's activities tend to be mixed, urban functions should also do so highly, but not be isolated each other. Therefore, a 24-hour vigorous city refers to a sleepless city, where consumption, operation and vigor exist all day long.

(4) Waterfront Life Zone

The planned base is close to the urban center, and is surrounded by water on three sides. Developed internal water system provides favorable waterfront development conditions for this base. Making full use of the waterfront characteristic, this plan maximizes and optimizes this resource value. It is recommendable to lead the water to the land inside and to set up the comprehensive urban activity area with mixed multiple functions in the central waterfront in line with the ecological greenbelt and urban open space as well as locally main transport lines. Meanwhile, the rivers and green open space should be used to create natural or artificial water and waterfront coastlines in different forms, to combine or retract them orderly in order to integrate the internal water of the land with the external rivers.

The design should keep to the following principles:

1) Ensuring that the waterfront coastline has enough development backland, avoiding the development of thin type strip.

2) Maintaining the continuity of the waterfront coastline and public activities.

3) Providing the facilities and conditions for watching water, being close to water and playing with water to the greatest extent.

4) Considering the setting up of dyke to stabilize the water level all the year round.

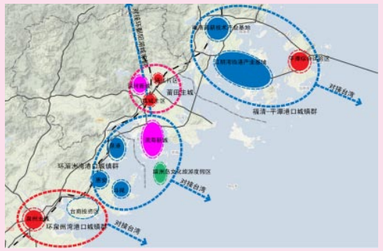
5) Combining with the tour and recreation plans, coordinating the land use and functions, and delivering the central compactness and moderate mixture.

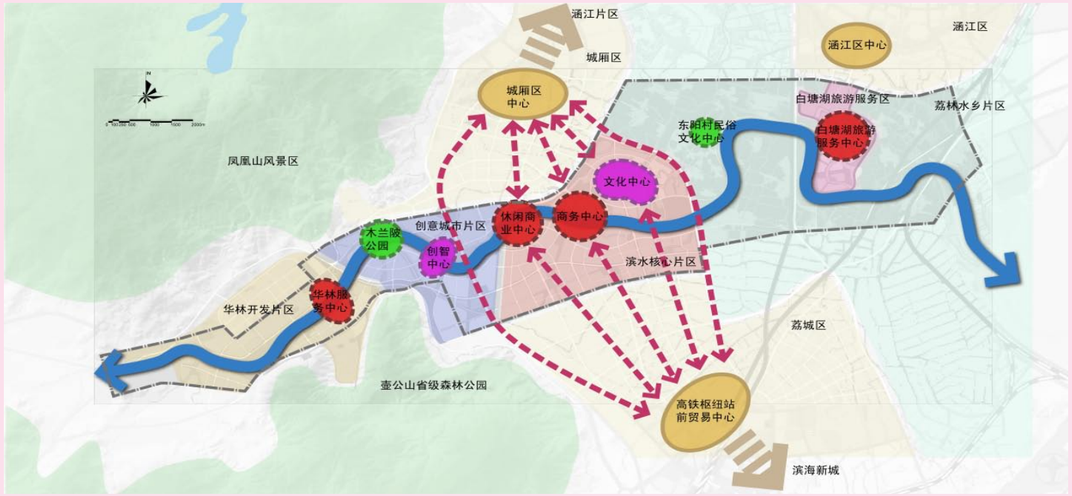
6) Creating harmonious and efficient traffic and pedestrian system, combining this system with tour system, and shunting pedestrians and vehicles.

7) Respecting traditional cultures, highlighting the care for people, building the space such as squares and parks to facilitate interpersonal communication. Restricting the use of motor vehicles and creating life atmosphere.

8) Stressing environment creation, emphasizing the external image, and building the special landmark building.

9) Integrating with the original social and urban texture, and creating the community unit with appropriate scale.





3.2 莆田木兰溪

木兰溪沿岸地区是未来莆田主城核心发展区的核心地带，它的发展对于莆田产业升级和城市空间的发展衔接都具有决定性的意义。规划用地东西长约20公里，南北向最大宽度约为5公里，用地总面积59.62平方公里。

3.2.1 城市发展领袖——构筑卓越的城市中心区域

——“海峡西岸现代服务业走廊的明珠，大湄洲湾地区的城市核心功能带”

木兰溪沿岸地区的区域特征应是反映21世纪大湄洲湾地区的经济和空间特征的新型城市中心，是一个现代化的、富于创新活力和进取精神的、具有舒展明朗的空间环境和独特个性的城市中心区域。她的发展对于提升莆田的城市吸引力，实现城市功能和空间的跨越式发展都有决定性的意义。

在当前的发展背景下，莆田市急需要塑造一个新的城市中心区，成为市域经济的领袖，为市域其它功能片区提供发展服务。规划区以其地理中心的优势、周边成熟的交通优势、城市建设基础等优势通过积极发展金融、信息、管理、研发、商务、展览、会议、流通、旅游服务、房地产等新型服务业，为区域提供多样化和高品质的服务。一方面能够壮大莆田市的第三产业，避免单纯通过港口工业的刺激而形成城市的重工业化发展；另一方面也可以使市域产业分工与协作更为合理，增强市域经济的联动效应。积极培育和发展新兴服务产业，形成莆田经济发展的创新中心与服务中心。

在完善莆田区域大旅游网络构架的基础上，主动积极营造内部都市旅游圈，整合荔林水乡、洋尾省级历史文化名村、木兰陂、宁海桥、梅妃故、白塘湖里等近郊旅游资源，对外吸引游客，提升城市形象；对内提高居民生活休闲质量，扩大内部消费市场的旅游示范服务中心。

3.2 Mulan River, Putian

The coast of the Mulan River is the core of the core development of the main urban area of Putian. Its development is crucial to the industry upgrading and urban space development connection of Putian. The planned land is about 20 km long from east to west, and up to 5 km wide from south to north, with the total planning area of 59.62 km²

3.2.1 Urban development leader - build the remarkable urban central area.

- The bright pearl of modern service sector corridor on the west side of the straits, and urban core function zone in the great Meizhou Bay region.

The area characteristics of the coast of the Mulan River should reflect the economic and spatial features of the great Meizhou Bay region in the 21st century. As a new urban center, this is a modern, innovative and enterprising area, which has stretched and clear space and unique characters. Its development will play a decisive role in enhancing the urban attractiveness of Putian, and achieving the leapfrog development of urban functions and space.

In the current development situation, Putian city needs badly to build a new urban central area, which will become the leader in urban economy and serves the development of other function districts in this region. With the geographically central advantage, mature surrounding traffic advantage and urban construction base, etc., the planning area provides diversified, high-quality services to this region by vigorously developing the new service sector, including finance, information, management, R&D, business, exhibition, conferences, circulation, tourist services, and real estate. On the one hand, it can expand the tertiary industry of Putian, and avoid the heavy industrialization due to simple stimulation by the port industry; on the other hand, it can make the industrial division and collaboration of this region more reasonable, thereby boosting the linkage effect of urban economy. By actively cultivating and developing emerging service industry, this area can form the innovation center and service center for economic development in Putian.

On the basis of improving the large tourism network architecture of Putian, this planning area actively builds the internal urban tourism circle, puts together the tourism resources of suburbs such as lychee forest region of rivers and lakes, Yangwei known as a provincial level, historic and cultural village, Mulanbei, Ninghai Bridge, Princess Jiang Caiping's Hometown, and Baitang Lake to externally attract tourists and enhance the urban image, and to internally improve the life leisure quality of residents and expand the tourism demonstration service center of internal consumption market.

3.2.2 回归生态人文——当代莆田城市精神的新坐标点

——“荔林文献名邦、蘭溪水岸新城”

莆田是人杰地灵、文化底蕴深厚的“文献名邦”，木兰溪沿岸地区的建设将尊重人文和自然的文脉传承，使之成为一个生态环境优美、连接历史和未来，体现当代莆田城市精神的新坐标点。

规划一方面保留并突出荔林水乡、文献名邦之传统，另一方面构建新的城市核心，推动区域产业发展。整个规划区域划分成四个功能区段：都市产业片区、创智新城片区、滨水核心片区和荔林水乡片区。整个规划区域内，沿江设置八个各具特色的城市公共活动中心：商务中心、文化中心、休闲商业中心、创智中心、木兰陂公园、华林服务中心、东阳村明清建筑群、白塘湖旅游服务中心。以木兰溪为线，串珠引玉，创造出开放共享的城市滨水空间；以城市主干道和快速公交通道为联系轴和发展轴，加强与城厢区、高铁枢纽和滨海新城之间的联系。

规划绿化水系系统呈现“一溪为线，水绿成网”的格局。以木兰溪为主线，以滨水带状公园、带状城市公园（生态绿化通廊）、街头绿地等各类带状绿地及生态通廊串联城市内部的各个主题公园，同时将凤凰山风景区、壶公山森林公园和城市绿心生态农村等外围自然生态资源引入城市空间。




3.2.2 Return to Ecological Environment and Humanism - New Coordinate Point of Contemporary Urban Spirit of Putian

"Literature state of lychee trees, New town along Mulan River"

Putian is a well-known literature state with outstanding people and brilliant cultural background. The construction of the coast of the Mulan River will respect the inheritance of humanism and context, and make this area a new coordinate point, which has a good ecological environment, connects the history and future, and reflects the contemporary urban spirit of Putian.

This urban plan is to reserve and highlight the tradition of lychee forest region of rivers and lakes and well-known literature state, and to build the new urban core and push the regional industry development. The whole planning area falls into four function areas: urban industrial area, innovation and intelligence new city area, waterfront core area and lychee forest area of rivers and lakes. In the whole planning area, eight characteristic urban public activity centers are set up along the river, namely, business center, cultural center, center for business and recreation, innovatiion and intelligence center, Mulanbei park, Hualin service center, architectural complex in the Ming and Qing dynasties in Dongyang Village, and Baitang Lake tourist service center. Along the Mulan River, this area is to create the open, sharing and urban waterfront space; to strengthen the contact with Chengxiang District, high-speed rail hub and coastal new city through urban main roads and high-speed public transport lanes.

The planning green water system presents the pattern of "green water network with a river as a mainline". According to the planning, centered around the Mulan River, this area connects various greenbelts and ecological corridors, including waterfront belt park, urban belt park (ecological green corridors) and green spaces in the streets, and theme parks in the city in series. Meanwhile, it introduces surrounding natural, ecological resources, including Pheonix mountain scenic spot, Hugong Mountain forest park and urban green eco-village, into the urban space.

3.2.3 构筑水岸生活——新的城市空间，新的城市生活

——“凡是国际上著名的城市，总有一条著名的河流与之相随相伴”

木兰溪是莆田的母亲河，其宽广的胸怀为莆田的城市发展提供了新的空间形式，那就是水岸城市空间的建设。滨河城市和滨海城市是未来莆田两大特色主题，由此构筑的水岸城市生活将给市民带来全新的体验，塑造新的生活模式，并促进更加开放、更加共享的城市精神的培育，沿木兰溪两岸，将是未来莆田新的城市地标。

城市设计强化滨水地区的共享性，把人的活动引向滨水地带，构建滨水的城市生活平台，把亲水的体验融入各种活动之中，塑造新的水岸生活模式。通过滨水商业街、建筑底商、滨水休闲设施、公园和广场等，使城市滨水区始终充满活力，成为公共活动的中心。

规划尊重本地区既有的自然环境，在凤凰山、壶公山，及木兰溪水系的生态背景下，构筑“山水相望、城乡融合”的整体城市意象。以滨水核心片区为重点，该区包含面向莆田全市服务的市级休闲商业核心圈、商务金融核心圈、文化休闲核心圈，以商业、商务和文化休闲为主要功能；特别关注水的形态塑造，结合自然地形，呈现出“岛、岸、湖、网”等多种滨水空间形态，带给人丰富空间体验，开放、通达、包容、悠远。水渗透到每个角落，带给这个城市新的空间，新的生活，新的精神。

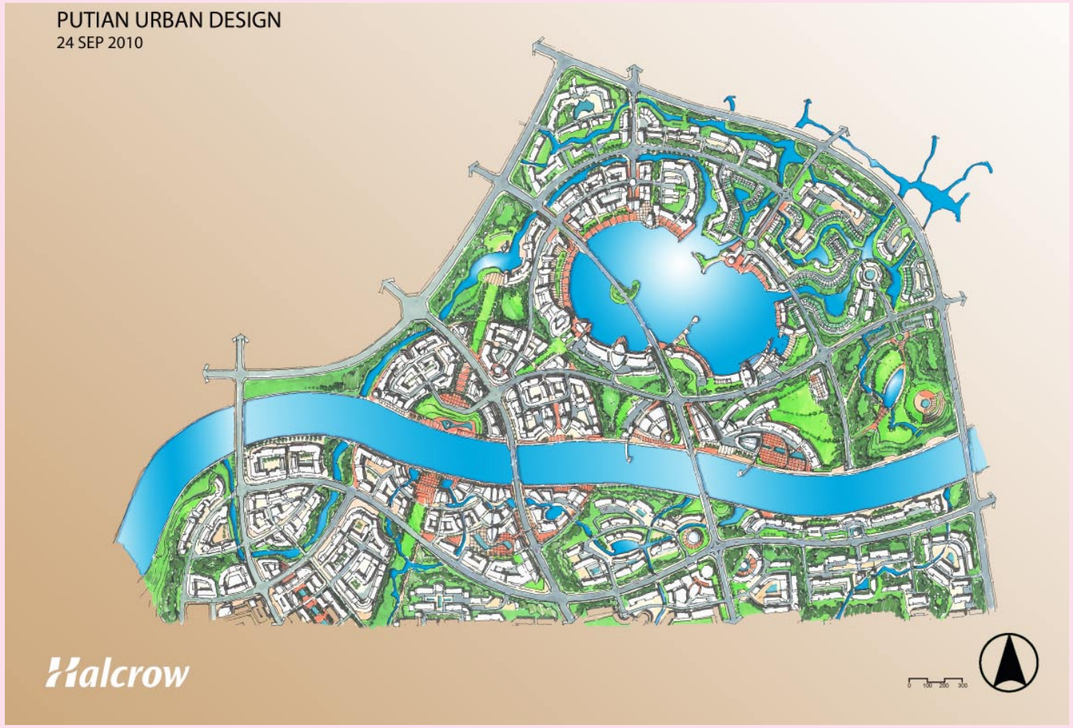
3.2.3 Building waterfront life - new urban space and new urban life

"Any internationally noted city is always accompanied by a famous river."

As the mother river of Putian, the Mulan River provides a new space form to the urban development of this region, that is, construction of waterfront urban space. The city along a river and coastal city will be two characteristic themes of Putian in the future. The waterfront urban life built on this basis will bring new experience to citizens. Putian will build a new life mode, promote the cultivation of more open and more sharing urban spirit. Both sides along the Mulan River will be a new urban landmark of Putian in the future.

This urban design intensifies the sharing of waterfront. On the one hand, it builds the urban life platform of waterfront by leading people's activities to the waterfront; on the other hand, it creates a new waterfront life mode by integrating water-enjoyable experience into various activities. Through the waterfront business street, buildings with ground floor shops, waterfront recreation facilities, parks and squares, etc., this design makes the urban waterfront always vigorous and the center of public activities.

Respecting the existing natural environment, this planning design intends to build the overall urban city described as "mountains overlooking rivers; integrating city and countryside" against the ecological background of Pheonix Mountain, Hugong Mountain, and the Mulan River system. Centering around the waterfront core area, this planning contains the municipal recreation business core circle, business finance core circle and culture recreation core circle, which serve the whole Putian, with business, commerce and culture recreation as main functions. It pays special attention to water forms, presents multiple waterfront spatial forms embracing "islands, shores, lakes and network", and thus brings rich spatial experience: open, accessible, inclusive and long-standing. Here, water is available everywhere, creating a new space, new life and new spirit for this city.



3.3 团泊水城

3.3.1 项目背景

天津市——中央直辖市，环渤海地区经济中心，中国北方最大的沿海开放城市。团泊新城作为天津11个新城之一，位于天津西南部，总用地面积约为47.8平方公里，是天津市向南延伸的生态、居住、文化、旅游、休闲的居所。本次规划是以现代多样化的生活模式为线索，打造集行政、教育、体育、商业、文化、居住、休闲为一体的宜居水城。

3.3 Tuanbo Water City

3.3.1 Project Background

Tianjin city, a municipality directly under the central government and the economic center of Bohai coastal region, is the largest open coastal city in north China. As one of Tianjin's 11 new cities, Tuanbo new city, located in southwest Tianjin, covers around 47.8 km², is the place for ecology, living, culture, tourism and recreation in south Tianjin. Using the modern diversified life mode as a thread, this planning aims to build the livable water city, which integrates administration, education, sports, business, culture, living and recreation.

3.3.2 规划理念

（1）新城开发

充分利用水资源，构建以水为主的城市空间和景观带，营造以人为本、优美舒适的集生活、工作、休闲娱乐为一体的城市环境。必须融入周边地区的整体环境中，协调互补，同时突出自身环境特色。

以交通站点和市民广场形成公共空间结点，标志性建筑物构成景观门户结点，水道、绿廊、步行街组成街道网络，形成特色鲜明的公共空间形象。

针对各类消费群体，提供多样化的居住生活、商业办公、休闲娱乐场所和消费层次选择，以聚集人气，满足不同的需求，降低市场风险。

根据当地条件，合理引入产业开发，形成产业与人口不断升级和提升的良性循环。

通过对生态环境和水资源的保护，提高地区环境水品质，促进地区价值的整体提升。

（2）滨水发展

注重滨水地区开发与城市整体的关系，使滨水地区与城市更好地融合，将城市引向滨水地区。

鼓励推行公交和步行优先的交通组织，吸引更多的步行人流，为沿街的商业设施和城市公共空间聚集“人气”，促进经济社会的互动发展。

多样化的滨水岸线处理，形成变化丰富的城市风景线。在滨水地区，将商业零售、餐饮娱乐、办公居住等功能合理地组织在一起，使之产生一种持久的活力，增加新开发区的吸引力。滨水地区应该是开放的、共享的，必须提高公众可达性，让所有市民共享滨水地区，从而取得良好的社会效益和经济效益。

在重要节点设置标志景观和建筑物，形成中心区的特色景观节点。一两个有魅力的主体建筑可以形成整个滨水开发区的地标，同时树立整个项目的风格。

（3）商业中心

导入体现健康生活和创新生活及消费理念的业态，注重休闲空间、交流空间、绿化景观空间的塑造。

文化演出及其他公共活动的举办可提升项目影响力及辐射力，注重消费与社会公共活动的结合。

增加业态的丰富多样性，满足各年龄、各层次消费者的需求，并延长其停留时间。

利用滨水环境优势，在建筑设计和休闲空间的打造上创新亮点。

功能业态的配置及空间的设计应考虑人性化的需求，如设置贯穿的室内商业步行街。同时提高娱乐设施、公共文化设施的可参与性。

（4）主题公园

整合利用水上运动中心、周边的商业休闲和旅游文化设施等资源，提升商业价值，并通过增强娱乐休闲等附加值较高的功能消除季节性影响。

除水上运动赛事外，可增加各类展览展示、演出表演、俱乐部活动、体验中心和博物馆等灵活设施，增加游客数量，并保持人流的持续性。

赋予商业及娱乐休闲设施某种特定主题，有利于各项功能的整合及具体项目的设计，提高知名度、吸引力与影响力。

利用本项目滨水的天然资源，结合当地的生活习惯喜好，进行休闲娱乐设施的开发设计。

（5）水上运动场地和设施

团泊水城二期将以水上运动为主题，着力打造能举办各类国际标准水上赛事的场地，包括赛艇/ 皮划艇赛道、激流回旋场地和帆船赛地等。据此，我们收集了历届东亚运动会的基本信息，并参照了2008 北京奥运会水上运动场地的设计标准，以及国际赛艇联合会的场地设计标准，对二期用地中的水上运动场地和设施进行布局和设计。

3.3.2 Planning Concept

(1) New Town Development

Fully using water resources, this project is to build the urban space and landscape area with focus on water, and to create the people-oriented, beautiful and comfortable urban environment, which embraces life, work and recreational functions. It is sure to integrate into the overall environment of the surrounding areas, to coordinate them and complement each other, and to emphasize own environment characteristics.

Forming the public space node at the traffic sites and citizen squares, it allows the landmark building to become the landscape gateway node, sets up the street network composed of waterways, greenways and pedestrian streets, thus building a characteristic public space image.

Targeting at various consumer groups, it provides choices of diversified life, business offices, recreation places and consumption levels to gather popularity,

Meeting different needs and reduce market risks.

According to local conditions, this project reasonably introduces industry development, forming the positive cycle of constant industry and population upgrading.

By protecting the ecological environment and water resources, it improves the water quality of this area and promotes the location value to rise as a whole.

(2) Waterfront Development

This project emphasizes the relations between waterfront development and overall city, makes the water better integrate with the city, and lead the city to the waterfront.

It encourages the traffic with stress on public transport and walk, attracts more people to walk so as to gather popularity for business facilities and urban public space along the street, and thus promotes the interactive development between economy and society.

It also provides diversified waterfront coastline, and makes this place an urban landscape with various changes. In the waterfront, this project reasonably combines business retail, catering and recreation, work and living and other functions, thereby producing enduring vigor and increasing the attractiveness of the new development zone. The waterfront should be open and sharing. It is necessary for the waterfront to improve the smooth public accessibility, allow all citizens to share the waterfront, thus obtain the good social and economic benefits.

At key locations, this project sets up some landmark landscape and buildings, contributing to the formation of characteristic landscapes in the downtown. Here, one or two main charming buildings can become the landmarks of the whole waterfront development zone and establish the style of this project.

(3) Commercial Center

This project introduces the type of operation, which reflects healthy life, innovative life and consumption concept, and emphasizes the building of recreation space, exchange space and green landscape space.

Cultural performances and other public activities can enhance the influence of this project, and pays attention to combine consumption with social and public activities.

This project increases the diversity of the industry condition, meets the needs of consumers of different ages at various levels, and extends their stay time.

It also shows some innovation highlights in terms of building design and recreation space creation.

In this project, configuration of function industry condition and spatial design should ensure the humanized need, for example, set up the indoor commercial pedestrian street. Meanwhile, it should improve the participation of recreation facilities and public cultural facilities.

(4)Theme Park

By integrating and using resources such as water sports center, surrounding business, recreation and tourist culture facilities, this project improves the business value, enhances the recreation and other functions with high added value to eliminate the seasonal influence.

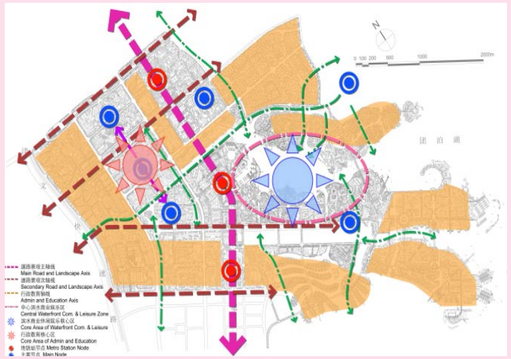
Apart from water sports events, this project can add some flexible facilities, including exhibition and display, performances, club activities, experience center and museum to increase the number of tourists and maintains the continuity of stream of people.

It gives specific themes to the business and recreation facilities. Then, this move is favorable to the integration of various functions and design of specific items, helping improve the popularity, attractiveness and influence of this project.

According to local living habits and likes, this project carries out the development and design of recreation facilities by using the natural waterfront resources.

(5) Water Sports Fields and Facilities

With the theme on water sports, the project of Tuanbo Water City Phase II concentrates on building the fields that are able to hold various water sports events according to the international standard, including the rowing/canoeing track, canoe slalom field and sailing race field. In view of the above, we collect the basic information of all the previous East Asian Games, refer to the site design standards for water sports of the Beijing 2008 Olympic Games and for International Rowing Federation, then arrange and design the water sports field and facilities for phase II land.



3.3.3 规划结构

因地制宜，从基地特征出发，创新地方特质，有机整合水域、湿地、滨水岸线、城市发展空间和发展后备空间等空间序列。方案依托团泊大道形成该片区主要的中心轴线，规划的多条联系干线成为次要轴线；结合运动、休闲、行政、教育、商业和居住等不同功能形成岛状布局，并通过城市道路和景观绿化带偕同串联，水体则形成各功能岛的自然界定。其中，基地中部环绕内湖，形成核心的中心滨水商业区，周边依次分布有不同结构特征的功能岛。

结合不同功能需求、建设使用及运营管理特征，有序组织功能聚集空间。形成主要的城市节点，构建多元开放的城市公共空间体系，充分体现滨水特色，突出核心区，协调外围城区。

滨水地带从整体出发，形成动静相宜的岸线流线和空间结构。内湖北岸延续湿地公园的绿意主题，通过数条绿化廊道，衔接湿地与水域，凸现静谧、优雅的空间氛围与有魅力的亲水功能空间。内湖西岸结合快速交通站点，形成现代高效的、集聚各类城市活动和服务功能的城市活力空间。内湖南岸充分利用滨水岸线，形成水上运动和旅游休闲等特色功能空间，并延伸至团泊湖水域半岛空间。

道路网的密度不仅满足了用地性质和开发密度不同而带来的不同交通量和交通模式的需要，同时也刻画了不同的城市特色。中心地区的商务办公、商业娱乐区以及滨水休闲区路网较密，以使街道尺度更加宜人，同时也增加更多公共临街面，给城市带来充满魅力的生活空间。西侧的居住地块适当增大，但避免超大地块，以创造宜人的邻里尺度。在东侧的休闲度假和活动区域，路网的密度较低，以减小对生态环境和休闲空间的干扰。

3.3.3 Planning Structure

According to local conditions and base features, this scheme provides locally innovative quality, and integrates the space sequence organically, including the water area, wetland, waterfront coastline, urban development space and back-up space for development. It relies on Tuanbo avenue to form the primary central axis of this area, and has multiple trunk lines as the secondary axis. It presents the island layout in line with different functions such as sports, recreation, administration, education, business and living, and connects such functions in series through urban roads and landscape greenbelts, with water being the natural bounds between function islands. According to this scheme, an internal lake is encircled in the middle of this base and thus offers the core waterfront business district. Around this base are function islands with different structures and features.

This scheme organizes the function aggregation space orderly on the basis of different function requirements, construction use and operation features. With main urban nodes, this scheme builds diversified and open urban public space system to fully show the waterfront characteristics, so as to highlight the core area and to coordinate the surrounding urban areas.

As a whole, the waterfront forms the coastline flow-line and spatial structure with appropriate dynamic and static arrangement. The north shore of the internal lake continues the green theme of the wetland park. Through several green corridors, it connects the wetland and water area, and highlights the serene, elegant spatial atmosphere and attractive water-enjoyable function space. The west shore of the internal lake combines with high-speed traffic sites to form the modern efficient urban vigor space with various urban activities and service functions. Making full use of the waterfront coastline, the south shore of the internal lake builds the characteristic function spaces, including the water sports and tourism as well as recreation, and extends to the water area peninsula space of the Tuanbo Lake.

The density of road network not only meets the needs of traffic volume and traffic mode caused by different land property and development density, but also shows the different urban characteristics. Dense roads are available to the business office of the central area, business recreation area and waterfront recreation area, in order to make the street size more pleasant. Meanwhile, here are increased public frontages, which bring charming life space to this city. The land for living in the west is appropriately enlarged, but it is not oversized land to create the pleasant neighborhood scale. The roads are less dense in the east recreation holiday area, so as to reduce the disturbance on the ecological environment and recreation space.

3.4 大连人工岛

大连人工岛是基于大连湾跨海桥隧工程而提出的填海项目，填岛既用于桥隧的转换连接，也有项目资金平衡的考虑。填岛靠近大连主城，和东港商务区隔水相望，因而是城市核心区功能拓展的重要承载地。

规划确定了“岛城联动、功能复合、地标引擎、低碳发展”的规划原则。利用岛屿特点和滨海资源，契合市场趋势，设计标杆项目。在功能定位上，要注重岛屿功能的复合性，确保岛屿内部产业、功能能够实现联动，确保岛屿经济发展的可持续性。在开发旅游项目时，注重社会、经济效益的平衡，注重公众休闲以及旅游发展功能；同时要打造一批标志性项目，增加岛屿的吸引力和影响力。在开发建设上，统筹各项发展功能，选取特色项目，分期开发运营，确保投入产出的平衡。

规划提出“海尚蝶岛”的规划理念，契合大连的文化特色和产业特点， 塑造一个“浪漫、生态、卓越”的国际滨海旅游度假地。包括旅游、商业和居住三大板块，“滨海旅游、休闲度假、时尚娱乐、主题商业、精品酒店、特色餐饮、创意办公和生态居住”八大功能。

在城市设计层面，强调多元化形态的水空间。其面向主城的海岸线，主要布局旅游和公共服务功能，形成和主城对望的景观地标；另一侧海岸线，则安排相对私密的居住功能，也提供了良好的海景岸线。

Dalian Artificial Island

Dalian Artificial Island is a reclamation development based on Dalian Bay Cross-sea Bridge & Tunnel Project. The reclaimed island not only serves as a conversion connection between the bridge and the tunnel, but also balances the funds of the development. Located in the vicinity of Dalian Main Town, the reclaimed island overlooks Donggang Business District across the water, and will become a key area for the function expansion of the urban core area.

Halcrow’s plan identified the development principles, and set some benchmark projects by integrating local resources with market trends. In respect of function orientation for the island, it is critical to ensure the complexity of functions to sustain the development for long-term benefit. When designing tourism products, the balance between social and economic efficiency should be valued. A landmark project is required to enhance the attractiveness and influence of this island development. In the implementation stage, coordination among functions, selection of feature projects, and rational phasing will be the key issues.

The plan is proposed in a concept of “Coastal Butterfly Island” in a purpose to create a romantic, ecological and outstanding international coastal tourism resort in Dalian. The plan is conceived in three sections, namely tourism, commercial and residential; and eight major functions are included, i.e. coastal tourism, leisure & vacation, fashion & recreation, theme commercial, boutique hotel, featured catering, creative office space, and ecological residence.

In the urban design stage, focus is laid on the diversified forms of water space. The coastline facing the main town will be allocated with tourism and public service functions, creating a landscape landmark overlooking the main town. The coastline on the other side will be arranged with relatively exclusive residential components.

第四章：结语

人性尺度的滨水空间是经济价值、社会价值、生态价值的综合体现，在合乐的滨水项目规划中，一直秉承如下的原则；

1、生态可持续发展——以生态环境的保育和拓展作为地区环境建设的根本目标，在城市建设、市政设施、公建配套、旅游休闲等各个环节，充分尊重自然并和谐共处，尤其是在水资源利用和湿地保护方面力求体现“正生态”效应。

2、功能复合原则——为塑就滨水地区的活力，为居住者和游客提供丰富多彩的生活方式与游憩体验模式，将商业、文化、旅游、休闲等多种公共职能，有机的组合在多个相对集中且步行可达的区域，形成城市生活的复合，并促进土地价值的合理提升。

3．开放共享原则——让所有市民共同享用滨水地区，不仅将收到良好的社会效益，也是出于经济效益的考虑。所有成功的滨水开发项目，毫无例外地将直接沿着水体的部分开辟为步行道，而让滨水的建设项目后退岸线，在不影响使用者远眺水景的情况下，让出了更多的岸线吸引人们的活动。

4、重视滨水空间的可达性——良好的可达性才能保证滨水空间的开放共享，必须优化多元化交通组织，因地制宜，有序组织道路交通和水陆换乘；处理好到达交通和穿越交通的关系，并尽量减少穿越型交通干道对滨水景观区的影响，

5．公共交通和步行系统优先原则——

6、保护特质风貌和历史遗迹——尊重地方传统文化，整合历史遗存与现代建设，强调滨水空间环境的整体性；

IV Conclusion

The human-scale waterfront space is the comprehensive reflection of economic value, social value and ecological value. The waterfront project planning of Halcrow Company always follows the following principles:

1. Ecological sustainable development- this project takes the cultivation and expansion of ecological environment as the basic objective of regional environment construction, fully respects the nature and delivers the harmonious coexistence in respect of urban construction, municipal facilities, auxiliary public facilities and tourism and recreation, and reflects the "positive ecological" effect through utilization of water resources and wetland protection in particular.

2. Function compounding principle- to build the vigor of the waterfront and provide the rich and colorful life styles and recreation experience modes for residents and tourists. This project organically combines multiple public functions such as business, tourism and recreation in multiple relatively concentrated areas reachable by walk on foot, compounds the urban life, and promotes the reasonable rise of land value.

3. Open and sharing principle- This project allows all citizens to share the waterfront together, which will not only obtain good social benefits, but also gain the economic benefit. Without exception, each successful waterfront development project will provide a pedestrian street in the area along the water body, and retreat the coastline of waterfront construction project. Thus, under the condition of not influencing the users to overlook waterscapes, the project will leave more coastlines to attract the activities of people.

4. Emphasis on waterfront space accessibility- good accessibility can ensure that the waterfront space is open and sharing. This project must optimize diversified traffic organization, and should orderly organize the road traffic and water and land transfer according to local conditions. It needs to handle the relations between reachable traffic and through traffic well and to minimize the influence of the through traffic trunk roads on the waterfront landscape.

5. Priority principle of public transport and pedestrian system– low-carbon transport mode can effectively enhance regional vitality.

6. Protection of characteristic landscapes and historical sites- this project respects the locally traditional culture, combine the historical sites with modern construction, and emphasize the wholeness of waterfront spatial environment.

城市更新与提升规划的探索

Exploring Urban Renewal and Upgrading

1、城市更新的背景

城市更新是城市发展到一定阶段所必然经历的再开发过程，随着经济社会发展环境的不断变化，城市更新也需要以更综合的视角来考量。随着工业化进程的加速，城市更新作为中国城市发展的调节机制正以空前的规模和速度在全国各地展开。如何把握其主要矛盾、基本特征和发展趋势，制定适宜的城市更新政策，成为当前中国城市建设和发展的重要研究课题。本文根据国内外的相关理论研究、实际案例及合乐的相关实践，展开分析和思考，并提出当今城市更新方面的一些建设性意见。

2、相关理论研究

2. 1西方城市更新的历程

虽然更新与改造伴随着城市发展的全过程，但是现代意义上大规模的城市更新运动始于上个世纪50年代的西方国家，以英、美、德、法等发达国家为首。在城市更新半个多世纪的历程中，不同时期，其发展动力、机制、更新对象，更新的重点城市区域及外部表现的特征也各不同。如下表

通过对西方国家的城市更新历程的总结，我们可以发现西方国家关于城市更新的研究，不管从内容的广度与深度，还是城市更新的内涵本身都发生了巨大的变化，从单纯物质形式的更新转向城市社会形态、经济形态的更新，并与环境、公众利益、区域特色等相结合，努力实现城市更新的可持续发展。

1. Background of Urban Renewal

Urban renewal is a redevelopment process, which a city inevitably experiences when it develops to a certain stage. As the development environment of economy and society constantly changes, urban renewal needs to be considered from a more comprehensive perspective. With acceleration of industrialization process, urban renewal as the adjustment mechanism of Chinese urban development is expanding nationwide on an unprecedented scale and at an unparalleled speed. How to grasp the main contradictions, basic features and development trend of urban renewal and to work out the feasible urban renewal policy has been the major research subject of the current Chinese urban construction and development. According to relevant domestic and foreign theoretical research, practical cases and relevant practice of Halcrow Group, this paper puts forward some constructive suggestions on the current urban renewal after analysis and thinking.

2. Relevant Theoretical Research

2.1 Urban Renewal History of the West

Although urban renewal and redevelopment go along with the whole urban development process, the large-scale urban renewal movement in the modern sense began in the Western countries in the 1950s, headed by some developed countries such as UK, US, Germany and France. In different periods during over 50 years of urban renewal, it is characterized by different urban development powers, mechanisms, renewal objects and renewed major urban areas as well as external representation. See the following table

From the summary of urban renewal course of the Western countries, we can find that the research of the Western countries on urban renewal has shown a great change in content width, content depth and connotation of urban renewal, and that it has changed from the renewal of simple physical form to the renewal of urban social form and economic form, and combines with environment, public benefits and regional characteristics, working hard to achieve the sustainable development of urban renewal.

表1 引自彭坤焘/李峰. 城市更新的产业驱动及类型分析. 理想空

Table 1 is derived from “Industry Drive and Type Analysis and Ideal Space of Urban Renewal" written by Peng Kuntao and Li Feng

年代	1950年代	1960年代	1970年代	1980年代	1990年代
发展潮流	重建 Reconstruction	复兴 Revitalization	更新 Renewal	再开发 Redevelopment	再生 Regeneration
主要策略与方向	重建与扩建市镇旧地区，通常依主要计划进行，扩充到郊区发展	继续1950年代方向主题：郊区发展、边缘地区发展、早期旧市区更新	着重局部基地更新（insite renewal）与邻里结构，再持续边缘发展	主要发展结构（全市计划性）、再发展结构（地区或局部性）：都市计划中有旗舰发展计划	更新细部考量，整合形态发展
参与者与关系人	国家与地方政府、私营部门开发商与营造商	公、私部门各半	私营部门为主，地方政府自力发展	私营部门与特殊代理机构，合作开发形态开发兴起	主要为合作型开发
活动的空间层次	地方与特殊地点（基地）层次	区域层次	先是区域与地方层次，既而以地方层次为主	早期局部地方，后期则整个地方为主	区域性策略发展
经济焦点	公共部门投资，少数私营部门参与	继续1950年代策略，直到私营部门开始活跃	公共部门资源退出，私营部门投资	以私营部门开发为主，公共部门辅助	公共部门、私营部门和第三方部门（非赢利组织）平衡参与
社会内容	改善住宅与生活品质	社会福利提升	社区发展	社区发展，以及选择性政府辅助	社区角色日获强调
实质环境重点	改换中心地区与边缘地区	1950年代政策延续/并行旧地区改善计划	强调旧都市地区更新	新旗舰发展策略	比1980年代更为保守，强调传统保存
环境策略	景观规划绿地	选择性改善	环境改善计划/局部政策改善	更宽广环境问题	永续发展观念更获重视

2.2中国的城市更新

2.2.1中国城市更新的历程

比起西方国家，中国的城市更新经历了一个相对更加复杂的过程。如下表：

2.2 Urban Renewal in China

2.2.1 History of China’s Urban Renewal

Compared with the Western countries, China sees the urban renewal experience a relatively more complicated process. See the following table:

年代	解放初期至1970年代	1970~80年代	90年代
政策背景	计划经济	市场经济体制开始发育，但计划经济的发展思想依然贯穿了城市更新的基本过程	经济全球化
社会目标	变消费城市为生产城市； 解决居民最基本的生活问题	改善城市职工住房条件	城市建设与飞速发展的经济保持同步； 城市更新成为产业结构调整的有效手段
主要策略	全力发展重工业，生产项目集中在城市新区。 旧城改造主要着眼于改造棚户和危房简屋。	城市新区划拨建设用地；旧城区用来填空补实。 采用“拆一建多”的开发方式，以最少的资金解决最多人的居住问题。	重新重视城市中心区的更新； 多样性动力机制推动，设立以社会、经济、文化内容等多目标，快速更新； 投资方式由“投入型”转向“产业型”。
环境重点	基本维持原状	强调城市新区的建设	旧城更新重新获得动力
存在问题	旧城区在整体上维持原状，未进行实质性的更新改造。	“外新内旧”，城市空间结构重心不明确； “填空补实”，使城市环境恶化； “拆一建多”，破坏了城市肌理。	城市文脉断裂，空间等级化； 资源配置失衡，基础设施建设不完备。

可以看出，与城市发展呈现高速增长和高速变化的趋势形成强烈反差，中国的城市更新出现了严重的滞后。

From this, we can see that, in striking contrast with fast growing urban development and fast growing change trend, China’s Urban Renewal lags behind.

2.2.2中国城市更新的主要问题

（1）城市化与郊区化二元并存。——城市空间结构失衡

基于完全不同的时空环境，中国不可能完整地重复西方城市化进程。中国当前城市更新的现状是：一方面大量新的产业与居住空间在城市郊区扩张，另一方面老的城市中心仍然具有巨大的经济活力和综合吸引力，城市更新依然是以追逐中心区超值的“超额利润”为重要目标。同时，新区经常会由于吸引力不足导致人气不旺，使得城市新旧区发展脱节。

（2）政府的趋利性与公民意识的缺乏——社会价值准则背离

将为公众谋取利益和提升城市整体竞争力作为城市更新的基本目标，政府往往需要进行净资本投入。目前国内的城市更新，政府往往不是扮演一个公共服务机构的角色，经济利益往往成为城市更新过程中政府追求的首要目标。城市更新成为城市政府牟利的工具，而普通市民被排除在更新决策过程之外，使得城市更新背离了基本的社会价值准则。

（3）全球化与经济利益的冲击——城市特色消失

生产方式的全球化、技术的发展和对经济利益（市场卖点）的追求，使得在城市更新的过程中地域文化的特色逐渐消失。各地追求“国际化典范”，把高楼林立作为城市发展的标志，以致“千城一面”的现象在中国层出不穷。

2.2.2 Main Issues in China’s Urban Renewal

(1) Coexistence of urbanization and suburbanization- imbalance of urban spatial structure.

Based on very different space-time environments, China cannot completely repeat the urbanization course of the West. The status quo of China's current urban renewal is: on the one hand, a large number of new industries and living space expand in the suburban areas; on the other hand, old urban centers still have great economic vitality and comprehensive attractiveness, and urban renewal is still based on the important objective of seeking value-based "superprofit" of urban centers. Meanwhile, due to the lack of attractiveness, new urban areas are often not popular, thereby leading to the deviation between the development of new urban areas and that of old urban areas.

(2) Interest orientation of the government and lack of public awareness- deviation from social values.

To set the basic objectives of urban renewal as seeking interests for the public and improving the overall urban competitiveness, the government often needs to input net capital. As to the current domestic urban renewal, the government usually does not play the role as a public service organization, whereas economic interests often become the primary objective that the government pursues in the urban renewal process. Urban renewal becomes the means of seeking profits for the government,and common citizens are excluded from the renewal decision process. In this case, urban renewal deviates from the basic social values.

(3) Impact from globalization and economic interests- disappearance of urban characteristics.

Globalization of production modes, technological development and pursuit of economic interests (market selling point) lead to the gradual disappearance of regional cultural characteristics during the urban renewal process. "International Model" is pursued everywhere, with buildings in great numbers as the symbol of urban development. Thus, "numerous cities with the same face" emerges endlessly in China.

（4）开发强度与基础设施承载力的冲突——城市环境恶化

在市场经济下，城市更新基于利益动机，多趋向高密度开发，造成人口密度、建筑密度和容积率过高，但是基础设施的负荷能力却没有得到相应的加强和提高。因此，城市更新往往带来了一系列负面效应，如：交通拥堵、绿地减少、地面积水、空气质量差等。

(4) Conflict between development intensity and infrastructure bearing capacity- deterioration of urban environment.

In the market economy, urban renewal is based on the interest motivation, and tends to be the high density development, causing too high population density, building density and floor area ratio. The bearing capacity of infrastructure, however, is not strengthened and enhanced accordingly. Therefore, urban renewal is bound to bring some negative effects, such as traffic jam, greenbelt reduction, excess surface water and poor air quality.

3、城市更新模式

3.1宏观层面

宏观意义上，城市更新的模式一般可分为重建、整建及保护三种。

3.1.1重建（Reconstruction）

即破坏原有结构的基础并建立新的城市规划布局。这种方式最为激进，耗费最大，也是最具有创意性，但进行缓慢，且容易遭受阻难，除非其它模式不可行时才可使用。

重建的典型范例当属二战的大规模“城市更新”运动，在当时由CIAM（国际建筑师协会）倡导的物质规划（Physical Design）为核心的近现代城市规划理论思想的深刻影响下，许多大城市如伦敦、巴黎、慕尼黑等都曾在城市中心拆除大量的老建筑，取而代之的是各种标榜为“国际式”的高楼。以这种方式发展城市虽然给城市中心区带来了一段时期的繁荣，但紧接着就出现了治安、交通等大量的社会问题。

3.1.2整建（Rehabilitation）

即或多或少地从根本上改变原有结构，结构的变化决定于发展的需要，通过开拓空间，增加新的内容以提高环境质量，适合于城市结构尚可继续沿用，但因城市管理不当及城市公共设施未予更新的区域。这种方式较重建模式迅速完成，也可免除拆迁安置的困扰，不需庞大资金而显较缓和的模式，适用于现已衰落，但仍可复原而无须重建的地区或建筑物，除防止其继续衰落外，还应改善其公共服务设施系统与城市环境。

同时，整建模式比较符合上世纪七十年代欧美经济学家提出的“可持续发展”（ Sustainable Development）的思想， 他们关注传统的渐进式规划和小规模的改建模式，重视城市更新的社会意义。因为城市是一个有机体，不能摧毁所有的老建筑，也不能保存所有的老建筑，前者会使地方文脉断裂，而后者会阻碍城市发展的脚步。

3.1.3保护（Conservation）

即保留历史上业已形成的结构总特点而不作过多的改变，对于旧城历史地段，建筑物有健全并充分的保持，区域状态良好，往往会采取保护模式进行城市更新。这种方式最为缓和而灵活，也是耗费最低的办法，是预防性的措施。但单一的采取保护模式往往无法适应以产业发展为导向的经济社会的发展。

3. Urban Renewal Modes

3.1 Macro Level

At the macro level, urban renewal modes fall generally into reconstruction, rehabilitation and conservation.

3.1.1 Reconstruction

Reconstruction means destroying the base of the original structure and establishing the new urban planning layout. This model is the most radical, most resource-consuming and most creative one, but advances slowly and tends to encounter resistances. It shall be adopted only when other models are not workable.

Reconstruction model should be the large-scale "urban renewal" movement after the World War II. In those days, profoundly influenced by the modern and contemporary urban planning theory and thought with focus on the physical design advocated by CIAM (International Congress for Modern Architecture), many large cities, such as London, Paris and Munich, demolished many old buildings in their urban centers, and replaced them with various high buildings advertised as "international style". Although this model brought prosperity to the urban centers for a period, it would soon be confronted with many social problems such as public security and traffic problems.

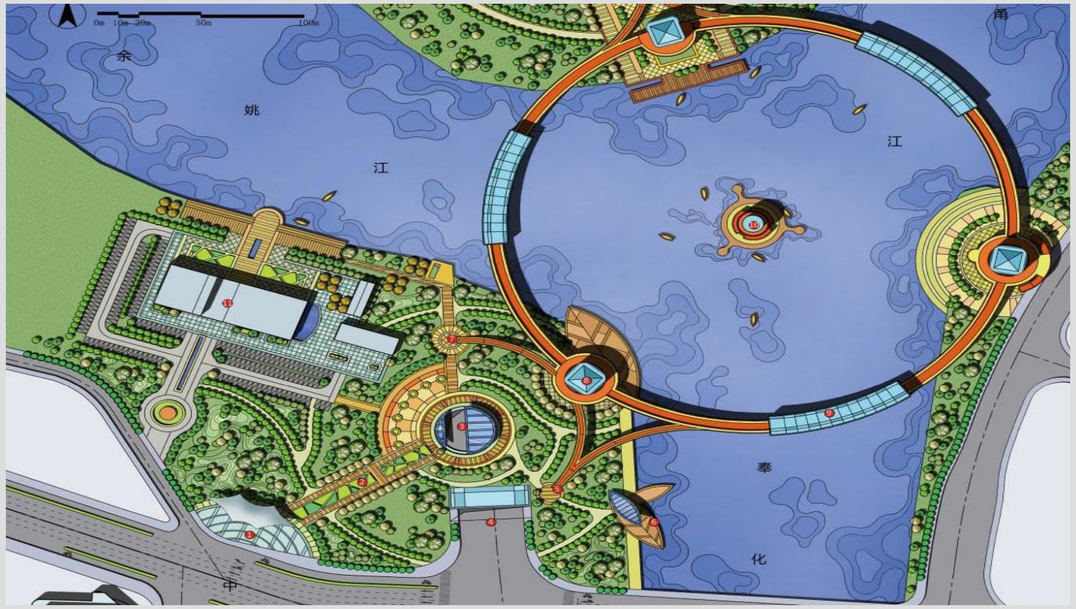
3.1.2 Rehabilitation

Rehabilitation means fundamentally changing the original structure, more or less. Structure change depends on development needs. It is to improve the environmental quality by exploiting space and increasing new content, and applies to the areas where the urban structure can continue to be used while the urban public facilities are not updated due to improper city management. This model completes faster than reconstruction, and is free of troubles caused by demolition and placement. Without the need of huge capital and appearing eased, it applies to the regions or buildings which decline but still can be restored and needn't to be reconstucted. Besides preventing the regions or buildings from continuing decline, this model should also improve the public service facilities and urban environment.

Meanwhile, this model complies with the "sustainable development" idea presented by the European and American economists in the 1970s. These economists paid attention to the traditional gradual planning and small-scale reconstruction mode, and emphasized the social significance of urban renewal. Since a city is an organism, we cannot destroy all the old buildings, nor preserve all of them. The former can break the local context, while the latter can hinder the urban development.

3.1.3 Conservation

Conservation means reserving the general feature of historically formed structures without making many changes to them, and improving and fully maintaining buildings at the historic sites of old cities. For the areas in good condition, this conservation model is often used for urban renewal. As a preventative measure, this model is most mitigatory and flexible, and consumes the least. Single conservation model, however, often fails to adapt to the development of economy and society which orientates towards industrial development.



更新模式	动因	目标	主要策略	存在问题
城市中心区改造更新	原有商业业态与容量无法适应服务化的要求	实现土地的高效集约利用	数量扩张，转变空间组织形态	人口聚集给交通带来的压力； 消费规模扩大使得市中心低价不断攀升。
城市工业遗产改造更新	工业区功能相对独立以及市区低价的不断攀升导致无力扩张，迫使外迁或转型	通过评估和定位，填充合适的城市功能，以带动周边地去区繁荣发展。	公园化、产业园、公共建筑（如博物馆、展览馆等）等。	开发模式单一，统筹协调机制缺乏，资金来源渠道缺乏等。
老旧危房改造更新	由于建筑的寿命因素，影响到安全问题；基础设施配置不足，严重影响居民生活质量。	提高城市形象，改善居民居住条件。	拆、该、留	牵扯到产权、利益协调、公共财政等问题，“老旧危房”改造是一个艰难渐进过程。
“道路”为载体的更新	现有道路无法承载日益增长的汽车数量以及商业区聚集所带来的压力。	提高道路承载力，以及道路的整体形象。	市政改造、景观提升	地价攀升导致道路无法扩展，给交通组织带来挑战； 大宽度给功能复合带来难度。
历史文化风貌区更新	传统建筑环境遭到破坏，导致城市传统空间的丧失和文化的断裂。	赋予历史建筑新的风采与美学价值，同时也是凸显城市的文化底蕴。	延续建筑形式； 置换建筑功能； 延续建筑空间； 提炼历史抽象符号。	过分保守的保护与更新，容易导致历史文化风貌区市区失去应有的活力。
交通枢纽地区的更新	现在交通体系无法满足城市全面发展的需求，城市功能发挥受到很大限制。	依托交通枢纽，发挥其对周边地区的带动作用。	扩建、新建、推倒重建	远离城市中心的交通枢纽短期内对周边的辐射力不大。
滨水地区更新	水运衰退。码头技术更新、旧港口用地空置衰落； 滨水区因其特有的景观美学价值，逐渐成为稀缺性要素。	使城市与水岸结合更为紧密，延续文化与生产作用。	功能置换、景观提升。	统筹协调机制缺乏，资金来源渠道缺乏等。
重大项目推动的更新	大型赛会，政治、经济方面的高端论坛，大型游乐项目等。	提升周边城市地区的区位条件，给城市带来新的推动力	旧建筑改建、拆旧建新、空地新建。	场所再利用面临难题；周边地区基础设施的配备不足等。

3.2微观层面

现代意义上的城市更新已然不是以建筑寿命来衡量，而是由产业变迁所驱动。经济的潮起潮落和产业的兴衰更替决定了城市更新的速度与节奏。因此，土地的区位价值开始凸现，城市在资源循环的逻辑下迈向服务业，城市更新的模式也以产业变迁为导向。

纵观过去30年，我国城市经历了沧桑巨变。随着经济活力释放，消费品过剩成常态，于是，服务业开始勃兴，并激发了城市的全面更新，同时也催生了城市更新模式的多样化。

但在一定程度上，上述更新模式都存在一定的弊端，结果有悖于初衷的现象时有发生。合理的城市更新模式应该是建立利益共同体的基础上，而不是参与方之间的“利益博弈”；应该致力于城市的可持续发展，而不是短期经济利益的追逐。

3.2 Micro Level

Modern urban renewal is not measured by building life any longer, but is driven by industrial transformation. The ups and downs of economies and industries determine the speed and rhythm of urban renewal. Therefore, location value of land begins to emerge, and cities advance toward service sectors with recycling of resources. Meanwhile, the urban renewal model is oriented at industrial transformation.

A survey of the past 30 years shows that great changes have happened to Chinese cities. As economic vigor is released, surplus of consumer goods has become a normal state. Thus, service sector begins to emerge, stimulating the overall urban renewal, and promoting the diversification of urban renewal models.

To some extent, however, the above renewal models have some drawbacks. As a result, deviation from the original intentions occurs from time to time. Reasonable urban renewal models should be based on the interest community rather than "interest game" among participants. They should concentrate on the sustainable urban development rather than the pursuit of short-term economic interests.

4、合乐的思考角度

4.1从城市空间角度

合乐认为，城市更新不应该是片面和孤立的，它应该与城市空间的拓展相伴随。城市更新应该在一个整体有序的城市总体发展框架的指导之下进行。因为在目前的中国，城市外延扩展和城市中心改造往往同时大规模并生，这两者之间的互相脱节，结果常常会导致城市发展重心不明。

那么，在城市更新的过程中，如何把握城市空间的有序发展？

城市空间结构调整应以可持续的发展理念为前提。可持续城市空间发展的核心就是充分利用城市土地资源，提高城市空间的使用效率和集约化程度，降低城市的交通需求，积极发展公共交通系统，减少环境污染和能源消耗，遏制城市蔓延，保护农村土地和生态环境，实现城市的可持续性发展。

以德国为例，二战后，受柯布西耶的现代主义城市设计思想的影响，德国的很多城市建造了主要为新居住区的大量城市新区，城市按功能分成居住、工作、购物、休闲等不同区域，其后果是不断增加的交通负荷。同时，过分强调功能而忽略城市的社会结构和空间品质，导致很多区域因缺乏生活内容和吸引力而犯罪率升高。于是，德国政府开始重新思考城市更新的出路。

经过长期实践，德国形成了完整的可持续城市更新策略。在政策层面上，包括三个层面：国家标准（如上世纪70年代出台的《特别城市更新法》，主要包括技术与排放等级，可持续发展策略、与建造相关的法律规定及调整社会再分配等策略）、地方开发策略（主要包括土地利用规划和控制、迁移与交通、公园与绿色空间等）和邻里相关政策（邻里再开发与复兴计划、 社区融合政策及公共空间环境标准制定等）。

同时，德国政府还专门制定了可持续的土地和开发空间措施，主要有：①对闲置用地进行再开发利用；②通过提高居住密度和城市功能的整合，节约土地资源；③通过规划和税收手段进行建筑用地的供需调节。

4.2从公众利益角度

合乐认为,公众利益应该是城市更新追求的基本目标，特别是对城市弱势阶层的关注。不同于简单的旧城改造，城市更新已不能再停留于物质环境改善与审美的角度。它是项系统的工程，涉及多元利益主体，其中最主要的是政府、市场与公众，三者的目的不一致，但成功的城市更新必须依靠三者合力。

因此，在城市更新的过程中，各种社会利益都必须被充分考虑，各种措施也必须紧密跟进。

以英国为例：

20世纪70年代后，英国城市更新主要遵循两个模式：

市场主导下的公私合作

20世纪80年代，英国政府成立了股份性质的城市开发公司，这是一种半官方性质的机构，地方政府无权干涉其日程经营活动。城市开发公司为私人资本提供了良好的投资环境，起到了作为连接政府和私人资本纽带的应有作用。

公——私——社区多元参与下的城市更新

1991年，英国政府设立了“城市挑战”计划。在该计划中，政府设立专门资金用于城市更新，但是地方政府必须要通过招标的方式，且政府招标必须要满足与私人企业合作以及重视社区公民参与等条件才能获得资金的支持。

4. Halcrow’s Perspectives

4.1 From the Perspective of Urban Space

Halcrow believes that urban renewal should not be one-sided and isolated, but should go along with urban spatial expansion. Urban renewal should continue under the guide of a wholly orderly master urban development frame. The reason is that in the current China, the urban expansion and reconstruction of urban centers often occur at the same time. Thus, the mutual disengagement between them often results in an unclear focus of urban development.

Then, how do we grasp the orderly development of urban space during the urban renewal process?

The structural adjustment of urban space should prepose the sustainable development idea. The core of sustainable urban spatial development is: fully use the urban land resources to improve the use efficiency and intensiveness of urban space, and to reduce the needs of urban traffic; actively develop the public transport system to reduce the environmental pollution and energy consumption; curb the urban sprawl and protect the urban land and ecological environment, so as to achieve the sustainable urban development.

Take Germany for example; influenced by the modernism urban design idea of Le Corbusier after the World War II, Germany built many new urban areas as new residential districts in many cities. According to functions, these cities are divided into different areas for living, work, shopping and recreation purposes and so on, resulting in increasing traffic load. Meanwhile, overemphasis on functions and overlook of urban social structure and spatial quality lead to a rising crime rate in many areas because of lack of life content and attractiveness. Hence, the German government began to rethink the way for urban renewal.

After long-term practice, Germany formed a complete sustainable urban renewal strategy. The policy involves three levels: national standards (e.g. in 1970s Germany launched the "Special Urban Renewal Act", which mainly include the technology and discharge levels, sustainable development strategy, laws and regulations on construction, adjustment of social redistribution and other strategies), local development strategies (mainly include the planning and control of land utilization, migration and traffic, parks and green spaces) and policies for neighborhood (formulation of neighborhood redevelopment and revival plan, community integration policy, environmental standard for public space).

Meanwhile, the German government specially worked out the measures for sustainable land and development space, including: (1) redevelopment and reuse of unused land; (2) conserve land resources by improving the living density and integrating urban functions; (3) adjust the supply and demand of building land by means of planning and taxation.

4.2 From the Perspective of Public Interest

Halcrow believes that the public interest should be the basic objective of urban renewal, particularly the concern over the urban disadvantaged class. Unlike the simple reconstruction of old cities, urban renewal is not limited to the physical environment improvement and aesthetic viewpoint any longer. Urban renewal is a systematic project and involves the bodies of multiple interests, in which the leading ones are the government, market and the public, with the three having different purposes. Successful urban renewal, however, must depend on the resultant force of the three factors. Therefore, during the urban renewal process, various social interests must be taken into account and measures must also be closely followed.

Take UK for example:

After the 1970s, the urban renewal of UK mainly follows two models:

Public-private cooperation dominated by market.

In the 1980s, the UK government established the joint-stock urban development company, a semi-official organization, whose daily operation was not interfered in by local governments. Urban Development Company provided the good investment climate for private capital, and it played a due role in connecting the government and private capital.

Urban renewal joined by the public-private-community.

In 1991, the UK government set up the "city challenge" plan. In this plan, the government arranged special funds for urban renewal. Local governments, however, must adopt the mode of invitation to bid, and the government tenders must satisfy these conditions such as cooperation with private enterprises and emphasis on participation of community citizens.

4.3从城市特色的角度

合乐认为，在城市更新中如何充分挖掘该地区独有的文化与景观特色并将之创新、提高，特色是一座城市的个性，是一个城市经济发育、文化沉积、历史沿革的外在体现。没有特色的城市不可能有品牌效应，也就失去了诱人的魅力。城市特色挖掘往往是决定更新成败的关键。

总之，城市更新应该在强调保留遗产的同时，又要与时俱进。

以上海的新天地为例，改变传统CBD地区的单一功能，将其与城市更新特别是历史文化的保护、整治结合起来，创建多功能混合的RBD（recreational business district），称为“游憩商业区”。

4.4从城市环境的角度

合乐认为，现如今，随着经济的快速发展和总量的提升，对于任何一个城市而言，产业是带动城市经济发展的根本，城市更新也已然是产业驱动的结果。但随着城市产业结构的调整，用地结构转换，人口结构变迁，传统的居住环境和文化氛围被破坏。因此，城市更新应该注重人文环境和文化氛围的营造，同时，高密度的开发建设，应该以基础设施的跟进为前提，特别是交通体系的改善，以及广场、绿地等休憩场所的设置。

以巴塞罗那为例，在上世纪80年代巴塞罗那开启了城市“第二次复兴”，其目标就是振兴城市公共空间和改善基础设施。为重振城市环境，巴塞罗那制定了一系列公共空间政策，逐步实施城市发展计划，更新基础设施。在整个城市的各个地区，通过设计大量新的公共空间，如步行街、广场、公园等，在居民身边掀起切实的公共空间复兴。

4.3 From the Perspective of Urban Characteristics

According to Halcrow, the urban renewal must know how to fully develop the unique culture and landscape characteristics of this region, and to improve them and to make them creative. The characteristic is the personality of a city and also its external reflection of economic development, cultural deposits and historical evolution. Without any characteristics, a city will not have any brand effect, and will lose its charm. Development of urban characteristics is often the key to determining whether urban renewal is a success. In short, urban renewal should advance with the times when emphasizing the heritage preservation.

Take Shanghai Xintiandi for example, change the single function of traditional CBD, and combine it with urban renewal, particularly with the protection and renovation of historical culture, so as to create the RBD (recreational business district) with mixture of multiple functions.

4.4 From the Perspective of Urban Environment

Halcrow thinks that, with fast economic development and gross rise today, industries are the fundamental factors for driving economic development in any cities, and urban renewal has become the result of industry drive. However, urban industrial restructuring, transformation of land structure and change of population structure lead to the destruction of traditional living environment and cultural atmosphere. Therefore, urban renewal should focus on creating the humanistic environment and cultural atmosphere. Additionally, high-density development and construction should be based on the precondition of the availability of infrastructure, particularly, the improvement of traffic system and the arrangement of recreational places such as squares and greenbelts.

For example, in Barcelona, in the 1980s this city initiated its "second revival", with the objective of revitalizing the urban public space and improving its infrastructure. To revitalize the urban environment, Barcelona developed a series of public space policies, implemented the urban development plan step by step, and updated its infrastructure. In each district, this city launched the real revival of public spaces around residents by designing a number of new public spaces such as pedestrian streets, squares and parks.

5、合乐的探索与实践

5.1以可持续的发展理念为前提——从城市空间角度

当前城市更新改造日益复杂，城市空间结构调整日益成为城市更新改造的关键问题。

合乐认为，城市空间结构调整应以可持续的发展理念为前提；通过相关案例的实践，合乐已将可持续发展的理念成熟应用，合乐的可持续工具集和等级系统-Haistar-由合乐的专家组经过多年实践与研究而得出，它跳出既定的城市框架，整体评估城市更新动力与经济环境关系、新旧区发展互动关系、更新内容构成与社会综合发展的协调性、更新活动区位对城市空间结构影响、更新实践对地区社会进步的推动作用等重大问题。通过-Haistar-的运用，确保在规划设计过程中，以可持续的发展理念为前提，建立评价体系以及制定发展策略，构建城市整体空间结构。

相关案例：彭州市旧城改造规划研究及城市设计

委托单位：彭州市规划管理局

编制时间：2012年2月—至今

1、项目概况

彭州市位于四川省会成都西北部，是成都市人口第三，面积第二的县级市。彭州是古蜀国建都立业的核心地区，自秦汉以来，建县设郡达2000多年，有着悠久的历史文明，素有“天府金盆”、“蜀汉名区”之美誉。

彭州市地处四川省主要经济带——成德绵经济带，城市的发展受到成都市、成德绵经济带以及成渝经济区的经济辐射，是成都市域西北部的中心城市。

2、规划目标

从历史古镇走向可持续发展的花园城

3、规划策略

（1）功能复合

住宅、商业、办公等功能混合在一起，形成一个综合性的社区或城市，将实现从功能到建筑、空间、景观乃至居民的多样性。

（2）多层级中心

由商业、行政、商务办公、文化教育等中心集聚构成社区公共中心，各住宅社区中设置六个邻里中心。

（3）生态优先

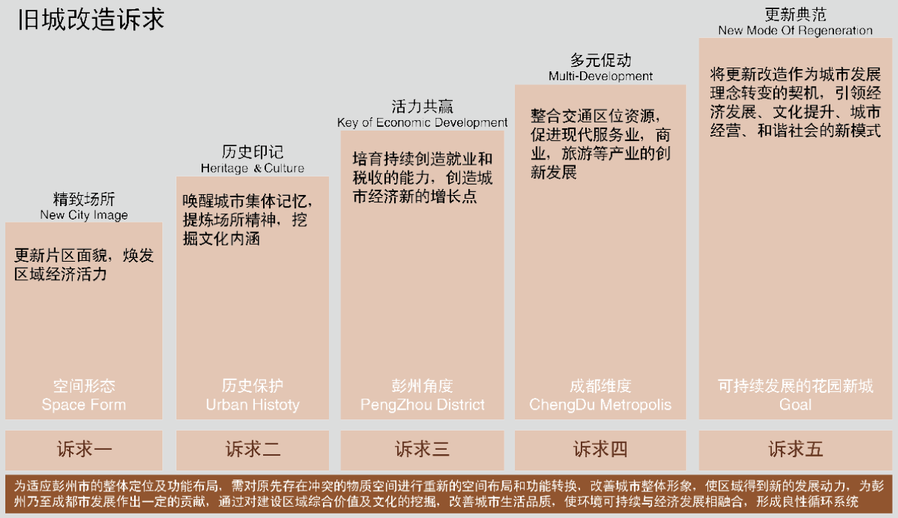
优先生态、尊重自然，最大程度地保护原生态的自然山水环境，充分挖掘和利用景观资源，使城市与自然环境有机融合，浑然一体。

（4）活力街道

“道/路/街”的道路组织模式，道系统——交通性道路分离；路系统——普通城市道路的分级；街系统——生活性街道的优化。

绿色出行方式，多层次公交系统——便捷的公交换乘；独立自行车系统——舒适自行车环境；多重步行体验——宜人的步行尺度。

4、指导原则与操作方法



5. Halcrow's Exploration and Practice

5.1 On the Basis of Sustainable Development - from the perspective of urban space

Currently, urban renewal is increasingly complex. So the structural adjustment of urban space has become a critical issue.

Halcrow believes: the structural adjustment of urban space should be based on the concept of sustainable development; through related cases in practice, Halcrow has maturely applied the concept of sustainable development. Halcrow's sustainable tool kit and grading system "-Haistar-" was developed by Halcrow's experts group through years of practice and research. It jumps outside of the established framework, giving an overall evaluation on some major issues, including the relationship between urban renewal impetus and economic environment, development interactive relationship between the new area and the old area, coordination between renewal content components and social comprehensive development, the impact of renewal activity location on the urban space structure as well as the driving role of renewal practice to the social progress of the region. Through the application of "-Haistar-", ensuring to be based on the concept of sustainable development during the planning and design process, build an evaluation system and work out development strategies, thus forming an integral urban space structure.

Case Studied: Planning Research and Urban Design for Pengzhou Old City Regeneration

Client: Pengzhou Planning Administration Bureau

Period: February 2012 - now

1. Project Overview

Pengzhou is located in the northwest of Chengdu, the capital of Sichuan province. It falls into a county-level city, with the third largest population and the second largest area in Chengdu. Pengzhou was the core area for the ancient Shu Kingdom to found the capital and build its career. It had established counties for more than 2,000 years since the Qin and Han dynasties. Pengzhou has a long history of civilization, and is known as "Tianfu treasure land" and "Shu-Han hot destination".

Pengzhou, as the central city northwest of Chengdu, is situated in Sichuan province's main economic belt——Chengdu-Deyang-Mianyang economic belt. Its urban development has been greatly influenced by the economic radiation of Chengdu city, Chengdu-Deyang-Mianyang economic belt as well as Chengdu-Chongqing economic zone.

2. Planning Objective

To transform from a historic town to a sustainable garden city

3. Planning Strategy

(1) Multiple Functions

Residential, commercial and office functionalities are combined together, forming a comprehensive community or city, which will realize the diversity ranging from buildings, space and landscape to residents.

(2) Multi-level Centers

Business, administrative, commercial office and cultural education centers are gathered together to form a public community centre, and each residential community sets up 6 neighborhood centers.

(3) Ecological Priority

Give priority to ecology, and show respect for nature. Protect the original natural landscape environment to the largest extent, and make full use of the landscape resources, organically integrating the city with natural environment.

(4) Dynamic Streets

"Lane/road/street" organization pattern: lane system——traffic separation between lanes and roads; road system——regular urban roads classification; street system——life streets optimization.

Green travel mode, multi-level public transportation system——convenient public transportation transfers; independent bicycle system——comfortable bicycle environment; multiple walking experience——pleasant walking space.

4. Guiding Principles and Implementation Methods

5.2以开放式工作程序为手段——从公众利益的角度

城市更新规划的组织工作应形成一个横向联系的、自下而上与自上而下双向运行的开放体系，也就是说城市更新规划的制定应当是一个多方位、多层次的公众参与过程。具体而言，城市更新规划制定的每一步骤都是一个多方位的公众参与层面，包括更新项目涉及到的相关单位、市民、市政府、规划局、专家委员会等。

在这个层面上，合乐认为规划者应作为城市更新过程中的调节器和催化剂，依据城市发展战略、技术法规以及专家经验，对外部环境各方面所反映来的信息进行选择与评价，为城 市更新确定现实的、折衷的、各方面相对公允的综合方案。

·相关案例：《宁波中心城环境品质提升规划对策研究项目》

·委托单位：宁波市城乡规划研究中心

·编制时间：2012年4月—至今

一、项目概况

1、研究背景

（1）随着经济社会发展水平的提升，大众对城市环境品质的要求与期待越来越高。城市环境品质已成为新时期影响城市发展的重要因素。

（2）近年来，国内大城市相继以城市环境品质提升为抓手推进城市化水平的内涵提升。

（3）宁波近年来却呈现出城市公共空间不足、城市形象特色需要进一步提升等问题。

（4）宁波市十二次党代会对提升城市环境品质提出了更高的要求，亟需针对中心城环境品质现状，提出环境品质提升的有效规划途径与对策。

2、研究目的

通过对宁波中心城环境品质的现状分析、目标构建及相关城市的经验借鉴等，提出中心城环境品质提升的有效规划途径与对策，为提升宁波城市竞争力提供重要支撑。

3、研究范围

（1）宁波中心城

课题所要求的研究范围为宁波中心城，根据《宁波市城市总体规划2004—2020》中对宁波中心城范围的描述为：包括三江片、镇海片、北仑片，共约600平方公里。

（2）重点研究范围

考虑到城市策略的可行性，我们将600平方公里的研究范围分为重点研究区域和一般研究区域，并将策略也分为宏观指导、中观引导和微观细则三种策略。

重点研究区域：老三区（海曙、江东、江北）、镇海老城-北仑小港区域。

一般研究区域：除重点研究区域以外的其他区域。

4、研究对象

按不同的城市区域来分，我们可以将研究对象分为历史街区的保护和修复、城市更新区域和城市新区三类。

5、研究期限

近期着眼于“十二五”期间，远景展望至2030 年。

二、内容要求

1、分析梳理中心城环境品质的内涵，并对宁波中心城环境品质现状进行评价；

2、选取国内外先进城市进行中心城环境品质提升方面的经验借鉴分析；

3、分析提出宁波中心城环境品质提升的关键要素和重点任务；

4、提出宁波中心城环境品质提升近期实施对策；

5、面向规划实施管理，提出提升环境品质的规划编制与实施管理要求。

5.2 Take Open-work Program as a Means - from the perspective of public interest

The organization work of urban renewal planning should form an open system of horizontal linkage as well as top-down and bottom-up two-way operation modes. In other words, the development of urban renewal planning should be an all-round multi-level public engagement process. More specifically, each step for the development of urban renewal planning is an all-round public participation level, including related units, citizens, municipal government, planning bureau and expert committees involved in the renewal projects.

In this regard, Halcrow thinks that the planners should serve as the regulator and catalyst during the urban renewal process. According to the urban development strategy, technical regulations and expertise, they should make choices and evaluations on the information collected from the external environment, establishing practical, compromise and relatively fair integrated program for urban renewal.

·Case Studied: Research on Planning Strategies for Environmental Quality Improvement in Ningbo Central City

·Client: Ningbo Urban and Rural Planning Research Centre

·Period: April 2012 - now

I. Project Overview

1. Research Background

(1) With the improvement of economic and social development, people's requirements and expectations to the urban environment quality are becoming higher and higher. The urban environment quality has been the key factor in the new era that affects urban development.

(2) In recent years, domestic big cities have successively focused on the improvement of urban environment quality to boost the urbanization level.

(3) Ningbo has, in recent years, been faced with problems such as insufficient urban public space and poor urban image characteristics that need to be enhanced, etc.

(4) The 12th congress of party representatives in Ningbo put forward higher requirements on the improvement of urban environment quality, that is, raising effective planning approaches and solutions on the basis of the central city's current environment quality status.

2. Research Purpose

Through the analysis of Ningbo central city's current environment quality status, target building and lessons from other related cities, raise effective planning approaches and solutions on the central city's environment quality improvement, providing significant support for enhancing Ningbo's urban competitiveness.

3. Research Scope

(1) Ningbo Central City

The research scope that has been defined in the subject is Ningbo central city. According to Ningbo City Master Plan 2004-2020, Ningbo central city involves Sanjiang area, Zhenhai area and Beilun area, with a total area of about 600 square kilometers.

(2) Key Research Scope

Considering the feasibility of urban strategies, we divide the 600 square kilometers' research scope into key research areas and general research areas. Our strategies are also classified into macro guidance, medium guidance and micro rules.

Key research areas: the old three areas (Haishu, Jiangdong, Jiangbei), Zhenhai old town-Beilun harbor area

General research areas: other areas (exclusive of the key research areas)

4. Research Object

On the basis of different urban regions, the research object can be divided into 3 types, including protection and restoration of historic districts, urban renewal areas and urban new areas.

5. Research Period

In the short term, focus on the twelfth five-year plan period; and in the long term, look far ahead into 2030.

II. Tasks

1. Analyze the connotation of the central city's environment quality, and make comments on Ningbo central city's current environment quality status.

2. Select advanced cities from home and abroad to make analyses on experience learned from the central city's environment quality improvement.

3. Put forward the key factors and major tasks on Ningbo central city's environment quality improvement.

4. Raise short-term countermeasures on Ningbo central city's environment quality improvement.

5. Implement management based on the planning, and work out plans and management requirements so as to improve the environment quality.

三、技术路线

四、成果内容

本课题的成果内容主要包括三部分，分别是现状调研——对策研究——策略提出。

1、现状调研

本次课题研究需建立在大量实地调研的基石之上，宁波的现状资料、各行业人群对宁波城市的看法和建议以及相关规划的实施情况，都是我们本次课题研究的立论基础。因此，现状调研工作分三次进行，采取现场调研、问卷调查、人物访谈三种形式，本次调研共发放问卷200份，访谈多个相关部门，历时一个月，参与人数10人。

2、对策研究

通过详实的现状调研，以及相关资料的研究，提出五大核心问题和四大关键准则，并在此基础上提出三大研究课题：A：城市活力点塑造；B：城市慢行系统打造；C：城市风情特色营造。

3、策略提出

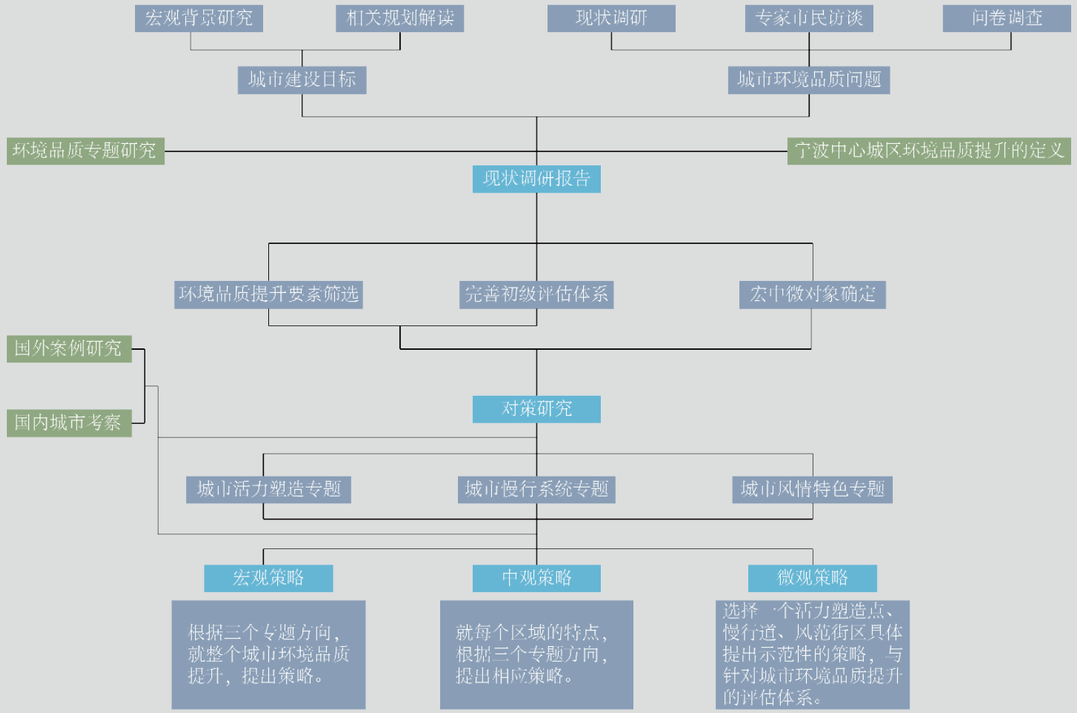
在调查研究的基础上，分别从宏观、中观、微观三个层面提出城市环境品质提升的策略：

宏观层面：根据三个专题方向，就整个城市环境品质的提升，提出策略；

中观层面：就每个区的特点，根据三个专题方向，提出相应策略；

微观层面：选择一个活力塑造点、慢行道、风情街区，具体提出示范性的策略与针对城市环境品质提升的评估体系。

III. Technology Roadmap



IV. Outcome

This subject's outcomes mainly include analysis of current situation-countermeasures study-strategy proposals.

1. Analysis of Current Situation

This subject's research needs to be based on a large number of survey and investigation. Ningbo's current situation information, opinions and suggestions to Ningbo city from all walks of life as well as the implementation of related planning all help to support our argument. Therefore, the analysis of current situation is divided into three times, adopting the form of on-site survey, questionnaire survey and interviews. We distributed 200 questionnaires in all, and interviewed several relevant departments, with 10 participants and the duration of 1 month.

2. Countermeasures Study

Through detailed analysis of current situation as well as study of related materials, we have put forward five core issues and four key principles. Moreover, we have also raised three major research subjects: A. city vitality shaping; B. city non-motorized traffic system building; C. urban characteristics creating.

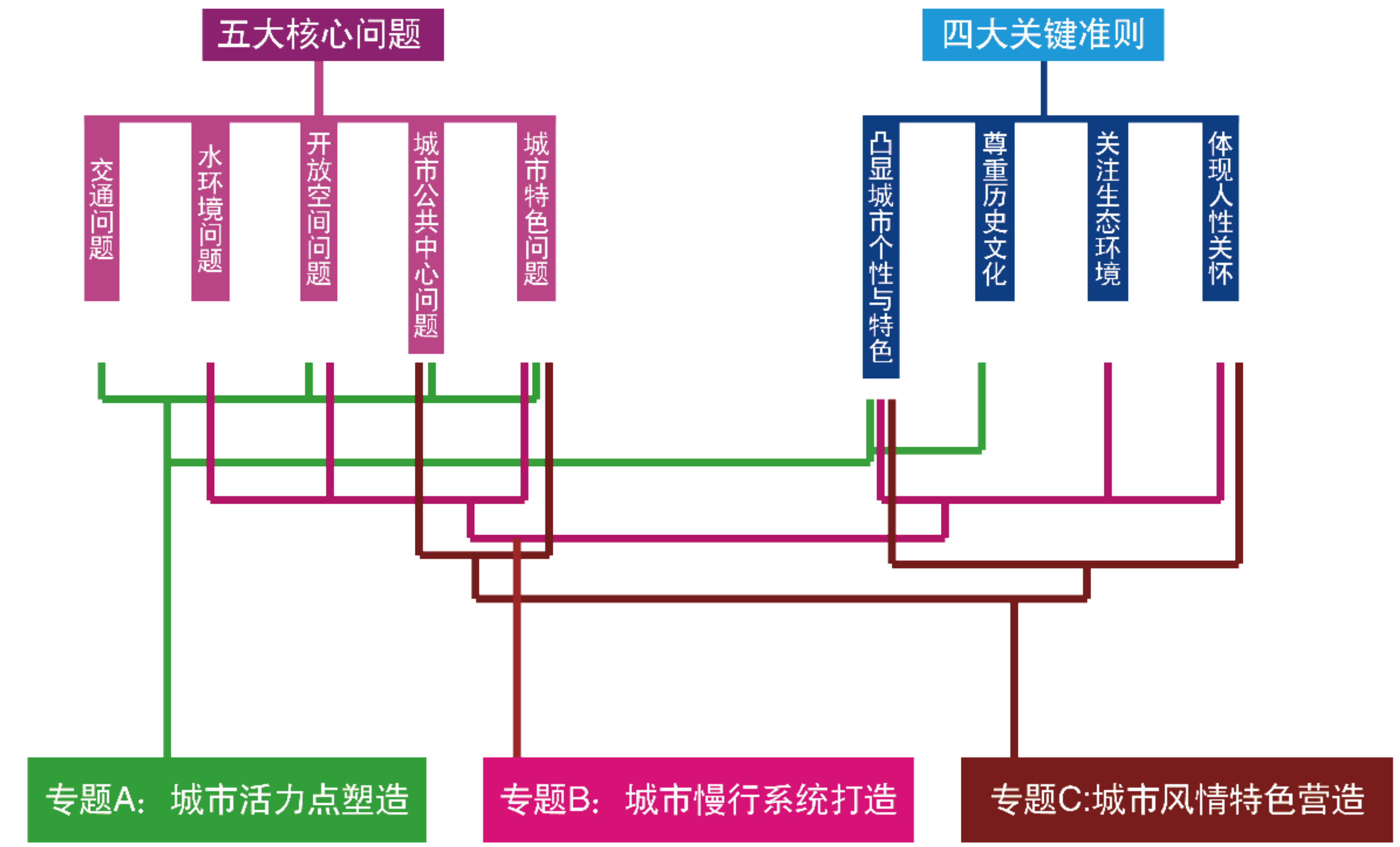
3. Strategy Proposals

On the basis of investigation, we have proposed urban environment quality improvement strategies from macro, medium and micro levels:

Macro level: According to three special directions, put forward strategies with regard to the whole city's environment quality improvement.

Medium level: According to three special directions, put forward corresponding strategies in terms of each area's features.

Micro level: Select a vitality shaping area, non-motorized vehicle lane and feature street, and put forward specific demonstrative strategies as well as evaluation system for the improvement of urban environment quality.



彭州旧城改造指导原则及操作方法

■多种手段并用实施城市更新

主要以政策杠杆、市场机制等引导城市更新区域内的功能转换、形象改造及开发改造时序等问题

■产业空间重新布局及功能转换

重点对城市核心区现有产业进行功能转换，通过将现有工业与南部区域周边工业用地的整合，置换不适宜产业，进行产业的更新淘汰，转变成城市核心区域

■更新改造与城市风貌功能相协调

根据规划所制定的区域风貌特色，对各片区进行建筑风格的界定，通过对原有构筑物的外观翻新、内部结构维护及重建改造等方法，使旧区的建筑风貌、功能配置与未来周边区域和谐协调

■标准制定、贯彻实施

根据不同区域的功能定位、风貌特色、土地的开发价值、建筑高度控制、建筑年限等作为建设区内城市更新活动的遴选条件，便于具体的实施贯彻

■广泛参与、意见整合

透过规划方案与城市更新所涉及区域的利益各方进行沟通协调，整合各方意见，逐步优化最终得到各方满意的城市更新方案

彭州旧城改造实施建议

✓总体方案的制定、分区分期逐步实施，结合区域的开发时序及改造的迫切性进行改造，远期达到城市更新的目标

✓建立严格的监督管理机制，全程监控城市更新过程中的每一环节，保证城市更新原则的贯彻执行，提高项目整体的运作效率

✓制定相应的政策法规，确保城市更新的顺利实施，建立政府、开发商及城市更新所涉及各方的协调机制

✓严格审核私人开发商的综合素质，通过公平、公开、公正的评核 ，挑选合适的开发商，降低政策决策者所可能面对的风险

✓城市更新是一把双刃剑，运用得当将给城市未来发展注入新的活力，提升城市整体品质；反之，将造成大量的社会经济问题，因此需要建立完备的监督管理体制，保证项目的顺利实施

操作策略

模式	运作机制	政策保障	特点
政府主导G	运用行政手段、动用地方财政进行旧区改造	国家相关法律法规及政策；上层规划文件；其它具有指导城市更新过程的法律、法规、条例及规定	执行性较强、规划方案贯彻好
政府牵头和私人开发商参与G+PD	政府政策鼓励、合格开发商的参与，根据城市更新目标、功能定位审核开发商的开发项目;可考虑政府牵头金融机构给合格开发商融资	国家相关法律法规及政策；上层规划文件；其它具有指导城市更新过程的法律、法规、条例及规定；金融机构监管管理条例	投入相对较少、土地开发价值利用度最高
政府、私人开发商及公众参与G+PD+P	政府倡导、广泛意见采纳、方案选定、公开招标、合格开发商的参与；过程中接受公众的监督及意见反馈，形成三方互相协调机制	国家相关法律法规及政策；上层规划文件；其它具有指导城市更新过程的法律、法规、条例及规定；金融机构监管管理条例；信息公开及反馈保障	各方参与度高、各方利益的融合

三种模式各要素横向比较

	政府主导	政府牵头和私人开发商参与	政府、私人开发商及公众参与	综合评价
资源投入力度	大	中	小	多方参与方式所投入力度最小
改造周期	短	中	长	政府主导改造周期短
政策风险性	大	中	小	政府主导所面临的风险较大
土地开发价值程度	中	大	较低	政府加开发商的合作对土地的开发价值最大
公众参与程度	较低	低	高	多方参与模式接纳群众的共同参与
利益均衡	较低	较低	高	多方参与能达到最大的利益平衡

彭州旧城改造指导原则及操作方法

旧城改造标准

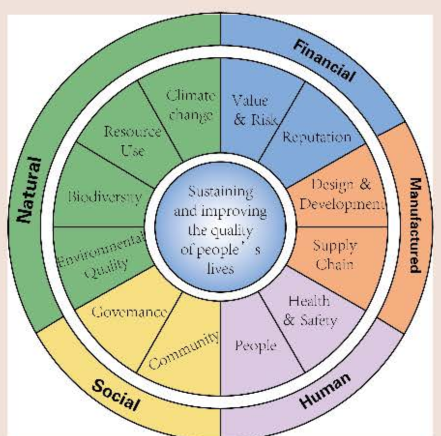
从分析旧城改造空间的维度出发，结合彭州区域现状条件及未来发展潜力，对区域内部识别具有保留价值的街区和构筑物或优化成更适宜的功能区域或构筑物。包括2个价值标准（实体价值、发展利用潜力），4项评估因子（原貌特性、区域历史文化价值、区域功能适宜度、社会价值）

价值标准	评价因子	权重	评估内容	评估标准
实体价值	原貌保存度	0.25	建筑风貌	一等（10-8）：建筑风貌基本完整、建筑结构基本稳定，建筑材料维持原有材料；二等（7-4）：建筑风貌较完整、建筑结构和建筑材料改动不大，具有较好的历史识别性；三等（3-0）：建筑风貌破坏严重，建筑结构和建筑材质均难以反映其原有状态
			建筑材料	
	历史文化价值	0.4	特定时期的艺术风格	一等（10-8）：具有较高的历史价值、艺术价值和科学价值；二等（7-4）：历史特征、艺术特色较明显，保存了一定得科学技术资料；三等（3-0）：没有什么历史、艺术、科学的价值
			特定时期的建设水平	
			地域特征或建筑结构特征	
			装饰造型艺术	
发展潜力价值	区域文化价值	0.2	区域文化发展	一等（10-8）：与城市主题文化密切相关，反映了特定时期区域文化背景和文化发展；二等（7-4）：与城市主题文化有一定关联，其产生反映了一定得时代性以区域性；三等（3-0）：与城市主题文化无关，其产生的偶然性较强
			区域文化发展	
			社会环境	
	社会价值	0.15	在社会城市发展中的作用	一等（10-8），在城市社会生活中起到了重要作用，有一定得认同感和归属感，具有区域生活得代表性；二等（7-4）：对城市社会生活有一定影响，但认同感和归属感不强；三等（3-0）：对城市社会生活基本没有影响，不具有区域生活的代表性
			对城市生活的影响	
			区域社会生活的代表性	

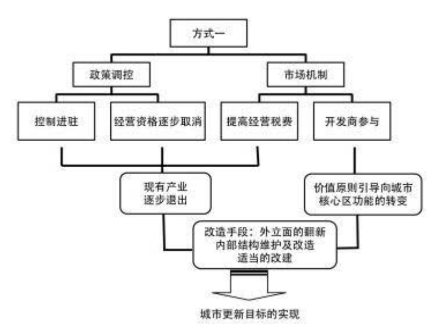
通过对各因子赋以一定的权重对建设区内部构筑物进行定量考核，综合评价其价值及区域适宜度，决定采取相适应的操作方式，便于旧城改造过程的实施。

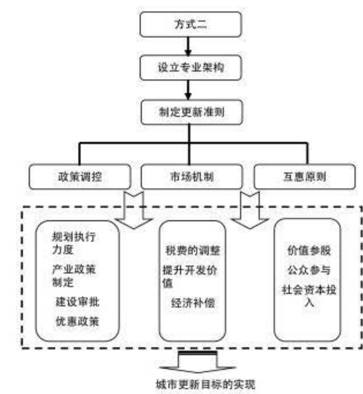
旧城改造方法

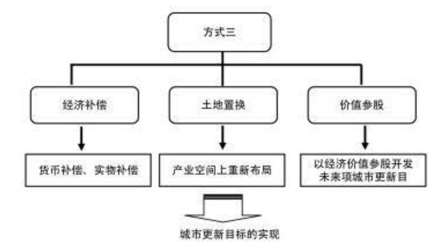
合乐的可持续性工具集和等级系统-Halstar-整合了全部已知的可持续性的含义来为规划的制定和评估提供一个全方位的指导，它使得规划方案更具有可持续性。通过Halstar的运用，确保了我们在关注核心部分之前，对彭州整体空间有一个系统性的认知。



以可持续发展为目标，建立评价体系以及制定发展策略构建空间结构。







方式一：最大限度的保留原有构筑物

☒政策调控

控制不适宜产业的进驻，不再更新相关产业的经营资格

☒市场机制

提高相关产业的税费,通过经济杠杆手段使产业迁移或转型

利用土地开发价值的提升，吸引私人开发商的参与，加快城市更新的过程

方式二：有条件拆迁改造+部分保留原有构筑物

•制定更新准则：制定一定的城市更新指导准则，根据标准采取有条件的拆迁改造或部分保留原有构筑物

•多种手段并用：运用政策调控、市场机制、各种经济性补偿、互惠双赢原则等手段进行城市更新

•设立专业组织：设立专门的城市更新组织负责指导监督城市更新过程中的每个环节顺利实施，保证改之有理、留之有道

方式三：拆迁改造

政府对核心区采取整体重建的方式，通过不同的手段对该区域的现有产业或其他功能属性进行改造

•经济补偿：通过经济补偿手段，鼓励参与各方的积极响应，手段包括货币补偿及实物补偿

•土地（空间）置换：通过对产业用地重新的空间布局，整合现有产业与未来产业空间布局，根据面积大小或价值高低，按一定优惠比例系数另辟产业用地

•价值参股：通过对需要拆迁改造的空间，根据评估价值与地块上城市更新活动的总投资额之比，按比例参股分享利益，被改造方能分享到城市品质提高及价值提升所带来的利益，改造方能减少前期拆迁所需要的投入资金，实现利益共享的多赢模式

• 相关案例：《上海杨浦滨江总体城市设计》

• 委托单位：上海市杨浦区规划局

• 编制时间：2010年3月—2010年9月

项目分析了杨浦滨江13平方公里的用地，由于项目为上海老工业基地改造，为此针对性地构建了五个特色策略：价值回归策略；资源织补策略；操作保障策略；更新形象策略；交通协调策略。

(A)价值回归策略

杨浦滨江地区具有较多的工业遗存建筑，承载着上海未来10年的发展历史和变迁。其未来的发展定位、业态分布从上海城市发展的整体格局进行分析和判断植入休闲、商业、文化、旅游等活动，根据需求来确定未来的发展模式，各种业态的配置比例，以实现该区域做好空间保护和更新的同时，成为未来黄浦江畔最富有魅力和活力的区域。价值回归策略的关键是做好对旧城改造述求的分析，针对不同的客群，特别是原有企业的改造述求进行规划，更能推动项目的进展，并促成土门地区的资源价值回归到应有的城市中心区的地位来。

Urban Design for Yangpu Riverfront Area, Shanghai

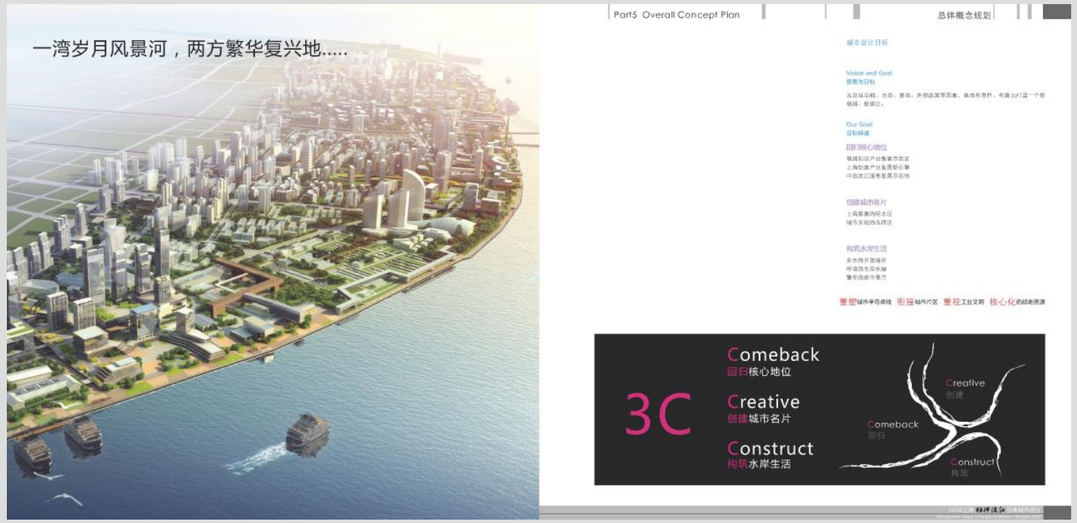
Client: Yangpu Urban Planning & Administration Bureau, Shanghai

Time: 3/ 2010-9/2010

This project includes an analysis on site conditions of Yangpu Riverfront which covers an area of 13 km2. Based on its project features of Old Industrial Base Renewal, five unique strategies were put forward, which are Value Reversion Strategy, Resources Complement Strategy, Operation Assurance Strategy, Image Upgrading Strategy and Traffic Coordination Strategy.

(A)Value Reversion Strategy

Large numbers of old industrial buildings, which are critical to the future development of Shanghai, are remained in Yangpu Riverfront area. In accordance with the overall development trend of Shanghai, introduce recreation, commerce, culture, tourism and other industries into this area, and identify its future development orientation and industrial distribution. It is to protect and renew this area with an aiming of building a charming and active region along the Huangpu River. The key of this strategy is the study on old town renewal, which is planning this area according to demands of different customers especially the requirements of existing enterprise renewal. By this, it can facilitate the development of this project and realize its land value of urban center.

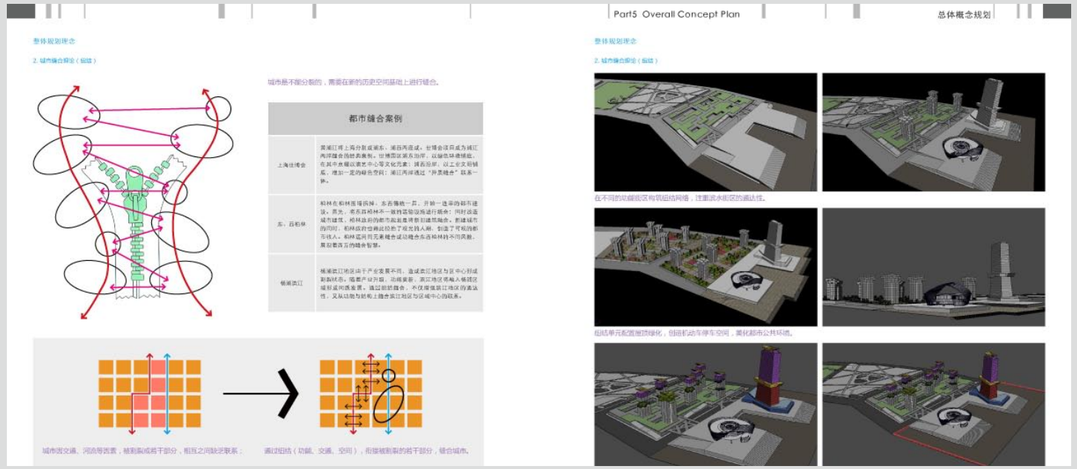


（B）资源织补策略

在城市更新改造中，尽量避免不必要的大拆大建，应充分梳理、合理利用现有资源，特别注重工业一直与历史资源的再利用再开发，从而达到城市建设价值的最大化。

(B)Resources Complementing Strategy

During the processing of renewal, avoid removal and rebuilding as much as possible; rationally and fully utilize the existing resources; focus on reusing and redeveloping industrial resources to maximize urban construction value.



（C）操作保障策略

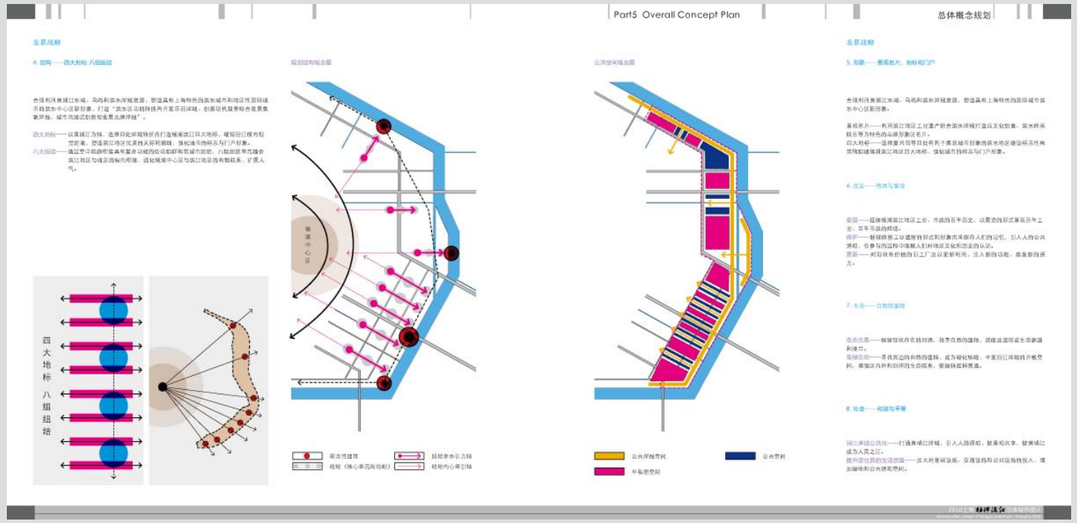
旧工业区的改造不同与其他城市地区更新的地方在于用地权属的相对集中和改造述求的相对分散，在用地调研上需要根据规划操作确定针对现状建设情况及未来发展条件进行综合分析，把用地分为以下四类：保留用地、提质改造用地、更新用地（近期拆迁地块）、远期改造用地（可拆可不拆地块）。由此增强规划的操作性。

对于中心城区的规划建设而言，其内容更倾向于公共政策，通过制定控制性图则控制建设强度和容量、建筑退界等几个重要原则。同时，规划需要制定分期和分区措施，制定开发单元，保证开发有序进行。通过制定一个“动态”的规划综合实施方案，促进旧城区更新有条不紊地展开。

(C)Operation Assurance Strategy

The difference between old industrial area reconstruction and other urban renewal lies in the centralized land ownership and dispersed reconstruction area. Based on the implementation requirements of this project, it is critical to undertake a comprehensive analysis of land functions. There are four main classifications of different land uses, including reserved land, immediate reconstruction land, renewal land (recent removal area) and long-term reconstruction land (could be removed or not removed). Finally, the operability of this project could be enhanced.

For the planning and constructing of central area, the key is to control development intensity and capacity and focus on building setback. Additionally, strategies such as pashing, zoning and development unit are applied to secure the project schedule.

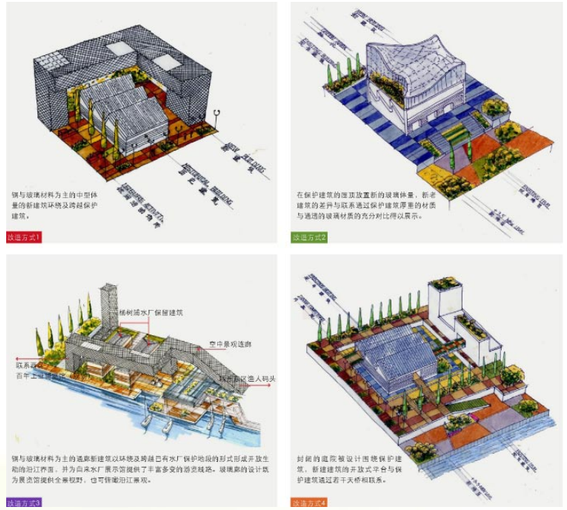


（D）更新形象策略

杨浦滨江片区历史遗存建筑形式较为复杂，如何紧握改造重建良机，借助科学地研究与合理地设计，协调区域周边环境，塑造杨浦滨江地区改造的展示窗口是本次设计需要解决的一个重要议题，同时如何把地区的发展与周边连动起来是未来发展成败的重要因素。一个能全面展现城市更新特色的形象将有利于城市更新的持续推进，因此在本项目中突出了杨浦滨江核心区的城市形象的研究。

(D)Image Upgrading Strategy

Since there are various remained architectural forms in Yangpu Riverfront Area, the critical part of planning is how to grasp the opportunity of reconstruction and build the connection with surrounding areas by rational research and design. This connection with the outside could be key factors to the success of future development. An image that reflects its project feature of renewal is beneficial to the continuous upgrade of this area. Thus, the study on city image of this area is highlighted.



（E）交通协调策略

杨浦滨江片区土地性质复杂，交通状况复杂，原本该片区面临的路网密度、交通不畅等问题的存在，未来的城市改造对已有的道路与城市基础设施都将产生巨大的冲击与影响，因此通过本次规划与研究，为滨江地区系统梳理了区域交通体系，平衡车行与步行关系，在设计中实现绿色交通，低碳、人性化的理念。

(E)Traffic Coordination Strategy

Land use and traffic conditions are quite complicated in Pudong Riverfront Area, thus there are high requirements of designing urban public facilities and reconstructing the existing roads. Via our planning and research, it should have built a regional traffic system which should also balance the two steams of vehicles and pedestrians. The concept of green transportation, low carbon and humanization could be applied in this project.

5.3以塑造城市品牌为目标——从城市特色角度

在实践过程中，合乐一直坚持城市发展——城市环境——城市特色之间是紧密联系的，在城市更新的过程中必须要分析、利用现状自然要素，采取因地制宜、与周围环境结合的规划原则，顺应、突出城市的自然特征；在传承、弘扬的理念下，延续城市历史文脉，保持地方特色；在科学、创新的指导下，根据城市景观环境的特点和发展趋势，对现状进行梳理、整合，灵活运用现代技术手段探求城市特色的有效表达。

·相关案例：宁波市中山路综合整治工程方案设计

·委托单位：宁波市市政工程前期办公室

·编制时间：2012年5月-6月

一、项目背景

1、规划范围

中山路西起机场路，东至世纪大道，规划范围为中山路道路两侧各约一个地块深度，总长度约9.3公里。

2、中山路概况

中山路是宁波城市的基本构架和发展廊道，几乎所有的城市文化、经济、政治、历史活动都依托于中山路展开，所以中山路的重要性要远大于一般意义上的城市主干道。

3、中山路定位

宁波的文化历史承载走廊；

宁波的空间组团发展轴线；

宁波的复合功能孕育基地；

宁波的城市形象展示大道；

4、中山路问题梳理：

5.3 With the Goal of Building the City Brand - from the perspective of urban characteristics

During the process of practice, Halcrow always insists on the close relationship among urban development, urban environment and urban characteristics. And during the urban renewal process, analyze and make use of the existing elements to conform to and highlight the city's natural features, with the planning principles of adjusting measures to local conditions and combining with the surroundings; under the concept of inheritage and promotion, extend the city's historical context and conserve local characteristics; under the guidance of science and innovation, and on the basis of urban landscape environment's features and development trend, make an analysis and integration on the current situation, and flexibly take advantage of modern technical means to seek effective expressions for urban characteristics.

·Case Studied: Design for Comprehensive Renovation of Zhongshan Road, Ningbo

·Client: Ningbo Municipal Engineering ffice

·Period: May 2012 - June 2012

I. Project Background

1. Planning Scope

From the airport road in the west to the Century Avenue in the east, the planning scope involves both sides of Zhongshan Road, with one block depth respectively and total length about 9.3 kilometers.

2. Profile of Zhongshan Road

Zhongshan Road is Ningbo city's basic backbone and development corridor. Almost all the urban cultural, economical, political and historical activities are spread relying on the Zhongshan Road. So the significance of Zhongshan Road far exceeds the general urban arterial roads.

3. Orientation of Zhongshan Road

The bearing corridor for Ningbo's cultural history;

The development axis for Ningbo's space group;

The inoculation base for Ningbo's compound functions;

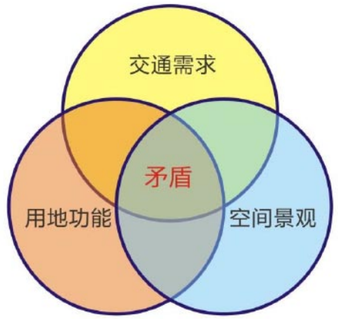
The display avenue for Ningbo's city image;

4. Zhongshan Road Problem Analysis:

二、整治定位

（1）整治定位

通过对中山路的问题分析，可以得出中山路现状所暴露出来的问题，基本上可以归结为交通需求、用地功能和空间景观之间的矛盾，我们对中山路的整治策略也正式基于这三大专题。



（2）规划总目标

交通合理化、功能复合化、环境品质精致化、城市形象可识别化

三、方案设计

1、道路交通工程专题

（1）现状

中山路现状宽度30－35米，规划道路红线宽度40－45米。按红线宽度计算，以双向6车道为主，规划未对公交专用道提出控制。

（2）城市道路优化及交通管理策略

a. 车道划分策略——明确路权、提升通行能力

b. 交通畅达度策略——增加路口间距，降低路口对车速影响

c. 路口优化策略——针对不同路口的问题提出具体策略

d. 轨道交通换乘策略（P＋R）

（3）慢行系统策略

a. 慢行路权保障策略——确定合适的空间宽度和隔离措施

b. 慢行过街保障策略——创造“安全、便捷”的过街环境

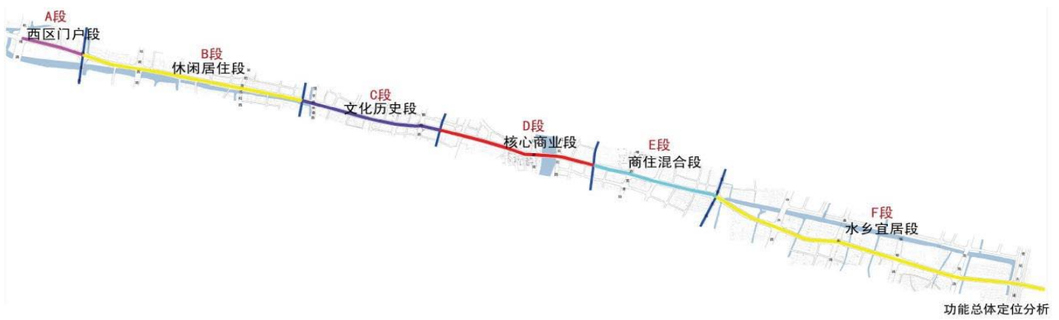
c. 慢行设施保障策略——优化慢行系统功能，吸引更多城市居民参与

d. 地铁（天桥出入口）交通组织策略——组织有序的立体交通

2、空间景观规划专题

（1）空间景观分析

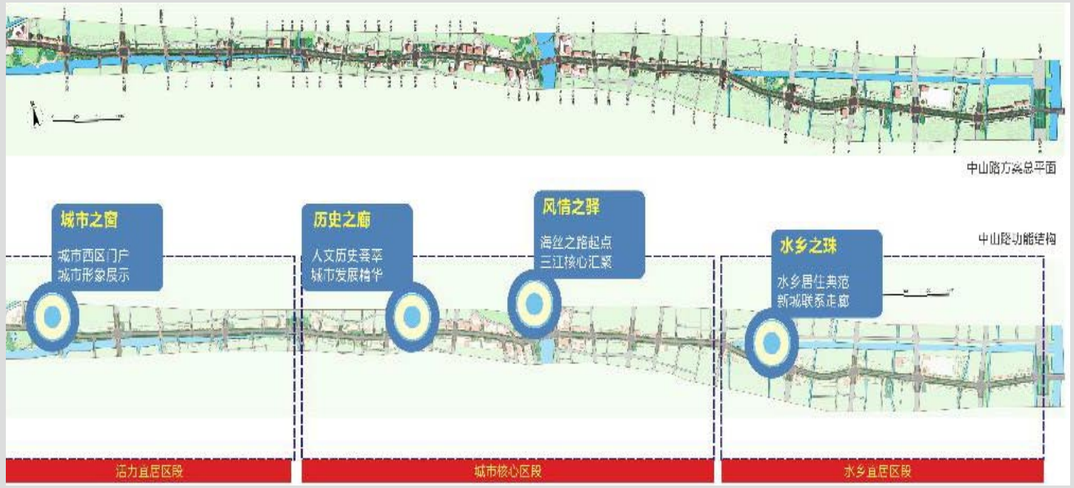
根据对中山路的区段划分以及现状界面功能分析，把中山路定位为六个主题界面功能区段，并对各段功能进行总体定位。



功能总体定位分析

（2）规划框架

总体形成三区段、四节点构架，西段结合城市之窗节点，第一时间展示宁波城市特征和发展风貌；中段为宁波自古以来城市精华，历史之廊和风情之驿节点多维度集中体现宁波城市魅力；东段为联系宁波老城和东部新城必经通道，结合河网密布的水乡特质，优质营造生态居住典范。



II. Renovation Orientation

(1) Renovation Orientation

Through the problem analysis on Zhongshan Road, we can see the problems exposed by Zhongshan Road's current situation. Basically speaking, the problems come down to the contradiction between traffic demands, land function and space landscape. And our renovation strategies on Zhongshan Road are also based on the three special topics.

(2) Overall Planning Objectives

Rational traffic, multi-purpose functions, exquisite environment quality and recognizable city image

III. Schematic Design

1. Road Traffic Engineering

(1) Existing conditions

Zhongshan Road's existing width is 30-35 meters, and the planned width of road boundary lines is 40-45 meters. Based on the two-way 6 lanes and the width of the boundary lines, the planning does not propose control to the bus-only lanes.

(2) Urban Road Optimization and Traffic Management Strategies

a. lane division strategy - identify the road right and improve the traffic capacity

b. smooth traffic strategy - increase intersection spacing to reduce its influence on the car speed

c. intersection optimization strategy - put forward specific strategies in accordance with different intersection problems

d. metro transfer strategy (P+R)

(3) Non-motorized System Strategy

a. non-motorized road right security strategy - establish proper space width and isolation measures

b. non-motorized street security strategy - create a "safe and convenient" street environment

c. non-motorized facilities security strategy - optimize the functions of the non-motorized system, and attract more citizens to participate in

d. metro (footbridge exit and entrance) traffic organization strategy - organize orderly tridimensional traffic

2. Spatial Landscape Planning

(1) Spatial Landscape Analysis

Based on Zhongshan Road's block division and the existing interface functionality analysis, Zhongshan Road is classified into 6 theme interface functionality sections, and the overall orientation is made towards each section's functionality.

(2) Planning Framework

The whole framework can be divided into 3 sections and 4 nodes. The west section combines the node of "window of the city", displaying Ningbo city's characteristics and development style; the middle section has reflected the city's essence since ancient times, and the history gallery as well as feature house presents Ningbo's unique charms from multiple dimensions; the east section is the only way to connect Ningbo old town with the eastern new town, setting an ecological living example in combination with the waterside feature of densely covered river networks.

（3）节点设计

1）展示城市特质的门户之窗

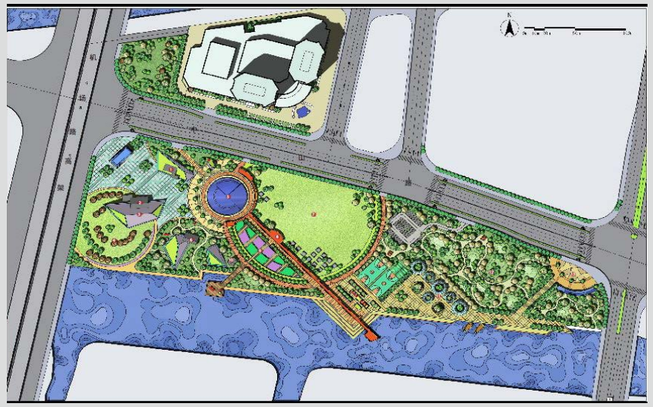
宁波城市之名取意“海定而波宁”，城市定名近千年，市名为最为突出的名片。作为城市窗口的滨河门户公园是对外展示的最佳舞台。

景观设计构思亦取“海定而波宁”之意，以静谧的“镜水印池”与阳光大草坪为核心景点，体现宁波之海定波宁之意，寄寓祥和安定之意。

滨河门户公园整体风格以现代时尚为主，展示近年来宁波城市建设成就与彰显经济重镇魅力。

2）镌刻城市印记的历史长廊

市政府广场位于城市核心地段，是城市历史脉络的重要节点。设计应该体现宁波古往今来的历史痕迹。在设计中，我们结合宁波古典元素——砖、瓦、桥、柱、廊、庭、苑等诸多江南符号表现古城风韵。将本广场打造成历史积淀深厚、体现老城特色的怀旧之地。此外，在景观元素中，还将镌刻了宁波市民历史记忆的“久久天桥”作为跨越景观旱溪的步行桥，将“久久天桥”用一种新的设计语言将其在景观节点中加以保留和复活。



3）展现商业文化的风情之驿

三江口绿地位于三江口西南侧，是三江口景观的重要组成部分。三江口景观是宁波城市景观的重要组成部分，由于江水的阻隔，各地块景观只远眺，无法近观。

在本次设计中，我们大胆设计了环形的人行景观天桥，环绕三江口各个地块，将其整合统一。使原本分离的景观成为一个有机整体。同时新设立的人行景观天桥，桥塔、三江之心景观灯头也将成为新的城市地标景观。同时对原三江口绿地进行改造，保留滨水景观节点，对内部草地进行重新规划，结合隧道、影都等周边环境，利用景观步道、圆形广场将其融合协调。

4）体现水乡生活的活力之珠

樱花公园以樱花观赏为主，在新规划的公园中，继续保留樱花观赏特色，以樱花观赏、中日交流、生态宜居为设计主题。设计手法以中式园林景观结合日式庭院景观，体现出中日景观的同异，丰富文化景观形态。交流广场以中日双方都喜欢的围棋作为布局方式，以棋盘作为纵横分割成各个方块，不同方块可作为竹池、枯山水砾石、水生植物种植池、水池等不同景观格。同时保留中日友好庭院，作为宁波与日本城市友好的历史见证。

(3) Node Design

1) Window to Display Urban Characteristics

The name of Ningbo came from the implication of "sea calm and waves calm". The name, which has been used for nearly one thousand years, is the city's most outstanding symbol.

The River Park, as the window of the city, is the best display stage to the outside world.

The landscape design concept also came from the meaning of "sea calm and waves calm". Select the quiet "mirror-like pool" and sunshine great lawn as the core scenic spots to reveal the meaning of "sea calm and waves calm", implying peace and stability.

The overall style of the River Park is modern fashion oriented, showing Ningbo's urban construction achievements in recent years and revealing the economic hub's charms.

2) History Corridor to Engrave the City Imprint

The municipal square, located in the urban core area, is the city historical context's important juncture. The design should reflect Ningbo's historical marks from ancient times till now. In the design, we combined Ningbo's classical elements that could stand for the city, such as bricks, tiles, bridges, posts, corridors, courtyards and gardens, to reveal the old town's features and charms. Make this square a nostalgic area with profound historical culture and evident old town characteristics. Besides, in the landscape elements, "Jiujiu overbridge", which is engraved in the memory of Ningbo citizens, has been selected as the footbridge to cross the dry stream. So it has been reserved and revived in the landscape node by using a new design language.

3) Feature Area to Present Commercial Culture

Three River Mouth green belts, located in the southwest of the Three River Mouth, is an integral part of the Three River Mouth landscape. The Three River Mouth landscape is an important part of Ningbo urban landscape. Due to the separation by the river water, you can overlook the landscape at each block, but are unable to view it closely.

We boldly designed a circular pedestrian landscape overbridge, which surrounded each block of the Three River Mouth, thus making it an integrated landscape. And the original separated landscape becomes an organic integrity. Meanwhile, the newly built pedestrian landscape overbridge, bridge tower, together with the "heart of Three Rivers" landscape lamps, will also become the landmark landscape of the new city. In addition, the original Three River Mouth green belt will be reconstructed, with the waterfront landscape node reserved. And the internal lawn will be re-planned, with the tunnel and cinema around it. Besides, the landscape pavement plus the round square are combined together to form a harmonious landscape.

4) Vitality Pearl to Reflect the Riverside Life

The Sakura Park is mainly based on flower appreciation. In the newly planned park, the feature of flower appreciation is reserved, and the design concept adopts the theme of flower appreciation, Sino-Japanese communication and ecological living. The design combined the Chinese garden landscape with the Japanese courtyard landscape, revealing the resemblances and differences between the Chinese and Japanese landscape, and at the same time enriching the cultural landscape forms. The Communication Square selects "Go" as the layout style which is preferred by both Chinese and Japanese. It is divided into several square blocks with the chessboard as the vertical and horizontal criteria. Different square blocks can be used as different landscape lattices, such as bamboo pool, landscape gravel, aquatic plant pool and pond, etc. Moreover, the China-Japan friendship courtyard is reserved as the history testimony of friendship between Ningbo and the Japanese cities.

3、街道要素设计专题

（1）现状

通过对宁波中山路的仔细调研，发现中山路的街道设施相对齐全，也不乏出现一些较为先进的街道设施，但仍存在一些问题，主要包括以下几个方面：

1）街道设施缺乏“人性化”设计；

2）街道设施建设历史文脉断裂；

3）街道设施缺乏个性和可识别性；

4）街道设施缺乏整体性；

5）街道设施使用环境欠佳；

3. Street Element Design

(1) Existing Conditions

Through careful investigation into Zhongshan Road, we find that its street furniture is relatively complete, even with some advanced facilities. But some problems still exists, mainly including the following aspects:

1) Lack of "humanization" design;

2) Historical context fracture;

3) Lack of personality and identifiability;

4) Lack of integrity;

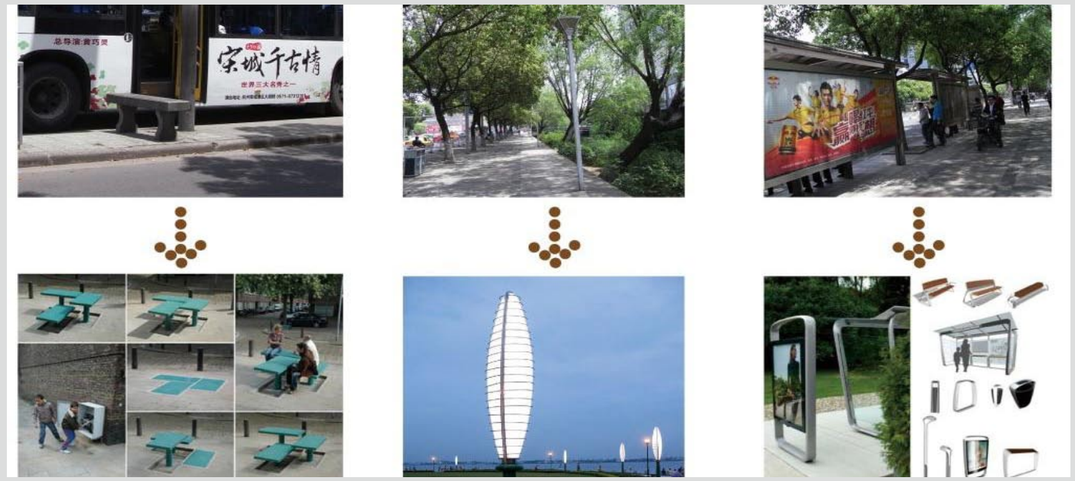
5) Poor service environment

（2）解决策略

街道设施是城市街道景观中相当重要的一部分，街道设施的创意与视觉意象，直接影响着城市街道空间的规划品质，反映着一个城市的经济发展水平以及文化水准。因此，城市街道设施的“人性化”设计是回归设计的本初意义，重新重视设计对人本身的关注；“主题化”设计是城市意向的诠释，重新将城市文化融入设计；“系统化”设计是对街道设施的体系化设计，使街道设施能更好的为人们服务。

(2) Resolution Strategy

Street furniture is quite an important part in the city street landscape. Its creativity and visual image directly influence the planning quality of urban street space, reflecting a city's economic development level and cultural standard. Therefore, street furniture's "humanization" design aims at returning to the design's primitive meaning, refocusing on the design's concern over human; "theme-based" design is the interpretation of urban image, reintegrating urban culture into the design; "systematic" design makes street furniture serve the people better.



3）设计母体

书藏古今，广义上寓意着宁波历史悠久、文化厚重，是一座有着7000年文明史的书香之城、文化之城；而狭义上是指位于中山路的天一阁。“港·通天下”，则突出了宁波作为现代化国际港口城市的特色。

而中山路作为宁波的城市窗口，中山路的街道设施也应体现“书”一“港”特色，因为两者既有精神层面的意蕴，又有物质层面的具象，互为映衬，相得益彰。

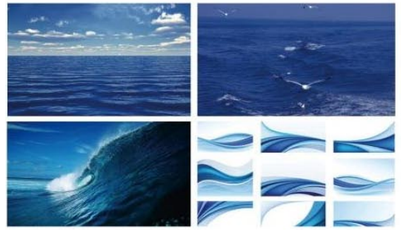
因此，将“藏书主题”和“海洋主题”作为中山路街道设施的设计主题，是非常恰当的。

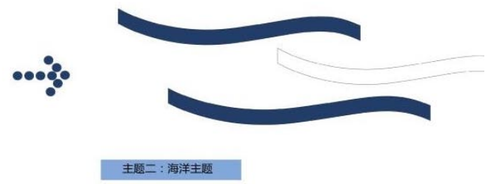
3) Design Matrix

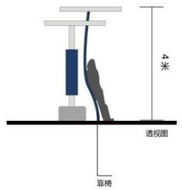
A collection of books throughout the ages, in a broad sense, implies Ningbo's long history and profound culture. It is a city of culture, with 7,000 years' history of civilization; while in a narrow sense, it refers to the Tianyi Pavilion located at Zhongshan Road. "Ports throughout the world" highlights Ningbo's unique feature as a modern international port city.

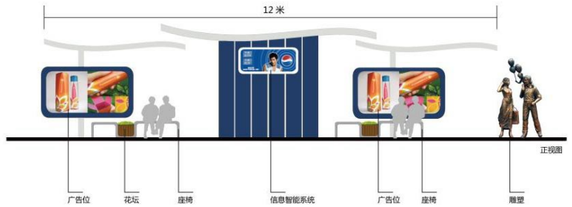
As the window of Ningbo city, Zhongshan Road's street furniture should also present the features of "books"-"ports", since both not only reflect the implication in the spirit level but also cover the elements in the material level.

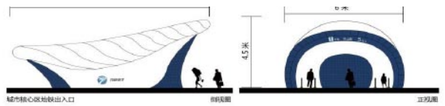
Thus, it is quite appropriate to choose "book collection theme" and "marine theme" as the design motif of Zhongshan Road's street furniture.

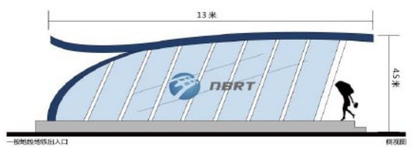


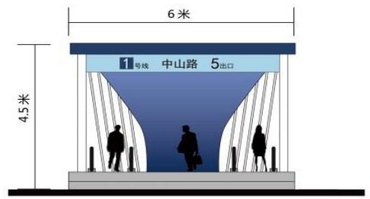












5.4以谨慎渐进式更新为方法——从城市环境的角度

由于目前市场取向的市场机制逐渐成为城市发展的基础性调节机制，出于经济利益，开发商往往急于求成，急功近利，违背城市发展更新自身规律，出现改造规模过大、速度过快的突发式改造。

合乐认为，应该认识到城市更新是一个连续不断的过程，应重点研究不同地区、不同类型更新改造的个性特点，充分考虑原有的城市空间结构和原有的社会网络结构，因地制宜，因势利导，采取多种途径和多个模式进行行之有效、切合实际的更新改造。

·相关案例：上海市外滩CBD规划设计

·委托单位：上海市黄浦区城市规划管理局

·编制时间： 2003年9月

一、项目背景

1、规划范围：东起黄浦江、西至河南中路、南起人民路及新开河路、北至苏州河，总占地面积约103公顷。

2、 现状问题：浦东新区陆家嘴金融中心的迅速崛起造成的竞争压力；历史建筑物不能或难以满足现代办公的需求；人车不分流造成道路拥堵。

3、场地综述

（1）土地分布：CBD是各种商业性建筑及综合性建筑的集中地带。CBD北块分布有许多住宅，零星点缀着一些办公用房、政府建筑及酒店。CBD南块包含相对较大的住宅区、政府建筑（包括博物馆）、酒店及闲置建筑等。南京路步行街东西横穿整个地块。

（2）建筑状况：CBD内有许多建筑都是历史保护建筑，但建筑状况总体较差，许多原有建筑特色由于过多的视觉干扰因素，例如电缆、标志牌、临时建筑物等。建筑高度多为2-9层，也有部分超高层建筑。

（3）交通状况：CBD地区路网密布，但由于许多道路相对狭窄以及缺乏适当的交通管理措施使目前交通呈混乱状态。CBD地区公共交通发达，地铁2号线穿越CBD。

二、规划目标

协调与平衡外滩CBD与陆家嘴金融中心的对景关系；建立一个充满活力、世界一流的现代化CBD；建立一个可持续发展CBD；

三、研究框架

5.4 With the Method of Cautious Incremental Renewal - from the perspective of urban environment

Currently, as the market-oriented market mechanism is gradually becoming the basic regulatory mechanism for urban development, the property developers are always eager for quick success and instant benefits, but go against the rules of urban development and renewal. So large-scale reconstruction at excessive speed emerges.

Halcrow thinks urban renewal is a continuous process. We should focus on urban renewal's individual characteristics of different regions and different types. What's more, the original urban space structure and social network structure should be taken into consideration as well. The recommended way is to adopt multiple channels and patterns to carry out effective and practical reconstruction.

·Case Studied: Planning and Design for Shanghai Bund CBD

·Client: Urban Planning Administration Bureau, Huangpu District, Shanghai

·Period: September 2003

I. Project Background

1. Planning Scope: from Huangpu River in the east to Central Henan Road in the west, from Renmin Road and Xinkaihe Road in the south to Suzhou River in the north, with a total area of about 103 hectares.

2. Current Issues: The competitive pressure caused by the rapid rise of Lujiazui Financial Centre in Pudong New Area; The historical buildings can not or are difficult to meet the modern office demands; Separation of pedestrians and vehicles is not implemented, thus resulting in the traffic jam.

3. Site Overview

(1) Land Distribution :CBD is the concentrated zone of various commercial buildings and mixed-use buildings. Many residences are distributed in the north of the CBD, with some office premises, government buildings and hotels scattering around it. In the north of the CBD are relatively large residential districts, government buildings (including museums), hotels, and vacant buildings, etc. The Nanjing Road Pedestrian Street is across the whole block from the east to the west.

(2) Buildings Condition :Many buildings in the CBD are protective historical buildings, but their overall conditions are relatively poor. Many original building features are interfered by excessive visual factors, such as electric cables, signboards, and temporary buildings, etc.

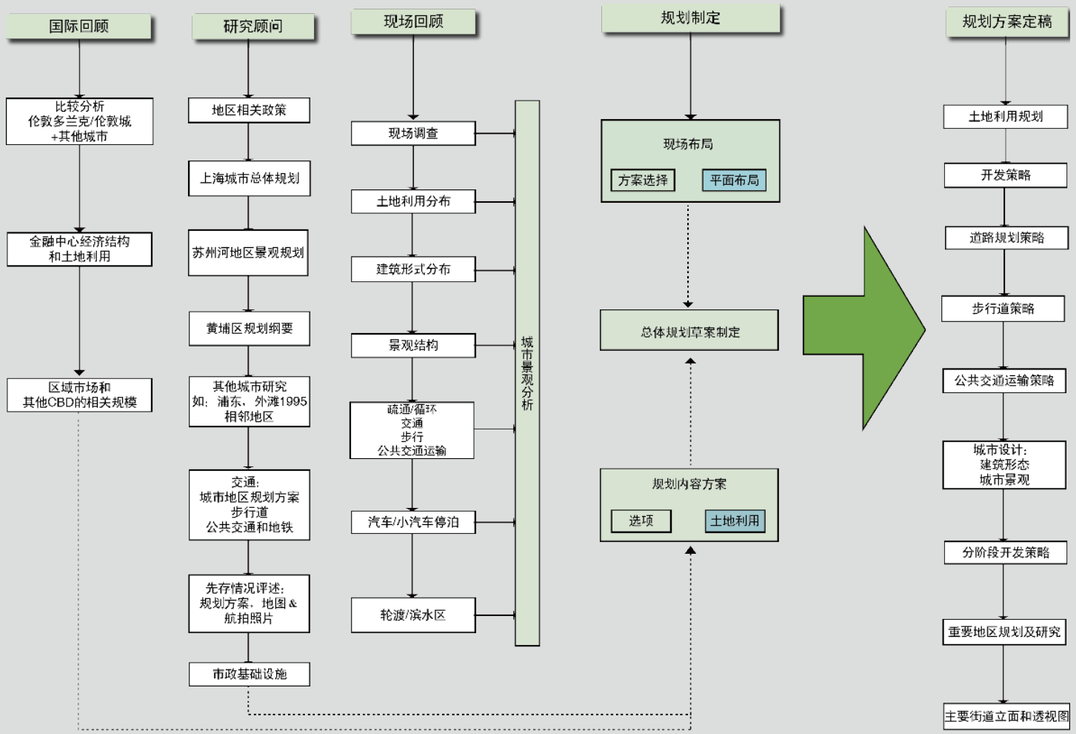
The building height is mostly 2-9 floors, and some are super high-rise buildings.

(3) Traffic Condition :CBD is densely covered with road networks. However, many roads are relatively narrow, and there is a lack of proper traffic control measures, thus leading to the current traffic jam.The public transportation in the CBD is quite convenient. Metro Line2 is across it.

II. Planning Objectives

Coordinate and balance the relationship between the Bund CBD and Lujiazui Financial Centre; Build a vibrant world-class modern CBD; Build a sustainable CBD;

III. Research Framework



四、方案设计

（1）设计概念——因地制宜策略和选择性填充

在新开发与历史文化风貌区之间寻求一种平衡；

强调整体的同时，强化各不同功能分区的特点；

（2）土地利用和活动框架——使用功能的有机结合

1）居住面积虽然有所增加，但所占比例有所下降。增加商业、办公以及宗教用地。

2）区域重建包括综合多种使用功能，加强外滩CBD的活力、多样性、安全性和综合性。所以，本次规划没有对土地利用进行严格地分配，但鼓励多功能用途的建筑。

（3）建筑形态——保留、改造、重建多元并举

1）保留高质量建筑的原有立面，对其内部进行整修，满足现代化办公的需求；

2）对风貌不佳的街区进行大范围填充，但必须对外滩特色的元素进行提炼，并保持与相邻建筑的临街立面协调。

新增建筑要与同区域内保留建筑的体量保持协调。

（4）交通组织——道路分级与人车分流多层级结合

1）CBD边缘主干道以车行道为主，形成主要的区域道路网；

2）商业街、历史街区和旅游点为行人优先道路；

3）禁止汽车通行的步行街，仅供公交车辆和少量的服务车辆通行。

IV. Schematic Design

(1) Design Concept - flexible adjustment strategy and selective filling

Seek balance between the new development area and the historical and cultural scenic area;

Enhance the characteristics of different functional divisions while focusing on the whole.

(2) Land use and activity frame- organic combination of different functions

1) Although the living space increases, its proportion has reduced. Increase commercial, office and religious space.

2) The reconstruction involves integrating multiple functions, and strengthening the Bund CBD's vitality, diversity, safety and integrity. Therefore, this planning does not make restrictive allocations to the land use, but encourages multi-purpose buildings.

(3) Architectural form- reservation, renewal and reconstruction

1) Preserve the original façade of high-rise buildings, and renovate their internal parts to meet the modern office demands;

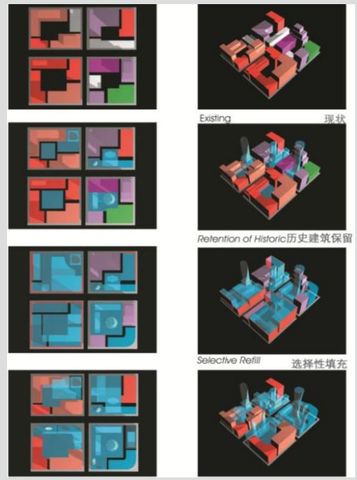
2) Implement a wide range of filling to the blocks with poor style, and refine the elements with the Bund characteristics, keeping coordinated with the roadside building façade of adjacent buildings. The new buildings should keep coordinated with the reserved buildings in the same area.

(4) Traffic organization- multi-level combination of road classification and pedestrian-and-vehicle dividing system

1) The arterial roads around the CBD are mainly vehicle lanes, forming the major regional road network;

2) The commercial street, historic district and tourist spots are the pedestrian priority roads;

3) The pedestrian street is only for buses and a few service vehicles. Auto not permitted.



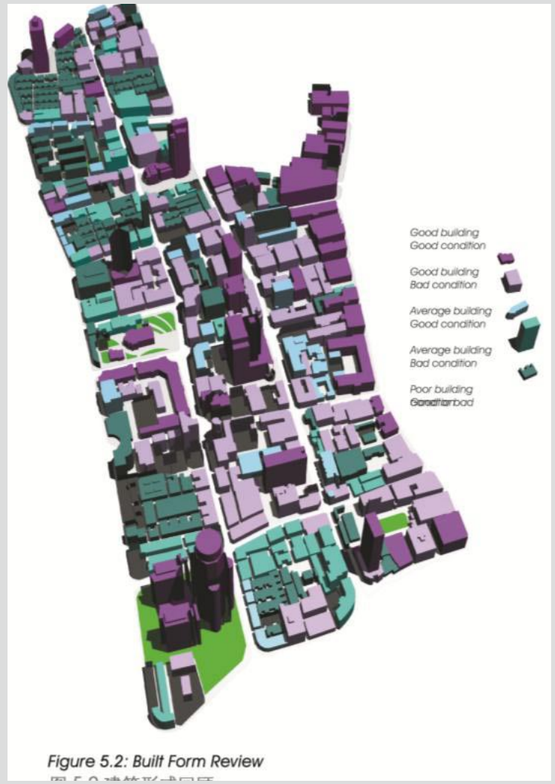


Figure 5.2: Built Form Review

五、总结

总体规划方案建议：

明确规划定位——为项目区域确立高品质、协调统一的定位；

区域风貌融合——与现有的南北相邻的规划区紧密融合；

城市空间互补——在土地利用和城市模式上与陆家嘴CBD形成互补；

确立次特征区域——通过土地利用和城市模式，建立“次特征区域”，从而形成具有吸引力、充满活力的各个区域；

保留建筑策略——保留历史建筑的精华；

有针对性设计——欢迎新的开发项目，在某些地点需要谨慎、敏感设计，在其它地点可以进行开放的设计；

加强门户的建设——创造明确的“引人入胜的感觉”。

V. Summary

Overall planning proposals:

Identify the planning orientation- establish high-quality and coordinated orientation for the project areas;

Integrate the regional features- closely link with the adjacent planned areas in the south and north;

Urban space complementation- the land use and city mode are complementary with Lujiazui CBD;

Establish areas with secondary characteristics- through land use and city mode, establish areas with secondary characteristics, thus forming attractive and vibrant zones; Strategy for preserved buildings - retain the essence of historical buildings;

Targeted design- encourage new development projects. Adopt cautious and sensitive design in certain areas, and open design in other areas;

Strengthen gateway image- create a definite "fascinating impression".

6、总结

在城市快速发展，社会与空间结构激烈变动的中国，城市更新已经是一个战略性的课题。它不应被单纯看作赢利性的工程技术行为，而是应该具有更高、更广的社会与经济目标。

在一定程度上讲，城市更新是城市发展永不停滞的脉搏，是永不衰竭的动力。城市更新已经超越了传统物质规划的领域，它需要我们更深的思考和更谨慎的行动。合乐也将在城市更新的道路上越走越远。

6. Conclusion

With the cities' fast development as well as social and space structure's dramatic changes in China, urban renewal has already become a strategic subject. It should not be purely considered as profitable engineering behavior, but it should have higher and wider social and economic objectives.

To some extent, urban renewal is the never stagnant pulse and never exhausted power for urban development. Urban renewal has surpassed the traditional physical planning, and it needs our deeper reflection and more prudent actions. Halcrow will also explore further on the road of urban renewal.

合乐在大都市地区新中心的规划实践

Halcrow’s Experience in the Planning for New Urban Centres

1. 合乐的关注

1. Halcrow’s Concern

1.1缘由

1.1.1中国城市化的发展进程对空间的需求

从整体来看，我国的城市化进程进入到了快速发展的阶段。但目前所表现出的是“大城市不大、中城市不活、小城市不强、小城镇不优”的状态。大都市地区依然像是一个有着巨大魔力的磁场，有能力吸引来自四方的人群。因此，建立网络化的大都市区带动整个地区发展，是中国城市化进程道路的重要而又有效的途径。并且，建立国际性以及国家性中心城市，作为大都市区的核心节点也是融入国际化发展的必要之路。

1.1 Rationale

1.1.1 The Demand for Space in China’s Rapid Urbanization

Viewed as a whole, China's urbanization is entering a stage of rapid development. However, it appears that "large cities are not large enough. Medium cities are not lively enough. Small cities are not strong enough and small towns are not excellent enough". Metropolitan areas, like magnets, retain the ability to attract people from every direction. Therefore, building networked metropolitan areas to drive the development of entire regions represents an important trend in China’s urbanization. Building nationally or internationally significant cities as the central nodes of larger metropolitan areas is the inevitable course towards internationalized development.

1.1.2大都市地区内部空间的重组

国际大都市都经历了从“单中心圈层蔓延”的城市空间结构，向多中心有序的紧凑空间结构转变的历程。目前我国的大都市地区也正在经历着这样的从裂变到重新聚合的历程。在这个过程中，新中心往往扮演着重塑城市形象、拉开空间格局以及有效整合资源，带动片区融入整体的重要角色。

由于公共活动积聚，新中心从一开始就是众望所归之地。在它的决策、计划到实施的过程中，受各方面人为因素影响的程度较大。境外规划设计公司参与的阶段相对较为前期，而且由于自身的优势所在，常常充当着外脑，高瞻远瞩为决策者提供相对理性、中立的建议，为决策提供帮助。

1.1.3合乐的实践

合乐公司曾参加过多个都市地区的新中心的规划设计，如迪拜的商业湾、武汉杨春湖城市副中心、南京浦口中心、沈阳东塔副中心、珠海沿海地区副中心等的规划设计。在这些项目中充分发挥了合乐公司在滨水空间、轨道交通以及城市设计等诸多方面的优势，为地区的高水平建设提供了前期咨询。

1.1.2 The Restructure of the Internal Space of Metropolitan Areas

All international cities have adopted to some degree rational compact spatial systems of multi-centers involving the city’s spatial structure of expanding concentric circles". Today, China's metropolitan areas are also experiencing the same process: from fission to re-polymerization. In this process, a new city center often plays an important role in reshaping a city’s image, creating a new spatial pattern and effectively integrating resources so as to drive regional activity and growth.

An increasing number of public events in China means that new city centers in which to hold such events are instantly popular. Decisions to create new city centres, their planning and implementation, are greatly influenced by personal factors. The early involvement of foreign planning and design companies can therefore be beneficial. Foreign companies, by virtue of superior experience and technology, often serve as an external brain and futurist to provide decision-makers with relatively rational and independent advice and help with decision-making.

1.1.3 Halcrow’s Practices

Halcrow participated in the planning and design for new centers for several metropolitan areas, such as Business Bay, Dubai; Yangchun Lake city sub-center, Wuhan; Pukou center, Nanjing; Dongta sub-center, Shenyang and coastal sub-center, Zhuhai. In these projects, Halcrow applied its design superiority in waterfront space, rail transportation and urban planning, and provided prophase consultancy on high level regional construction.

1.2概念

1.2.1大都市

大都市（Metropolitan）是区域经济概念的延伸，是指在一定范围内城市群、城市圈、城市带中发挥核心作用的城市。它是经济、科技、文化教育、人力资源集聚的重要载体，是促进经济社会有效运行的平台，是一个地区综合实力、管理水平、竞争能力的集中体现。目前中国的大都市主要包括上海、天津、北京、深圳、广州、青岛、大连、重庆、武汉、西安等城市。

1.2.2新中心

“城市新中心”是一个仅次于城市主中心、承担城市诸多主要功能的综合性城市区域。它是城市经济社会发展到一定阶段的产物，是在城市边缘区出现的新的要素集聚点。

在大都市地区，往往有若干新中心，与一般城市的新中心的不同在于，它具有更强的综合性，往往不仅是某一方面主导功能的积聚。而且一般城市的老中心在还未饱和时，由于城市扩展，需要建立新中心。这种情况下，在初期由于投入的有限和滞后，会出现人气不足的局面。而大都市地区的新中心，往往是主中心或老中心在自身空间不足的情况下的溢出。其本身还在酝酿中时，就已经有了多种有前途的可能。

1.2 Concept

1.2.1 The Metropolitan Area

A ‘metropolitan area’ or ‘metropolis’ is an extension of the concept of a regional economy and refers to the central role a city can play in an urban agglomeration, an urban circle or an urban belt within a certain range. It is an important medium of economic activity, science and technology, culture, education, and human resource clusters: a platform for promoting effective economic and social interactivity and a concentrated expression of comprehensive economic strength, management standards and competition of a region. At present, China's metropolitans include Shanghai, Tianjin, Beijing, Shenzhen, Guangzhou, Qingdao, Dalian, Chongqing, Wuhan and Xi'an.

1.2.2 A New Center

A “city new center’ is proximate to a city’s main center and constitutes a comprehensive urban area fulfilling many of the city's main functions. It is a product of a city's arrival at an economic and social developmental stage and a cluster of new elements emerged in the urban edge.

In metropolitan areas there are often several new centers, the differences being that a one new center may be more comprehensive and not merely a cluster of activity and facilities focuses on a single dominant function. Where older centers of ordinary cities are not saturated, new centers may be built as required. However, there is a significant risk they will be under-populated due to limited or delayed input in the initial stages. Often a new center of a metropolitan area is the result of overflow of a main or old center due to lack of space. Yet new centers have the potential for a variety of possible futures, even if they are already under deliberation.

2. 合乐的视野

2.1国内外案例

随着全球化大都市规模的逐渐扩大，多中心发展成为现代国际大都市空间格局演变的主导方向，建设新中心成为大都市多中心发展的重要选择。东京、伦敦、巴黎、华盛顿、莫斯科等国际大城市都通过建设“副都心”解决了城市发展中的空间矛盾。

从20世纪50年代“首都圈整备计划”开始，经过六十多年的规划发展，东京共形成了池袋、新宿、涉谷、大崎、上野-浅草、锦系町-龟户、临海七个副中心，每个副中心既是所在地区的公共活动中心，同时也承担东京作为世界城市的某些职能。这种网络化都市格局，在一定程度上促进了东京都市群的形成。

巴黎在1965年的巴黎大区规划中明确提出了设立城市副中心，建设发展凡尔赛等9个副中心，其中拉德芳斯已经是公认的副中心建设的典范之作。

上海从1999年的城市总体规划中提出，要建设花木、徐家汇、江湾-五角场、真如四个城市副中心，总面积9.5平方公里，实现了上海城市结构由“单中心”向“多中心”转变。

2.2 理论总结

在都市区的中心建设中，从空间位置、发展模式、以及局部形态等方面，都有许多理论值得借鉴。

多中心理论

美国经济学家昌西.哈里斯和爱德华.厄尔曼研究了二战后欧洲和美国城市扩展的状况，提出了著名的多中心理论，揭示了城市发展为多中心的内在根据和动力，断定了城市发展具有多中心的趋势。城市是由若干不连续的地域组成，他们分别围绕不同的核心形成，在这些不同等级的经济功能体内，土地利用功能区布局大小不一、布局有弹性。

紧凑城市

它是在城市规划建设中主张以紧凑的城市形态来有效遏制城市蔓延，保护郊区开敞空间，减少能源消耗，并为人们创造多样化、充满活力的城市生活的规划理论。紧凑城市理论所提倡高密度开发、混合的土地利用和优先发展公共交通等三大策略尤其适用于新中心区的规划与设计。在中心区地带应当形成以TOD为主要发展模式的高密度混合区域。

垂直城市

垂直城市是相对于水平城市而言的纵向空间分布。垂直城市目前主要用在建筑概念上，是指同一栋建筑或一组高密度的建筑群里建有完备齐全的银行、邮局、餐饮、购物、办公、酒店、居住等一般城市生活和工作的功能。这不同于一般的商住混合物业的概念，是一种微缩城市功能在庞大建筑体内，尤其是在地标建筑中垂直布局。

在中心区的核心区，往往需要一个承建地下交通零售空间、地面商业休闲空间以及地上商务空间的城市综合体，成为空间乃至人文活动的地标，并且引领周边片区发展，带动其他功能的积聚。

2. Halcrow’s Perspective

2.1 References at Home and Abroad

With the global growth of cities, multiple-nuclei development has become the dominant direction of modern international metropolitans in the evolution of spatial structure patterns. Building a new center becomes an important choice for metropolitan multi-centric development. Tokyo, London, Paris, Washington, Moscow and other major international cities have each resolved space contradictions in urban development by building sub-centers.

Starting from "metropolitan area preparedness plan" in the 1950’s and through more than sixty years of planning and development, Tokyo has evolved seven sub-centers: Ikebukuro, Shinjuku, Shibuya, Osaki, Ueno – Asakusa, Kinshicho – Kameido and Rinkai. Each sub-center is not only a local public activity center, but has assumed some of the key functions of Tokyo as a world city. This urban network pattern promotes to a certain extent, the formation of the Tokyo Metropolitan agglomeration.

The lle-de-France planning of 1965 provided for the development and construction of nine sub-centers of Paris, including Versailles of which La Défense is recognized as a good model of sub-center building.

Starting from 1999, Shanghai proposed in its urban master planning to build four city sub-centers: Huamu, Xujiahui, Jiangwan - Wujiaochang and Zhenru, with a total area of 9.5 square kilometers. The vision was to transform Shanghai’s urban structure from “single-nucleus” to “multiple-nuclei".

2.2 Theoretical Summary

In terms of spatial location, mode of development, and local shape, many theories deserve to be referenced in the construction of centers of a metropolitan area.

Multiple-nuclei Theory

American economists, Chauncey Harris and Edward Ullman, studied the status of urban expansion in Europe and the United States after World War II. They put forward the famous multiple-nuclei theory, examining the inherent and compelling basis for a city to be developed into a multiple-nuclei one. They concluded that urban development has an inherent tendency towards multiple-nuclei. A city is made of a number of discontinuous districts formed around different nuclei. In these economic cells of differing levels, the layout of land-use and area function is of differing sizes and full of flexibility.

Compact City

This planning theory advocates the use in urban planning and construction of compact urban form to effectively curb urban sprawl, protect open spaces in the suburbs, reduce energy consumption, and create diversified and vibrant city life for inhabitants. The three major strategies of high-density development, mixed land use and priority development of public transit advocated by the compact city theory are especially suitable for use in the planning and design for a new center area. According to this theory, a central area should form a high-density mixed-use area with TOD as the main development mode.

Vertical City

'Vertical city' refers to vertical spatial distribution with respect to a horizontal city. The Vertical city theory is mainly used in architectural concepts and refers to a structure or a group of high-density structures with complete banks, post office, restaurants, shops, offices, hotel, residential and other general city life and work functions. Different from the general concept of commercial and residential property, it is a miniature urban function in vivo in a very tall building, especially in a vertical layout of a landmark building.

A core area of a central area often requires an urban complex with underground traffic and retail space, ground-level commercial and leisure space as well as separate commercial space, which can become a landmark of space and even human activity, leading the peripheral area development and bringing along the accumulation of other functions.

2.3发展趋势

从都市圈发展的一般规律来讲，中心城区外围副中心的形成，是都市圈能级和规模进一步扩张的关键环节。新中心是在都市扩展的离心阶段萌芽，在离心扩大阶段形成。在大都市地区中心的位置往往与城市的整体空间结构、空间演替、规模、公共交通方式的选取有关。

新中心要有较为完善的设施和相对独立的功能，居住和就业就近平衡。同时，发达的轨道交通系统是副中心形成和发展的重要支撑条件。东京在建设副中心时，首先是修建了一条环市中心的轻轨线，依托各个交通枢纽中心把各副中心连接起来。之后以副中心为起点修建了多条放射状、向近郊或邻近城市延伸的轻轨线。

大都市通常有4～5个副中心，各个副中心的功能并非小而全，而是根据自身的情况有所侧重。就发展模式而言，城市副中心包括主导功能驱动模式、园区升级模式、生活需求、公共设施导入四种主要类型。就空间结构模式而言，又可分为市区多中心、郊区多中心以及都市区内多中心三种发展模式。本文将要涉及的两个合乐的项目案例分别为市区多中心（沈阳东塔）和郊区多中心（珠海平沙）。

副中心是功能高度复合的场所，无论是在水平空间还是立体空间都实现了混合，体现了活力。在上海的副中心建设中，真如副中心规划形成了“纵横双轴、南北两心、商街合环、带型公园”的布局结构。通过对“寺、仓、市、轨”历史记忆点的挖掘，体现了对城市文脉的继承与延续。真如副中心规划地下空间建筑面积为120万平方米，其中商业设施为40万平方米，停车设施为55万平方米，以垂直城市、综合开发理念提高了土地利用的集约程度。

2.3Development Trend

In view of the general law of metropolitan circle development, the formation of sub-centers in the periphery of a central city is a key link for further expansion of a metropolitan circle's level and size. New metropolitan nuclei are buds in the centrifugal phase of city expansion and are formed in a centrifugal expansion phase. Metropolitan nuclei tend to be located after consideration of a city's overall spatial structure, space succession, size and mode of mass transit.

A new center should have perfect facilities and relatively independent functions with balanced residential areas and nearby employment. A developed rail transit system is an important element in the formation and development of a sub-center. When sub-centers were built in Tokyo, the first step was to construct a light rail line linking the center and sub-centers by using various transportation hubs. Later, starting from sub-centers, light rail lines in a radial shape were constructed and expanded to the suburbs and neighboring cities.

A metropolitan usually has 4 to 5 sub-centers. Each sub-center need not be small and comprehensive but may be focused on some particular functions according to its unique situation. In view of development mode, sub-centers have 4 types of mode, including 'dominant function-driven mode', 'park upgrade mode', 'needs of life' and 'public facilities leading-in'. In view of spatial structure and size, there are three development modes: urban multi-center, suburban multi-center and metropolitan multiply-nuclei. This article will describe two projects successfully executed by Halcrow: urban multi-center (Dongta, Shenyang) and suburban multi-center (Pingsha, Zhuhai).

The sub-center is a functional complex, in terms of horizontal space or three-dimensional space, reflecting a city's vitality. In the construction of sub-centers in Shanghai, the Zhenru sub-center will have a layout of "vertical axis and horizontal axis, nuclei at the north and south, commerce and street in the same ring, parks in belt type" according to the planning. By tapping historical memory of the "temple, warehouse, market and railway", succession and extension of the urban context are embodied in the planning. Planning for the Zhenru sub-center includes the construction of an underground space with an area of 1.2 million m2, of which 400,000 m2 is for commercial use and 550,000m2 is parking. The concept of vertical city and comprehensive development increases the intensity of land utilization.

3. 合乐的践行

3. Halcrow’s Practice

3.1合乐项目概述

在过去的十年时间里，合乐公司曾参加过多个大都市地区新中心的规划设计，包括南京浦口中心区（2005年）、武汉杨春湖城市副中心规划（2006年）、迪拜商业湾（2009年）、沈阳东塔副中心（2011年）、珠海平沙新城规划以及中心区设计（2012年）。这里就近两年的两个项目进行详细介绍。

3.2 沈阳东塔副中心

东塔地区是沈阳市一主（浑南、浑北）四副（铁西、沈北、曹仲、东塔）城市结构中距离主城区最近的副中心，位于沈阳市东南部，一环路与浑河之间。随着沈阳城市化进程加快，沈阳城市建设进入了优化城市空间、提升城市功能的关键性历史时期。东塔机场这一重要的交通枢纽也逐渐由处于城市边缘变为被城市建设包围的状态，机场与城市发展相互干扰的诸多矛盾日益凸显。

东塔地区总面积为7.6平方公里，利用机场搬迁后释放的巨大空间资源，重审城市功能、优化空间布局、缝合交通体系、塑造景观品质、提升土地价值。通过“释放与整合、转型与提升”，实现东塔机场地区的华丽转身。东塔城市副中心，将成为沈阳城市格局中的重要发展极。在上一轮的沈阳市城市总体规划阶段已经就本地区的发展框架，给出了明确的定位，本次规划的重要任务是给出更为细化的发展策略以及空间形象。

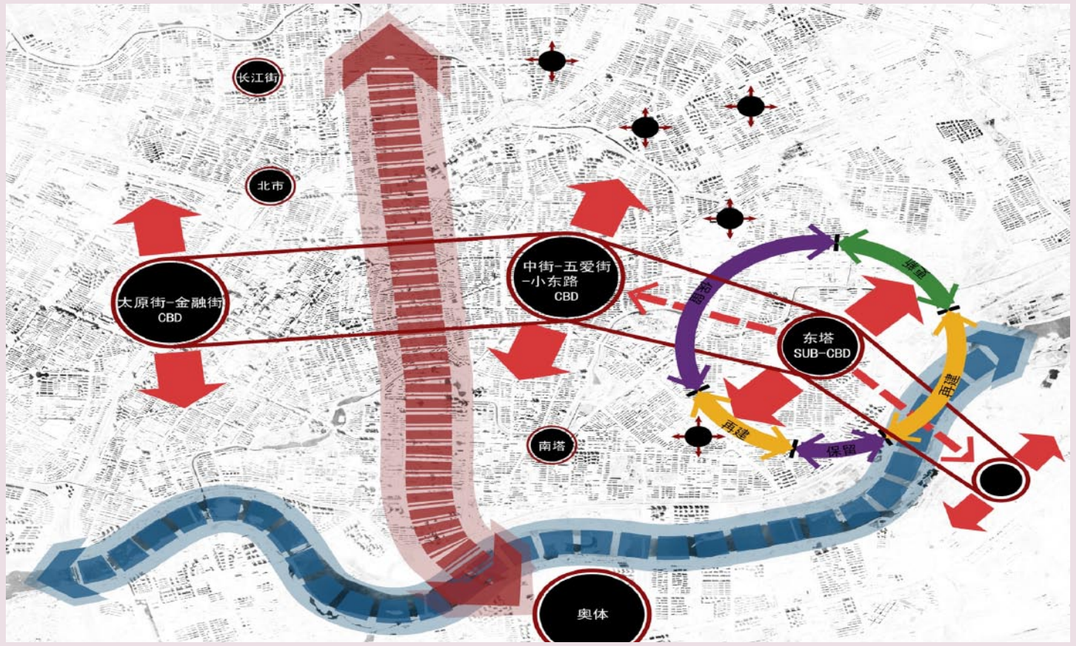
3.1 Halcrow Projects Overview

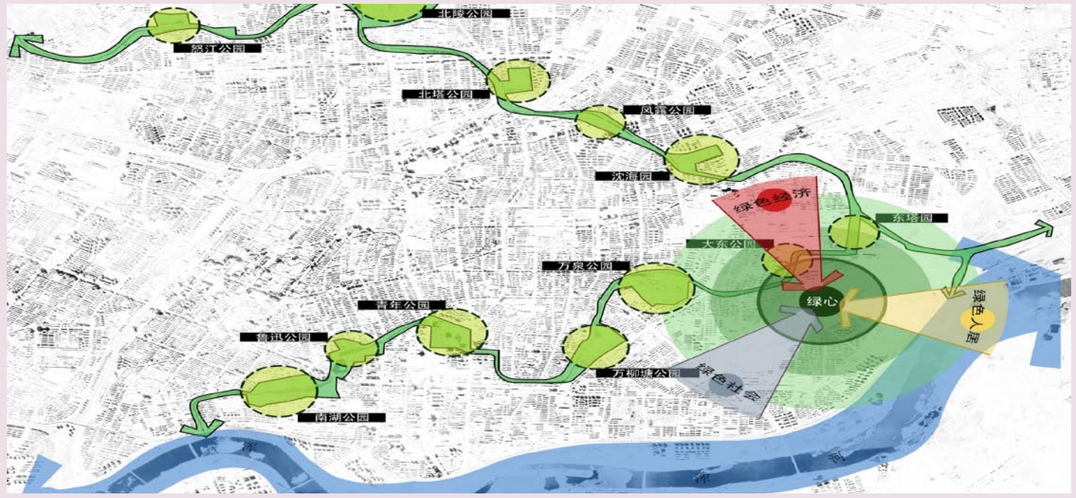
In the past decade, Halcrow has participated in the planning and design for new centers in several metropolitan areas, including the central area of Pukou, Nanjing (2005), Yang Chun Lake city sub-center, Wuhan (2006), Dubai Business Bay, Dubai (2009), Dongta Sub-center, Shenyang (2011), and the new town planning and central area design for Pingsha, Zhuhai (2012). Two projects carried out in the last two years will be described here in detail.

3.2 Dongta Sub-center, Shenyang

Dongta district is a sub-center nearest to the main center in the urban structure of Shenyang City, comprising one main center (Hunnan and Hunbei) and four sub-sectors (Tiexi, Shenybei, Caozhong and Dongta). It is located in the southeast of Shenyang City, and between No.1 Ring Road and the Hunhe River. Along with the accelerated process of urbanization in Shenyang, Shenyang urban construction has entered a critical period in which to optimize urban space and enhance urban functions. Dongta airport, an important transport hub at the edge of the city, is also gradually being surrounded by urban construction. Airport and urban development interfered with each other and many contradictions became increasingly apparent.

Dongta district has a total area of 7.6 square km2. The huge area freed up by the relocation of the airport will be utilized and urban functions will be reassessed to optimize the space layout pattern, integrated transportation system, landscape quality and land values. By means of “release and integration, transformation and enhancement”, Dongta Airport district will undergo a magnificent change. The Dongta sub-center will become an important development pole in the pattern of Shenyang City. The development framework of Dongta district was clearly pointed out in the previous master planning for Shenyang City. The main task of the current planning is to provide a more detailed development strategy, as well as a spatial image.





本次方案我们主要从城市更新、机场搬迁以及都市滨水区几个不同的维度进行初步研究，通过整合基地的优势资源，充分考虑未来轨道交通、区域道路、河流生态带等的带动作用，在总体三心互动、功能复合的总体框架下，规划富有区域特色的城市副中心空间。合乐提出了：

三大空间策略

第一、缝合城市功能

从发展环境看，东塔机场地区要结合两大外部机遇：

（1）沈抚同城。未来以沈阳为中心，形成6条城镇发展轴，东塔地区位于其中的沈顺连接带上，沈抚两市是我国距离最近的两个特大型城市，沈抚同城化建设将实现沈抚两市总体实力和竞争优势全面提升。未来将大力发展先进装备制造业、新材料产业和现代服务业。重点发展旅游休闲、文化创意、健康科技和生态宜居产业。

（2）沈阳城市由单中心向多中心的空间发展模式转变。东塔距离城市主中心较近，将起到”分散“和“极化”主中心功能的作用，东塔要分担城市中心的部分商务功能、补充完善文化休闲功能，缓解城市中心的交通拥挤和预防城市中心因为聚集规模过大而带来的聚集负经济现象。

东塔地区作为沈阳市主城区对接东部的东门户，以区域联动引领沈抚同城一体化发展连接带的重要功能节点；以轨道交通以及新建浑河大桥为支撑，南拓北连，成为浑南浑北片区的又一功能衔接点；搭建起联系城市功能的“空间核心”；梳理区域交通关系网络，形成依托副中心的交通辐射网络，打造带动东部片区发展的动力引擎。同时促进沈阳市作为区域中心城市的功能与实力，增强其辐射与带动作用。

We conducted a preliminary study from several different perspectives of urban renewal, airport relocation and urban waterfronts. By integrating superior resources and giving leading roles to future rail transit, regional roads and a river eco-belt, a sub-center space full of regional characteristics was planned under the overall framework of the interaction of a three-center and functional complex. Halcrow put forward:

Three Major Space Strategies

First, Integrating or “Suturing” Urban Functions

In view of the development environment, Dongta airport district shall seize two major external opportunities:

(1) Integration of Shenyang and Fushun. In the future, centered at Shenyang, six urban development axes will be formed. Dongta district lies in the Shenyang- FuShun connection area. Shenyang and Fushun are the two closest of the very large cities in China. Integrating Shenyang and Fushun will result in an all-rounded enhancement of their combined economic strength and competitive advantages. In the future, great efforts will be made to develop modern industries such as advanced equipment manufacturing, new materials production and modern services. Focus will also be given to the development of tourism and leisure industry, creative cultural industry, health science and technology industry and eco-living industry.

(2) Shenyang is transforming its development mode from “single-nucleus” to “multiple-nuclei”. Dongta, closer to the city's main center, will play the role of "dispersion" and "polarization" of the main center’s functions. Dongta will share part of the business functions of the city center, supplement and improve the function of culture and leisure, mitigate traffic congestion in the city center and prevent the city center from clustered, negative economic phenomena brought about by excessive agglomeration.

Dongta district, as the eastern gateway to the main urban area of Shenyang, will become another functional nexus between Hunnan and Hunbei district by acting as an important functional node leading the development of Shenyang and Fushun integration connection area. It will be driven by a regional linkage, the support of rail transportation and a newly built Hunhe Bridge as well as an extension towards the south and connection to north. It will create a “spatial core” to link city functions, comb regional traffic connectivity network, form a traffic radiation network dependent on sub-center and create a power engine to drive the development of the eastern area. At the same time, it will promote the function and economic strength of Shenyang City, the regional central city, and enhance Shenyang’s radiating and leading role.

第二、维护生态基底

保护东塔地区现有生态廊道，通过人工水系沟通（环城水系）玉带与（浑河）银廊，创造丰富的滨水新空间，承载休闲活动，实现沈阳市东部地区的可持续发展。

第三、构筑人文场所

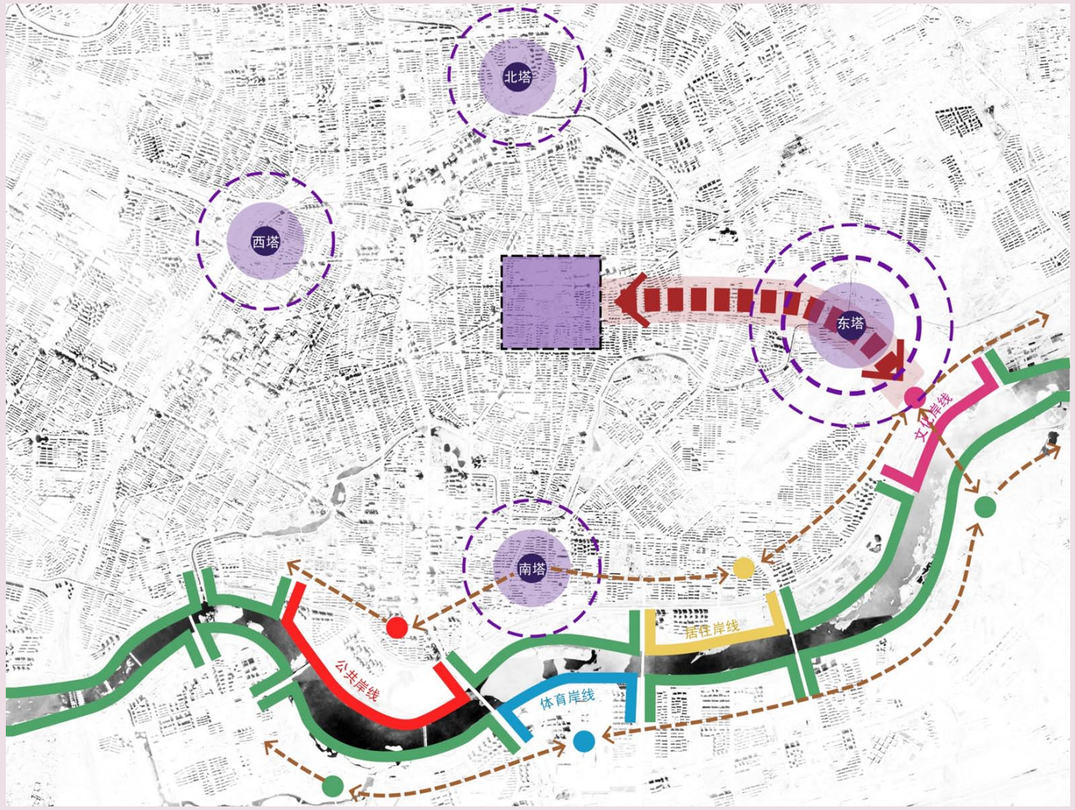
挖掘东塔地区历史文化、工业文化，传承城市文脉，借由城市更新塑造魅力形象；借鉴国际大都市滨水地带的空间组织模式，沿河岸线形成以文化为主导的公共空间，补充现有不足。同时在与河岸垂直的方向增加可进入滨水地区的通道。通过商业、商务、居住、创意、文化演艺等功能混合，打造功能完善、交通顺畅、生态宜居、富有活力的沈城东部新中心，形成集聚人气、营造活力的场所。

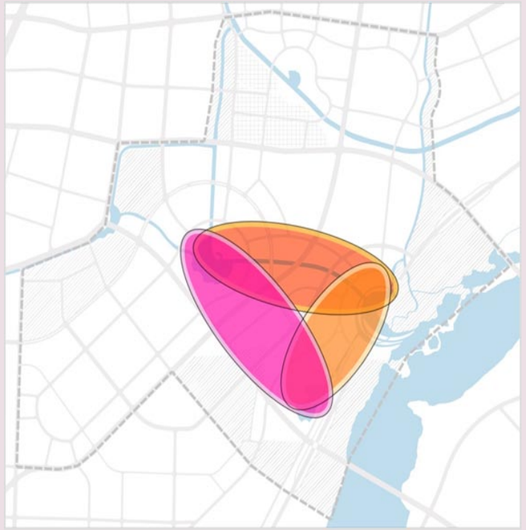
Secondly, Maintaining the Ecological Base

An existing ecological corridor in Dongta district shall be protected by means of an artificial waterway (water around the city) to intercommunicate with the “Jade Ring” and (Hunhe River) “Silver Corridor”, thereby creating a wealth of new waterfront space for leisure activities and achieving the sustainable development of the eastern part of Shenyang City.

Thirdly□Building a Humanities Space

The river shoreline will become a culturally dominated public space to supplement the existing shortcomings. This will be achieved by tapping the historical and industrial culture of Dongta district carrying forward the urban context, creating a charming image of urban renewal and using an international metropolitan waterfront space organizational model for reference. Meanwhile, channels into the waterfront will be increased in a riparian vertical direction. A new east center of Shenyang will be created with complete functions, smooth traffic, ecological livability and vitality through the mixing functions of commerce, business, residence, creativity, culture and performance, thus becoming a popular and vibrant place.





四大概念设计特色

Four Major Features of the Concept Design

第一、与区域互动的空间结构

整合现状资源要素，加强浑南与浑北互动，带动东部发展，形成西南、东北向的城市功能拓展轴，以中部复合性功能中心片区带动两侧发展。形成商务交通枢纽核、科技总部办公核及文化创意核三大核心。

第二、复合型的道路交通体系

对接区域交通，使东塔机场地区由交通尽端变成交通节点。建立多层次的路网空间格局，交通性道路与生活性道路相分离的“道-路-街”的道路组织模式，通过便捷的公交换乘、宜人的步行尺度倡导绿色出行模式。

在滨水区，平行于水岸的城市干道往往阻碍与腹地的联系，因此江岸可达是滨水空间塑造的重要问题。可达性可以通过增加公共交通站点和加强滨水步行系统来实现。我们大胆的建议将二环路局部下穿，将浑河湿地引入，将城市功能在局部导出，提高浑河沿岸公共亲水性，也便于形成面向东部的城市门户意向。

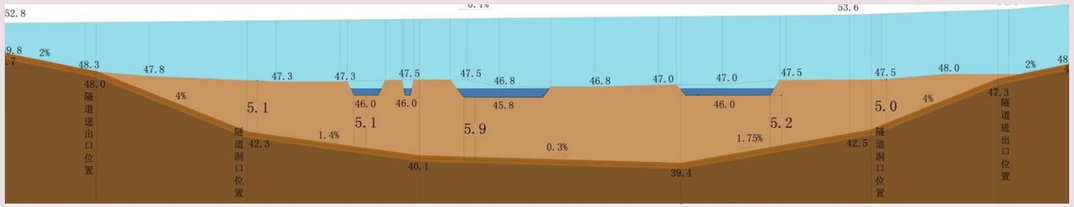
First, Regional Interactive Spatial Structure

Integrating existing resource elements; strengthening the Hunnan and Hunbei interaction; and driving the eastern section’s development and forming a northeastwards urban function extended axis will drive the development of both sides by establishing a central, complex function area. The three nuclei of a commerce and traffic hub, S&T headquarters office and a cultural centre will be the result .

Second, Compound Road Transport System

Dongta airport area will be transformed into a traffic node from a traffic dead end by connecting with the regional transportation system. The spatial pattern of a multi-level road network will be set up to achieve an organization mode of “road, way, street” separating roads for transportation purposes from roads for domestic living purposes. Environmentally friendly travel mode is promoted by means of convenient public transit transfer and a pleasant, ample pedestrian area.

In the waterfront area, urban trunk roads parallel to the riverbank often impede the connection to hinterland. Accessibility is therefore an important issue in creating waterfront space. Accessibility can be achieved by increasing public transit stations and prioritising waterfront pedestrian capacity. We put forward a bold proposal to take part of the No.2 Ring Road underground to allow for Hunhe wetlands. This will permit the desired urban functions and facilitate the formation of the intended city gateway towards the east whilst improving the appeal of the Hunhe River bank towards the public as well.

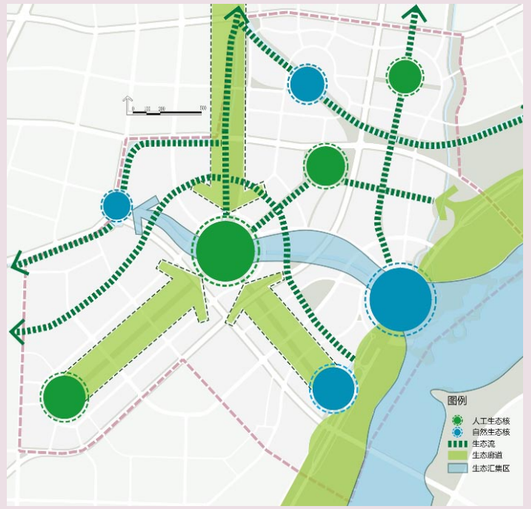


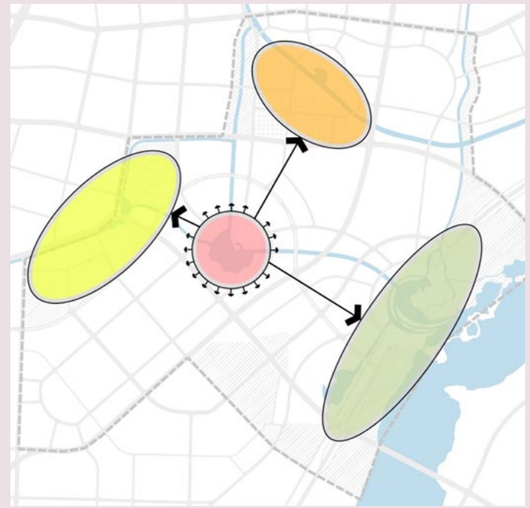
第三、景观型的生态策略

沟通“玉环”与“银带”，使基地南北向的生态格局在内部产生横向关联，“依水复绿” 形成有机渗透和集聚，展现自然之美；打造城市轴线景观廊道，组织更加有序列感的中央商务景观，展现城市之美；打造浑河沿岸的绿地景观，绿廊的营造充分注重生态效益的发挥，集中复建生态环境与文化建筑的互相衬托，展现生态之美。

Third, Landscape-ecological Strategy

The "Jade Ring" will be connected to the "Silver Corridor" so that the ecological pattern of north-south base will generate an internal horizontal relationship. This will show off the beauty of nature through organic infiltration and collection produced by “greening recovered with water”. An urban axis landscape corridor will be built and a central business landscape with a greater sense of sequence will be organized to highlight the beauty of the city. Green landscaping along the Hunhe River bank will be created and great attention will be given to promote ecological benefits. This will be achieved by creating a green corridor and by rehabilitating the ecological environment and various cultural buildings to showcase the environment.



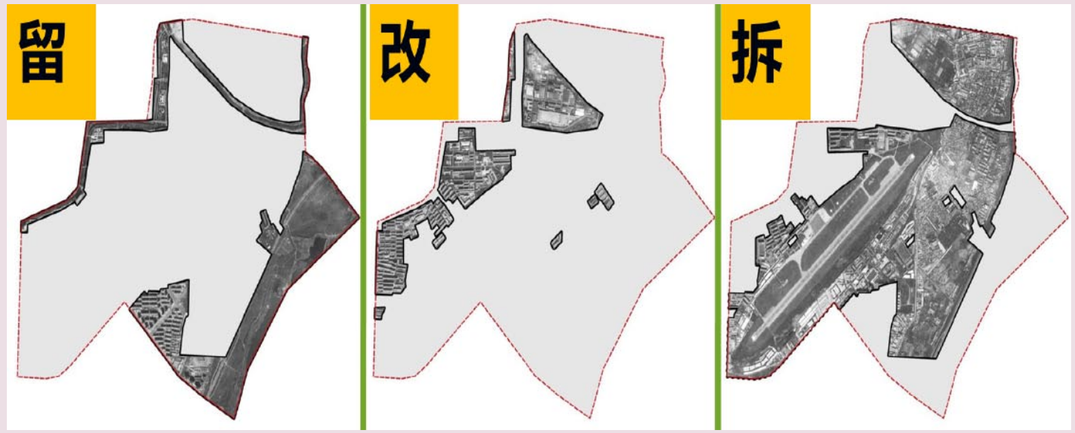


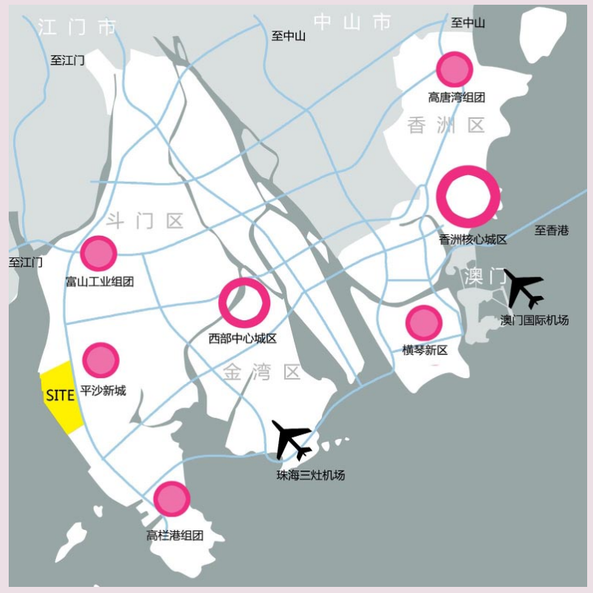
第四、丰富的建筑肌理空间

通过不同体量的建筑围和，创造不同的建筑肌理空间。中央功能复合区采用轴线的手法，加强与河岸的空间关系，引导开发向滨水区有序拓展。在内部河道的两侧以小尺度建筑体现滨水特色风情。中心区的活力是建立在多种功能集聚和活动混合的基础上的，不同功能建筑以多样性和互补性达到共生形态。在创意产业区，需要保留现有道路肌理，保留有价值的厂房，保留历史回忆。

Fourth, Rich Architectural Texture Space

Different architectural texture spaces will be created by enclosing buildings of different volumes. The central functional complex area will adopt an axis approach to strengthen the spatial relationship with the river bank and guide the orderly expansion of the waterfront. For internal rivers, small volume buildings on both sides embody the waterside characteristics. The vitality of the central area is built on a mix of a variety of functions and activities while the different functional buildings will reach symbiosis by virtue of their diversity and complementary. In the creative industrial zone, it is necessary to retain the existing road texture, valuable plants and historical features.





3.3珠海平沙新城概念规划

作为国家级经济技术开发区的高栏港经济区在“西部大开发”的推进中，在城市交通、产业、城市三大格局的构建中、在珠中江一体化的进程中，以及在粤港澳合作的探索中都扮演着先头兵的角色，而平沙新城是高栏港经济区的一个重要的功能区。随着内外部发展形势的变化，平沙新城发展已到了一个“战略节点”和“机遇时刻”，迎接外部机遇、发挥自身优势、推动西部地区城镇化、促进城市功能转型与重构将是平沙新城在城市发展中承担的历史使命。

珠海平沙新城西邻黄茅海，南至三一重工用地线，东至高栏港高速，北至乾务镇交界。总面积约为25 平方公里（其中海泉湾约5 平方公里）。本项目的规划设计内容分为两个层次，分别为平沙新城概念性规划设计和重要节点详细设计。

本次规划的主要任务就是要解决，如何在开发平沙新城的战略背景下确定新城功能定位；如何在构建新城功能体系过程中明确新城发展动力；如何在整合资源的条件下最优利用资源；如何在打造滨海新城的过程中塑造平沙的空间特色。通过对区域整体态势的总体把握，制定了：

五大发展战略

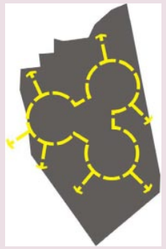
高瞻远瞩—着眼区域统筹，促进空间重构

和而不同—南北功能共生，东西产业互动

低碳高效—打造价值高地，构筑成本洼池

科技领先—三大系统支持，构建未来新城

特立独形—塑造鲜明特色，创新滨海名片



再此基础上，我们细化定位以及量化空间，提出了：

四大空间策略

第一、区域对接的交通策略

利用东西空间走廊联系平沙新城与珠海主城区，拉近与港澳的空间距离。在南部港区、新城和北部城市间建立区域发展的新轴线。

第二、塑湖造湾的景观策略

最大化增进海湾开发，在基地内部塑造水主题景观核心，过滤海水泥沙，增加滨水岸线长度，吸引人气内聚，构筑独具特色的城市景观风貌。

第三、服务引领的功能策略

新城作为珠海西翼海洋产业提升的商务中心、珠海海洋温泉开发的旅游名片，高栏港区发展的国际化生活配套。

第四、山海融城的生态策略

梳理生态网络，增加入海口生态复合度，最大化保留山林水系的生态廊道，以组团化城市形态使城区融于自然环境之中。

整体形成“一带贯穿、双轴汇聚、三湾引领、六区共进”的规划结构。我们以“活力彩带”和“绿链镶珠”两个概念为基础，结合其他方案的优点，进行城市设计。通过轴线、节点、地标、界面、开放空间、分区六大设计要素，构建整个新城城市设计框架。

3.3Concept Plan for Pingsha New Town, Zhuhai

Gaolan Port Economic Zone, as a state-level economic and technological development zone, plays the role of forerunner in the advance of "western development", in the construction of three patterns of urban transport, industry and city, in the process of integration of Zhuhai, Zhongshan and Jiangmen and in the furtherance of co-operation between Guangdong, Hong Kong and Macao. Pingsha New Town is an important area in the Gaolan Port economic Zone. With changes in the situation of internal and external development, the Pingsha New Town development has come to a “strategic node” and “opportunity time”. To meet the external opportunities, give full play to its own advantages and promote the urbanization of the western region and the transformation and reconstruction of urban functions will be the historical mission undertaken by Pingsha New Town in urban development.

Pingsha New Town is close to Huangmao Sea on the west, Sany land on the south, Gaolan Port expressway on the east and Qianwu town boundary on the north, with a total area of approximately 25 square kilometers. The planning and design for the project is divided into two stages: conceptual planning and design for Pingsha New Town, and detailed design for key nodes.

The main task of the planning is to solve problems on how to determine the functional position of the New Town against the background of the strategic development of Pingsha New Town; how to identify the momentum for New Town’s development in the process of building New Town’s functional system; how to optimally use resources in the process of integration; and how to shape Pingsha’s spatial features in the process of building the coastal new town. With regard to the overall regional trend, the following strategies were put forward:

Five Major Development Strategies

Foresight - focusing on regional co-ordination to promote space reconstruction.

Harmony without uniformity – North-south functional coordination and east-west industrial interaction.

Low-carbon and high efficiency – Creation of value highland and cost lowland.

Led by science and technology – Three major systems support to build a future New Town.

Unique – Creation of distinctive features and coastal name card.

Based on the prior paragraph, we refined the positioning and quantified the space, and proposed:

Four Major Spatial Strategies

First, Whole Regional Traffic Connection Strategy

The East-west space corridor will be used to connect with the Pingsha New Town and the main urban area of Zhuhai, and to shorten the spatial distance to Hong Kong and Macao. A new axis for regional development will be set up in the southern port area, the New Town and the north of the city.

Second, Creating Lake and Bay Landscape Strategy

Maximizing bay development to shape a core of waterscape inside the base and increasing the length of the shoreline, to be achieved by the filtration of seawater and sediment and thereby attracting people to build a unique urban landscape style.

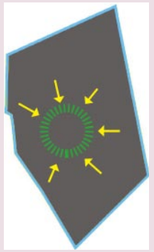
Thirdly, Service-led Function Strategy

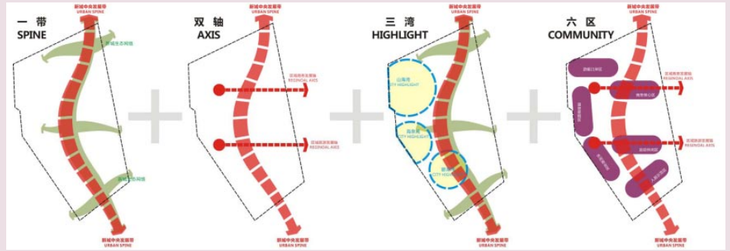
The New Town will become a business center enhanced by the marine industry along the west wing of Zhuhai, a tourist business card of Zhuhai ocean hot spring development and internationalized living support to the development of Gaolan Port.

Fourth, Ecological Strategy - Urban Coverage of Mountain and Sea

Combing ecological networks to raise the estuaries' ecological composite degree and preserving the mountain-wood-river ecological corridor to the maximum extent; integrating the urban area into the natural environment in the form of an attractive agglomeration.

The New Town will have a planning structure of "one belt through, bi-axial aggregation led by three Bays and the co-development of six districts" . The urban design is based on the two concepts of a "vitality ribbon" and a "beaded green chain" and combined with the advantages of the other programs. Six design elements of axis, nodes, landmarks, interface, open space and districts will be used to build the urban design framework for the entire New Town.





3.4合乐的观点

在中心区的规划实践中，有很多值得关注的问题。以下三点，是我们认为基于开发与保护、活力与品质，提出的需要在规划以及空间设计中贯彻的重要原则，尤其是在前期咨询阶段，这对空间格局的构架至关重要。

3.4.1倡导公共交通的整体网络

整体城市格局中需要多层次的路网空间格局，而在城市中心区需要高密度小路幅的模式，体现基于步行尺度的城市肌理。规划采用“道/路/街”的道路组织模式，交通性道路的分离形成道系统，普通城市道路的分级形成路系统，生活性街道的优化形成街系统。

采用绿色出行方式，以大运量快捷交通为主要公共出行方式，构建包括轨道交通、轻轨、公交在内的多层次公交系统，以及便捷的公交换乘；在中心区内，设置公共交通的换乘枢纽，形成以此为节点，向周边辐射带动的交通网络。同时整合道路断面，形成舒适自行车环境；发展多重步行体验。

3.4.2实现功能布局的立体混合

在城市生态有机体中，中心区的活力是建立在多种功能集聚和活动混合的基础上的，不同功能建筑以多样性和互补性达到共生形态。不同的业态，如商务、商业、酒店、会展、居住等，具有活动的时段性特征，通过土地混合使用可以保持地区内人群活动的延时性，注入活力。

中心区往往是土地利用非常集约的地带，是紧凑的格局。中心区建设需要突破地下空间的限制，实现纵向上的垂直混合，通过综合体的形式，以点带面，引爆区域发展。

3.4.3体现城市向自然的回归

城市肌理是人们感受城市的基本空间载体，其中自然肌理又是独特的、不可逆生的。水体往往体现了生态、景观、游憩三大功能特征，是自然肌理的本底。保持河流以及其它水域的自然状态，不加“整治”与修饰，局部需生态恢复是最佳的利用方式。

在规划中，需要通过适当的减法而不是加法，留足开敞空间，这在前期的咨询规划中是十分必要的。人类在满足基本的生存需求后，总希望能得到更加健康的生活体验。在寸土寸金的中心区需要通过建设集中又分散的有系统的绿色空间，创造体验自然的空间机遇。

3.4Halcrow's View

There are many issues warranting careful consideration in the planning for central areas. The following three points, we believe, are the important principles to be followed in planning and spatial design, especially in prophase consultation. Based on the development and protection, vitality and quality, we put forward these principles which are crucial to the framework of spatial pattern, particularly in the prophase consultancy.

3.4.1 Advocating an Overall Public Transit Network

An overall urban pattern needs a multi-level spatial pattern of a road network while the city center area needs a mode of high density and narrow width roads to reflect the urban texture based on a pedestrian scale. In the planning, the road organization mode of "road, way, street" shall be adopted to form a road system by means of separation of traffic roads, a way system by means of the grading of ordinary urban ways and a street system by means of the optimization of streets for life purposes.

Environmentally friendly travel mode will be adopted to take BRT as a main public travel mode to build a multi-level public transit system including rail transport, light rail and buses, as well as a convenient public transit transfer. Within the central area, an exchange hub of public transit shall be set up to form a network which takes the hub as the node and radiates to the surrounding areas. Road sections shall be integrated to create a comfortable bike-riding environment and for a multifaceted pedestrian experience.

3.4.2 Achieving Three-dimensional Mix of Functional Layout

In the urban ecological organism, the vitality of a central area is built on the mix of a variety of functions and activities while the different functional buildings reach symbiosis by virtue of diversity and complementarity. Different industries, such as business, commerce, hotels, exhibitions, and housing are characterized by a time interval of events and activities while the mixed use of land can maintain the extension of public events and activities within the region and inject vitality.

The central area is often a place where the land is intensively used and is in a compact pattern. The construction of a center area needs to break through the limitation of underground space to achieve a longitudinally vertical mixture. Regional development will be brought about by means of different shapes of complex buildings, fanning out from a point to an area.

3.4.3 Representing City's Return to Nature

The urban texture is the basic spatial carrier for people to experience the city where the natural texture is unique and irreversible. Water often reflects three major functional characteristics of ecology, landscape and recreation. It is the background of the natural texture. Maintaining the natural state of rivers and other waterways without "rehabilitation" and modification with local ecological restoration is the best way of use.

In planning, it is essential to reserve enough open space by means of appropriate subtraction rather than addition in the prophase consultancy. After meeting their basic needs for survival, people aspire to a more healthy life experience. Systematic green spaces should be unified and constructed under separate management in the precious land of a central area to create an opportunity to experience natural space.

合乐的生态城市规划探索

Halcrow’s Experience in Eco-City Planning

重点地段建筑形态鸟瞰图

1、背景

随着环境变暖、地震海啸等灾害频繁，人与自然的冲突加剧，人类聚居的城市生态环境普遍恶化，区域生态支撑能力持续衰退，国内外诸多城市纷纷开展了生态城市建设的探索与实践，以试图改变目前的发展困境。虽然目前生态城市的探索、讨论、建设均已取得了一定的成效，但远远未达到完善与形成完整的学科体系的高度，还处在蓬勃发展之中。合乐在中国的10年规划中，也在不断地尝试，不断地摸索，为中国城市建设的生态化、可持续化发展，贡献着自己的力量。

1. Background

With the increasingly warming environment, frequent earthquakes and tsunami disasters, the conflict between man and nature intensifies. The city’s ecological environment for human settlements deteriorate, the regional ecological bearing ability decreases, many cities both at home and abroad have carried out the exploration and practice of eco-city construction in an attempt to change the predicament. Although the exploration, discussion and construction of eco-cities have reached certain achievements, it is still far away from a sound and integrated disciplinary system, and it is still in a flourishing development process. During Halcrow’s 10-year planning in China, we continue to try every effort to make our due contributions to the ecological and sustainable development of China’s urban construction.

2、生态城市规划方法研究总结

城市是一个以人类的消费需求和生产、生活活动为导向的，人为利用自然资源，改变自然生态构成、物质循环和自然能量转换的人工生态系统。城市的主人是人类，城市的各项运作均以人类的生存、发展为核心，通过人类的主观能动性作用于自然。在以往的发展中，人类以主宰者的身份，通过城市改造自然，将自然生态系统纳入到人工的城市系统中。但随着城市尤其是大都市区的快速发展，人与自然之间的矛盾日益恶化，严重的自然灾害日益频繁，城市化引发的环境生态危机已经成为1990年代后城市规划领域中重要的讨论方向。众多规划师对此做出了大量有益的探索与实践，从生态城市规划方法来讲，主要包含以下几种方向。

2.1. 生态城指标体系

生态城指标体系是目前用于指导、评估生态城设计、建设、运营的常用办法，它不仅可以描述现状及趋势，同时也是规范现在与未来的评价指针。

以中新天津生态城为例，在生态城规划伊始，首先是由规划单位多方面征询意见，选择出对于生态城的发展方向至关重要的关键因素，并据此编制生态城指标体系，在指标体系的指导下进行生态城市规划。通过总体规划、分区规划、控制性详细规划等不同层面的设计，分层分步的将指标体系的要求落实到空间中，并最终在生态城建设过程中得以贯彻。此外中新生态城管委会进一步分解生态城指标体系，将其落实到各职能专业部门的工作中，成为考核各部门工作的一项重要指标。通过这种做法，使生态城指标体系真正成为了生态城市建设的大纲，并保证了设计、建设、运营的生态可持续发展方向。

2.2. 人口环境承载容量

环境承载容量是指一定时期内，某地域在保持生态平衡的状态下，能持续供养的最大人口数量。

合理的人口环境承载容量是指某地域在一定时期内，利用该地的能源和其他自然资源及智力、技术等条件，在保证符合社会文化准则的物质生活水平条件下，所能持续供养的人口数量。具备合理的人口环境承载容量的城市，在其开发、运营过程中对于土地、水与生物资源的利用中应避免过度干扰而超过其所处生态环境系统的容量，以致产生不可恢复程度的不可知风险。从环境供给面的概念而言，一个城市或自然系统有其一定的环境容量，然而此容量并不容易进行估算。目前常用手法为生态足迹测算方法，生态足迹既能够反映出个人或地区的资源消耗强度，又能够反映出区域的资源供给能力和资源消耗总量，也揭示了人类持续生存的生态阈值。由于其能够简便地使环境的承载力及社会生产能力得到量化，并可通过相同的单位比较人类的需求和自然界的供给，因此，真正具有了区域可比性，成为一种有效的分析工具。

2.3. 生态安全网络

城市的生态可持续发展以其所处的区域生态可持续发展为基础，因此区域生态安全网络的构建是生态规划的最基础工作之一。目前常用的方法是分析生态背景，构建生态廊道，强化生态斑块，从而形成全区域的生态网络，构建了区域生态安全格局，保证了自然生态栖息地的延续，避免了城市对自然系统的阻碍。从另一个角度看，我们可以认为，该方法是强化了现有的自然生态系统，将城市进行了合理的切割，打散后融入其中，是将城市系统纳入到了自然生态系统中，从而实现了城市与区域自然生态系统的“动态嵌合”，能够保护和恢复生物多样性，维持生态系统结构和过程的完整性。当然生态安全网络的建立并非易事，尤其在高度城市化地区，应当采取因地制宜、循序渐进的方式，并且要时刻关注城市与区域自然生态系统之间的物质流、能量流的正外部效益。

重点地段建筑形态鸟瞰图

2. Eco-city Planning Methodologies

A city is an artificial ecosystem. It is oriented towards human consumption demand and production, and living activities by leveraging natural resources to change the constitution of natural ecosystems, material circulation and natural energy conversion. Human beings are the master of the city, and various operations of the city are centered on the survival and development of human beings by leveraging the subjective initiative of them. During the past development process, human beings have emerged as a dominator and incorporated the natural ecosystem into the artificial urban system via city transformation. However, with the rapid development of cities, especially metropolitan areas, the conflict between man and nature is worsening, and serious natural disasters are happening more frequently, so far the environmental and ecological crisis caused by urbanization has become a focus in the field of urban planning in the 1990s. Numerous urban planners have made a great number of useful exploration and practice, mainly containing the following directions in terms of eco-city planning approaches.

2.1. Eco-city Index System

Eco-city index system is a typical approach currently used to guide and evaluate the design, construction and operation of ecological cities, which can not only describe the current situations and trends, but also serve as an evaluation indicator to regulate the present and the future.

Take Sino-Singapore Tianjin Eco-city for example. At the beginning of the eco-city planning, the planning firm consulted for multifaceted opinions, selected key factors crucial for the development direction of the eco-city, and based on them to develop the eco-city index system to guide the ecological urban planning. Requirements of the eco-city index system shall be carried out through master planning, zoning, detailed regulatory plan at different levels and steps, and ultimately implemented in the eco-city construction process. In addition, the Administrative Committee of Sino-Singapore Tianjin Eco-city developed the detailed eco-city index system and implemented it in various specialized functional departments, which becomes an important performance indicator in various departments. By doing so, the eco-city index system has truly become the outline for the eco-city construction, and ensured an ecologically sustainable development direction for the design, construction and operation of the eco-city.

2.2. Environmental Population Bearing Capacity

Environmental bearing capacity refers to the maximum population to maintain under the premise of keeping ecological balance for a certain period within a certain geographical area. Reasonable environmental population bearing capacity refers to the maximum population to maintain for a certain period within a certain geographical area by leveraging the local energy and other natural resources and the intellectual, technical as well as other conditions under the premise of compliance with the level of material life under social and cultural norms. A city, with reasonable population bearing capacity, shall avoid excessive interference in the use of land, water and biological resources which exceeds its ecological environment capacity, so as not to result in unrecoverable unknown risks in its development and operation process. From the perspective of environmental supply capacity, a city or a natural system has its certain environment capacity; this capacity, however, is not easy to estimate. The commonly used method is to calculate the ecological footprint. The ecological footprint does not only reflect the individual or regional resource consumption, but also reflect the regional resource supply capability and the total resource consumption, and reveals the ecological threshold for sustainable humanity survival. It helps to quantify the environmental bearing capacity as well as the social production capacity in an easy manner and compare the human needs and natural supplies by the same unit. Therefore, it is of true regional comparability and becomes an effective analysis tool.

2.3. Ecological Security Network

A city's ecologically sustainable development is based on the regional ecological sustainability where the city locates. Therefore, the construction of the regional ecological security network is one of the most basic tasks in urban ecological planning. A commonly used method at present is to analyze the ecological background, build ecological corridor and strengthen ecological nodes, so as to form a region-wide ecological network and build a regional ecological security pattern, thus ensuring the continuation of the natural ecological habitat, meanwhile avoiding urban resistances to the natural system. From another perspective, we think that this method strengthens the existing natural ecosystems, segments the city in a reasonable way, breaks up and then incorporates into the natural ecosystem, so as to achieve a "dynamic integration" of the urban and regional natural ecosystem, enabling the protection and restoration of biodiversity, as well as the maintenance of the integrity of the ecosystem structure and process. Of course, the establishment of an ecological security network is not easy, especially in highly urbanized areas. It shall take step-by-step approaches based on local conditions, and pay close attention to the positive external benefits from material flow and energy flow between the urban and regional natural ecosystems.

重点地段建筑形态鸟瞰图

整体城市形态鸟瞰图

2.4. 可持续性城市形态

生态城市规划毫无疑问的将面临一个问题：哪种城市形态可以被称为是生态城市形态？哪种城市形态与城市空间布局能够在环境效益、资源节约、经济效益、社会效益之间取得可持续发展的平衡？众多的规划师都对此进行了不断的思考与探索，虽然目前尚无法给出一个标准生态城市形态的范式，但是抵制大城市蔓延成为了共识。诸如，新城市主义、精明增长、混合开发等等，以追求可持续性城市发展为目标的紧凑型城市形态是目前的常用设计形态。如欧洲开放建筑研究小组的一份有关城市可持续发展的报告，曾对欧洲城市的紧缩发展提出如下策略：假定居住在城市地区的城市化人口增长两倍，城市可持续发展的政策目标即经济繁荣程度能增长五倍，那么对于环境的负面效应不升反降为二十分之一，并使最终的城市环境压力变为原来的一半。这正是欧盟可持续发展政策所追求的目标：结合城市环境品质与经济的持续性发展。其中一个重要的策略，即引导城市发展的恰当尺度，将使人类活动对自然的干扰降低，城市的紧密形式则让能源的消耗达到最小。

2.5.绿色交通与混合开发

采用绿色交通与混合开发的土地利用规划，是近年来业界普遍采用的生态可持续规划概念。在美国的旧金山、圣地亚哥、波特兰等地，规划师们采用公共交通导向的开发策略，以城市成长边界、站区填充式发展、市中心区的再发展等方式，来改变美国几十年来的私人汽车道路导向发展、郊区化与大都市区蔓延所造成的环境恶果。在南美洲巴西的库里蒂巴以及厄瓜多尔的基多等城市也通过成功的公共交通开发，成为了国际上著名的可持续发展城市典范。以绿色交通、绿色出行为导向的开发理念在许多城市都成功的实现了环境的改善、社会的公平、生活的便捷，因此，通过城市交通组织模式（如重组城市公共交通体系、增强慢行系统等）来重新构建城市的土地使用模式，成为了目前生态规划的常用方法，也是最为有效的方法之一。其基本概念是以地铁、轻轨或其他公共交通系统的车站为中心，覆盖适宜步行半径范围的空间，以此降低机动车的使用率。并依托公共交通站点进行高强度的公共设施混合开发，形成不同等级的功能中心，进一步形成以公共交通系统为骨架的城市空间结构。

随着《雅典宪章》所确立的“功能主义”思想的影响，一系列不适宜生活的空间秩序问题摆在了规划师的面前，西方的众多城市开始重新思考土地的混合使用。19世纪60年代，在雅各布斯发表了其著名的《美国大城市的生与死》之后，土地混合利用概念的出现频率提高了。到19世纪80年代，土地混合利用的发展倾向在城市中心区使用。而到19世纪90年代，土地混合开发更加成为交通导向、邻里关系、宜居社区和精明增长等规划理论的重要组成部分。伴随着公共交通系统增长的再发展机会，土地的混合利用也逐渐成为了众多规划师的共识。土地混合利用增加了社会的选择类型，减少了交通出行，增加了地区活力，节省了公共设施的运营成本，有利于资源的高效利用，是目前生态城市规划中必须采用的规划方式。

2.6. 生态科技与生态修复

城市的高速发展，对资源的粗放式利用，不仅对城市内部的生态系统，而且对周边大范围区域的自然生态系统都造成了严重的破坏，甚至达到了难以恢复的地步，严重的影响了城市的生态可持续发展。随着生态环保科技的进步，众多针对资源的可持续利用，对环境修复、生态培育的技术，如水资源整合利用技术、废弃物回收再利用技术、绿化培育修复技术等，使得生态可持续发展的愿景在已发展起来的城市建成区及周边的实现更具有可行性。例如悉尼2000年奥运会所在的赫姆布什湾,利用生态科技与自然环境修复方法,在生物多样性保护及其生存环境维护，包括悉尼地区所有动植物群系等方面实现了成功。这类技术常用于建成区的生态化改造中。

除此之外，诸多采用可再生资源、可再生能源的技术，也大量的应用于城市建设之中，如地源热泵、太阳能发电、风力发电等，进一步避免了城市对自然生态系统的索取，将城市系统与自然生态系统之间的物质流、能量流等循环控制在了一个合理的程度上，从而实现了可持续发展的目标。

重点地段建筑形态鸟瞰图

2.4. Sustainable Urban Form

Ecological urban planning will undoubtedly face such a problem: which kind of urban form can be called the ecological urban form? Which kind of urban form and urban space layout can achieve the balance of sustainable development among environmental benefits, resource conservation, economic benefits as well as social benefits? Many planners have constantly thought and explored this topic, however, no standard paradigm of eco-city form has been given so far, but they have reached a consensus to prevent the spreading of big cities. The compact city form in pursuit of sustainable urban development is a common design form at present, such as new urbanism, smart growth, mixed development. For example, the European Open Architecture Research Group has once proposed strategies to develop compact city in its report on the sustainable urban development as follows: if the population living in urban areas is assumed to grow by twice, and the policy objectives for sustainable urban development, namely level of the economic prosperity, rise by 5 times, thus the negative effects to the environment would reduce to 1/20 instead of rising, and the ultimate urban environment pressure would reduce by half. This is exactly the pursuit of the EU in its sustainable development policy: to realize the sustainable development by combining the quality of the urban environment and the sustained economic development. One important strategy is the appropriate scale to guide urban development, which will reduce the interference of human activities to the nature; meanwhile a compact city form enables the minimization of energy consumption.

2.5. Green Transport and Mixed Development

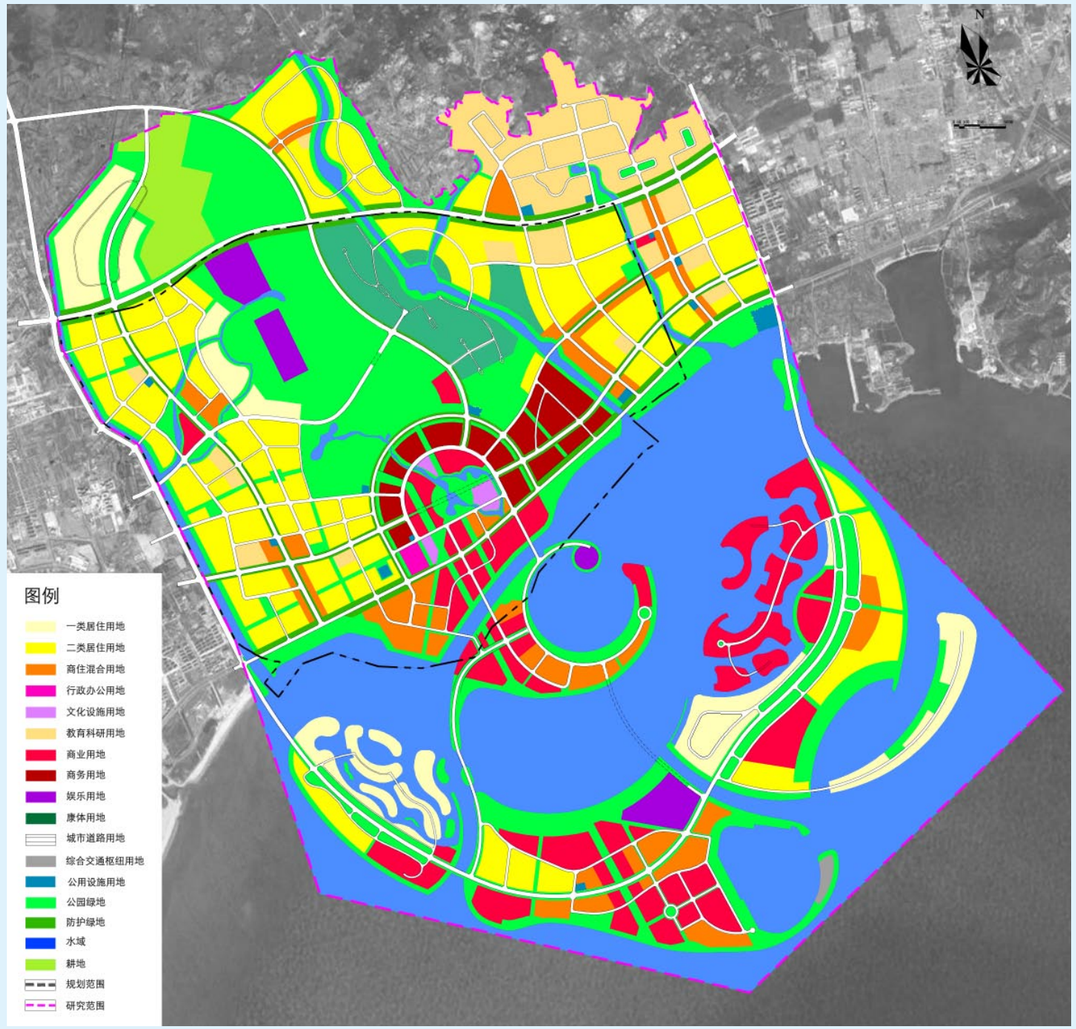
Land use planning combing green transport and mixed development is an ecologically sustainable planning concept commonly used in the industry in recent years. In San Francisco, San Diego, Portland and other places in the United States, planners are using public transport-oriented development strategy, adopting methods of urban growth boundary, infill development, re-development of the downtown areas, etc., to change the environmental consequences caused by private car road-oriented development, suburbanization and spreading of metropolitan areas prevailing in the United States for decades. In South America, Curitiba in Brazil as well as Quito in Ecuador and other cities has become the famous sustainable city models in the world through successful public transport development. The green transportation and green travel-oriented development concept has helped many cities to successfully realize the environment improvement, social equity and the convenience of living, thus rebuild the city's land-use patterns by the mode of urban transport organization (such as the reorganization of the urban public transport system, enhancement of slow-traffic system etc.) has become a common method in ecological planning and also one of the most effective methods. The basic concept is to center on the subway, light rail or other public transport system stations, covering the walkable space radius, thereby reducing the utilization rate of motor vehicles. At the same time, a mixed development of high-intensified public transportation facilities relies on public transport stations, so as to form functional centers of different levels and to further form the urban space structure backed by public transport systems.

With the impact of a "functionalism" ideology established in the Athens Charter, planners are faced by a series of problems regarding the space order unfit for living; therefore, many cities in the West began to rethink the mixed land use. After the publication of "The Death and Life of Great American Cities" by Jane Jacobs in the 1860s, the occurrence of mixed land use concept became more frequent. By the 1880s, the development tendency of mixed land use was first adopted in downtown areas. By the 1890s, the mixed land development became an important component in urban planning theories such as traffic-oriented ones, neighborhood relations, livable communities and smart growth, etc. With the re-development opportunities associated with the growth of the public transport system, mixed land use has gradually become the consensus of many planners. Mixed land use increases social choices, reduces traffic, increases regional vitality and saves operating costs of public facilities, which is conducive to the efficient use of resources, so it is a must in ecological urban planning.

2.6. Ecological Technology and Ecological Restoration

The rapid development of the city and the extensive use of resources have not only caused serious damages to the city's internal ecosystem, but also to the natural ecosystem in a larger surrounding areas even to an unrecoverable degree, seriously affecting the city's ecologically sustainable development. As eco-technology advances, the sustainable use of resources, environmental restoration and ecological cultivation technologies, such as integrated water resource utilization technology, waste recycling technology, greening nurturing restoration technology, make it more feasible to realize the ecologically sustainable development vision in the urban built-up areas as well as the in surrounding areas. For example, the Homebush Bay, where the Sydney 2000 Olympic Games was held, used ecological technology and natural environment restoration methods to achieve success in biodiversity protection and their habitat maintenance, including all animal and plant formations, etc. in Sydney. Such technology is commonly used in the ecological transformation of the built-up areas.

In addition, a lot of technologies using renewable resources and renewable energy are also widely used in urban construction, such as ground source heat pumps, solar power and wind power, to further avoid the urban consumption of natural ecosystems, ensuring a loop control of material flow and energy flow between the urban system and the natural ecosystems to a reasonable extent, so as to achieve the goal of sustainable development.



3、合乐项目实践介绍

3. Halcrow’s Practice

3.1. 青岛西海岸经济新区中心区启动区概念规划

3.1.1 项目概况

项目位于胶州湾以西，胶南市区与黄岛区之间，靠山面海，陆域规划面积约为28平方公里，可建设用地17平方公里，海域规划面积由设计单位根据设计方案确定，是青岛市西海岸经济新区中心区的启动区。

青岛西海岸经济新区是《山东半岛蓝色经济区发展规划》明确建设的新区，是山东半岛蓝色经济区建设的重要支撑，也是我国海洋经济发展的战略支点。根据2012年3月青岛市发展和改革委员会编制的《青岛西海岸经济新区发展规划》，本次规划范围将重点发展金融服务、现代商务、高端商业、旅游度假，培育西海岸金融聚集区，增强综合服务功能，集聚具有国际影响力的文化事件和国际会议，推进文化产业和文化品牌建设，构建人文新区。

3. Halcrow’s Practice

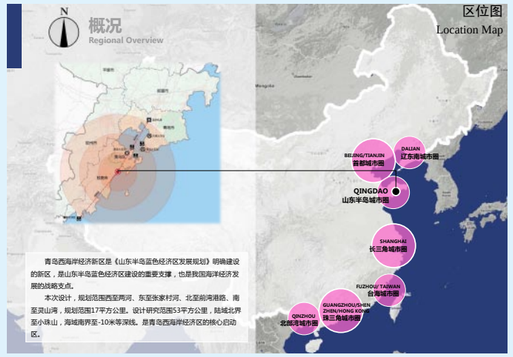
3.1. Concept Plan for the Promoter Zone of Central Area of Qingdao West Coast New Economic Zone

3.1.1 Project Overview

The project is located in the west of Jiaozhou Bay, between Jiaonan city and Huangdao District, leaning against the hill and facing the sea, covering a planning land area of 28 square kilometers, among which 17 square kilometers for construction. Its planning waters area is determined by the design scheme of the designer, and it is a start-up area in the center of Qingdao West Coast New Economic Zone.

Qingdao west coast new economic zone, a new zone clearly defined to construct in the Development Plan for Shandong Peninsula Blue Economic Zone, is a significant support for the construction of Shandong Peninsula blue economic zone and a strategic support for marine economy development in our country. In accordance with the Development Plan for Qingdao West Coast New Economic Zone prepared by Qingdao Development and Reform Commission in March 2012, the scope of planning will focus on the development of financial services, modern business, high-end commerce and tourist resort, as well as the cultivation of west coast financial clusters, so as to enhance the integrated service functions, and to gather cultural events and international conferences of international influence to promote the development of the cultural industry and brand building, thus building a humanistic new area.

重点地段建筑形态鸟瞰图



3.1.2 设计构思

我们详细研究了青岛的居民生活习惯、历史文化、近代的城市建设、城市色彩演变、城市经济发展特色，从中提炼出适合于本次设计的三个关键词：自然生态、海洋特色、活力进取。本次设计需要遵循生态可持续发展的要求，与周边自然环境相融，营造人与自然和谐共生的生态城市典范；需要充分体现本地的海洋特色，面向海洋竞争时代，突出滨海城市特点；需要塑造一个具有活力的城市空间，传承青岛积极进取的城市精神，适应青岛市民生活习惯的空间秩序。 因此我们从当地自然要素中选取了“海浪”作为设计构思来源。

3.1.3 生态规划方法

本次规划采用全生命周期的生态规划方法，实现从设计、建设到运营全过程的真正生态低碳。在生态理念中，采用了“开源节流”的思想，鼓励采用可再生能源、非传统水源实现“开源”，鼓励绿色交通、绿色建筑，扩大碳汇能力以实现“节流”，从而实现更进一步的生态低碳。

（1）构建生态安全格局，增强碳汇能力

规划首先构建生态安全格局，以此为基础，将规划建设范围纳入至区域生态环境中，使启动区的发展与自然生态系统能够更好的融合；在设计细化过程中，进一步完善规划范围内的生态廊道、绿化水系，使之发挥更好的碳汇作用。

我们以规划区北侧紧邻的小珠山为城市生态背景，依托现有的三条南北向的主要水系与小珠山的支脉（华山、朝阳山），构建城市主要的生态廊道，连通小珠山与灵山湾，形成“通山达海”的纵向生态通廊。

规划区东西两侧为已建成区域，未形成系统的生态廊道。因此我们依托东西侧的交通干线，在其两侧构建生态廊道，既可提供交通防护功能，又可在规划区内形成横向生态通廊，与纵向生态通廊共同形成了规划的生态安全网络

3.1.2 Design Concept

We studied the habits of residents, evolution of history and culture, modern urban construction, change of urban color as well as the characteristics of urban economic development in Qingdao in detail, and extracted three key words in the design ideas: natural ecology, marine characteristics, vitality and enterprising. Our design needs to follow the requirements of ecologically sustainable development, blending with the surrounding natural environment, creating an eco-city model of harmonious coexistence of man and nature; our design also needs to fully embody the local marine characteristics and orientate towards marine competition era, highlighting the characteristics as a coastal city; again our design needs shape a vibrant urban space, inheriting the enterprising spirit of Qingdao, as well as adapting to the spatial order which the people of Qingdao get used to. Therefore, we selected "waves" from the local natural elements as a source of design ideas.

3.1.3 Ecological Planning Methodology

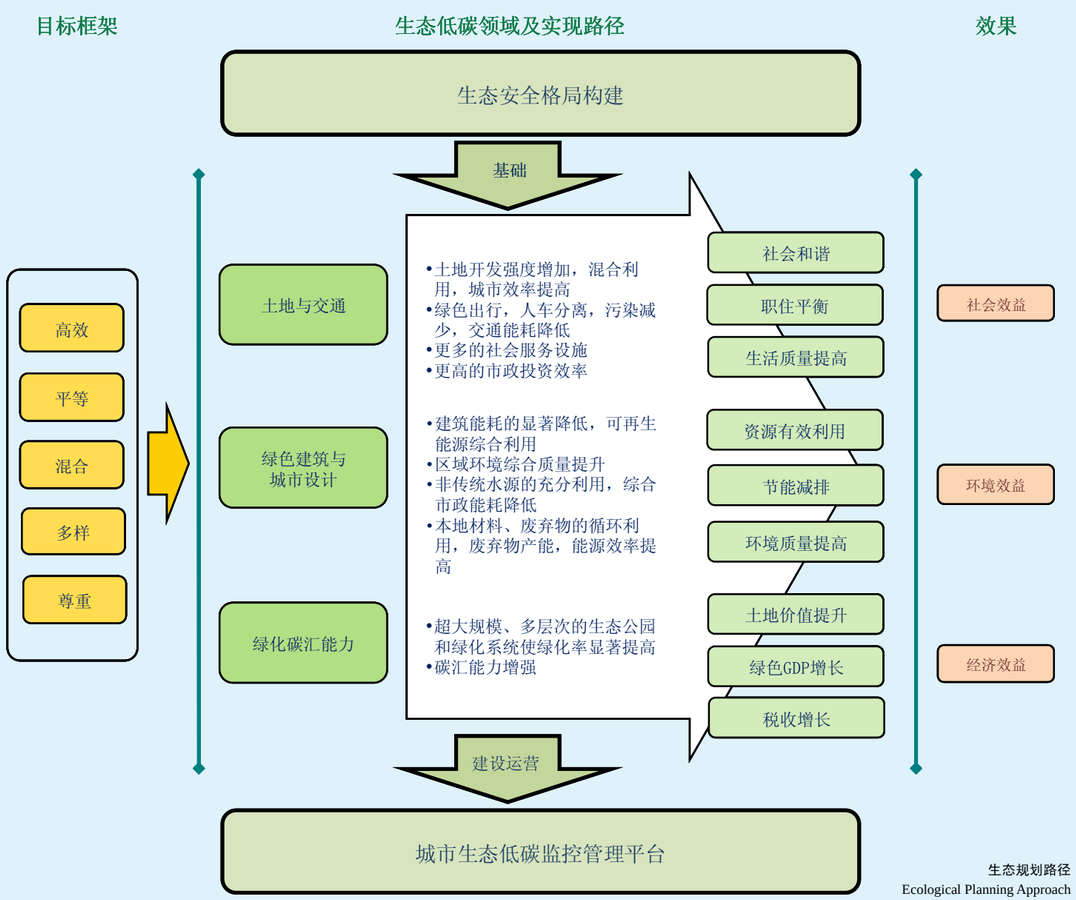
An entire-lifecycle ecological planning approach is adopted in this design, so as to achieve the real low-carbon ecological city covering the whole process starting from design, construction to operations. We adopted the idea of "broadening sources and reduce consumption" in the ecological concept, to encourage the use of renewable energy and non-conventional water resources to "broaden sources", and to encourage green transportation and green building, expanding carbon sink capacity to "reduce consumption", with the purpose of achieving further low-carbon ecological city.

(1)Build an ecological security pattern, enhance the carbon sink capacity

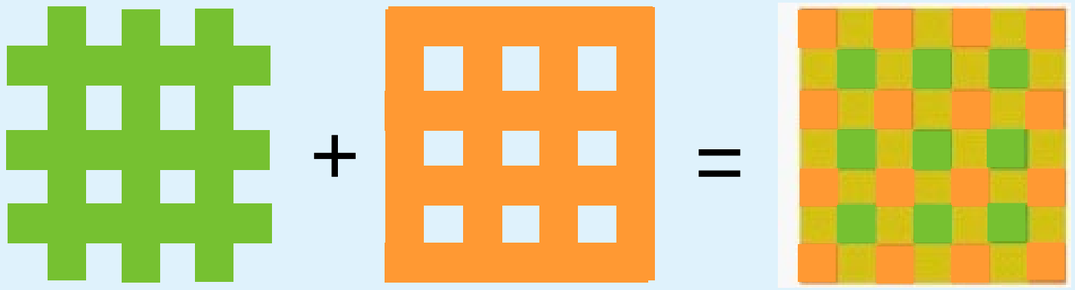
First, build an ecological security pattern, based on which to incorporate the scope of the planning and construction into the regional ecological environment, thus facilitating the development in the start-up areas to be better integrated with the natural ecosystem. During the detailed planning process, we will further improve ecological corridor and green water system, so as to make it play a better role of carbon sinks.

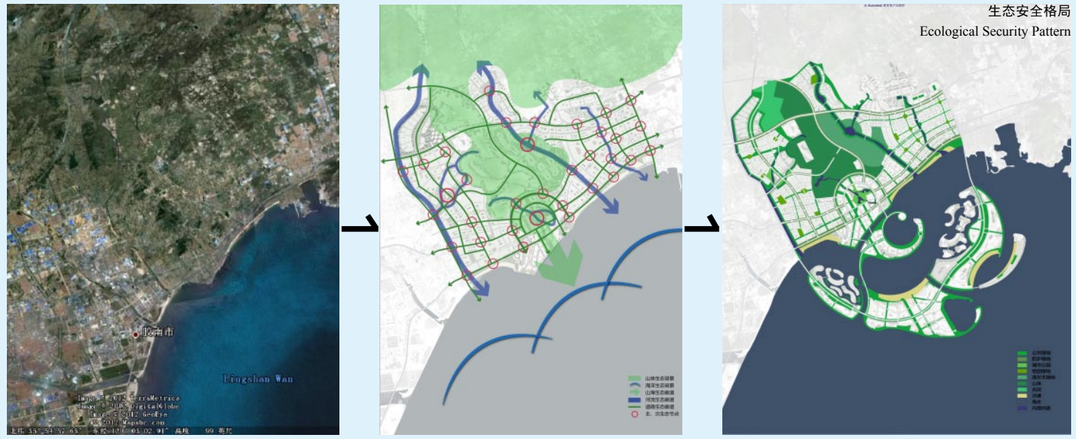
We used Xiaozhushan, north of the Planning Area, as the urban ecological background, relying on the existing three north-south rivers as well as offshoots of Xiaozhushan (namely (Huashan, Chaoyang Hill) to build the city's main ecological corridor connecting Xiaozhushan and LingShan Bay, forming a longitudinal ecological corridor which "connect to the river and the sea".

The east and west sides of the Planning Area have already completed construction, thus no systematic ecological corridors there. Therefore, we rely on the transportation routes of the east and west side to build ecological corridors, which can not only provide traffic protection, but also can form a horizontal ecological corridor within the planning area, jointly forming an ecological security network with the above-mentioned longitudinal ecological corridor.



生态规划路径
Ecological Planning Approach





（2）通过多种设计手法实现综合生态效益

A. 环境生态规划路径

在生态安全格局的基础上，规划采用集约用地、立体复合、绿色交通、绿色建筑、生态场地规划、垂直绿化、构建城市生态绿廊、扩大城市绿核等方式，增强城市与自然生态环境的互动，强化城市的碳汇能力，实现环境、能源的生态低碳，打造一个会“吐故纳新”的城市生态环境。

我们依托区域生态网络在规划区范围中的生态廊道，及规划区中心的小珠山支脉（华山、朝阳山）打造中心绿核， 辅以垂直绿化、屋顶花园等方式，扩大城市的碳汇面积；将规划范围细分至社区级，综合社区级范围的用地情况，进行场地分析，通过建筑物的朝向、间距、摆布来达到被动节能的目的；在用地布局中，采用兼容而功能不同的混合开发模式，降低长距离出行需求，便捷居民生活的同时，实现集约利用土地、节能减排的目的。

B. 社会生态规划路径

我们通过延续青岛文脉，构筑体现青岛特色，适宜青岛人民生活习惯的特色空间，以实现社会效益的生态可持续发展。在分析青岛的居民生活习惯、城市色彩、社会经济发展历史等特色后，我们根据青岛的地域特殊性，平衡四季、室内外的活动频率、活动种类，增加青岛市民喜好的城市开放空间；充分利用本地建筑资源，就地取材，延续城市色彩特色；在已有的海洋经济基础上，大力发展提升，通过构筑极具针对性、吸引力的社会公共服务设施，吸引相应的高端资源，促进海洋产业的集聚、升级；保证公共配套服务设施6分钟步行距离的全覆盖，便捷居民的生活，降低出行的碳排放。多种措施并举，最终实现具有本地特色，同时又绿色便捷的城市生态社会效益。

(2)Achieve comprehensive ecological benefit via a variety of design techniques

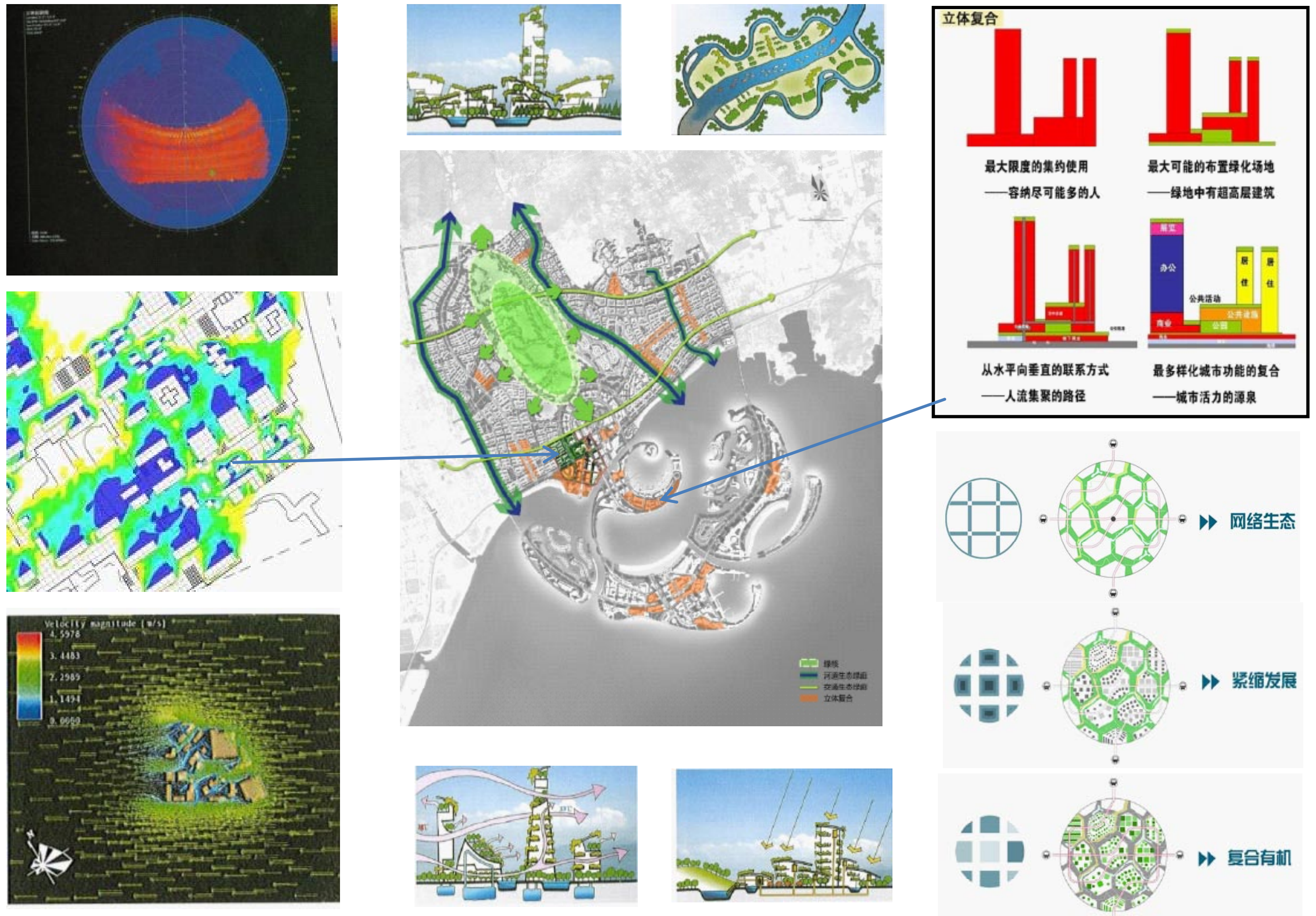
A.Environmental Ecological Planning Approach

Based on an ecological security pattern, we adopted approaches such as intensive land use planning, three-dimensional compound, green transportation, green building, ecological land planning, vertical greening, construction of urban ecological corridor, expanding urban green core, so as to enhance the interaction between urban and natural eco-environment, strengthen the city's carbon sink capacity, realize low-carbon ecological city in terms of environment and energy, and ultimately create an urban ecological environment to "get rid of the stale and take in the fresh".

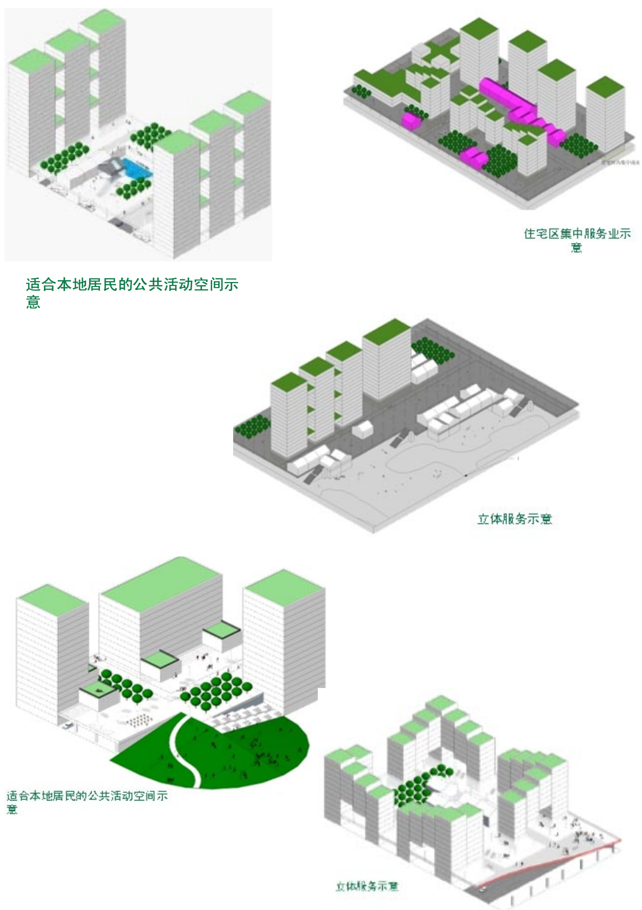
We rely on the ecological corridor within the planning area in the regional ecological network as well as offshoots of Xiaozhushan (namely (Huashan, Chaoyang Hill) to build a central green core, which is supplemented with vertical greening, roof garden, etc. to expand the city's carbon sink area. We segmented the scope of planning areas to the community level and carry out site analysis by taking land use at the community level into consideration, and achieve passive energy-saving purposes based the building’s orientation, spacing and layout; we adopted a mixed development model featuring compatible use with different functions to reduce the need for long-distance travel, so as to achieve the purposes of intensive use of land and energy saving while ensuring convenient living for the residents.

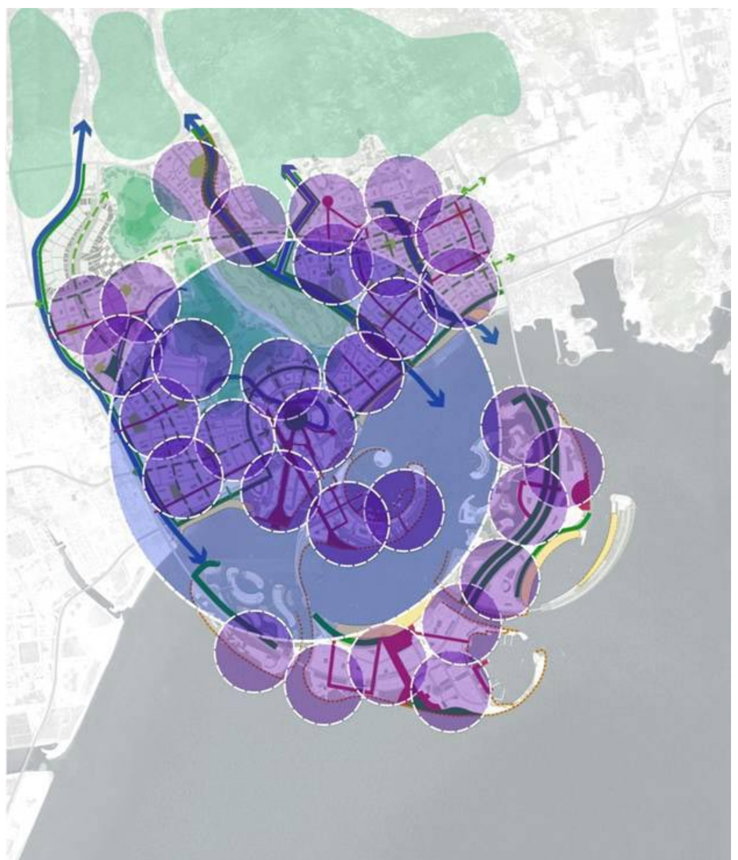
B.Social Ecological Planning Approach

We are dedicated to achieve ecological sustainable development for social benefits by extending Qingdao’s city context and building a special living space embodying characteristics of the city of Qingdao and suitable for people's living habits. After analyzing the living habits of Qingdao residents, urban color and socio-economic development history, etc., we set up the activity frequency and types of activities balancing both four seasons and indoor/outdoor activities according to the geographical particularity in Qingdao, and increase open space based on the public preferences in Qingdao; we take full advantage of local construction resources and local materials, to extend the city color characteristics; we vigorously develop and improve based on the existing marine economy, and build a highly targeted and attractive social and public service facilities, to attract corresponding high-end resources and to facilitate the clustering and upgrading of the marine industry ; we are committed to providing a full coverage of 6-minute walk distance to the public service facilities, so as to bring convenience for Qingdao residents' life and reduce carbon emissions from travel. We adopted a variety of measures simultaneously, and eventually realized the urban ecological & social benefits with local characteristics while ensuring green and convenience.



环境生态规划路径
Environmental Ecological Planning Approach





社会生态规划路径
Social Ecological Planning Approach

C. 生态低碳策略

我们在清洁能源、绿色建筑、低碳交通、智能电网、资源综合利用等方面，分别提出了针对性的发展策略，综合实现生态低碳的可持续发展目标。

a. 清洁能源利用

太阳能热水系统：中低密度居住建筑及度假型酒店均安装太阳能热水系统。太阳能光伏发电系统：公共建筑屋顶安装光伏组件。地源热泵系统：利用绿地地下面积，采用能源站形式，实施地源埋管。风能、潮汐能的利用：利用滨海优势，通过小范围的风能、潮汐能的利用，既能够部分补充能源利用，也能够起到技术示范作用

b. 发展绿色建筑

新建建筑均按绿色建筑二星级标准以上设计（标志性建筑达到三星级标准）;新建居住及公共建筑工程积极创建青岛市绿色施工工程

c. 低碳交通

交通设施优化：太阳能路灯；电动车充电站、充电桩；电动汽车等新能源车辆；智能交通平台。低碳公共交通：轨道交通、旅游观光巴士、普通公交多种方式结合；完善公交网络和交通接驳，建设公交专用道和公交出行信息系统 。非机动车出行：设置自行车租赁站点和自行车专用道及慢行交通系统；废旧轮胎或者透水材料铺设非机动车道或慢行通道。 低碳出行：发行低碳公共交通磁卡，并提供节能低碳项目网上认领的方式，鼓励低碳出行。

d. 智能电网

建立与光伏发电系统相配套的智能电网接入系统 、建设电能在线监控系统 、示范应用智能电网终端设备、探索建立深度展示智能电网的可视化平台

e. 资源综合利用

非传统水源利用：加大雨水、河道水和中水等非传统水资源的利用，将其应用在生态核心区的绿化浇灌、道路广场冲洗、停车场冲洗及公厕马桶冲洗

生活垃圾分类：区域内的所有生活垃圾均按照“以线串点、以点带面、点线面结合”的技术策略进行分类，生活垃圾分类收集率高于95%

生活垃圾无害化处理：区域内所有生活垃圾无害化处理率应达到100%。从垃圾收集、转运、调配到处理的全过程，进行科学规划和合理布局，发挥综合处理的最优效应

f. 绿色消费

培育引导绿色生活、鼓励居民及游客购买各类绿色环保、高效节能产品、广泛树立绿色消费典范。

C. Low-carbon Ecological Strategy

We proposed targeted development strategies respectively for clean energy, green building, low-carbon transportation, smart grid as well as comprehensive utilization of resources, etc., so as to achieve the low-carbon eco-sustainable development goals in an integrated manner.

a. Use of Clean Energy

Solar hot water system: install solar hot water systems in all low-to-mid density residential buildings and resort hotels. Solar photovoltaic system: install roof-mounted PV modules in public buildings. Ground source heat pump system: utilize underground space of green areas, adopt the form of energy stations and implement GSHP pipes. Utilization of wind energy and tidal energy: take advantage of the coastal area, utilizing small-scale wind energy and tidal energy, so as to partly supplement energy technology and also to serve as an exemplary role.

b. Development of Green Building

The new buildings shall be designed above standards of two-star green buildings (three-star standard for landmark buildings).

Build new residential and public construction projects to actively create green construction projects in Qingdao.

c. Low-carbon Transportation

Optimization of transportation facilities: solar street lights; electric vehicle charging stations/piles; new energy vehicles, such as electric vehicles; intelligent transportation platform .Low-carbon public transport: a variety of transportation modes such as rail transport, sightseeing bus and ordinary bus; improve public transport network and transport connections, construct bus lanes and bus travel information system.Non-motor vehicles: set bicycle rental sites and bicycle lanes and.slow traffic systems; non-motor vehicle lanes or slow traffic lanes paved by waste tires or permeable materials .Low carbon travel: issue low-carbon public transport magnetic cards, provide on-line claim system for low-carbon & energy-saving projects, and encourage low-carbon travel .

d. Smart Grid

Construction of a smart grid access system matching the PV power generation system. Construction of an On-line Power Quality Monitoring System. Demonstration application of smart grid terminal facility. Explore the establishment of a visualized platform for in-depth display of the smart grid.

e. Comprehensive Utilization of Resources

Non-conventional water use :To increase the use of non-conventional water resources, such as rainwater, river water and reclaimed water, in the greening land irrigation, road and square cleaning, parking lot cleaning and public toilets flushing in ecological core areas.

Household Garbage Classification :All the garbage in the area shall be classified in accordance with the technical strategy "to connect points with lines and from point to plane and combined point-line-plane", leading to a classified garbage collection rate higher than 95%.

Non-hazardous Treatment of Household Garbage :Reach 100% non-hazardous treatment of all garbage in the region. Adopt scientific planning and rational distribution in the whole process from garbage collection, transit and deployment to disposal, so as to play an optimal effect of integrated treatment.

f. Green Consumption

Develop and guide green living, encourage residents and visitors to buy all kinds of green and energy-efficient products, and extensively set models of green consumption.

（3）建立城市生态低碳保障机制

为确保城市建设运营过程中的生态、低碳、可持续发展的方向，我们提出了一系列的保障机制来监督、约束、考核。

加强运营监管 —— 在区域智能电网的基础上，结合重点用能楼宇管理体系和地区能源中心的建设，建立“外网直报信息、内网监控管理”的区域节能低碳监控管理平台，以加强区域总体能耗和碳排放的总体掌控、动态管理、监测核算和预测预警。

强化落实考评 —— 规划区建设纳入地方“十二五”发展规划，各重点项目行动计划纳入政府年度工作计划，制定低碳建设导则予以评价考核。

完善政策机制 —— 国家、市有关绿色建筑扶持资金和可再生能源建筑应用项目扶持资金/非传统水源利用工作和生活垃圾分类工作的推进平台/绿色电力和清洁能源发展机制/绿色信贷/家庭用户光伏系统并网接入试点

建立专项资金 —— 设立规划区低碳发展实践专项资金/制定资金管理办法和运作模式/加强对资金使用效率的评估。

实施能审能评 —— 严格实施建设项目节能专项审查制度/实行建筑节能专项竣工验收和建筑能效测评制度

加强宣传培训 —— 加大生态低碳发展的宣传力度/广泛开展国际机构、民间团体和开发商之间的双边或多边国际合作/大力提倡生态低碳生活及绿色消费，加强行为节能

(3)Establish the urban ecological low-carbon safeguard mechanism

To ensure the ecological, low-carbon and sustainable development in the process of urban construction, we put forward a series of guarantee mechanisms for monitoring, constraint and assessment.

Strengthen operational supervision – based on the regional smart grid, in combination with the management system of key energy-consumption buildings and construction of regional energy centers, establish a regional low-carbon energy monitoring and management platform with "direct information report via the external network, monitoring management via the internal network" so as to strengthen the overall control, dynamic management, monitoring accounting and forecasting warning in terms of overall regional energy consumption and carbon emissions.

Strengthen the implementation of evaluation – incorporate the planning zones into the local "12th Five-Year Development Planning" with various key projects included in the government's annual work plan, and develop low-carbon construction guidelines for evaluation.

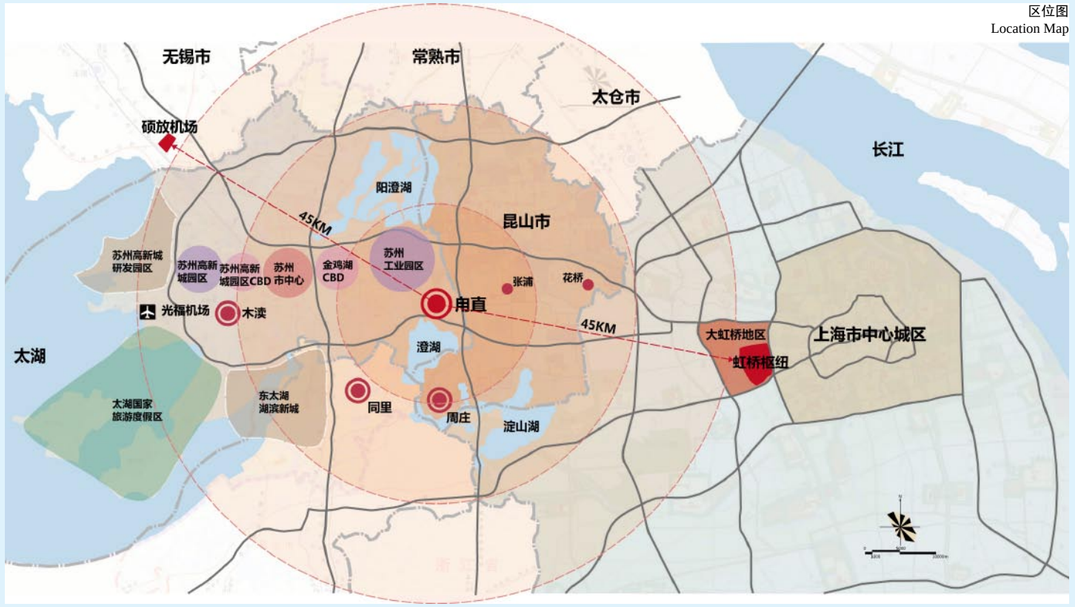
Improve policy mechanism – national/municipal funds to support green building and renewable energy construction projects, promotion platform for non-conventional water use and garbage classification, green power and clean energy development mechanism, green credit / household PV networking & access pilot.

Establish a special fund - establish a special fund for low-carbon development within the planning area, develop fund management methods and modes of operation, enhance assessment of the efficiency in the use of funds.

Implement energy-saving review and evaluation – strictly implement special review system for building projects in terms of energy saving, implement final acceptance of special building projects in terms of energy efficiency and energy efficiency evaluation system.

Strengthen publicity and training – increase publicity of the development of low-carbon ecological city, extensively carry out bilateral or multilateral international cooperation among international institutions, civil groups and developers, strongly promote low-carbon eco-living and green consumption, enhance behavioral energy saving.

区位图
Location Map



3.2. 苏州甪直镇整体城市设计

3.2.1 甪直古镇概况

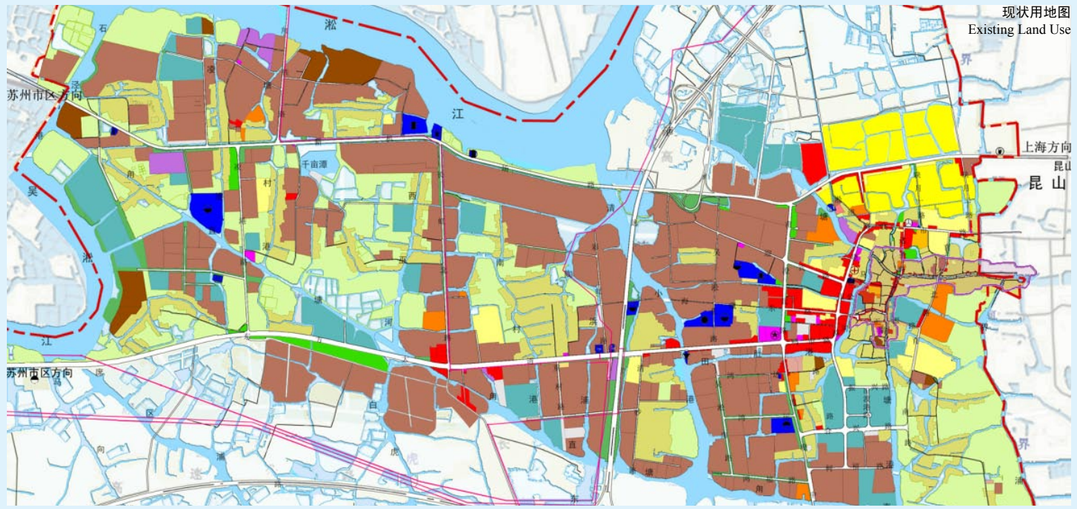
甪直古镇地处苏州城东南25公里，是吴中区的东大门，北靠吴淞江，南临澄湖，东距上海58公里，全镇总面积75平方公里，总人口近15万，其中古镇区面积约1.04平方公里。甪直古镇与苏州古城同龄，始于春秋时期，距今已有2500年历史，地处太湖流域镇内水系纵横，作为水分水析、水系水萦、水抱水环的泽国典型，素有“五湖之厅、六泽之中” 的美誉，充分展现了江南水乡古镇风貌，被誉为“神州水乡第一镇”，是国家4A级旅游景区、太湖国家级风景名胜区、中国历史文化名镇、首批国家级非物质文化遗产。

3.2. Urban Design for Luzhi Town, Suzhou

3.2. Overview of Luzhi Town

Luzhi, the eastern gate of Wuzhong District, is a famous historic old town 25 kilometers southeast of Suzhou. It is with Wusong River on its north and Chenghu Lake on its south, 58 km west of Shanghai, covering a total area of 75 square kilometers, of which the ancient town covers around 1.04 square kilometers, and with a total population of nearly 150,000. Dating back to the Spring and Autumn Period, Luzhi has a history of about 2,500 years, which is comparable with the city of Suzhou. It is the leading scenic and tourist spot of Taihu Lake Scenic Area, and is a typical water town with "numerous bridges and plenty of waters" well known as a hub "connecting with five lakes and embracing six waterways", fully demonstrating the typical style of ancient water towns in south China; besides, it claims the title of "the first water town in China" for its beautiful waterways and ancient bridges, as well as a National 4A Scenic Spot, Taihu National Scenic Area, famous historical and cultural town of China and one of the first batch of national intangible cultural heritage.

现状用地图
Existing Land Use



3.2.2 甪直在发展中的现状问题

(1)自然人文遗存与工业产业发展有待协调

甪直东接全国百强县前三甲的昆山市，北临新加坡苏州工业园区，具备了一定的工业发展优势。原有古镇区因旅游业的发展保存较好外，而其他区域水乡特色遭到了不同程度的破坏，与古镇整体的城市形象要求不符。甪直镇辖区内自然村落分布较为分散，居住用地多沿河，与工业用地混杂，现状工业以服装、织染、电子、建材等为主，产业空间布局分散呈碎片化，表现出典型的村镇经济发展模式。尽管镇区内商业、文化娱乐、医疗教育等公共服务设施基本齐全，但用地局促，总体规模较小。

(2)建筑空间形象未能充分展现江南水乡特色

甪直当前仅古镇区保留了较为完整的水乡特色，现状老镇区居住用地较为紧凑，以低层和多层为主。新建低层住宅造型现代，屋顶大多为红琉璃瓦，多层住宅大多为坡顶灰瓦。古镇区周边区域受高度限制多为多层建筑且较为密集，商业建筑及配套建筑多位于古镇区西侧，分布不均且集中度不高。镇区内建筑高度单一，区域可识别性差。

(3)基础设施建设难以满足现实需求和发展需要

甪直镇区目前主干道红线宽15-22米，间距1600米，其他等级道路多数为尽端路，交通系统不成体系，导致镇区内交通不畅。镇区内高压线交织密集，且走向不具有规律性，不利于建设用地的有效利用。甪直镇区现状河网密集，水乡自然特征显著，但多数河道呈自然状态，沟通不畅，淤塞严重，水质恶化，从而影响到镇的总体环境。

3.2.2Existing Problems in the Development of Luzhi Town

(1)The natural and cultural heritage needs to be coordinated with industrial development

Luzhi is adjacent to Kunshan City in the east, one of the Top 3 towns in National Top 100 Counties, and Singapore Suzhou Industrial Park in the north, laying a sound foundation for industrial development. The ancient town is well preserved due to the development of tourism, while the typical characteristics of water town in other regions has been damaged to different degrees, thus failing to match the overall image as an ancient town. In Luzhi Town, natural villages are distributed in a more dispersed way, residential land scattered along the rivers and mixed with industrial land. Currently, Luzhi focuses on industries such as clothing, weaving & dyeing, electronics and building materials with a fragmented industrial layout, demonstrating a typical mode of economic development at the town and village level. Despite basically complete public service facilities such as commerce, culture and entertainment as well as medical and education, Luzhi Town still lacks enough land from an overall planning perspective.

(2)The architectural space fails to adequately show the image of a water town in south China

Currently, only Luzhi ancient town retains a relatively complete style as a distinctive water town, featuring more compact use of residential lands, mainly low-rise and multi-rise buildings. The newly built low-rise residential buildings embrace a modern style, mostly red-glazed roof tiles, and most of the multi-rise buildings have sloping roofs and grey tiles. The surrounding areas are mostly intensively distributed multi-rise buildings due to height restrictions, while commercial buildings and ancillary buildings are unevenly located in the west of the town, which is of lower concentration. Singe-height buildings in the town area lead to poor identification.

(3)Infrastructure fails to meet the practical and development needs

At present, red lines on the main roads in Luzhi are 15-22 meters wide and 1600 meters spacing; and most of other grade roads are dead roads, without a sound transport system, resulting in poor local traffic in the town. The irregularly intertwined high-voltage lines in the town are not conducive to the effective use of land for construction. Luzhi has a quite intensive river network with the distinctive natural features as a water town, while most rivers are still in their natural state, leading to poor water flow, severe blockage and deterioration of water quality, thus affecting the overall environment of the town.

平面布局图
Plane Layout

3.2.3 设计思路

秉承生态文明理念，全面构析角直所拥有的自然空间，明确相应的服务人群，从共生、回馈的角度组织规划设计要素，从而构建面向生态文明的城市空间秩序。

（1）从历史渊源展现角直城市形象特色

角直古镇位于镇区东侧，于明清时期逐渐兴旺繁荣，是角直现今最主要的旅游资源。规划通过古镇历史透视未来，江南水乡的自然空间是角直的“根”，角直人祖祖辈辈据此繁衍生息，具有浓郁的吴文化。因此，角直的城市形象应从全镇进行统筹考虑，深挖历史，延续文脉，将农耕文明时期的角直古镇、工业文明时期的角直工业园区，以及未来生态文明时期的角直新城进行有机地结合。

（2）突出特色要素以塑造角直个性

规划通过多角度分析角直特色，挖掘其核心特色要素，在城市设计中突出强化，彰显角直鲜明个性。角直的历史和发展因水而生、因水而盛，自然条件水乡泽国，城市空间水分水析，城市建筑依水而筑，人文气息智者乐水，居民活动无水不欢，整个城市的文化与水相融。水是角直的核心要素，通过水来组织城市设计中的要素，同时要素的设计应更好地衬托角直的水。

(3)以可持续发展理念引导角直城市发展

根据生态文明的要求，规划应基于复合多样、集约用地、节能减排、绿色出行四个层面构筑角直的可持续发展空间。因此，规划通过多维度的功能复合，满足城市的健康发展需求，对于不可再生的土地资源，集约节约利用以提高单位用地效益，打造职住平衡的城市空间，降低通勤排放，设定绿色建筑建设要求，提高整个镇区的绿色建筑比例，同时对于工业项目设定准入门槛，以实现降低工业项目的能耗、排放、污染的基本目标，从而符合角直镇的总体形象定位及发展要求。

(4) 延续文脉再现鼎盛人文

角直自古人杰地灵、人文发达，从陆龟蒙的《江湖散人传》，到叶圣陶的《多收三五斗》等古往今来的众多文化精品，都是以角直为背景进行创作的。规划保护原有创作资源，通过设计优化现有水系及景观，提供文化创作交流的对象与场所，鼓励角直本地特色文化的创新发展。规划在强化角直文化的凝聚力，提高整体市民文化素质的同时，通过高标准配置旅游设施和文化设施，营建文化之旅的空间载体，提升角直的文化水平，扩大角直的文化影响力。

3.2.3Design Concept

Adhering to the concept of ecological civilization, comprehensively analyze the natural space in Luzhi, and clearly define corresponding people to serve, and design planning elements from the co-existence and feedback perspective to build an urban space oriented towards ecological civilization.

(1) Showcase Luzhi’s image based on its historical origins

Luzhi Ancient Town is located in the east of the town, thriving since the Ming and Qing dynasties and has become the major tourism resource in Luzhi. It is planned to look forward to the future from a historic perspective of the ancient town, with the nature space of water town as its "root" in Luzhi, where Luzhi people live and thrive for generations, featuring a strong Wu culture. Therefore, the overall image of Luzhi shall be designed based on the town as a whole by digging deep into its history and extending its cultural context, so as to organically integrate the ancient town built during the farming civilization period, the Luzhi industrial park built during the industrial civilization period, as well as the Luzhi new city to be constructed in the future ecological civilization period.

(2) Highlight uniqueness to shape Luzhi’s characteristics

It is planned to explore Luzhi’s characteristics through multi-angle analysis for its core feature elements, and highlight them in urban design to reflect Luzhi’s distinctive characteristics. Luzhi develops and flourishes based on its waterways, and it is naturally a water town with abundant water resources, rivers crisscrossing and architectures built by the rivers, embracing a cultural atmosphere where the wise man likes the water; in addition, all resident activities rely on the waterways and the entire city culture is perfectly blended with water. Water is the core element in Luzhi, therefore it is designed to combine all urban design elements through water; meanwhile, all elements shall be designed to better set off the waters in Luzhi.

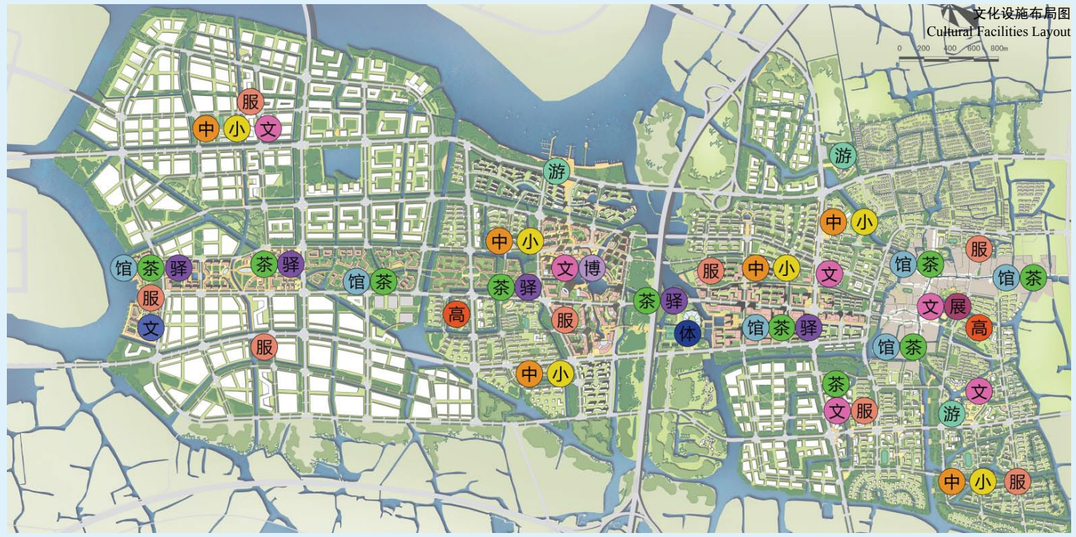
(3) Guide Luzhi’s urban development based on a sustainable development concept

In accordance with the requirements of ecological civilization, it is planned to build a sustainable development space in Luzhi from four perspectives: intensive land use, composite diversity, green travel and energy saving. Therefore, it is planned to meet the demand for healthy development of the city based on a multi-functional composite diversity concept; adopt an intensive land-using method for the non-renewable land resources to increase effectiveness per unit land area; build a jobs-housing balanced urban space to reduce emissions from commuting; set the requirements of constructing green buildings to increase the proportion of green buildings in the entire town; meanwhile set the access threshold for industrial projects to reduce energy consumption, emissions and pollutions resulting from industrial projects, thus aligning with the overall image positioning of Luzhi Town as well as its future development requirements.

(4) Inherit cultural context and reproduce humanities

Luzhi has long been known as a place of great hero and outstanding humanism since ancient times, many cultural works throughout the ages, from "Biography of a Wanderer" by Lu Guimeng" to "Harvest More Grains" by Ye Shengtao, used Luzhi Town as background for creation. It is designed to protect the original creative resources and to optimize the existing waterways and landscape, so as to provide targets and places for cultural and creative exchanges, as well as to encourage cultural development and innovation with Luzhi’s local characteristics. It is planned to strengthen Luzhi’s cultural cohesion and improve cultural qualities of the public as a whole; at the same time, by constructing high standard tourist facilities and cultural facilities, create a space for cultural tours, and enhance Luzhi’s cultural level as well as expand its cultural influence.

文化设施布局图
Cultural Facilities Layout



3.2.4 生态规划方法

我们从集约用地、复合多样、绿色出行、节能减排四个角度构筑角直的可持续发展空间。

3.2.4 Ecological Planning Approaches

We build a sustainable development space in Luzhi Town from four perspectives, namely intensive land use, composite diversity, green travel and energy saving.

总体鸟瞰图
Overall Bird's View

(1)集约用地

土地空间是不可再生资源，我们通过保护现有的生态用地、现有水系，在适宜开发建设的土地上采用混合开发模式，提高单位土地的利用率，增加土地的复合功能，从而提高单位土地产出，在满足发展的基础上，集约利用土地。

(2)复合多样

城市系统是一个复杂的复合系统，多样化复合化会给城市提供一个更健康的发展条件。因此我们采用开放包容的态度，创造推动城市发展的复合多样功能，满足居民生活生产出行的多样需求，保护城市生态环境的生物多样性，通过多维度的功能复合， 满足城市的健康发展需求。

(3)绿色出行

我们在空间中就近配置完善的便利设施，满足步行3~8分钟的服务半径，降低高碳出行需求；打造职住平衡的城市空间，降低通勤排放；营造优美宜人的慢行空间，以城市中轴、各区步行道、滨水步道为主，鼓励慢行，鼓励健身，培育健康休闲的生活氛围；布局便捷高效的公共交通，通过5分钟服务半径的公交站点设置、清洁能源的公交车辆配置、优美公交线路环境的营建，降低小汽车的使用，从而实现交通出行的低碳排放。

(4)节能减排

我们建议设定绿色建筑建设要求，提高整个镇区的绿色建筑比例，同时全镇范围内鼓励使用可再生能源，对于工业项目设定准入门槛，降低工业项目的能耗、排放、污染，以符合角直镇的总体形象定位及发展要求。

可持续发展要素叠加图
Sustainable Development Elements

(1)Intensive Land Use

Land space is a kind of non-renewable resource. We adopted a mixed development model on the lands suitable for development and construction by protecting existing ecological land and the existing waterways, so as to improve the utilization per unit land area and to increase land composite functions, thereby enhancing output of unit land area and realizing intensive land use on the basis of meeting the requirements for future development.

(2)Composite Diversity

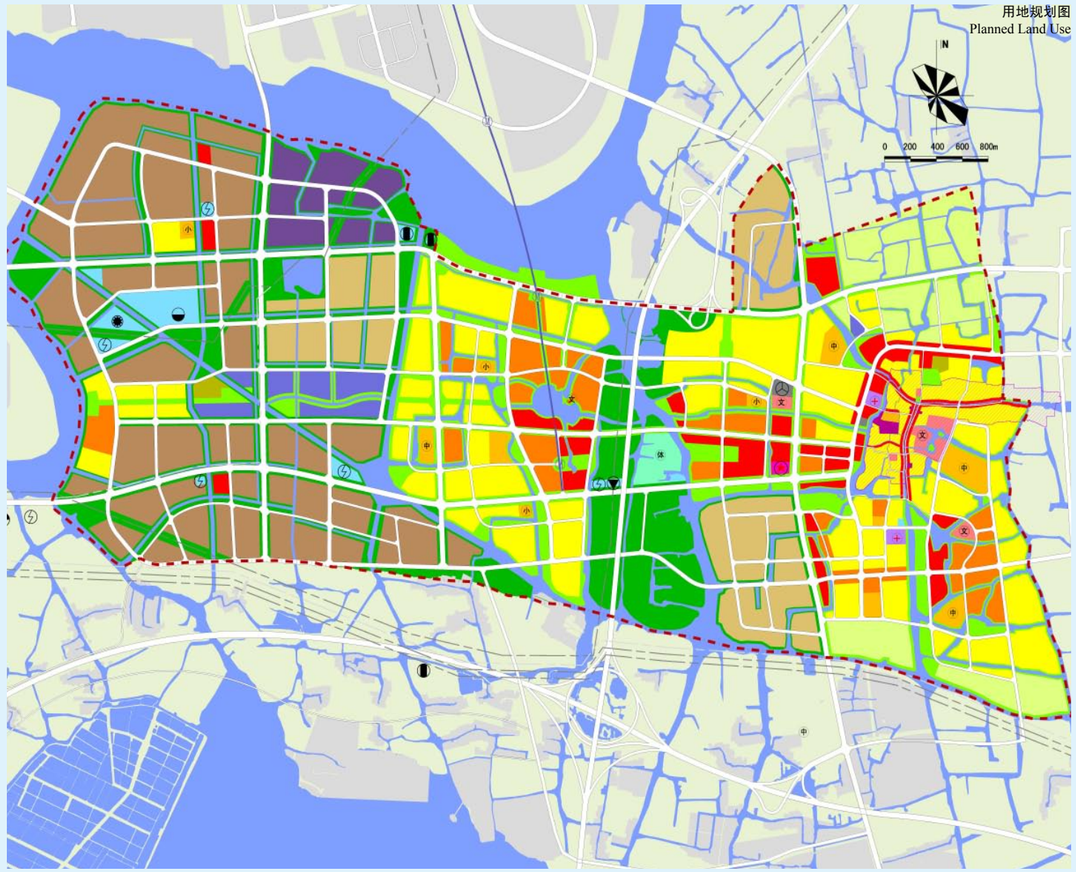
The city system is a complex and diversified composite system, providing more healthy conditions for city development. Therefore, we have adopted the attitude of openness and tolerance to create composite diversity promoting urban development, so as to meet the resident's diverse needs in terms of living, working and traveling, and also to protect the biological diversity of the city's ecological environment and meet the city's demand for healthy development through a multi-functional composite deployment.

(3)Green Travel

We build improved facilities in the nearest living space within a service radius of three to eight minute walking distance, so as to reduce high-carbon travel requirements; we build a jobs-housing balanced urban space to reduce emissions from commuting; we create a beautiful and pleasant slow traffic system, focusing on the city axis, walking lanes in various districts and the waterfront pedestrian walkway, so as to encourage slow traffic, fitness and cultivate a healthy and comfortable living style; we construct convenient and efficient public transport with clean-energy public transport vehicles within five-minute radius of bus stops and create a pleasant bus lines to reduce the use of private cars, and ultimately achieve the goal of low carbon emissions.

(4) Energy Saving and Emission Reduction

We recommend to set requirements in green building construction, increase the proportion of green buildings in the entire town; meanwhile we encourage town-wide use of renewable energy and set the access threshold for industrial projects, reduce energy consumption, emissions, pollutions resulting from industrial projects, thus aligning with the overall image positioning of Luzhi Town as well as its future development requirements.



用地规划图
Planned Land Use

合乐旅游地产策划实践与思考

Halcrow’s Experience in Planning for Tourism Estates

一、问题的提出

近年来，中国旅游地产非常火爆。一方面，中国旅游业经过多年的发展已经颇具规模，2011 年收入已经超过 2 万亿，根据世界旅行旅游理事会（WTTC）的分析，中国旅游业对 GDP 总体的贡献已经达到 9.2%。另一方面，中国房地产业正处于结构调整、转型发展的关键时期，受当前宏观调控的政策影响，以住宅为核心的传统房地产开发遭遇发展瓶颈，投资风险加大而利润下降，房地产业发展亟需创新。因此，依托旅游资源进行的房地产开发成为市场新的投资热点，倍受社会各界关注。

目前，社会各界对旅游地产的定义尚未形成统一的认识，但普遍认为，旅游地产开发必须注重对旅游资源的利用与保护，并以旅游产品和服务为依托，围绕旅游景点及其附近开发休闲度假、商务或住宅地产。旅游地产投资周期长，投入资金量大，影响因素众多，兼具房地产投资风险和旅游业开发风险，这些对旅游地产开发商提出了比传统房地产开发商更高的要求。在旅游地产开发中，如何挖掘旅游地产自身资源的稀缺性，实现旅游地产开发价值的最大化，并兼顾社会效益、环境效益和经济效益是值得探讨的问题。

1.Background

“Tourism estate” tends to be a hot issue in China in recent years. Based on a report by World Travel and Tourism Council (WTTC), income generated from the tourism industry exceeds CNY 2000 billion in 2011 which contributes to 9.2 percent of total GDP in China. On the other hand, due to government control and high investment risk with lower return, traditional real estate development is facing a bottleneck, which calls for industrial innovation especially in the critical period of industrial restructuring and development transformation. Thus, tourism estate development is turning to be a new investment highlight and attracting increasing social attention.

There is no public agreement on the definition of “tourism estate development”, however, a common belief is that utilization and protection of tourism resources is the main concern in such development, supported by provision of tourism products and services as well as construction of resorts, commercial and residential houses around scenic spots. Factors, such as long life cycle of investment and large capital requirement together with high risks in the industry, all contribute to higher standards for tourism estate developers in comparison with traditional estate developers. With a view of social, environmental and economic interests, it is crucial to find a true balance between scarcity of resources and maximization of development value during the process of tourism estate development.

二、中国旅游地产发展现状

（一）中国旅游地产发展历程

改革开放以来，随着城乡居民生活水平的持续提高和政府逐步将旅游业培育成支柱产业，中国旅游业的发展历程大致经历“观光游——休闲游——度假游”三个阶段。与此对应，中国旅游地产的发展与这三个阶段紧密联系。

第一阶段：观光游开启旅游时代，旅游地产萌芽发展

1978 年，在国务院召开的全国旅游工作会议中，中央提出了从政治接待向自主经营转变的旅游产业发展战略，标志着我国现代旅游产业的开端。旅游地产最先在酒店业的发展过程中出现，大批国有旅游饭店引入外资，进行经营改革，同时也引入国外先进的饭店管理模式。1989 年，华侨城在深圳推出了中国第一个主题公园“锦绣中华”，开创了中国文化旅游的先河，创造了“一步迈进历史，一日游遍中国”的神话，成为中国旅游地产市场初期发展的代表项目。

2.Tourism Estate Development Status in China

(1)Tourism Estate Development History in China

Since Reform and Opening-up in China, due to continuously increasing incomes of urban and rural residents and transformation of tourism industry into a pillar industry supported by Government, tourism industry has experienced three stages: sightseeing tour, leisure travel and vocational tour. The development of tourism industry in China has close relationship corresponding to these three stages.

Stage 1: A New Era of Tourism Development and Emergency of Tourism Estate

Dating back to 1978, during a national tourism working conference held by the State Council, Central Government proposed a tourism industry development strategy recommending transforming this industry from government control to independent operation, indicating a new age of modern tourism industry. Tourism estate emerged with hotel industry development. During that period, large foreign capital invested into the State-Owned Tourist Hotels and new international modern management mode was also applied to this industry. OCT built the first theme park “Splendid China” in 1989, a representative project in the preliminary development of tourism estate, which has initiated Chinese Cultural Tourism and created a mythology of “one step into the history, one day travel around China”.

第二阶段：休闲游提升旅游品质，旅游地产快速发展

1992 年，国务院批准了 12 个国家级旅游度假区，随后各级地方政府又批准了 100 多个省级旅游度假区。1996 年，政府推广旅游年活动，休闲和商务旅游成为中国旅游经济发展的新形式。1997 年，中国首家分时度假公司——泰慕赛尔休闲产业网络有限公司成立，标志着分时度假正式进入中国。2001 年，在海口举办了“第一届中国旅游房地产博览会”及“旅游房地产发展论坛”，会议中首次提出“旅游房地产”这一概念。与此同时，伴随着房地产市场的大规模发展，中国旅游地产开始受到旅游业经营者和房地产开发商的重视，旅游地产开发也从单一的酒店、主题乐园向大规模、多元化形式的综合地产进行转变。

Stage 2: Rapid Development of Tourism Estate with Leisure Travel Enhancing Tourism Quality

12 National Tourist Vacation Resorts were approved to be built by the State Council in 1992. After that, more than one hundred Provincial Tourist Resorts were also constructed by local governments. Annual Tourism Activity made leisure and commercial tourism as a new form of tourism economy development and was held by government in 1996. The establishment of Timeshare Leisure Network Co., Ltd in the next year marks timesharing industry’s entry into China. In 2001, “China First Tourism Estate Expo” and “Tourism Estate Development Forum” were held in Haikou, and at the same time, the concept of “tourism estate” was firstly introduced in those conferences. Additionally, with dramatic real estate market expansion, increasing number of tourism business runners and property developers are attracted into this industry. Besides, this industry is transforming from developing hotel and theme parks to constructing large-scale and multifunctional areas.

第三阶段：度假游促进旅游转型，旅游地产稳健发展

随着中国国力不断提升，国家开始大力倡导国内旅游，提高公民旅游意识，在全社会营造关注旅游、参与旅游、支持旅游的氛围。2008 年，国家旅游局发布国民休闲计划，倡导奖励游、福利旅游、修学旅游、银发旅游等。2009 年，政府颁布《关于推进海南国际旅游岛建设发展的若干意见》，到 2020 年，海南岛初步建设成世界一流的海岛休闲度假旅游胜地。2010 年，国家“十二五”规划提出，进行收入分配体制改革，提高居民收入，根本性推动旅游消费需求。在此过程中，涉足旅游地产的地产商越来越多，投资规模也越来越大，一些大型旅游地产集团快速成长，以度假、休闲、娱乐为主题的旅游地产项目成为市场主流，旅游地产发展进入了高级形态。

Stage 3: Stable Development of Tourism Estate with Vocational Travel Accelerating Transformation of Tourism Industry

Economy in China is experiencing a continuous growth, and domestic travel is greatly advocated by Government in recent years to raise public consciousness of tourism and create an atmosphere of engaging in, supporting tourism in the whole society. In 2008, National Tourism Administration promulgated a new Nationwide Leisure Plan to initiate incentive tourism, bonus tourism and training tourism as well as senior citizen tourism. In the following year, “Discuss on the Construction of Hainan International Tourism Island” was issued by the government. The plan mapped a world-class island leisure tourism resort in Hainan Island by 2021. Furthermore, the Twelfth Five-year Plan in 2010 put forwards that tourism consumption can be stimulated by updating income distribution system and generating higher individual income. In conclusion, more estate developers are involved in; larger capital is required; large-scale tourism estate groups are expanding rapidly, all showing that tourism estate projects based on the theme of vacation, leisure and recreation will be the main stream.

（二）中国旅游地产发展特点

1．旅游地产市场发展空间很大

旅游地产与旅游业发展高度相关。根据世界旅游组织的预测，中国在2020年将成为世界第一大旅游目的地，每年吸引1.4亿之多的国际游客，占全球国际游客总量的8.6%。根据国家旅游局制定的旅游“十二五”规划，至2015年，我国国内旅游业总人数将达到35亿人次，旅游业总收入将增到2.3万亿元。预计在2012年下半年，中国政府将推出《国民休闲纲要》，将启动大休闲旅游时代，这为中国旅游地产拓展了更大的外延空间。

(2) Characteristics of Tourism Estate Development in China

1.Great Potential in Tourism Estate Market

There is high correlation between tourism estate and tourism industry. In accordance with prediction by World Tourism Organization, China will appeal to 0.14 billion international tourists per annum, which makes up 8.6 % of global demand, and will become the largest tourism destination in 2020. Another prediction made by the Twelfth Five-year Plan said that the total number of domestic tourism will reach 3.5 billion with income generated from this industry increasing to CNY 2300 billion in 2015. It is estimated that “Nationwide Leisure Guideline” will be issued by Chinese Government in the second half of 2012, which will start a new era of leisure tourism and extend tourism estate industry to a bigger market.

2. 旅游地产市场发展差异很大

旅游地产发展地域性很强，与自身禀赋资源和所处区位条件紧密联系。拥有自然遗产资源或文化遗产资源的旅游地产，如利用好这些先天稀缺资源，如风景名胜区、历史文化名城等，在市场竞争中会具有一定优势。而致力于后天打造的商业型旅游地产项目，如主题公园，受本区域经济社会发展水平影响很大。中国疆域辽阔，领土范围东西距离约 5200 公里，南北距离约5500公里，区域发展差异很大，这使东、中、西部的旅游地产发展也参差不齐。

2.Big Differences in Tourism Estate Market Prospects

Regional factors, such as nature resources and location conditions, play a critical role in the development of tourism estate. It is crucial to effectively utilize scarce resources such as scenic spots and historic cities in those tourism estates which boast natural and cultural heritage to obtain competitive advantages; besides, the construction of commercial-oriented tourism estate such as theme park is also impacted by regional economic and social development. Since China is vast in territory and measures 5200 km from east to west and 5500 km from south to north, big differences exist in market conditions, which will lead to differences in east, middle and west areas tourism estate development.

3. 旅游地产市场竞争日益激烈

目前，中国有27个省市自治区将发展旅游业作为地方支柱产业。近年来，不少知名房企参与旅游地产开发，旅游地产遍地开花，万亩大盘比比皆是，热的烫手。据不完全统计，2012年第1季度，全国旅游地产投资过亿元的签约项目近70个，投资总规模达2600亿元。东部地区旅游资源现在大多已被圈完，现在要找旅游资源，只能往西看，比如西藏、新疆等地。这也促使旅游地产商业模式不断尝试创新，旅游地产的投资门槛逐年推高，市场竞争日趋激烈。

（三）中国旅游地产发展困境

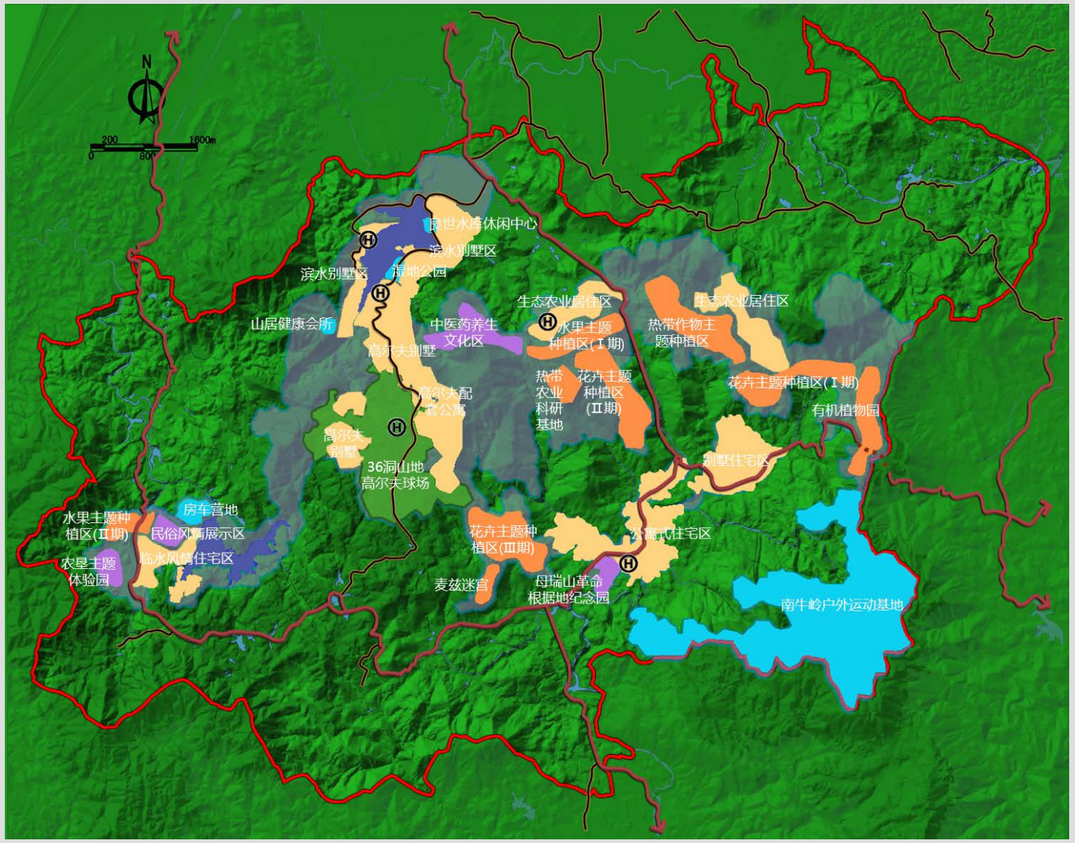
虽然中国旅游地产发展已经取得了一定的成就，但也面临诸多的挑战。第一，旅游地产开发中“重地产、轻旅游”，很多开发商打着发展旅游的旗号进行跑马圈地，拿地之后仍然按照传统住宅开发模式来运作旅游地产项目，结果容易造成项目开发经营失败。第二，旅游地产开发中“重开发、轻规划”，尤其是忽视策划的重要性，很多开发商在开发前期没有很好地挖掘自身特点去思考如何创造地块最优价值，决策时喜欢拍脑门，这使很多旅游地产开发项目同质化严重，不是泡温泉就是打高尔夫。第三，旅游地产开发中“重营销、轻内涵”，不少开发商搞旅游地产喜欢夸大宣传和过于概念营销，缺乏脚踏实地做好旅游产品的实干精神，没有使旅游和地产进行很好的融合，最终会影响到旅游地产的开发结果。

3.Increasingly Intensive Competition in Tourism Estate

27 provinces or autonomous cities have already taken tourism industry as leading at the moment. With more famous brands engaging in tourism estate development, as mentioned above, “tourism estate” is becoming a hot issue in recent years. Partly estimated, for the first quarter of 2012, total number of over-CNY 0.1 billion projects is about 70, involving a total investment of CNY 260 billion. The majority of tourism resources in the east area have been developed, therefore, in order to find new tourism resources, it is better to look forward in the west areas such as Tibet and Xinjiang. In addition, continuous innovation of operation mode in this industry is needed and larger capital is required for investment threshold, which results in increasingly intensive competition.

(3) Obstacles in Tourism Estate Development in China

Although significant achievements have been made, tourism estate development is faced with quite a number of challenges. For instance, “estate over tourism” phenomenon is one of the major challenges. Unethical enclosure under the cover of developing tourism, lots of estate developers still operate projects in the old mode of traditional residential housing development, which might easily lead to a failure. Another challenge is “development over planning” phenomenon. Without thorough consultation on the project in the early stage and consideration on how to create value based on its own features, there is high similarity in this industry with most projects. Finally, “marketing over connotation” phenomenon challenged a few developers for the reason that the majority tends to advertise clamorously, and even worse, lack of practical spirit, which will end in little integration of tourism with estate and negative impact on this industry.



三、中国旅游地产策划发展现状

旅游地产策划是旅游地产开发前期工作的首要工作之一，也是旅游地产规划和建筑设计的前提。旅游地产策划工作内容主要是，基于旅游项目的区位、市场、资源、竞争等基础分析，通过对旅游资源的创意解构与有机整合，明确旅游地产的发展定位、主导功能和目标市场，策划旅游地产产品及相关旅游节庆活动等。

根据不同机构类型，国内从事旅游地产策划业务的机构大致分为两大派别，即学院派和实务派。学院派机构，目前主要是国内有关高校或研究院所，侧重于旅游地产发展理论层面分析，研究视角有探讨中国发展旅游地产的可行性、制约因素分析、存在问题和对策，旅游地产市场体系及开发模式的研究，旅游地产项目案例研究等。实务派机构，既有综合性的国际知名房地产咨询公司，也有专业从事旅游地产策划的民营咨询机构，虽然各自的研究重点有所不同，但大多注重旅游地产的市场调研、发展理念创意和产品策划等实用内容的研究。与如火如荼的旅游地产发展景象相比，国内旅游地产策划从整体来看，实务研究领先于理论研究，但原创研究较少而模仿研究较多，定量分析较少而定性研究较多。因此，中国旅游地产策划为达到行业发展需要，还需要求新务实，努力前行。

3.Development Status of Tourism Estate Consulting Services in China

Tourism estate consultation is critical, because, in the early stage of development, it is the fundamental to concept planning and architecture design. Main jobs involved in consultation services include undertaking analyses on project location, market, resources and competition etc. Through utilizing and integrating tourism resources, it aims to identify development orientation, main functions and target market, and furthermore, give basic ideas of tourism products and related events.

According to different services provided, tourism estate consulting institutions can be classified into two schools, one is academism and the other is pragmatism. Academism institutions refer to universities and research centers which place more emphasis on theoretical analysis, including exploration on the feasibility of tourism estate development in China, investigation on its constraints, existing problems and potential solutions as well as researches on its market system, development mode and successful cases in this field. Pragmatism institutions include those comprehensive international estate consulting enterprises and private consulting corporations engaging in this industry. Regardless of differences existing in each institution’s research emphasis, the focus of most institutions is on market prospect, concept innovation and product design. To sum up, pragmatism research is ahead of academism research. However, taken together, although good prospects of tourism estate development can be expected, there are not enough original researches; instead, most researches are referred from other sources. In addition, qualitative analysis is much more than quantitative Analysis. Thus, tourism estate consulting industry in China needs great improvements and requires innovation.

四、合乐旅游地产策划实践

（一）合乐旅游地产策划总体思路

1．策划理念

合乐旅游地产策划注重三因理念，即因人成事、因地制宜和因势利导。因人成事，策划旅游产品必须以游客为本，协调好外来游客与当地居民的关系，打造兼顾各方利益诉求的旅游项目。因地制宜，立足项目自身条件，找出适合自己的发展路径，既不盲目借鉴，也不盲目攀比，脚踏实地。因势利导，把握旅游业和房地产业发展趋势，从市场中寻找差异化的竞争产品，实现项目的可持续发展，确保项目开发运营的投入产出平衡。

2．策划步骤

合乐旅游地产策划一般采取“四步走”，包括 第一步进行项目发展评估，找出项目开发存在的主要问题；第二步进行项目价值提升，找到项目开发的发展目标；第三步进行项目产品策划，找出项目开发的旅游主导产品；第四步进行项目开发建议，找到项目具体实施的操作路径。

3．策划特点

合乐旅游地产策划体现出“三化一性”特点，包括：市场化，通过市场调研与分析，找出项目在旅游地产市场中的发展空间；国际化，通过国内外类似成功项目的经验借鉴，为项目发展拓宽视野和探索实施路径 定量化，通过构建旅游地产项目的产品定位分析框架或发展规模预测模型，为项目实施提供发展依据；可行性，基于构建的项目开发与运营财务模型，对旅游地产开发、投融资、招商运营等提出具有可行性的实施方案和建议措施。

4.Halcrow’s Practice in Tourism Estate Consulting

(1) Guidelines for Halcrow’s Tourism Estate Consulting Services

1.Consulting Conception

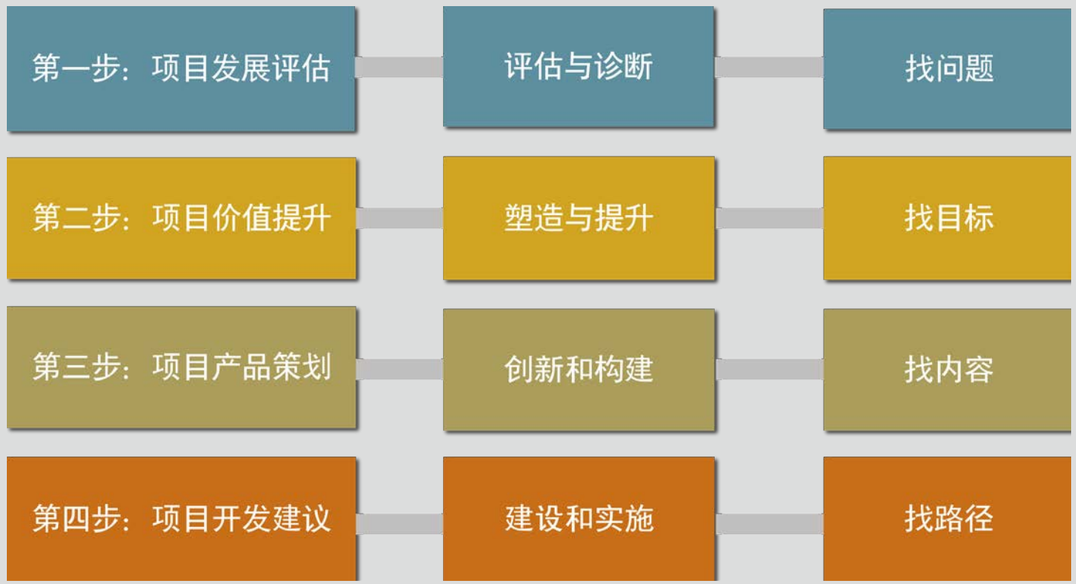
Utilizing resources, conditions and trends is the main principle of consulting service of Halcrow. With the goal of finding a balance among all interests, designing tourists-oriented product and coordinating relationship between tourists and local residences have fully explained the meaning of utilizing resources. By contrast, utilizing conditions refers to make the best use of local conditions to find a way that suit us the most without unrealistic reference to and comparison with other projects. Last but not the least, utilizing trends is consulting according to the trends of tourism and estate industries to design a product with differential advantage. As a result, the goal of sustainable development and input-output balance is realized.

2.Consulting Procedure

A Four-step method can be summarized as followed. Step 1: evaluate the project and outline main problems; step 2: create project value and set the development target; step 3: product design and identify leading product; step 4: suggest on project development and find feasible implementation methods.

3.Features of Halcrow’s Consulting Services

High degree of marketization is one feature, which means expanding market by various analyses. Another feature, internationalization, is exploring new ways of implementation by referring to international successful related cases. Quantification, by contrast, is identifying development basis for project implementation through establishing tourism estate product positioning analytical framework and building development scale forecast model. Feasibility, according to project development model and financial operation system, is to make feasible solutions and proposals on estate development, funding, investment and operations etc.



（二）合乐旅游地产项目策划实践范围

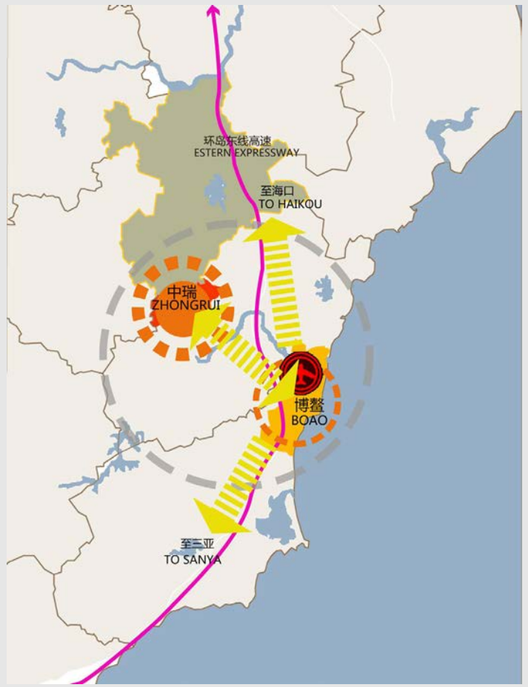
经过十年的快速发展，合乐在旅游地产项目策划、规划和建筑设计方面成果颇丰，策划旅游地产项目类型包括滨水度假、主题公园、休闲农业、古镇改造、文化开发、都市休闲等，服务客户以地方政府和大型房地产地产开发商为主。

我们已经完成的典型项目包括：海南定安县中瑞片区旅游地产发展策划、海南乐东龙腾湾—梦幻海岸项目策划、上海世博后续开发项目发展策划、江苏苏州阳澄湖半岛旅游项目策划、江苏句容欧洲影视城项目发展策划、浙江宁波杭州湾新区海上新世界项目策划、浙江镇海九龙湖旅游地产项目策划、辽宁大连人工岛旅游项目策划、广州增城国际旅游度假城项目研究、广西南宁龙象谷一期策划研究、四川正龙智慧型国际生态山水田园样板镇项目研究、重庆市渝中区山地公园研究等。我们正在参与的大型项目包括：江苏苏州太湖国家旅游度假区中心区发展策划研究、安徽桐城孔城老街旅游度假区二期项目研究、云南普洱休闲养生部落项目总体顾问服务、北京康西草原马文化高端商务休闲度假区项目研究等。

(2) Scope of Halcrow's Practice in Tourism Estate Consulting

Halcrow experienced a rapid growth in the last decade, and great achievements have been made in tourism estate consulting, planning and architecture design. Tourism estate consulting projects fall within several categories, such as coastal resorts, theme park, leisure agriculture, ancient town renewal and cultural development etc. Major clients served are local government or large property developers.

Halcrow has completed tourism estate consulting projects for Hainan Zhongrui Area, Hainan Ledong Development, Shanghai Post-Expo Development, Suzhou Yangcheng Lake Peninsula, Jurong Film Studio, Water World Development in Hangzhou Bay New Area, Zhenhai Jiulong Lake, Artificial Island by Dalian Bay, Guangzhou Zengcheng International Resort, Phase 1 of Guangxi Longxiang Valley, Sichuang Zhenglong International Ecologic Town and Chongqing Mountain Park Yuzhong Area etc. Consulting projects still in progress includes Suzhou Taihu Lake Tourist Resort, Phase 2 of Tongcheng Kongcheng Old Stree Tourism Resort, Yunnan Puer Spa Tribe, Beijing Kangxi Grassland High-end Resort etc.



（三）合乐旅游地产项目策划典型案例

(3) Portfolio of Halcrow's Tourism Estate Consulting Projects

1. 海南定安县中瑞片区旅游地产发展策划

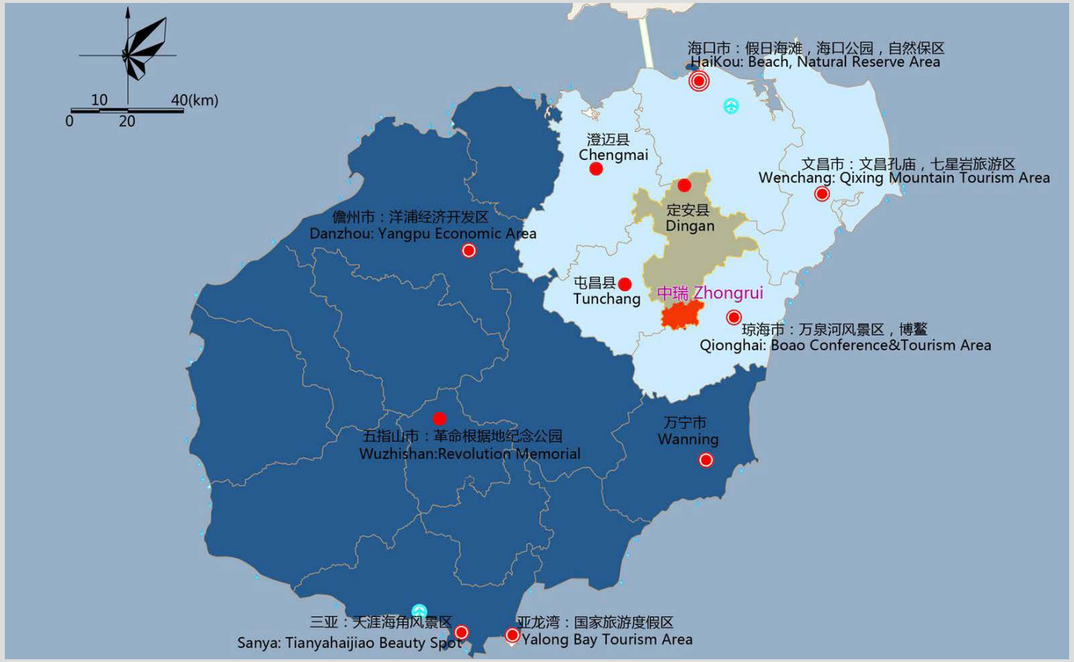
1. Tourism Estate Development Consulting for Zhongrui Area, Hainan

（1）项目简介

(1) Brief Introduction

2010 年，在海南建设国际旅游岛和农垦体制改革的背景下，华西希望集团与海南中瑞农场签署了合作框架协议，共同建设总面积约 105 平方公里的定安县中瑞片区。受客户委托，我们承担了中瑞片区发展策划研究工作，要求立足海南旅游和地产发展现状，借鉴国内外相关案例发展经验，重点研究生态农业、旅游和养生养老等主导产业定位、功能策划、空间布局、开发策略、投资收益分析等。最终研究成果得到华西希望集团和海南省政府有关部门的高度认可，并于 2011 年获得“上海市优秀工程咨询成果二等奖”。

Under the background of constructing an international travelling island in Hainan and reformation of cultivating system, Huaxi Hope Group signed cooperation agreements with Hainan Zhongrui Farm on the construction of Zhongrui area which has a total site area of 105 km2. Halcrow was commissioned to undertake consulting services for this area. By viewing local development conditions and referring to international successful cases, the goal is to identify industrial orientation and spatial distribution, consult on functions, set development strategy and conduct investment profit analysis in ecological agriculture, tourism and health preserving industry. Highly honored by Huaxi Hope Group and Hainan Government, Halcrow is also awarded “The Second Prize of Shanghai Excellent Engineering Consultation”.



（2）策划成果特点

(2) Features of Halcrow's Work

特点一：以资源评价和市场调研为基础，科学确定项目发展定位

我们通过合理评估中瑞片区的各种资源、调研分析海南岛相关产业和市场发展现状、借鉴国内外成功风情小镇的发展经验，将项目定位于紧扣“生态、文化、创新”发展主题的海南岛山居旅游度假目的地和中国山地休闲度假示范小镇。中瑞片区将以三大主题旅游产品为主，即农业生态之旅、山水度假之旅和文化体验之旅，并辅以主题酒店、生态居住、特色商业、商务会展等四大配套功能，突出项目发展的生态文化、英雄文化、养生文化、休闲文化和度假文化这五大内涵，创造“视享、听享、触享、味享、心享”的“六享”休闲养生度假生活。

Feature 1: Identifying Development Orientation based on Analysis of Natural Resources and Market

In addition to characteristics of the existing natural resources in Zhongrui, Halcrow also studies other related industries in Hainan and market development status as well as the development features of globally-renowned tourism towns; based on that, we proposed a development orientation of “ecology, culture and innovation” with an aim to build a mountain leisure tourism demonstration town. Zhongrui Area is planned to take ecological agriculture, landscape exploring and culture experience as leading functions, supported by theme hotel, eco-housing, commercial, and business conference & exhibition facilities. Cultural context were highlighted in Halcrow's plan. Ecological culture, hero culture, health culture, leisure culture, and holiday culture were five themes of the development.

特点二：综合分析项目基础条件，合理策划功能主题板块和空间布局

中瑞片区四面环山，谷地格局清晰，空间资源类型丰富。我们综合运用了高程分析、坡度分析、坡向分析、3D 模拟等手段对片区地形及资源进行了全面分析，根据环境条件和资源状况确定出适宜发展的空间板块，同时，策划五大功能板块，即山水度假区、农业体验区、休闲文化区、运动康体区和风情体验区，通过良好的交通组织，优化整体空间布局，有利于各板块综合联动发展。

Feature 2: Rational Planning on Main Function Modules and Spatial Distribution through Comprehensively Analysis on Local Conditions

Zhongrui Area is surrounded by mountains and has rich spatial resources, indicating a sound geographical pattern. By methods of altitude analysis, slope gradient analysis and slope direction analysis together with 3D simulation, Halcrow has a comprehensive understanding of its natural resources and terrain, which help in defining feasible space for development. Five functional components, including landscape resort, agricultural experience area, leisure culture area, fitness area and customs experience area, are supported by well-organized transport system, with a goal of improving spatial distribution and better utilizing each functional component.

特点三：运用波特钻石模型确定主导产业体系，实现生态、经济和社会的协调发展

我们运用波特钻石模型，梳理中瑞片区的发展条件和机遇，确定项目三大主导产业，即农业、旅游业和养生养老产业，并构思三大主导产业协同联动，共同实现农场资源的生态保护型开发。这三大主导产业之间的关系界定为：生态农业产业为发展基础，精深化发展种植、加工、科研等环节，构建高端农业产业链；休闲旅游业为发展驱动，突出生态旅游、山水度假和文化体验等主题，提升项目发展知名度和影响力；养生养老产业为发展核心，用功能载体集聚农业、旅游业的优势资源，使中瑞片区发展成为海南中部养生养老的首选居留地。

Feature 3: Using Porter Diamond Model to Identify Leading Industry System

Applying Porter Diamond Model in analyzing development conditions and future opportunities, Halcrow identified agriculture, tourism and health as leading industries to attain the goal of ecologically protecting existing agricultural resources. Ecological agriculture industry is the basis of the development, focusing on planting, processing and researching to design a high-end agricultural industry chain; leisure agriculture industry plays a role as a driver, highlighting ecological tourism, landscaped and culture experiencing to enhance project awareness and influence; health industry is regarded as the core, making full use of resources advantages in agriculture and tourism industries to develop Zhongrui area as the first choice for health care.

特点四：运用多种方法策划主题游乐项目，形成品牌旅游园区集聚

考虑到项目开发实施的需要，根据中瑞片区发展定位、功能布局和产业体系，我们综合运用了产业链和价值链分析、产业集群和市场营销等方法策划了 12 类重点游乐项目。特别是发挥委托方在农业旅游领域的领先优势，借鉴成都“花舞人间”的成功经验，充分发挥中瑞片区的大空间优势，以大面积种植花卉、水果和经济作物为发展基础，策划出满足国内外居民消费升级趋势的时尚主题休闲度假游产品，例如水果主题游乐区、热带作物主题区、有机植物园、中医药养生园等。

Feature 4: Planning on Theme Parks by Using Different Approaches to Form A Tourism Park Cluster

Taking project implementation into consideration and based on this area’s development orientation, function layout as well as industrial system, Halcrow provided consulting services for 12 key tourism projects by conducting analysis on industrial chain and its value chain, forming industrial clusters and setting marketing strategies. By referring to successful project in Chengdu, and utilizing spatial advantage especially the client’s leading advantage in agriculture and tourism industry, Halcrow designed several tourism resorts surrounded by large flower, fruit and economic crop fields, aiming to meet the increasing consumption demands of worldwide populations. These tourism resorts can be further classified into Fruit Park, tropical crops theme parks and organic garden as well as traditional Chinese medicine health garden.

特点五：合理确定项目开发规模和分阶段计划，实现开发运营价值最大化

中瑞片区开发规模大，开发时间很长，投资收益存在一定的不确定性。为此，我们按照市场发展空间和开发投资收益最大的原则来确定项目开发总量，并考虑不同阶段的发展特点，多层次、分步骤设计项目各阶段发展路径。对于项目开发的酒店、住宅等物业规模进行合理测算，实现中瑞片区分期滚动开发与总开发的价值最优组合。

Feature 5: Identifying Rational Development Scale and Phasing Strategy

Due to large-scale development and long life cycle of investment in this project, uncertainty exists in obtaining profits. Under the principle of maximizing investment profits and going with market trends, Halcrow identified the total development volume of this project and divide it into several phases as well as using different development approaches for each phase. Additionally, we also estimated the scale of hotel and residential development in this area and optimally combine value generated from progressive development and total development.

2. 上海世博后续开发项目世博园区过渡期利用定位研究

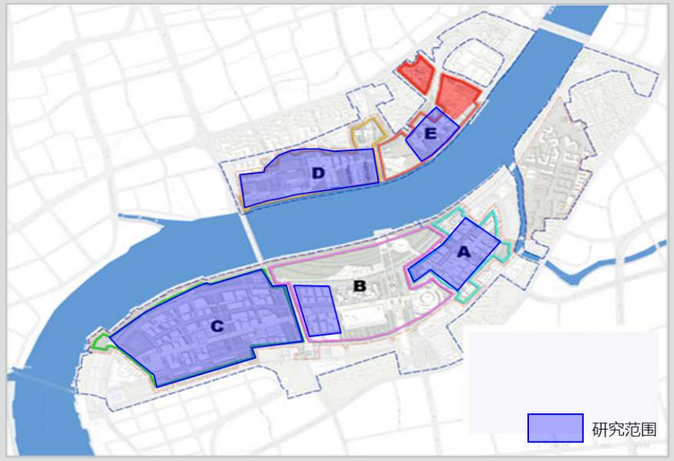
（1）项目简介

上海市委、市政府对上海世博园区后续利用高度重视，要充分发挥世博会的效应，积极利用好世博遗产，做好世博园区的后续利用。受客户邀请，我们参与了上海世博园区过渡期利用定位研究，研究范围包括 91 个场馆，总展馆建筑面积 29.8 万平米。由于后续利用开发时间较长，过渡期预计将达到 3-8 年。我们在深入研究全球世博场馆后续利用成功经验和黄浦江沿岸各区域发展情况的基础上，通过评价上海世博园区整体发展条件和各场馆的现状基础，科学确定项目的发展定位和业态配比，使现有场馆既能够有效传承上海世博会的理念和主题，又能实现后续利用的社会、经济效益的最大化。策划中，我们巧妙地将上海市花“白玉兰”融入到项目发展理念和空间布局优化中，充分地体现了上海地域特色。最终研究成果得到上海世博局以及相关领导、专家的高度认可。

2.Post-Expo Development (Utilization and Development Orientation of Exhibition Areas), Shanghai

(1)BriefIntroduction

High emphasis is put on post-Expo development by Shanghai Government; the aim is to fully use world Expo effect and exhibition areas. Delegated by the client, Halcrow is engaging in positioning study during its transition period after Expo. This project covered 91 venues with a construction area of 298000 sq.m. and will last for quite a long period, expected to be 3 to 8 years. Based on the principle of inheriting Expo concepts and achieving maximized socio-economic benefit, Halcrow referred to global successful post-Expo development cases and conducted analysis on regional development conditions along Huangpu River as well as researching on development status of Shanghai World Expo and each venue to identify development orientation and rations. White yulan magnolia is the symbol of Shanghi and is the design inspiration of this project, which is to show Shanghai regional features to the world. Recently, this project is high honored by Shanghai World Expo Bureau and some domain experts in this field.



项目基本情况

■ 《世博后续利用规划》：AB 片区定位为高端会展区、C 片区定位为国际总部商务聚集区、DE 片区定位为文化博览区；

■ 后续整体开发时序：B 片区→A 片区→DE 片区→C 片区；

■ 过渡期时间：AB 片区 3-5 年、C 片区 5-8 年、DE 片区 5-8 年；

■ 场馆拆留情况：

1、一轴四馆永久性保留；

2、中国建设的 42 租赁馆、11 个联合案例馆暂时全部保留；

3、参展国赠送给中国的 6 个馆暂时保留；

4、3 个企业自建馆暂时保留。

5、参展国自建馆委托拆除场馆将暂时保留。

■ 本项目研究内容共包括 91 个场馆。

（2）策划成果特点

特点一：借鉴全球世博园区后续利用经验和发展趋势，融合本地特色形成项目发展理念和空间布局思路

通过分析世界各国世博园区后续利用经验和发展趋势，我们提出了“白玉兰”的发展理念，用白玉兰“花繁而大、美观典雅、清香远溢；开路先锋、朝气蓬勃、奋发向上”的精神来深化世博园区后续发展的内在诉求。在空间布局上，我们运用了白玉兰花的形态特征，将白玉兰的 6 个花瓣比拟为世博园区五个片区及世博村共六个组团，3 个花萼比拟为后滩、世博和白莲泾三个公园，并利用生态绿地和道路系统，区分不同的功能组团，形成各具特色的状似花瓣的主题区，打造出蕴含白玉兰花主题特征的特色片区。

(2) Features of Halcrow’s Wor

Feature 1: Using Experiences of Other Exhibition Centers Projects to Identify Development Orientation and Spatial Layout in the light of Local Characteristics and Market Prospects

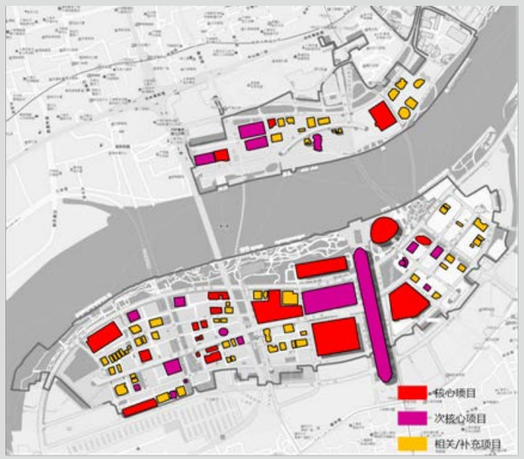
By referring to experiences from other exhibition centers and based on local characteristics and market prospects, “white yulan magnolia”, which has the feature of elegant and vigorous, is selected as the development concept of this project. White yulan magnolia has six petals, referring to five World Expo exhibition areas and one World Expo Village, by contrast, its three calyces stand for Houtan, World Expo and Bailianjing Garden. Additionally, Halcrow utilize green land and roads to divide different functional areas. All these are in accordance with the theme of “white yulan magnolia”.

特点二：运用“分类聚合、以主定次”的方法进行场馆业态定位，打造项目开发利用风格与后续经营特色

我们采用了“分类聚合、以主定次”的方法对 91 个研究场馆进行业态定位，具体研究中采取了三步。第一步，根据世博期间片区划分的情况、道路系统以及部分场馆的已定功能等条件，采用“分类聚合”的方法将整个世博园区划分成了五个功能片区。第二步，根据城市道路系统、场馆建筑风格和世博期间部分组团的划分实际，运用“分类聚合”的方法对各功能片区进行功能组团细分，并考虑场馆区位条件与建筑体量、世博期间人气和展馆国家的国际影响力等因素，将场馆又细分三级，即核心场馆、次核心场馆和其他场馆。第三步，运用“以主定次”的原则对各级场馆进行功能和业态定位，对每个场馆都尽量延续世博主题，充分考虑展馆的建筑特色、结构、面积适合的功能，以及如何在过渡期实现盈利目标。

Feature 2: Identifying Orientations for the Venues Based on the Principle of “Classifying and Clustering; Main-Functions Determine Minor-Functions”,

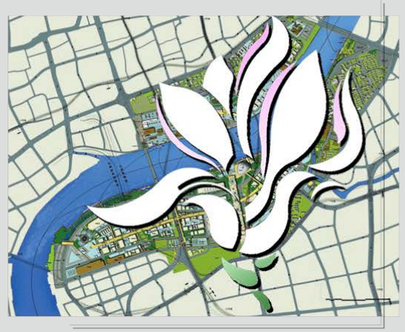
Based on the concept of “classifying and clustering; main-functions determine minor-functions”, Halcrow identified development orientation for 91 venues, which involves three steps. Step 1: by applying “classifying and clustering”, divide the whole World Expo Zone into five functional areas in view of current status of some venues and roads systems; step 2: by applying the same method, however taking more factors such as architectural style, each venue’s location, building form, popularity and international influences into consideration, further divide each venue into three levels which are core venue, sub-core venue and other venues; step 3: under the principle of “main-functions determine minor-functions” and in light of architectural style, structure and site area as well as previous used theme for each venue, identify its function and development orientation and make suggestions on how to reach the goal of making profits during the transit period.



白玉兰

—— 花繁而大、美观典雅、清香远溢

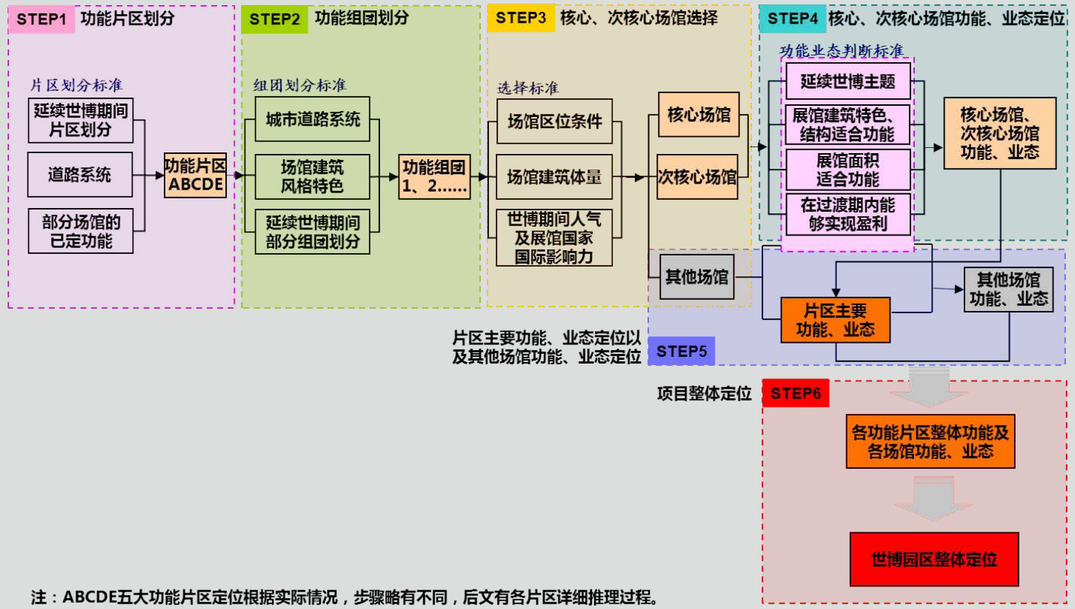
—— 开路先锋、朝气蓬勃、奋发向上



6个花瓣代表了世博园区五个片区及世博村共六个组团，3个花萼代表了后滩、世博和白莲泾三个公园。

白玉兰，英文名magnolia，对应着八大内涵，也是世博园区未来的八大特征。

- 世博园区，上海将来发展的先锋区域，与白玉兰开路先锋的精神相契合；
- 世博园区，将是上海最具人气、活力的区域，与白玉兰朝气蓬勃、奋发向上的精神相契合；
- 世博会期间，世博园区融和了许多白玉兰的元素，白玉兰与世博园区有着不解之缘；
- 白玉兰是上海的市花，是上海的标志，寓意世博园区将成为上海市的又一个经典标志。



注：ABCDE五大功能片区定位根据实际情况，步骤略有不同，后文有各片区详细推理过程。

特点三：紧密把握过渡期场馆利用的特点，策划各片区的业态组合并科学测算业态配比

过渡期开发利用的最大特点是时间相对较短，但我们需要实现各场馆的综合价值最大化。在功能业态策划过程中，我们针对不同片区各场馆过渡期不同的实际情况，将业态类型、场馆特点和业态市场表现等因素进行系统分析，策划出各片区的主要业态组合，例如过渡期较短的片区，以购物、餐饮、文化艺术、会展等功能为主，而过渡期相对较长的片区，可以考虑增加一定的办公、精品酒店、休闲娱乐等。同时，我们结合市场调研、各场馆的建筑特点以及各种业态对使用面积的需求，对各场馆内部业态进行了分析，计算出各场馆业态面积配比情况。

Feature 3: Planning on Combination of Operation Mode through Understanding of Venue Utilization during the Transit Period

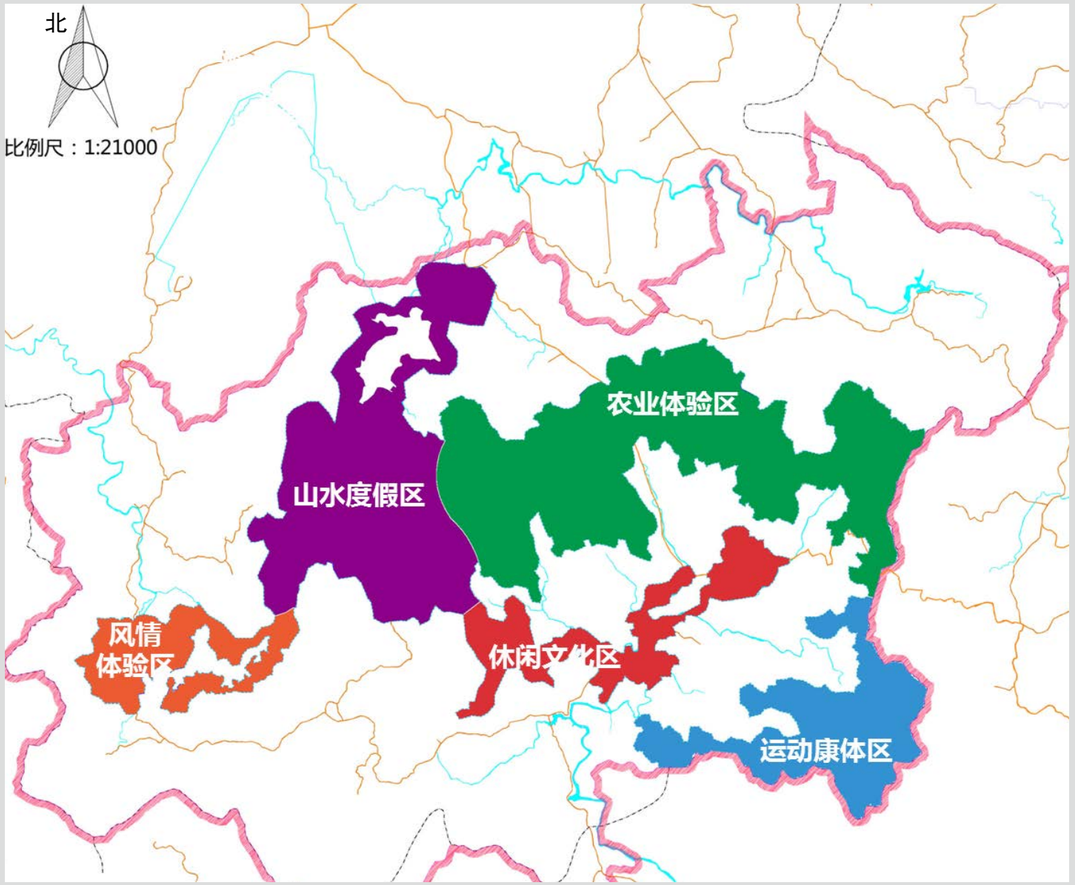
The main problem of development during transit period is shortage of time; worsen, each venue is still seeking profit maximization. Based on this status, and in the light of actual situation and its operation mode, venue characteristic, Halcrow provide consulting services on each area as illustrating in the following. Short time transit period area will be built as shopping center, restaurant, art gallery and exhibition centers; by contrast, long time transit period area will be built as office building, high-class hotels and entertainment center etc. Halcrow also conduct market analysis and investigate on architectural style and available areas for construction of each venue to each venue and finally, calculate ratio.

特点四：针对各场馆特点设计一馆一招商方案，注重项目实施可行性

招商是上海世博园区过渡期利用的关键环节，决定项目的最终成败。我们对各片区、各场馆业态进行定位时，均提出了有针对性的招商策略，即“一馆一招商”方案。每个场馆招商方案都反映了各场馆自身条件和内部各业态的主要特点，提出了具体的招商策略和拟招商家名单，提高了本项目实施的可行性。

Feature 4: Emphasizing the Feasibility of Project Implementation

Attracting investment is a key element of post-Expo development. “One venue, one investor” investment strategy is put forward depending on development orientation for each venue and also involves detailed tactics and its potential investors, aiming to enhance feasibility of this project.



五、中国旅游地产发展趋势与合乐旅游地产策划思考

（一）中国旅游地产发展趋势

1. 旅游消费需求日益多元与个性化，提升旅游地产品质要求

21 世纪是体验经济时代，旅游地产也不例外。未来很长一段时间，中国旅游业的主流模式仍然为“观光走量、休闲求质”，但度假旅游是旅游业发展到高级阶段的必然产物，其追求的是使游客“放松”，更多关注游客在固定旅游目的地的停留。游客在通过各种休闲方式和活动追求身心愉悦时，自然会多考虑自身需求和彰显自己个性，从众的消费心理较少，但对于住宿及其配套要求比较高。这一趋势也说明，旅游地产开发不同于普通的房地产开发，它更依赖于自然环境资源条件和开发出来的度假产品综合实力。如果旅游地产不能使游客度假体验出“回归自然”、“返朴归真”，如何吸引都市客群在周末或节假日趋之若鹜？如果旅游地产不能使游客度假获得“身心灵美”、“至尊享受”，如何使都市客群能够流连忘返而长期度假？

5.Prospects for Tourism Estate in China and Halcrow’s Ideas on Tourism Estate Consulting Service

(1) Prospects for Tourism Estate in China

1.Diversified and Individualized Tourism Consumption Demand will Improve the Quality of Tourism Estate

Economy is experiencing rapid development, so as tourism estate. “Sightseeing being the mainstream with leisure tourism being the supplementary” will remain as the key model of tourism industry in China for quite a long in the future. Nonetheless, vocation tourism, aiming to keep tourists “relax” and focusing on time spent on specific tourism destination by tourists, is the higher level of tourism industry. By ways of various entertainment activities, tourists feel pleasure and relax, thus in order to meet each tourist’s preference, higher standards of dinning and lodging is required. With this trend keeping in mind, tourism estate development differs from traditional estate development for its reliance on nature resources and capabilities of developing new tourism products. Unless feeling back to the nature and feeling enjoyful, tourists from metropolitans will not be attracted to spend their holidays here.

2. 旅游业与其他产业结合更加紧密，推动旅游地产跨界发展壮大

旅游业与文化体育、科技教育和商务会展等产业的结合越来越紧密，正逐步成为跨领域、跨行业的综合性、战略性产业。首先，文化是旅游产品的灵魂，没有文化的旅游是不存在的。因此，旅游地产开发也需要注入文化基因，才能永葆青春。其次，科技进步和技术创新已成为全球旅游业发展的主要推动力，在线旅游预定业务、电子旅游信息和电子商务等正在改变旅游业的市场环境。人造主题公园则需要充分运用现代高科技技术，增加旅游对人的吸引力，同时也带动旅游地产的升级发展。最后，旅游业直接促进了与其密切相关的酒店业、餐饮业、休闲娱乐业和百货及奢侈品消费。旅游地产开发应该注意这些跨域、跨业合作趋势，顺势而为，开发和提供满足市场需求的综合型旅游地产产品。

2.Closely Attach Tourism Estate to Other Industries to Form Stronger Development Force

Integrating with culture sports, science & technology education and business exhibition, tourism industry is transforming to be a cross-field and strategic industry. Firstly, culture can be observed in anywhere of this industry, therefore, it is quite critical to add culture element into consideration. Secondly, advanced technology is the main driver to accelerate the development of tourism industry since online booking, electronic tourism information and electronic commerce is emerging. For instance, by fully utilizing high technology, theme park will attract more tourists, resulting in development of tourism estate industry. Last but not least, tourism industry has close relationship with lodging, catering, leisure entertainment and shopping such as luxury consumption, so emphasis should be put on cooperation with these industries. Going with the trend, multi-functional tourism product that meets various tourists demand will become the “winner”.

3. 旅游地产越来越关注旅游服务内涵，未来需要创新发展商业模式

当前主流的旅游地产项目重点都在于地产开发，而非旅游。因为，旅游往往挣钱慢，而且很有可能是亏钱的。许多企业打着“旅游”的旗号进行圈地，常在青山秀水之地开建住宅甩卖。这种“旅游忽悠、地产赚钱”的商业模式可以使先进入市场的房地产企业获益匪浅，但越来越多的企业进入以后，让这个领域竞争变得非常激烈。一方面，地方政府意识到旅游资源的重要性，不再将其作为招商引资的配套措施，而是当作发展旅游产业的重要条件，未来房地产开发商关注点如不从“地产”转向“旅游”，那么很难再像以前获得优势旅游资源和圈占大量建设用地。另一方面，国内现有旅游度假产品缺少清晰的商业模式来确保房地产开发商和投资者获利，即使开发与运营产权酒店也会面临缺少愿意持续度假的终端客群的困境。所以，作为非刚性需求的旅游地产需要创新发展路径，找到能证明自己价值的商业模式。

3.Consider Innovative Commercial Modes to Cope with Increasing Service Demand of Tourism Estate

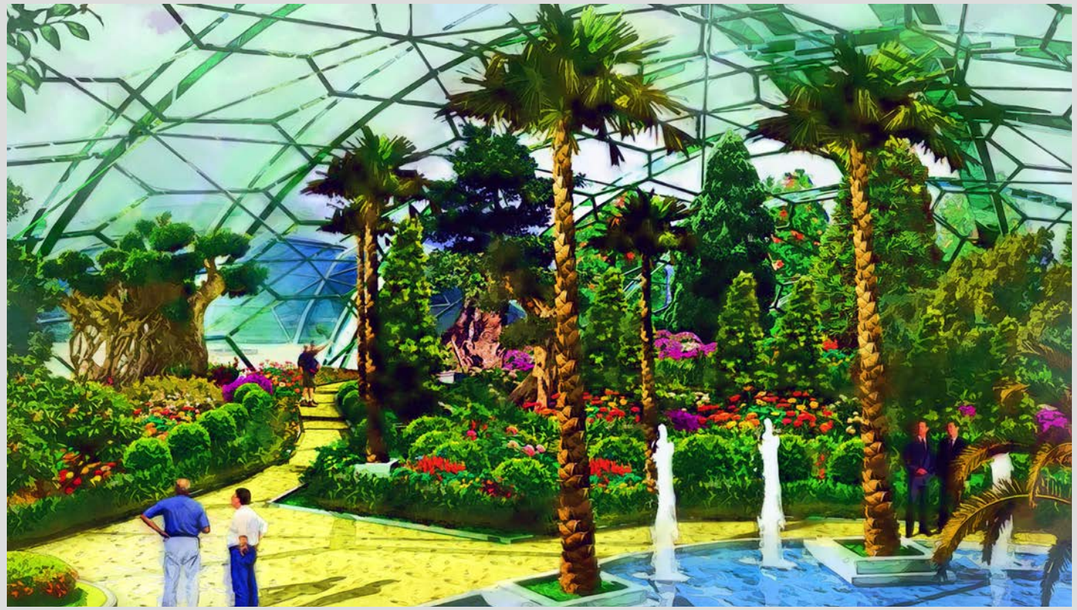
There is a trend that majority of tourism estate projects focus on estate development instead of tourism promotion due to its long life cycle of investment and high risk of losing money. Unethical enclosure under the cover of developing tourism and with the aim of obtaining large profits, lots of estate developers construct residential housing in scenic areas; however, by doing so, this will end in more intensive competition. To protect tourism resources and promote industrial development, local government set barriers on investing. Worsen, this industry also lacks of clear business mode to ensure profitability for estate developers and investors, even for ownership hotels, it lacks of loyalty customers. As a result, adaptive business model is in need for each investor.

（二）合乐旅游地产策划思考

发展旅游地产对中国经济非常重要，可以促进旅游业和房地产业同时转型升级，积极推进中国经济结构调整，加快经济转变增长方式。同时，发展旅游地产，可以完善城乡综合服务功能，有效提升城乡整体形象，更好地改善城乡居民生活。因此，旅游地产策划具有非常重要的现实意义。基于对国内外旅游地产发展现状及趋势的认识，我们认为未来旅游地产策划需要注意以下四个方面内容：

(2) Halcrow’s Ideas on Tourism Estate Consulting Service

Development of tourism estate is crucial for China economy for the reason that it can upgrade image of whole city and upturn living standard by transformation of tourism and estate industry together and restructuring economy in China. Furthermore, based on an analysis of global development status and future trend of tourism estate, four main points are highlighted by Halcrow as presenting in the following:



1．更加科学地评估旅游地产资源优势

旅游地产策划的前提之一是摸清项目发展的家底，即自身拥有多少旅游资源及其优势在哪那里？现有旅游资源分类大多是从目的地属性特征进行分析，而忽视了从目标客群的角度去考虑资源分类，这使我们在评估旅游资源时容易陷于技术限制，需要进行完善。目前评估旅游资源常常使用经验法，凭直觉经验进行判断，以定性描述为主，缺乏一些量化分析。考虑到旅游资源价值的多元化和综合性，我们有必要采取定性与定量分析相结合的方式进行评估，通过构建量化评价模型来研究旅游地产所依托的旅游资源竞争能力。

1.More Scientific Evaluation on Resource Advantages of Tourism Estate

An evaluation of project tourism resources is necessary before providing consulting services; however, most evaluation is based on destination characteristics, rather, from customer aspect, which needs great improvement. Additionally, using experience to judge tourism resources is a method of qualitative description which lacks of quantitative analysis. With a view of diversity and synthesis of tourism resources, an evaluation model, combining qualitative and quantitative analysis together, is to be built, aiming to assess tourism competitive power.

2．更加精准地确定旅游地产目标客群

旅游地产的开发与销售一般要考虑兼顾地产和旅游两种产品的需求，因此其目标客群的发展定位必须满足房地产市场和旅游市场的双重需要。进行旅游地产开发前，需要运用多种方法进行市场调研，包括问卷调查、行为观察、机构访谈等手段，确定旅游地产消费客群的消费特征与偏好。另外，考虑到旅游地产消费同时尚产业相似，通过增加新的供应可以创造市场需求。在某一个区域开发旅游地产时，我们可以在借鉴国内外类似成功旅游地产项目经验和把握全球旅游产业发展规律的基础上，提出符合市场趋势的旅游地产产品和服务，以此来满足未来追求品质生活的目标客群需要。因此，我们既要把握好现有客群的消费特点，也要研究未来客群的消费或投资偏好。

2.More Precise Identification of Target Group of Tourism Estate

Developing and marketing of tourism estate need to consider two aspects: tourism and estate, so as identification of customer segmentation. By application of market investigations, such as questionnaire, behavior observation and interview, target customer’s preference is determined. Tourism estate industry has some similarity with fashion industry, thus the law of “additional supply stimulating demand” can also play. Refer to global successful projects and under the principle of industrial development, investors design products and services that go with the market trend to meet customer’s future demands of higher quality life. Therefore, existing customer consuming preference is crucial as well as potential customers.

3．更加创意地策划旅游地产产品

旅游地产策划的目的是在正确的市场定位下，研究设计出具有竞争力的旅游地产产品。在旅游地产产品的组合之中，核心产品是其中最为重要的部分，它为旅游地产目标客群提供了为什么要来这里进行休闲娱乐、度假旅游的主要原因。我们在产品策划中需要运用一定的技术去进行产品设计，例如运用差异化定位战略，确定本项目旅游地产产品的独特竞争优势，或者实施产品组合战略，从旅游产品的质量大小、市场发展能力多少和客源地区吸引力强弱等角度设计旅游地产产品。除此之外，我们还需要从分析消费者的终端需求入手，通过研究消费者的旅游体验特征，例如从娱乐（entertainment）、教育（education）和审美（estheticism）等层面提炼出目标客群的有效需求内涵，然后设计出符合市场需求的产品。

3.More Innovative Tourism Estate Products

Consulting on tourism estate product is to identify market orientation and design a competitive product. Core products play a critical role as it absorbs target customers to come for entertainment, relaxation and spending holidays. Two strategies are selected in designing products; one is differentiation which is designing product with unique feature to obtain competitive advantage, another is product combination which is designing product in accordance with product quality, size, market potentiality and attractiveness for customers. Besides this, customer final demands such as entertainment, education and estheticism should also be allowed for consideration to produce a product that can be successful in the market.

4．更加合理地构建旅游地产发展模式

现在旅游地产开发门槛日益提高，单个项目的投资规模增长很快，与此同时，市场竞争更加激烈，旅游地产开发商如何能够在遍地开花的度假地产中实现赢利和可持续发展？现有旅游地产项目的发展模式主体是以地产养旅游、以销售居住产品来长期持有酒店类资产产品。中国旅游地产发展初期，很多旅游地产项目是假旅游、真地产，但最近几年，随着市场环境和政策调控的变化，更多的项目是真旅游、真地产，当地政府对开发商、投资商要求也越来越明确，这使旅游地产的产品组合更加均衡，也为后续的稳健发展奠定了基础。与国外发展经验不同，中国旅游地产目前的发展态势在全球独一无二，正在创造历史。我们认为，中国旅游地产跨越式前行是中国近年来经济转型发展的一个极佳缩影，因此，理论界和实务界都有必要保持一种淡定心态，在这段发展历程中，探索出一条兼容东西方智慧的中国旅游地产发展新模式。

4.More Rational Development Mode for Tourism Estate

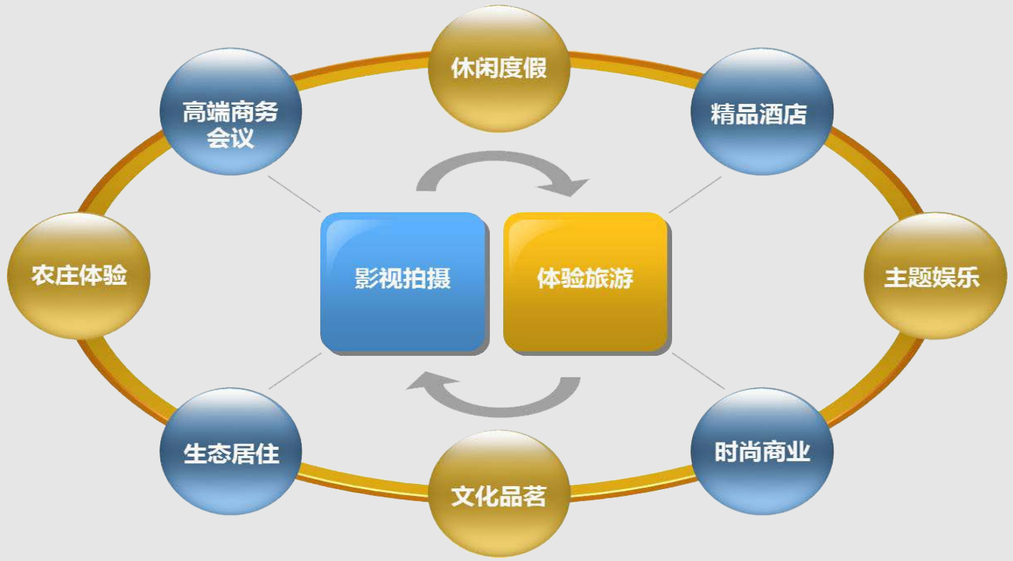
With more barriers set for entering into this industry, increasingly large investment capital required and intensive competition, tourism estate developers are facing a challenge of how to make profits sustainably. Before many regulations were set in the early stage of tourism estate development, most developers focus on estate development under the cover of expanding tourism industry, however, owing to changing market environment and macro control by local government, developers now pay more attention to tourism exploration, which formed a solid foundation for later development. Due to its unique characteristic, China is creating a mythology that cannot be copied by any country. Tourism estate development is a miniature Chinese economic transformation, so during this process, exploring a new model that integrates both eastern and western culture is badly needed.

欧洲影视城项目

在分析项目发展的宏观背景（重点剖析国际知名影视地区休闲旅游发展趋势和长三角地区宏观经济发展整体状况）和发展条件的基础上，借鉴国内外同类项目的成功案例和经验总结，并对长三角影视基地、旅游业以及相关物业市场的发展情况进行深度调研，最终提出项目的整体发展定位：打造成“欧洲影视文化旅游区”，以影视拍摄和体验旅游作为两大核心驱动，辅以文化品茗、主题娱乐、休闲度假和农庄体验等功能。根据项目情况给出详细的投资估算。

European Film Studio

Based on the analysis on macro background and development conditions of the project, and with reference to successful cased in China and abroad, researches were conducted on the film studios, tourism developments and other related markets in Yangtze River Delta, and a development orientation was proposed for the project: to create a “Tourism Area of European Film Culture”, where film shooting and tourism experience are two major functions, with service functions such as tea culture, theme entertainment, leisure resort and farm life experience etc.


休闲度假
高端商务会议
精品酒店
农庄体验
影视拍摄
体验旅游
主题娱乐
生态居住
文化品茗
时尚商业


N
0 250 5
1 快艇主码头
2 西区停车场
3 英雄广场（主入口）
4 贡多拉主码头
5 佛罗伦萨广场
6 维也纳音乐广场
7 生态公园
8 里亚托桥
9 许愿池
10 圣马可广场
11 叹息桥
12 音乐喷泉
13 酒吧街
14 国会大厦（五星级酒店）
15 医院
16 慕尼黑广场
17 天鹅堡（酒店）
18 玛歌酒庄
19 圣玛格丽特水城
20 野趣田园
21 生态湿地
22 二圣水库
23 马术俱乐部
24 东区停车场
25 东区主入口
26 白鹭洲
27 英伦城拍摄区
28 老火车站
29 影视主题乐园
30 外景拍摄区
31 外滩码头拍摄区
32 外滩拍摄区
33 美泉宫（超五星级酒店）
34 影视后期制作区
35 尼斯水岸
36 明星高档居住区

海南乐东项目

项目地点：海南省乐东县

项目规模：26 平方公里

服务内容：概念性规划

业主：宁波三立置业有限公司

乐东是海南省南部沿海旅游功能区，也是海南西海岸旅游产业带的主要地区。涉及多个国家和人口的广泛国际交流合作必将成为乐东旅游发展强大有力的腹地，为乐东带来源源不断的游客和活力注入，使乐东真正成为东方的乐土。 本次方案将乐东的旅游特色定位为：生态旅游、乡村旅游、海洋旅游、户外旅游和民族旅游，重点打造尖峰岭品牌、莺歌海品牌、毛公山品牌和黎族乡村品牌。

Ledong Development, Hainan

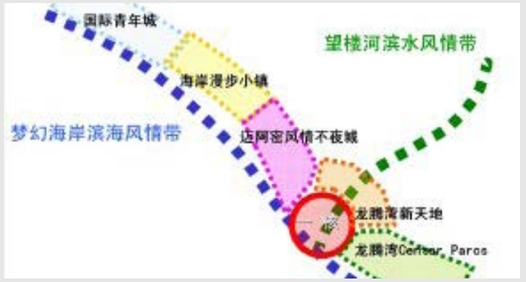
Location: Ledong, Hainan

Area: 26 km2

Type: Concept Plan

Client: Ningbo Sunland Group

Ledong is a coastal tourism function zone in south Hainan Province, as well as a key part of the tourism industrial belt on the west coast of Hainan. The development opportunities of Ledong lie in its extensive international communication and cooperation, which will bring visitors and vitality to Ledong. The plan highlighted the features of tourism development, which are eco tourism, countryside tourism, ocean-related tourism, outdoor tourism, and folk culture tourism. The key tourism brands will include Jianfeng Mountain, Yingge Sea, Maogong Mountain and Li Nationality Village.



广西南宁龙象谷

首先从市场的角度，进行了项目的可行性分析，通过市场竞争、经济测算等多方面的详细比较分析，最终确定了本项目的详细功能及配比，从项目的源头确保了项目开发的低分险高收益。

然后通过对基地的详细分析，从规划的角度保证了项目的工程可行性，通过规划选址、设计，保护现有自然资源，依托现有地形，降低工程造价及难度，确保了项目的可操作性。

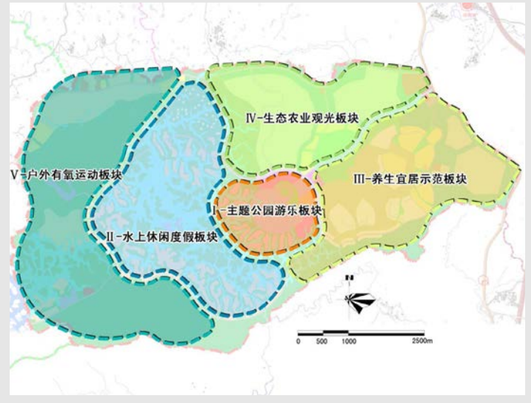
最后通过对主题乐园的专业设计，将南宁的文化精神内核与基地环境、项目定位相融合，实现了项目开发的综合效益。

Nanning Dragon & Elephant Valley, Guangxi

Halcrow conducted a feasibility analysis from the aspect of market conditions. Through detailed comparison and analysis on market competition, economic calculation and other aspects, we identified the detailed functions and ratios for the development, thus guarantee the cost efficiency from the very beginning of the project.

Then, detailed analysis on site conditions was conducted to ensure the engineering feasibility from the planning perspective. Key aspects such as site selection, site design, natural resource reservation, landform investigation and engineering cost and difficulties were all taken into consideration to ensure a feasible development.

Halcrow also provided professional urban design services for a theme park in the development, in which the cultural heritage of Nanning and the park site were perfectly integrated.



浅谈城市综合体的设计

Discussion on the Design of City Complexes

连云港总部地块透视图

Perspective View of Lianyungang Corporate Headquarter

摘　要：在社会经济高速发展的今天，商业活动越来越多，目前更有集商业、办公、宾馆、公寓、住宅于一体的高层大型综合体建筑遍及中国的城市，如何科学合理地安排各种功能，以及合理组织不同需求人群的流线，是设计好这类建筑的关键。

关键词：城市综合体；立体化；多样化；空间开放；文化叙事性；可持续发展

Abstract: In the wake of the current era with rapid economic and social developments, there have been increasingly more commercial activities, and currently, China’s cities are scattered with the large-scale high-rise complex buildings integrating commerce, office, hotels, apartments and residence; so how to scientifically arrange various kinds of functions, and rationally organize the flow lines of crowds with different needs is the key to the excellent design for such kind of buildings.

Key words: urban complex; tridimensional; diversity; spatial openness; cultural context; sustainable development

1. 前言

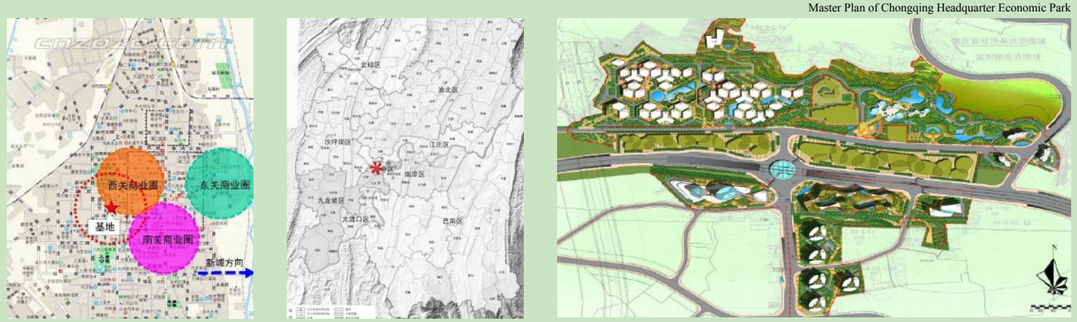
城市综合体一般指建筑综合体在拥有更多城市特性和城市公共空间的同时各组成功能之间如城市各功能之间具有相互协调、共生、互补关系的综合体，内部功能协同、高效，空间紧凑多样，表现出极大的生命力和充沛的发展潜能。城市综合体是城市形态发展到一定阶段的必然产物，是现代城市发展背景下建筑综合体的升级与城市空间的延续，对推动城市的进化具有极其重要的作用。

1. Preface

An urban complex generally refers to buildings in which the architectural complexes are endowed with more urban characteristics and urban public space, and while among such various forming functions as among the various urban functions there is a relationship of mutual coordination, mutual existence and mutual supplementation, with coordinated and highly efficient internal functions and compact and diverse space, manifesting extreme vitality and development potential. An urban complex is an inevitable product when the urban forms have developed to a certain stage, and it is the upgrade of architectural complexes and the extension of urban space under the background of modern urban development and it features extremely important functions in the promotion of the urban evolutions.

重庆总部经济园区平面图

Master Plan of Chongqing Headquarter Economic Park



城市综合体的功能和技术要求较为复杂，将多种不同功能布局的建筑组合在同一建筑内，需要考虑各种功能布局，科学合理组织引导不同人流，还须考虑其相应的停车、人防、设备等有关方面问题。在城市化过程中，城市综合体起着营造城市新的商务、商业中心区，打造城市新地标，创造城市活力之源的商业综合体和居住街区，创造充满活力和积聚人气的市民文化活动广场，同时，在避免城市中心空洞化，减少城市通勤交通压力等方面起着重要作用。

城市综合体一般选址于城市中心区，大致可分为两类:一类是为复兴旧城中心区或旧街区核心地段而建的城市综合体；另一类是在新的城市中心区的城市综合体。诸如在城市副中心、CBD、核心地段等。如连云港企业建设总部B地块（以下简称连云港总部）、杭州水晶城以及重庆总部经济园区均属于后者，山西大同西门外商业广场属于前者，基地东侧为保留的古城区，采用集中与分散并存的开发模式，不但使新与旧的关系得到比较妥善的处理，而且为地域增添了新的城市意向。

城市综合体由于其功能齐全，方便居民生活，布局紧凑，节约用地等因素，建成后能很快带动周边地区的发展，提高地块的商业价值，因此城市综合体在城市有很大的发展空间。在设计前期首先应在设计定位上确定商业形式、规模、上部功能，对整体的策划和平面进行综合设计，以减少投资失误，提高收益。

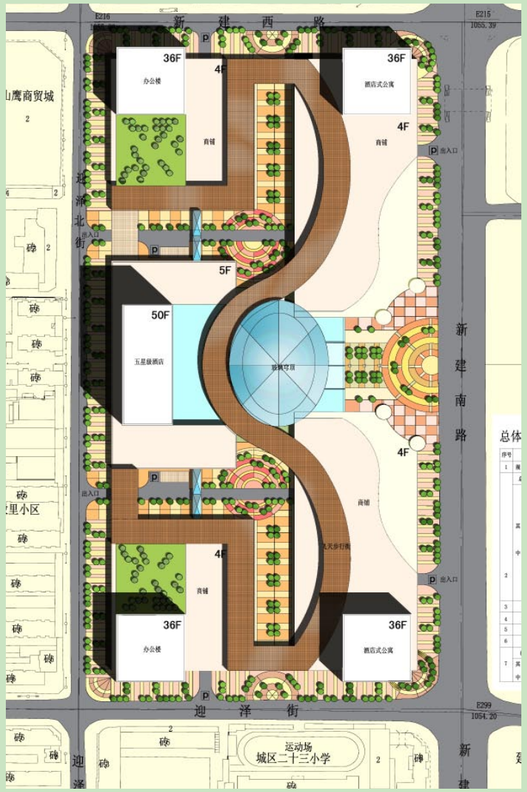
An urban complex’s functions and technical requirements are rather complicated, and the combination of architectures with different functional layouts in the same architecture calls for the consideration for a coordinated overall layouts, and scientific and rational organization and guiding of different crowds; it is also necessary to consider relevant issues on such aspects as parking, air-raid shelter and space for equipments. During the urbanization process, urban complexes always play an important role in such aspects as creating the new urban business and commercial center zones, casting new urban landmarks, creating the commercial complexes and residential blocks that are the sources of urban vitality, creating the resident cultural activity plazas that are filled with vigor, and meanwhile, in avoiding the hollowing of the urban centers and reducing the transportation pressure of urban commuting.

The site of a urban complex is generally selected in the urban downtown area and it can be roughly divided into two categories: one is the urban complex that is constructed in order to revitalize the old city centers or the old core areas; the other category is an urban complex that is located in the new urban center, for example, in the emerging sub-centers, CBD and other core areas, etc.. Examples of our work include Parcel B of Lianyungang Corporate Headquarter (hereinafter referred to as Lianyungang Headquarter), Hangzhou Crystal City and Chongqing Headquarter Economic Park, all falling into the latter category, while Datong Ximenwai Commercial Plaza, Shanxi belong to the former, whose east part is the preserved ancient town, for which the development mode of “concentration and dispersed” was adopted, which not only enabled the relationship between the old and the new to be appropriately handled, but also added to the region new urban functions.

Since an urban complex features such factors as full functions, convenient resident life, compact layouts and land-efficient, upon its completion, it can swiftly spur on the developments of the surrounding area, and elevate parcel’s commercial values; therefore urban complexes boast enormous development potential in cities. In the initial stage of design, it is necessary to identify the commercial forms, scale and functions regarding the design orientation and conduct comprehensive designs for integral planning and planes so as to minimize investment risks and maximize profits. The design of an urban complex has following characteristics:

山西大同西门外商业广场平面图

Master Plan of Datong Ximenwai Commercial Plaza, Shanxi



重庆总部经济园区平面图

Master Plan of Parcel B of Lianyungang Corporate Headquarter

2. 相关发展规律总结

2.1 立体化发展

目前城市发展过程中出现的一些矛盾与问题以及相关城市建设经验促使城市综合体发展呈现出立体化的态势，这些矛盾一方面是城市的人口、交通、以及城市活动等各方面的压力与缓解对城市容量与运行效率的高要求；另一方面是城市用地与空间不可能无限扩张与城市传统结构本身多维度联系不强的现实，城市容量与效率问题得不到充分的解决。

传统城市都是沿着二维平面而生长的，街道、广场、园林等城市空间主要在城市地面上发展，城市的各种分项系统分别占据城市土地的二维平面。在城市职能体系日趋复杂的今天，这种方式不仅浪费了有限的土地资源，同时又造成了城市功能不能很好实现。为了满足城市容量增长的需求，作为城市中重要的核心区域，城市综合体的立体化发展趋势越发明显，例如城市交通系统中不同交通方式的立体切换，建筑跨越交通路线形成整体群组，城市广场高抬或下沉以改善高空和地下的环境质量，自然要素、生态景观与建筑、交通、市政设施的上下层叠等等。城市的运作不是二维模式所能完全充当主体的，更不应该是城市人活动基面二维平面的建构。立体与三维意味着联络与交流的多维化与多通道性，更意味着解决问题途径的多样化，综合体的立体化是效能发挥的有利条件，也是提高集约化容量与效能的充分条件。

2. Summary of Relevant Development Regularities

2.1 Tridimensional Development

Some of the contradictions, as well as the relevant experience of urban construction that have appeared in the current process of urban developments have urged the urban complex development to show a tridimensional trend; and these contradictions, on one hand, exist between the urban population, transportation, activities and the high demand on the urban capacities and operational efficiencies, where pressures are caused; on the other hand, they exist in the fact that the limited urban land and space cannot expand infinitely, and the reality that traditional urban structures themselves have weak multi-dimensional associations, therefore the issues of urban capacities and efficiency cannot be fundamentally solved.

Traditional cities have all grown in two dimensional planes and such urban space as the streets, squares and gardens are mainly developed on the ground level of cities; the various kinds of sub-category systems respectively occupy the two-dimensional planes of the urban land. In the wake of the current time when urban functional systems have become increasingly complicated, such old mode not only wastes the limited land resources, meanwhile, it has caused the fact that the urban functions fail to be ideally realized. In order to cope with the needs of the growth of urban capacities, as an important core component of the urban center, a tridimensional trend of urban complex development has become increasingly evident, for instance, the tridimensional shifts of different transportation means in the urban transportation system, architectures' crossing over the transportation routes to form integral clusters, the raising or sinking of city squares for the aim of improving aerial and underground environmental quality, and the staggering of the upper and lower levels of the natural key elements and ecological landscapes and architectures, transportation and civil facilities, etc. For a city's operations, the two-dimensional can hardly serve as the entity, and it shall by no means be the construction of the two-dimensional planes of the activity basic plane of urban dwellers. Stereo and three-dimensions means the multiple dimensions and multiple passage nature of contacts and communications, and to a greater extent it means the diversification of the means for problem-solving; the stereo of a complex is an advantageous condition for tapping the efficiency, and it is also a sufficient condition for elevating the concentrated capacities and efficiencies.

山西大同西门外商业广场鸟瞰图

Bird's View of Ximenwai Commercial Plaza in Datong, Shanxi

城市综合体建立在立体城市设计方法基础之上，成为城市集约化发展中的一个典型现象，主要是建筑的处理运用城市设计的手法，将城市要素与城市建筑利用合理的方法结合在一起，使城市功能在建筑之上得以实现。城市综合体的立体化主要是指城市基面的立体化。城市基面包括绿化基面、交通基面、城市公共活动基面以及建筑设施基面等等。立体化的城市机制形态就构成了达到城市集约化功效目的的物质基础。如大同西门外商业广场，结合飞天走廊的设计，实现了城市与建筑的一体化以及绿化、建筑、交通、室外公共活动等基面的立体化；再如连云港总部地块，用空中连廊和人行通廊连接建筑，构成一个立体的建筑空间，并整合了城市，这些都是在城市综合体之上达到的城市的立体化，是城市模式发展的重要趋向之一，今后的立体思维方式将逐渐渗入城市综合体的理论体系之中。立体化是城市要素整合的一种结果，城市要素整合是城市立体化的一重要措施，同时也是其中一条重要的原则。

An urban complex is established on the basis of the design approach of tri-dimensional cities, and it becomes a typical phenomenon in the concentrated urban development; this mainly involves that the handling of architectures adopts the approach of urban design and combine key elements and urban architectures using rational approaches, thus making the urban functions be realized above the architectures. The stereo of an urban complex mainly refers to the stereo of the urban basic planes. The urban basic planes include the greening basic planes, transportation basic planes, urban public activity basic planes and architectures facility basic planes, etc. The tridimensional urban mechanism and forms construe the material basis that reaches the urban concentration. Take the Datong Ximenwai Commercial Plaza as an example, by combining the Aerial corridor, it realized the integration of the city and the architectures and the stereo of such basic planes as greening, architectures, transportation and outdoor public activities; in another example, the Lianyungang Headquarter Parcel, it used aerial passage corridors and pedestrian corridors to connect the architectures, thus forming a tridimensional architectures space and integrating the city; all these are the urban stereos that were realized on the urban complex, and it is one of the important trends in the city type development, and the future tridimensional thought mode will gradually permeate into the theoretical system of a urban complex. Stereo is a result of the integration of urban key elements, and the integration of urban key elements is an important measure of urban stereo, and meanwhile it an important principle among them.

连云港总部地块鸟瞰图
Bird's View of Lianyungang Corporate Headquarter

重庆总部经济园区透视图
Perspective View of Chongqing

重庆总部经济园区透视图
Perspective View of Chongqing

2.1.1 交通系统立体化

交通空间作为建筑的生命线，是建筑功能正常运转的关键之一，而在城市综合体建筑中，不同性质的功能空间要相互结合、相互激发，更要求交通空间的有效组织。城市综合体通常具有优越的地理区位和交通环境，在一定的时间内能够聚集大量的人流、车流，利用立体化的设计方法，通过形成良好的城市活动基面组合的系统，进而避开联系基面的二维交叉，以此化解城市矛盾。立体化模型的关键在于立体交通网络（机动交通和步行交通）的建立，以及交通网络与各功能单元的多方位链接。

重庆总部经济园区、大同西门外商业广场、杭州水晶城以及连云港项目都是通过将人车流在不同标高上进行立体化处理，既解决了交通问题，又创造了宜人的城市公共空间，通过地下或者地上的立体交通系统达到了城市地域功能系统整合的目的。其中重庆案例遵循交通分流规划设计思想，采取“立体交通”策略，分地面、地下和地上三个层次组织基地的立体交通网络，有效化解了基地的交通矛盾。大同案例的地下一层空间分为商业和停车，地上通过近2万多平米空中室内步行街将底层人流吸引到顶层，形成浮动比例的吸客效应。

2.1.1 Tri-dimensional Transportation Systems

As the life line of architecture, transportation space is one of the keys for the normal operation of the architectural functions; while in the architectures of a urban complex, the functional space of different natures shall be mutually combined and mutually excited, and it puts greater requirements on the effective organization of the transportation space. A urban complex usually features advantageous geographical locations and transportation environment, and within a certain time periods it can assemble a large amount of stream of people and vehicle flows; and adopting the tridimensional design method, through the formation of the excellent system of the combination of the urban activity basic planes, further avoid the two-dimensional crossings of the linking basic planes so as to dissolve the urban contradictions. The key of the tridimensional model lies in the establishments of tridimensional transportation network □motorized transportation and walking transportation), and the multi-range links of transportation networks with the various functional units.

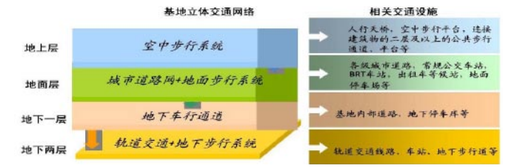
Chongqing Headquarter Economic Park, Datong Ximenwai Commercial Plaza, Hangzhou Crystal City and the Lianyungang Project all, through conducting tridimensional processing of streams of people and vehicle flows on different elevations, not only the transportation issue, but also created a pleasant urban public space; through underground or ground tridimensional transportation systems, it reached the goal of integrating the urban regional functional systems. Among them, the Chongqing case followed the planning and design thought of separation of transportation, and adopted the strategy of “tridimensional transportation”, and organized the Base’s tridimensional transportation network by dividing them into such three levels as the ground, underground and above ground, thus effectively dissolving the transportation contradictions of the Base. In the Datong case, the space of the first underground level was divided into commercial and parking, while regarding the ground, through the nearly more-than-20,000-square-meter aerial indoor pedestrian street, the streams of people on the bottom level was attracted to the top level, thus forming the customer attracting effects with floating proportions.

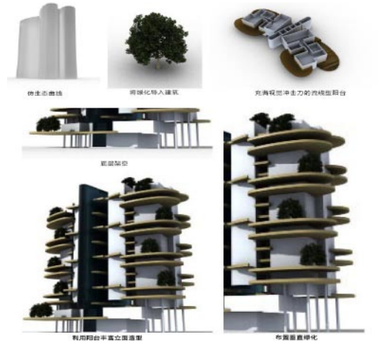
B户型上层平面图

A户型上层平面图

B户型下层平面图

A户型下层平面图





2.1.2 景观系统立体化

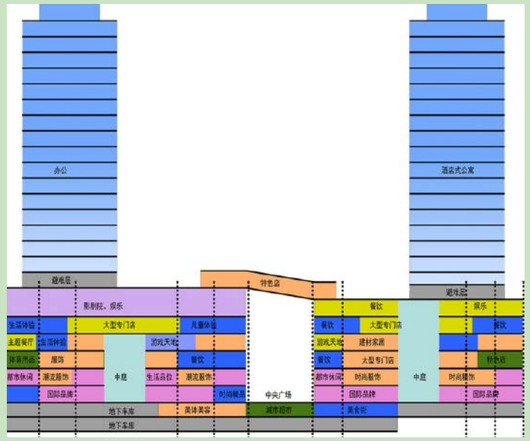
城市建筑的建设难免与原有的城市景观环境有冲突，也有可能对城市环境造成大的破坏。如果能利用立体的城市整合环境的设计手法，不仅能延续原有的景观环境，还能为之增添新的特色。如杭州水晶城，城市绿化基面与建筑屋顶融为一体，城市基面得到了连续。建筑和城市达到了一体化的整合。连云港总部地块利用城市立体化处理手法，商业整体由西向东呈跌落梯田布局，使建筑的屋面与室外人的活动以及绿化有机的结合，创造了一个有机的公园形态，充分利用屋顶作为休憩观景场所，从而起到改善环境质量，促进城市机体运作便捷和保护自然生态要素等多重作用。再如重庆总部经济园区的台地景观，以原生地貌为设计雏形，营造出台地、坡地景观，自上而下随地势层层递进，错落有致的立体景观体现了人与自然对话的主题。

2.1.2 Tridimensional Landscapes System

It is hard to avoid the clashes between the construction of urban architectures and original urban landscape environment, and the former might cause major damages to the urban environment. If we can utilize the design approaches of integrating the environment with the tridimensional cities, not only shall we be able to extend the original landscapes environment, but we can further add new features to it. In the case of Hangzhou Crystal City, the basic planes of the urban greening are fused into one with the architectures, so the basic plane of the City was continued. The architectures and the city were integrated as a whole. The Lianyungang Headquarter Parcel, by adopting the approaches of urban tridimensional processing and the terrace layout of the entire commercial block falling from west to east, made the architectures building surfaces of the architectures and the outdoor human activities and greening combined in an organic way, thus creating a form of an organic garden; by making sufficient use of roof tops as the sites for leisure and sigh-seeing, it played such multiple functions as improving environmental quality, enhancing the operational swiftness and convenience of the urban mechanism and the protection of the key elements of nature ecology. Take the tableland landscape of Chongqing Headquarter Economic Park as another example, with the original landscape as the initial shape of design, created a tableland and slope landscape, which succeeds level by level from bottom to top, and the orderly staggered tridimensional landscapes manifest the theme of the conversation between humans and nature.

大同项目绿化意向图

Reference Picture of Green Space of Datong Development



2.1.3 功能组织立体化

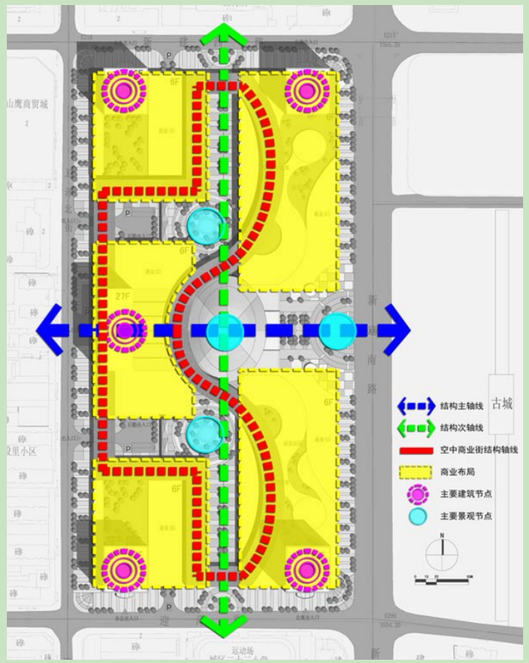
目前城市综合体的发展日趋扩大化与群体化，建筑的规模越来越大的同时，集合的功能越来越多。发展至今，城市综合体的内部功能几乎包含了所有常见的城市公建功能，建筑构成一般包括商务功能、客居功能、购物功能、餐饮功能、休闲娱乐功能、会展设施等，它往往跨越几个街区，具有庞大的规模，其内部各功能之间合理综合的内在关联及这些建筑功能群与城市功能的合理交织是城市综合体设计的核心内容之一，由此产生的功能集群化、综合化开发模式也成为城市综合体的成功要素之一，也是项目能否成功的关键。立体化城市的主要表现是这些城市基面在立体空间内，以某种适合发挥城市功能的方式相互穿插与重叠，甚至交织在一起的形态机制，如大同案例，为了最大限度利用有限的土地资源，各功能在水平、垂直方向上融合分布（图7），建筑呈现出向地上、地面、地下空间发展的趋势，形成流动的、连续的空间体系。再如重庆总部经济园区以地标性的景观节点构筑物—世纪之眼作为立体交通系统的交汇枢纽中心，进行地面及地下立体交通的转换与承接。由于基地地面交通的复杂性，设计将纳入地下机动车、人行、立体交通作为设计的重点之一。

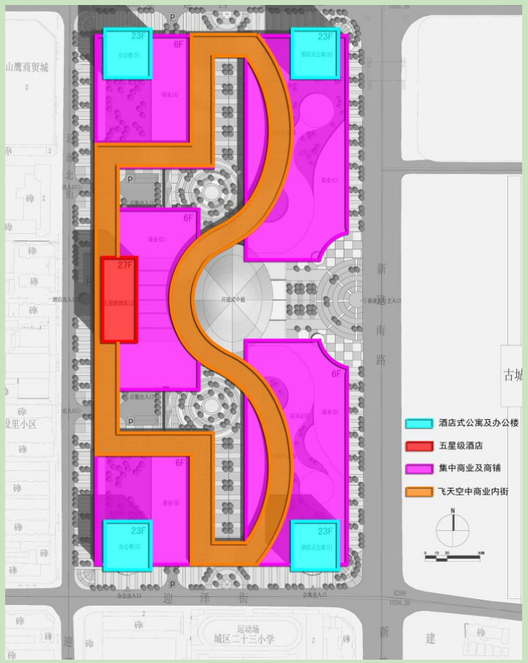
2.1.3 Tridimensional Functional Organizations

Currently, the development of urban complexes has the tendencies of expansion and grouping; while the architectural scales have become increasingly greater, there have been more and more integrated functions. With their developments till today, the internal functions of urban complexes have almost included all the commonly seen urban public civil functions, with the architectural formations generally including commerce functions, lodging functions, shopping functions, dining functions, leisure and entertainment functions and conference and exhibition facilities, etc. It usually covers several blocks and features an enormous scale; the internal correlations of the rational integration of its various internal functions and the rational interlacing of these architectural functional groups and the urban functions are one of the core contents of the urban complex designs, and the consequent development mode featuring the grouping and integration of functions has also become one of the elements for the success of a urban complex, and it is also a key to whether the Project can succeed or not. The main manifestation of a tridimensional city is that these cities' basic planes are within the tridimensional space, and it is a form mechanism in which they intersect and overlap each other in a certain mode that is suitable for tapping the urban functions, or even they are interwoven with each other; take the Datong case as an example, in order to maximize the utilization of the land resource, the various functions are distributed in a fused way on the horizontal and vertical directions(Fig.7), with the architectures presenting a trend of developing above ground, ground surface and underground space development, thus forming a flowing and continuous spatial system. Take the Chongqing Headquarter Economic Park as another example, with the landmark landscapes junction—the Centennial Eye as the converging hub center of the tridimensional transportation system, it conducted the conversion and inheritance of the ground underground tridimensional transportation. Due to the complexity of the surface transportation of the Base, the design shall include underground motorized vehicles, flexible and tridimensional transportation as one of the key points of the design.

大同项目结构分析图

Structural Analysis of Datong Development





2.2 多样化

2.2.1 功能多样化

城市综合体的一大特色就是对不同功能的复合，在同一空间中并置和重叠多种功能层次，是城市综合建筑常见的设计手法。在设计中主要功能集合在一起，既需了解每种功能各自的特性，也要理清与其它功能之间的有机、互动、互补关系，才能实现项目的整体成功。多种功能共存城市综合体更像是城中之城，成为综合了办公、商业、酒店、居住、餐饮、娱乐、交通等各种城市生活中的若干组合的空间集合体，以商业为极致因素配比综合体街区的混合功能，其超大的规模、复合的功能、多层次的交通都在影响和改变着人们的生活方式。如在重庆案例的综合体中互动整合了办公、商务、酒店、商业以及居住五大主题，实现了购物、娱乐、办公、居住等完整的生活场景，类似城中之城，人们在其中可以实现许多城市生活的需求。

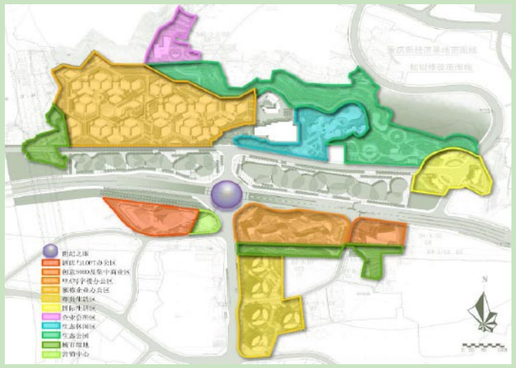
2.2 Diversification

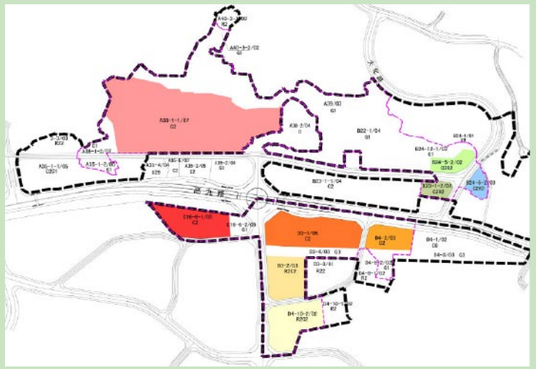
2.2.1 Functional Diversifications

One major characteristic of an urban complex is the compounding of the different functions, and the parallel setups and overlapping of various kinds of functional levels is a common design of approach in urban comprehensive architectures. In the design, to integrate the main functions, it is not only necessary to grasp the various characteristics of each function, but it is also necessary to sort out the organic, interactive and the complementary relationship with other functions so as to realize the Project's integral success. An urban complex with the co-existence of various kinds of functions is more like a town in a city, and it becomes a spatial aggregate of several combinations in the various kinds of urban living integrating offices, commerce, hotels, habitation, dining, entertainment and transportation, and it distribute the mixed functions of the complex blocks with commerce as the extreme factor, and its super-large scales, compound functions and multi-level transportation are all affecting and changing people way of life. For example, in the complex of the Chongqing case, it had interactive integration of such five main themes as office, commerce, hotels, and commerce, and realized such living scenes as shopping, entertainment, office and habitation, quite similar to a town within a city, in which people can realize many requests of urban living.

重庆项目规划结构分析图

Structural Analysis of Chongqing Development





在城市综合体的众多功能中，商业的重要性不言而喻。一切空间形态构成都是由其基本的生活行为决定的，而在当下单纯以满足商业活动为主要开发方向的城市综合体便找到了侧重所依。在中国，有“集市”就是城市最初雏形的看法，可见商业与城市发展的渊源。城市综合体作为对城市空间的整合叙事，作为城市发展重要载体，其设计理应是以商业作为最为极致的主导要素。因为城市综合体要在城市空间布局中实现自身布局的合理性，当然要考虑以上因素，商业将成为城市空间结构中最永恒流动的胶水，不但把分离的城市元素不断地连接起来，而且促使其演变，使商铺向空中的集聚成为可能。此外，城市综合体往往是城市公共交通的集结点，可以吸引大量的人流车流以提升综合体的人气，复杂的功能构成和巨大的交通流量对城市综合体的空间整合能力提出很高的要求。大混合、小分区的原则成为处理城市综合体中多元经济实体之间复杂矛盾关系的关键之处。

大同西门外商业广场项目是一个典型的以商业为主导的混合街区功能的城市综合体模型，各个功能空间在进行了立体的分区布局后，被贴近地面的商业空间所统一和整合。它拥有五星级酒店、高层写字楼、高档酒店式公寓、商业等众多功能，利用城市平台的概念，在对高度密集化的城市空间进行水平与垂直方向的多维度组织的同时，将城市核心区交通枢纽密集人流进行合理的疏导组织，使其转化为优质的商业人流，设计将城市平台下的首层核心空间提供给交通枢纽，之上形成集绿化、广场内部人行交通为一体的开放空间，围绕城市平台设置飞天环廊，将底部商业、酒店、办公、公寓连接起来，将各功能区的商业价值发挥到最大化，该项目也为以城市综合体整合城市商业流量资源方面提供了新思路。

Among the multiple functions of a urban complex, the importance of commerce is quite self-evident. The constructions of all spatial forms are determined by their basic living behaviors; however, under the current developmental mode in which the urban complex solely with commerce occupying the proportion of the current urban complexes, the design of the complexes found the basis of particular emphasis. In China, there is an opinion that "fairs" are the initial forms of cities, so the historic origins of commerce and urban development can be seen here. A urban complex serves as an integrated narration of the urban space and as the important carrier of urban development, so its design of course regards commerce as the most extreme guiding key element. Because if a urban complex is to realize the rationality of its own layout in the urban spatial layout, of course it is necessary to consider the above factors, and commerce will become the glue that will be most lowing in the urban spatial structure, which not only constantly connects the separate urban elements, but also enhance its transformation, thus making possible the stores' assemblage in the air. In addition, a urban complex is usually the assembling point of the urban public transportations, and it may attract a large amount of streams of people and vehicle flows so as elevate the complex's popularity, and the complicated functions configurations and the enormous transportation flows put forward very high requirements on the space integration capacity of a urban complex. The principle of big mixture and small divisions has become a crucial point for handling the complicated contraction relations among the diverse economy entities among the urban complexes.

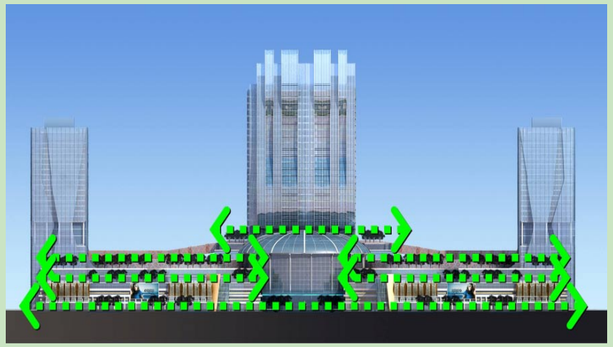
The project of Ximenwai Commercial Plaza of Datong is a typical urban complex model with mixed block functions guided by commerce, and the various functional spaces, after being laid out by the tridimensional divisions, were unified and integrated by the commercial space that is close to the ground surface. It possesses such multiple functions as five-star hotels, high-rise office buildings, high-grade hotel type apartment buildings and commerce; and while conducting horizontal and vertical multi-dimensional organizations on the highly concentrated urban space, conducted rational guidance and organization on the dense streams of people of the transportation hub, thus making them converted into the quality commercial streams of people; the design provided the transportation hub with the first-floor core space under the urban platform, and formed an open space integrating greening and the pedestrian transportation of the plaza's interiors, and set around the urban platform was a circular aerial corridor, which joins the commerce, hotels, office, and apartments on the bottom, thus maximizing the commercial values of the various function zones, and the Project also provided new thoughts on the aspect of the urban complex's integration of the urban resources of commercial flows.

连云港项目的立体桥接系统

Tridimensional Bridging System of Lianyungang Development

大同项目的空中步行系统

Aerial Pedestrian System of Datong Development



2.2.2 交通方式多样化

城市综合体既在内部集合了城市的各种功能空间，又与外部的城市公共空间通过多种形式紧密结合成为城市功能混合使用中心，延展了城市的空间价值，也使其本身成为城市的有机组成部分。城市综合体与城市结合的设计关键在于步行系统的便捷性和可达性，综合体需要通过与城市公共步行系统相联系，构成城市化的完整步行系统，从空间上分为地面、地下和空中三种层面。

连云港总部地块以商业办公功能为依托，建立起丰富立体的人行网络，分别规划为地下一层的步行街人行、地面景观人行、二层的人行连廊通行与四至五层的空中连廊。多层立体桥接系统（图X）强调了通达顺畅与体验趣味。

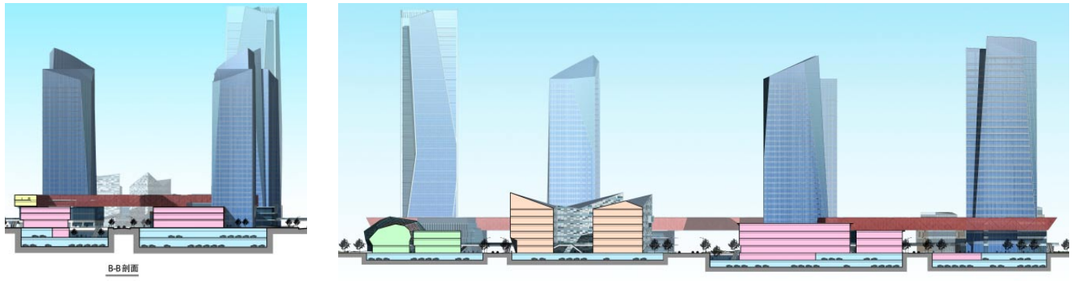
2.2.2 Diversification of Transportation Modes

Not only does a urban complex have internal integration of the various kinds of urban functional space, it is also closely associated with the external urban public space through various forms to become the mixed utilization center of urban functions, thus extending the urban space values, and making themselves become an organic composition of the city. The key to the design of the combination of a urban complex and a city lies in the convenience and accessibility, and a complex needs to, by connecting with the urban and urban public pedestrian system, form a complete pedestrian system of urbanization, and spatially it is divided into the three levels of ground, underground and aerial.

The Lianyungang Headquarter is based on the commercial office functions, and rich and tridimensional pedestrian networks, which were respectively planned as the joined corridor passages of the walking lane of the pedestrian street on the first underground floor, the walking lane of the ground landscapes, and the walking passage corridor on the second floor, as well as the aerial passage corridors on the fourth and fifth floors. The tridimensional bridging system of the multi-level stereo type (Fig. X) stressed the accessibility and smoothness and the interest of experience.

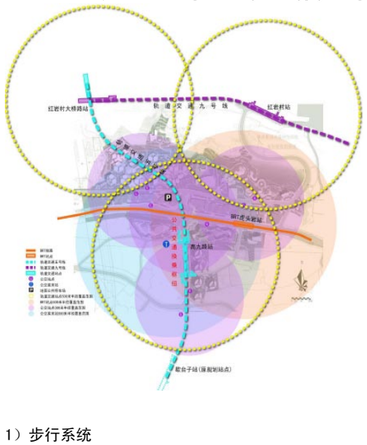
连云港项目剖面

Section Drawing of Lianyungang Development



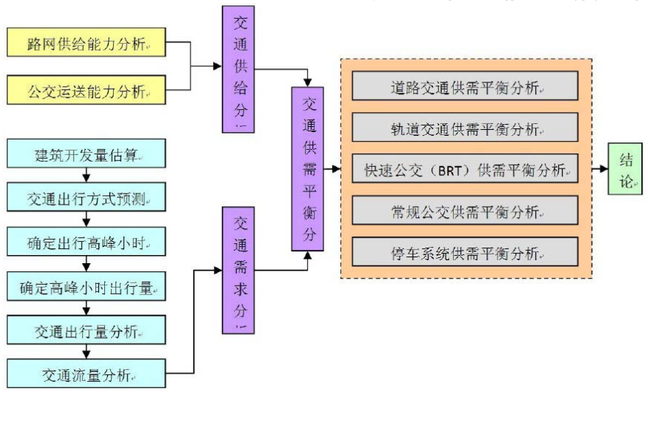
重庆项目的公共交通规划分析

Analysis of Public Transport Planning of Chongqing Development



重庆项目的交通供给分析

Analysis of the Transportation Supplies of Chongqing Development



1）步行系统

步行系统中最主要的是地面步行系统，对项目基地周边的人流来源分析和不同人群性质的定位是进行地面步行系统设计的基础。地面步行系统有以下几种空间形式：a. 结合建筑主入口设置公共开放空间b. 室内商业街外延与城市公共空间直接相连c. 开放式中庭与城市公共空间相连接d. 架空底层融入城市空间e. 将建筑的垂直交通在地面层城市化。

随着城市地铁车站、地下通道、地下商业街等地下空间的开发利用，地下步行系统也成为城市综合体设计中的一个主要人流方向。地下空间越来越多地与城市综合体发生直接的关 联，设计中将其整体考虑可以为项目输入巨大的客流量。地下步行系统的空间形式主要有：

a. 采用下沉广场形成城市化开放空间b. 设置中庭与城市地下空间相连c. 设置商业街与城市地下步行系统相连。

由于地面空间日益紧张，空中交通系统的开发也越来越多地运用到城市综合体项目中。空中步行系统一般有过街天桥、空中连廊。主要的空间形式有a. 设置屋顶花园等开放空间b. 设置空中商业街与空中步行系统相连c. 建筑间通过天桥、空中连廊相互联系，形成建筑组群。

(1) Pedestrian System

The most important thing in a pedestrian system is the analysis of the ground pedestrian system on the streams of people in the surroundings of the Project’s base and the positioning on the properties of the different groups of people are the basis for the design of a pedestrian system. A ground pedestrian system has the following several spatial forms;a. in combination with the architectures. Main entrances, set up public open space b. the extension of indoor commercial streets and the direct connections with the urban public space c. the open type central courtyard is connected with the urban public space d. the hollow bottom level was fused with the urban space e. the urbanization of the architectures’ vertical transportation on the ground surface.

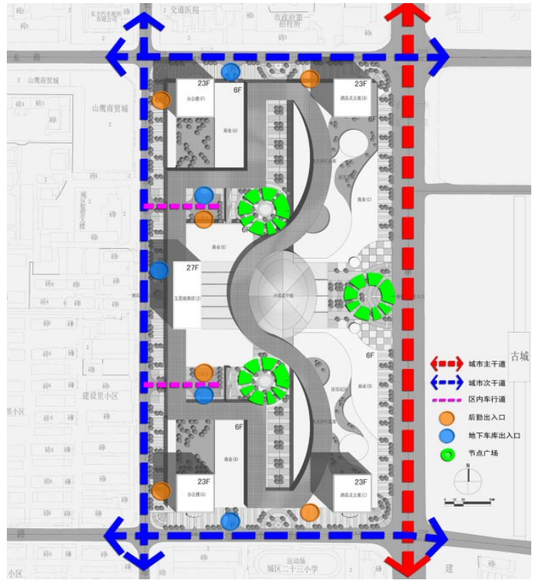
With the development and utilization of such underground space as urban subway stations, underground passages and underground commercial streets, the underground pedestrian system has also become a major direction of streams of people in the urban complex design. The underground space has increasingly become directly associated with the urban complexes, and in the design, it can be considered in an integral way that it can introduce enormous passenger flows for the Project.

The spatial forms of the underground pedestrian system mainly include: a. the sinking type plazas were adopted to form the urbanized open space b. establishment of the linkage of the central courtyard with the urban underground space. c. the establishment of the linkage of the commercial streets with the urban underground pedestrian system.

Since ground space has become increasingly scarce, the development of the aerial transportation system has been increasingly applied in the project of an urban complex project. Generally, an aerial pedestrian system has an overfly bridge. The main spatial forms of the aerial passage corridors include: a. the setups of such open space as the aerial gardens b. the setups of the conjoining of the aerial commercial street with the aerial pedestrian system c. the architectures are associated through the flyovers and aerial passage corridors to form architectural clusters .

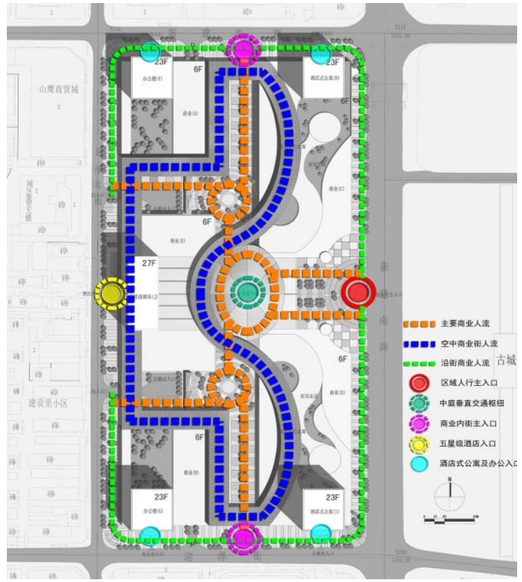
大同项目道路分析图

Road Analysis of Datong Development



大同项目人行交通分析

Pedestrian Traffic Analysis of Datong Development



无论是何种形式的步行系统，都需将其交通动线结合。建筑内部功能布局与建筑内部的水平垂直交通系统相关联，整体设计才能真正形成一体化的立体交通网络系统。

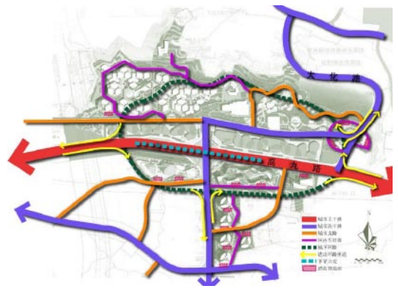
大同案例采用复合式的步行交通系统，商业人行主线贯穿于整个基地，构架串联起各个商场，使商业人流明确顺畅地到达各个购物目的地。内部步行街同时作为基地内部的消防车道，飞天空中走廊让人流走动于各个商业体块，以此实现商业空间利用最大化。而重庆案例通过数据证明了建筑容量的合理性，基地周边的主次干道、轨道交通及BRT能有效促进交通的快速集散，设计采取人车相对分流的交通导向模式，将不同性质和类型的交通流组织到不同的交通系统和道路系统中，中间水系以步行道和内部服务通道连接，尽量避免穿越型的机动交通。

No matter what forms the pedestrian system may be, it is necessary to combine it with the transportation dynamic line. The layout of the architectures internal functions are associated with the horizontal and vertical transportation system in the interiors of the architectures, and only in this way can the integral design really become an integrated tri-dimensional transportation network system.

For the Datong case, the compound type pedestrian transportation system was adopted, and the main line of the commercial pedestrian lane was carried through the whole Base’s frameworks, linking the various shopping malls and enabling the commercial streams of people to specifically and smoothly reach the various shopping destinations. Meanwhile, the internal pedestrian streets serve as the Base’s internal fire-fighting passage, and the Flying Aerial Corridor enabled streams of people to be mobile among the various commercial blocks so as to realize the maximization of the commercial space. In the Chongqing case, through data it proved the rationality of the architectural capacities, and the primary and secondary trunk ways in the Base’s vicinity, rail transportation and BRT can effectively enhance the rapid distribution of transportation, and the design adopted the transportation orientation model with the separation of people and vehicles, organized the transportation flows of different properties and types into the different transportation systems and road systems, while the middle water system are conjoined with pedestrian lanes and internal service passages so as to minimize the crossing type motorized transportation.

重庆项目透视图

Perspective View of Chongqing Development



重庆项目交通分析图、步行系统分析图

Transport Analysis and Pedestrian Analysis of Chongqing Development

连云港总部地块透视图

Perspective View of Lianyungang Corporate Headquarter

（2）车行系统

城市综合体巨大的车流量主要包括了公共交通和私人交通两种，公共交通主要包括了 地铁、轻轨、公交车、出租车等；私人交通则以机动车为主，地面层是人车密集的层面，较好地实现人车分流，减小相互间的干扰是设计的重点，主要采用以下几种处理方式：a. 设置开放式的停车空间b. 架空底层作为停车空间c. 将公共交通站点纳入建筑内部考虑d. 形成室内公交站点e. 设置相对独立的停车楼并与主体建筑立体化连接。

为保持地面城市空间的连续性和完整性，将公交站点私人机动车特定人流物流的停靠区等设在地下已成为一个趋势。对于地下车行系统的设置，要避免不同类型车行系统的相互干扰，并和建筑内部的其它功能便捷连接，可结合建筑的垂直动线，地下空间水平或垂直划分不同的停靠区域，并有各自独立的出入口，出入口在地面的位置需结合地面层交通系统， 整 体规划避免相互干扰，空中车行系统为城市综合体的交通方式提供了更大的弹性，同时也能减缓大量车流对城市地面交通带来的压力，主要有与空中轨道交通相连及与城市立体交通系统相连两种方式。

重庆总部经济园区在设计中为缓解该区域地面交通的压力，一条地下环路被设计用以各个地块地下空间，规划中的地铁线路纵贯南北规划区域，通过人行地下通道将地铁各处入口与各个地块相连，同时带动地铁周边的商业发展。大同案例的商场交通则实现了人车分流，人流主线主要由东侧商业广场进入，地下停车采用全地库设计。

2) Vehicle Transportation System

The enormous vehicle flow of a urban complex mainly includes the two categories of public transportation and private transportation, while the public transportation mainly includes subway, light rail trains, buses and taxis, etc.; and private transportation mainly includes motorized vehicles; the ground surface is the level where the streams of people and vehicles are concentrated, so the realization of separation of people and vehicles and reduction of the mutual interference are the key points of the design, and the following several kinds of processing approaches were adopted:a. the setups of open type parking space b. and use the hollow bottom level as the parking space c. integration of the stops of public transportation into the interiors of the architectures for consideration d. formation of indoor stops of public transportation e. setups of relatively independent parking buildings and their conjoining with the main building.

In order to maintain the continuity and integrity of the ground urban space, it has become a trend set up the public transportation stops and the stopping areas of private cars and specific streams of people in underground areas. Regarding the setups of underground vehicle transportation system, it is necessary to avoid the mutual interferences of different types of vehicle transportation systems, and have convenient connections with other functions within the buildings; it is possible to, in combination with the vertical dynamic lines, horizontally or vertically divide the different docking zones; they shall be provided their respective independent exit and entrances, and the positions of the exits and entrances on the ground shall be combined with the transportation system on the ground level; the integral planning avoids the mutual interferences, and the aerial vehicle transportation system provides the urban complex's transportation modes with greater elasticity, and meanwhile it can also relieve the pressure on the urban ground transportation brought about by the enormous vehicle flows, and there were two major modes of connection with aerial rail transportation and the connection with the urban tridimensional transportation system.

In the design of Chongqing Headquarter Economic Park, in order to relieve the pressure of the ground transportation of the area, an underground circular road was designed to for the various underground space of the various parcels, and the routes of the planned subway runs across the planned areas in the south and north, and, through the pedestrian underground passages, the subway entrances at various locations were connected with the various parcels, and meanwhile, this mobilizes the commercial development in the peripheries of the subway. The shopping mall transportation in the Datong case realized the separation of people and vehicles, with the main lines of streams of people entering from the commercial plaza in the eastern side and the underground parking adopting the design of complete underground vaults.

2.3 空间开放

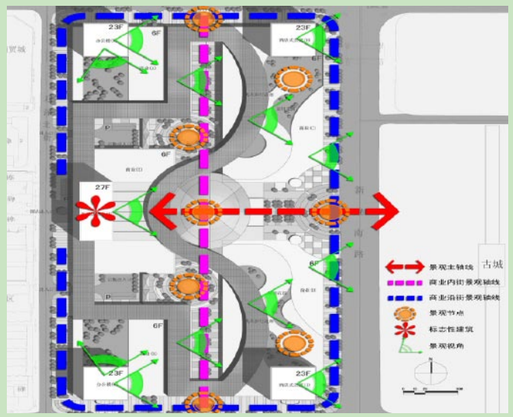
城市公共空间基面可以说是对城市人没有时间限定、身份限定与行为限定的城市空间的主要活动层面。基面上展开的是具有城市功效的活动，所限定的城市空间具有公共性，基面与其他城市基面或者城市要素基面具有直接联系。总之，开放空间的设计具有城市性价值，并且是一种融入城市实体形态中的开放空间的基面，它具有强烈的城市属性与公共属性。

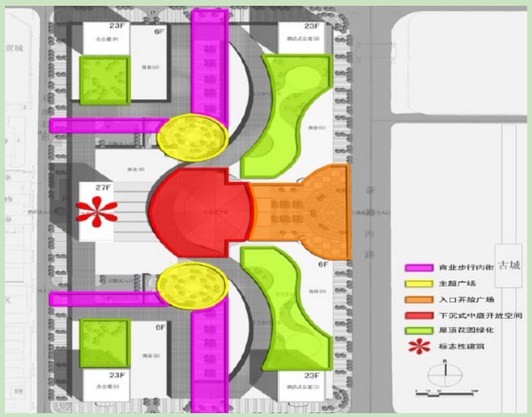
开放的空间是建筑叙述的主线。在当下时代，建筑与城市的空间构成应更加突出开放民主的风尚，城市综合体作为一种有序化的实体空间模式，通过对城市公共资源的配置，将公众利益、商业利益、国家利益、集团利益重新整合，而开放空间正是城市综合体叙述的主线，为民众自发公共活动创造条件，使城市公众资源的意义彰显。实体之间相互发生联系，空间上也要相互渗透与结合，在整体功能上，城市区域之间也应该是有机的统一体。

2.3 Spatial Openness

It can be said that the basic surfaces of the urban public space are the main activity levels of the urban space that has no time constrains, identity constraints and behavior constraints on the urban residents. Conducted on the basic planes are the activities featuring urban efficacies, and the constrained urban space features the public nature, and the basic planes and the other urban basic planes or urban key elements have direct associations. In summary, the design of open space features urban values, and it is a kind of basic plane of the open space that has been fused into the urban physical form and it features strong urban properties and public properties.

An open space is the main line of the architectural narrations. In the current time, in the architectures and urban spatial formations, the more open and democratic fashion shall be highlighted, and a urban complex, as an orderly entity space model, through the configurations of urban public resources, re-integrate the public interests and commercial interests, national interests and group interests; the open space is the main line of a urban complex's narrations, which creates conditions for the mass voluntary public activities, thus manifesting the significance of the urban public resources. Among the entities, they have mutual associations, and on spatial aspect, there should also be mutual permeation and combinations; and on integral functions, urban areas should also be an organic unified body.



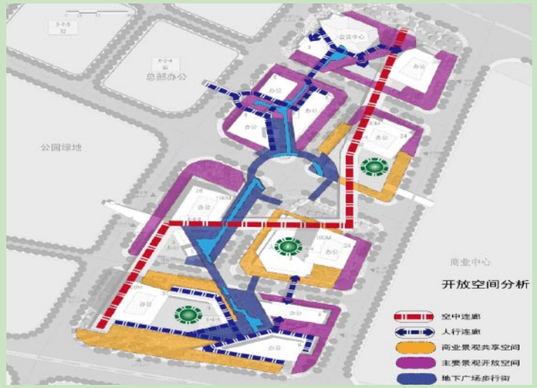


城市综合体中开放空间的营造手法多样，典型实例如大同案例，以五星级酒店作为中轴对称点，沿中轴线对称结构分布了商业和不同业态的主楼，人行主入口呈开放格局面向已规划的魏都大道。重庆总部经济园区的绿化开放空间包括有生态公园、临崖开放空间、滨水绿带和绿化连廊等，各区域项目的开放空间要素包括广场、步行街、景观大道和入口节点等。大同西门外商业广场则通过从地面到屋面的多种多样的广场、街道、绿地形成了独特的游廊一般的立体系统，反应了不同项目间的个性化设计。再如重庆总部经济园区的建筑沿地段内伸展，连接着人工湖的两岸，成为生活和体验景观的重要元素，立面的蜿蜒边界定义了向不同活动空间开放的不同领域，柔和的边界给人以亲切感。

There is a big variety of approaches for the casting of the open space in a urban complex, and one typical example can be the Datong case, in which the five-star hotel served as the symmetric point of the central axis, and distributed along the symmetric structures of the central axis are the main buildings of commerce and different business modes, and the elastic main entrance present an open pattern facing the planned Weidu Boulevard. The greening open space of Chongqing Headquarter Economic Park includes an ecological park, a cliff-side open space, a water-side green belt and greening passage corridors, etc. The open space key elements of the various regional projects include plazas, pedestrian streets, landscape avenues and entrance junctions. Datong Ximenwai Commercial Plaza, through the diverse plazas, streets and green belts from the ground to the roof tops to form unique tridimensional systems like tourism corridors, which reflected the personalized designs of different projects. In another example, the architectures of the Chongqing Headquarter Economic Park extended along the interior of the land sections and connected both banks of the artificial lake, thus becoming the important elements of life and sight experience, and the winding borders of the facades defined the different fields of the opening of different activity space, and the gentle and soft border bestow people a sense of endearment.

连云港项目的景观绿化分析
Landscape Analysis of Lianyungang Development

连云港项目的空间分析图
Spatial Analysis of Lianyungang Development



2.4 文化叙事性

以文化相关主题构建城市合体空间叙事灵魂。一方面，文化作为全球化时代城市的解毒剂，另一方面，文化也是控制城市的一种有力手段。在20世纪70年代的美国和欧洲城市，文化已更多地成为地方政府和商业联盟的商业策略中的工具，文化越来越成为城市的商机而被消费着。

在城市综合体设计中，文化的消费成为武器，像讲故事一样将城市综合体设计融入了情感态度，表达一种以文化消费为主导的，与自然环境和地域文脉相结合的叙事思维方式。大同西门外商业广场项目在大同这样一座历史古城，建筑叙述风格转向更加注重与自然元素和当地文化的结合，项目以佛教文化提炼的元素成为该区块的核心文化意向，利用大同所富有的古城文化成为设计灵感的追索蓝本，形成本地独有的文化标志，布局呈现古城鲜明的城市肌理，作为当地区域特征，肌理要素为规划提供了客观依据。与此同时，传统城市被重新整合的现代化建筑形象重新定义、利用和消费。玻璃穹顶的中心室内中庭，象征着万象世界的汇集融合。

2.4 Cultural Narration

Construe the space narration spirit of the urban aggregate with relevant culture themes. On one hand, culture serves as an urban de-toxicant amid the globalization era; on the other hand, culture is also a forceful means for controlling the cities. In the American and European cities in the 1970s, culture had, to a large extent, become a tool in the commercial strategies of the local government and commercial alliances, and culture has increasingly become an urban business opportunity that is being consumed.

In the design of a urban complex, the consumptions of culture becomes a weapon, and just like story-telling, it fuses the emotional attitude into the design of a urban complex and expresses a narrative thinking mode guided by cultural consumption and combined with the nature environment and regional cultural veins. The project of Ximenwai Commercial Plaza of Datong, being in such a historical ancient city as Datong, the architectural narrative style has been shifted to attaching more importance to the combination with the nature elements and local culture; the Project regarded the elements refined by the Buddhist culture as the core cultural intention of the block, and, using the ancient city culture featured by Datong, became the tracing blueprint of the design inspirations, thus forming a cultural mark unique to the locality; the layout manifested the distinctive urban textures of an ancient city and served as the characteristics of the local region, and the texture key elements provided the planning with objective basis. Meanwhile, the traditional city was redefined, utilized and consumed by the re-integrated modern architectures. The glass central indoor courtyard made of glass doom symbolized the aggregation and fusion of the all-inclusive world.

2.5 可持续发展

2.5.1 被动式设计

被动式设计是可持续建筑的主要特征之一。城市综合体的被动式设计是为了减少使用制冷、供热及采光设备，降低建筑能耗；并创造高质量的室内和室外环境。被动式设计概念强调的是：依据建筑所在地域的气候特征进行设计，遵循建筑环境控制技术的基本原则，考虑建筑功能和形式的要求等。城市综合体的被动式设计需要有一套整体系统的方法，它必须开始于前期设计阶段，贯穿于整个设计过程。

在重庆案例中，生活区建筑将理想空间、景观与实际空间汇聚在一起，设计为一座围绕着绿色庭院的生态建筑，实现了自然与人工的绿化相互融合。住宅之间通过空中花园相连接，使每户都有开阔的视野以及良好的自然通风和景观，使建筑融于自然，并与生态完美结合。

重庆案例生活区的绿色庭院设计
Green Courtyard in the Living Quarter of Chongqing Development

2.5 Sustainable Development

2.5.1 Passive Design

A passive design is one of the major characteristics of the sustainable architectures. A urban complex's passive design is aimed at reducing the utilization of cooling, heating and lighting equipment, and cutting down on the energy consumptions of the buildings, and the creation of high-quality indoor and outdoor environment. What the passive design emphasizes is: conduct the designs based on the climate characteristics of the architectures' locations, follow the basic principles of architectural environment control techniques, and consider the requirements of architectural functions and forms, etc. The passive design of a urban complex calls for set of approach of the integrated system, it must be started from the initial design stage, and carried throughout the whole design process.

In the Chongqing case, the architectures of the living quarter assemble the ideal space, sceneries and the actual space, and designed them into an ecological architecture that center around the green courtyards , thus realizing the mutual fusion of nature and the artificial greening. The residences are connected through aerial gardens, thus bestowing each household with a broad field of vision and excellent natural ventilation and scenic and landscapes, and making the architectures fused with nature and perfectly combined with the ecology.

2.5.2 可再生能源的利用

可以用于建筑的可再生能源主要有：太阳能、风能、地热能。由于城市综合体建筑体量的庞大，以及普遍的都会有高层甚至超高层主体，使其有很大的受光和迎风面积，这为城市综合体对光能和风能的利用提供了便利条件。

重庆总部经济园区附近的江水资源丰富，方案拟采用水源热泵新建建筑，以充分利用当地的自然资源条件，改善城市环境，减少城市灰尘污染，冬季供暖、夏季空调、提供全年卫生热水。江水水源热泵机组以江水为冷热源，因水体温度较恒定，是很好的热泵热源和空调冷源，可以利用江水的热量，达到节能环保、节约运行费用的目的。

2.5.2 The Application of Renewable Energy

The renewable energy forms that can be used for architecture mainly include: solar power, wind power, and thermal power. Due to the immense volume of the urban complex architectures and generally there are high-rise or even super-high-rise main bodies, bestowing them enormous light reception and wind-facing areas, thus providing the urban complex's application of light energy and wind power with convenient conditions.

In the vicinity of Chongqing Headquarter Economic Park, there is abundant resource of river water, and it is planned that the scheme will adopt the newly architectures adopting the water source heat pump so as to fully utilize the conditions of the local natural resources, improve the urban environment, reduce urban dust pollution, provide heat in winter, and provide healthy hot water year round. The heat pump unit of the river water uses the river water as the cooling and heating source , and since the temperature of the water body is rather constant, it is an ideal heat source for heat pumps and cooling source for air-conditioning ; It can use the heat of the river water and can reach the goal of energy-saving and saving operational expenses.

连云港企业建设总部B地块用地区位

Location of Parcel B of Lianyungang Corporate Headquarter

2.5.3 立体绿化

由于现代城市的众多的道路和硬质铺地取代了自然土地和植物，在水平方向发展绿地越来越难，因此立体绿化将使绿色城市的美好理想变为现实。而城市综合体的立体空间是承载绿化的天然平台。如连云港总部基地项目，运用建筑外墙面、屋顶、立体步行桥、窗口、檐口作为绿色植物的载体，如此展示出来的是上下穿行、层次丰富而分明的绿色视觉效果，并可实现生态效益的最大化。

2.5.3 Tri-dimensional Greenery

In modern cities, roads and hard pavements are taking the place of natural land and vegetation, which makes it more and more difficult to expand the green space on horizontal level. In the light of that, tridimensional greenery will help in turning the beautiful dream of green city into reality. The tridimensional space of urban complexes is the natural platform for greenery. In Lianyungang Corporate Headquarter Development, for instance, the building outer walls, roofs, over bridges, windows and cornices are all used for carriers of green space, providing tridimensional green visual effects and maximizing the ecological benefits.

3. 理论或研究方法的总结　　城市综合体是城市生活集大成的建筑群体，发展至今，我国极高的人口密度、当代经济发展的推动力以及目前政府的诸多调控政策，成为推动城市建筑综合体发展的巨大动力，形成空前的建设高潮，并具有建设规模大、建设速度快的特点。城市综合体除了具有本身固有的基本特征之外，还会受到每个城市文化习俗、消费模式理念等因素的影响。可以说，每个综合体其实都有着自己独特的个性，是不可复制的。因此，房地产开发商不能过度依赖以往的经验，而应该充分了解当地的情况进行设计决策。

本文介绍了城市综合体的设计，提出了设计要点和手法，在有限的城市用地上集中各项城市机能加以整合设计，并考虑交通和停车系统、建筑形态、规模、开放空间等若干城市综合体设计关键问题进行综合分析，如何解决好这些问题是城市综合体设计的关键所在。应该加强在相关方面的基础研究，为适合城市实际情况的城市设计体系进行修正和改善。

归纳起来，城市综合体设计应具备以下几个要点：

①项目拥有具有标志性的建筑，更智慧、更具创新性、更城市化；

②内部功能合理分布，相互关联；

③保证内部动线及与城市交通系统的有机衔接，理解并回应具有活力的社会与已建成环境间的关系；

④不仅强调建筑设计，还应考虑内部空间设计，增进对高品质生活与已建成环境间关系的理解，创造具有吸引力的高品质体验；

⑤坚持可持续性的规划与建筑思想，为全球快速增长且日趋城市化的人口提供经济节约型综合体项目的责任；

发展至今，我国极高的人口密度和当代经济发展的推动力，以及目前政府对住宅产品的诸多调控政策，成为推动城市建筑综合体发展的巨大动力，形成空前的建设高潮，并具有建设规模大、建设速度快的特点。由于其建设成本高、社会影响大，因此对城市建筑综合体的建设更需要采取谨慎、科学的态度，真正为这个概念赋予内涵！

大同项目鸟瞰图

Bird's View of the Datong Development

3. Summary of Theories and Research Approaches A urban complex is an architectural group that integrates the urban life, and with its development till today, our nation's extremely high population density, the impetus of the modern economic development and a multitude of current regulatory policies by the government have become the enormous impetus propelling the development of urban architectural complexes, and formed an unprecedented construction boom and feature the characteristics of large construction scales and rapid speed. In addition to the basic characteristics an urban complex possesses inherently, it will also be affected by such factors as each city's cultures and customs and concepts of consumption types. It can be said that each complex in fact has its own unique characteristics, which cannot be replicated. Therefore, real estate developers cannot excessively rely on their past experience, but should rather have sufficient grasp of the local circumstances for conducting the design decision making.

This paper touched on the design of an urban complex, proposed the design key points and approaches, and the high concentration of various urban functions on the limited urban land use and the rational integration and design, as well as the comprehensive research and analysis on such key design issues of an urban complex as the transportation and parking system, architectural forms, scales and open space; how to ideally solve these crucial issues is the key to the design of a urban complex. It is necessary to consolidate the basic research on the relevant aspects, and conduct revisions and improvements in order to adapt to the city's actual circumstances.

In summary, the design of an urban complex shall feature the following key points:

1.The Project possesses features symbolic architectures, more intelligence, innovations and more urbanization.

2.The rational distribution and mutual correlations of the internal functions.

3.Ensure the organic tracking of the internal dynamic lines with the urban transportation system, grasp and respond to the vigorous relationship between the society and the established environment.

4.Not only is it necessary to emphasize the architectural designs, it is also of importance to consider internal space designs, enhance the comprehension of the relationship between the high-quality life and the established environment and create a high-quality experience featuring attractions.

5.A responsibility of adhering to the sustainable planning and architectural thoughts and provide the population, which has seen a global fast growth and increasing urbanization, with a complex project with the economic and conservative type.

With its development until today, our nation's extremely high population density and the impetus of the modern economic development, as well as the multitude of regulation current regulatory policies on the housing products have become the tremendous impetus for driving the development of the urban architectural complexes, thus forming an unprecedented construction boom and featuring an enormous construction scale. Due to its high construction costs and big social influences, it is even more necessary to adopt a prudent and scientific attitude towards the constructions of urban architectural complexes and really bestow this concept with connotations.

4. 合乐项目实践介绍

4.1 山西大同西门外商业广场项目

项目位于大同这座悠久历史的古城，基地的地理区位优势明显，位于大同城市的中心地带，且交通便捷。东部魏都大道为城市主干道，车辆通行能力强，为缓解交通压力，将人行主出入口规划在魏都大道，地铁东侧是保留的古城区，为基地提供良好视线的同时也提供了良好的景观资源。项目拟规划近62万平米的大型购物中心，一站式的购物体系，由一座五星级酒店、两座酒店式公寓、两座办公楼，空中商业街以及35万多平方米的购物中心五大板块共同组成。项目在商业规划方面分别引进时尚百货、生活超市、数码电器等多个业态，在一个层面上形成多个中心，不同的消费主体，解决了空间单调的问题，次主力店穿插其间，营业场所和公共空间交融一体。其中地标性五星级酒店将建立大同酒店业的范本。

4. A Profile of Halcrow Project Practice

4.1 The Project of Datong Ximenwai Commercial Plaza, Shanxi

The Project is located in the historical ancient city of Datong, and the Base features obvious geographical advantages. Not only is it located in the central area of downtown Datong, it is also endowed with swift and convenient transportation. Weidu Boulevard in the east is the City's main trunk way with a strong vehicle passage capacity; and in order to relieve the transportation pressure, efforts were made to plan the main entrance and exit on Weidu Boulevard, and the east of the subway was the preserved ancient city zone, thus not only providing the Base with an excellent sight line, but also providing excellent landscapes resources. It is planned the Project will have a nearly 62,000-square-meter large-scale shopping center, a one-stop shopping system, and it will jointly comprise such five blocks as a five-star hotel, two hotel apartment buildings, and with the aerial commercial street as the core, and a 35,000-square-meter shopping center. On the aspect of commercial planning, the Project will respectively introduce such a multitude of forms as fashionable general merchandize, life supermarkets, digital electronic devices to form multiple centers and different consuming entities on one level, thus solving the problem of monotonous space; the secondary mainstream shops intersect among them, with the business locations and the public space fused into one body. Among them, the landmark five-star hotel will establish a model for hotels in Datong.

合乐的创新和观点

1）规划构思：项目以“一带、两轴、五个基本点”的商业规划为总体构思，在一个平面上形成了丰富的空间，并且以室内中庭为核心，进行商业资源的集中和发散，比较有效的解决了商业空间单调和单层平面面积过大的问题，并使得顾客在其中购物时具有清晰的方向感；

2）以“飞天走廊”为突出特色：飞天走廊是近2万平米的空中室内步行街，结合业态规划，以观景为目的将底层人流吸引到顶层，形成浮动比例的吸客效应。飞天走廊结构布局的独特性和商业规划的领先性，将带来强大的项目区别性，进而升华到品牌的认识，在体验的过程中消费者产生认可，可推动魏都大道商业广场的成型；

3）交通系统：基地的车行系统实现人车分流，地下车库全地库设计，步行系统采用了复合式的步行交通体系，商业人流主线贯穿于整个基地，构架串联起各个商场，实现了商业空间利用最大化。

4）空间设计：空间呈现大广场与商业步行街结合、多层次开放格局，充分利用屋顶作为休憩观景场地，商业整体由西向东呈跌落梯田布局，创造一个环境优美，富有新奇体验的商业广场。

Renovations and Viewpoints of Halcrow

5.1 The project of Ximenwai Commercial Plaza of Datong, Shanxi

1) Planning conception: the Project regarded the commercial planning of “One belt, two axes and five basic points” as the general conception, thus forming a rich space on one plane, and, with the indoor central courtyard as the core, it conducted the concentration and dissipation of the commercial resources, thus more effectively solving the problem of the monotonousness and the excessive size of the single-level planes areas and bestowing the customers with a distinctive sense of directions while doing shopping;

2) The “Aerial corridor” was regarded as a substantial feature: the “Aerial corridor” is an aerial indoor pedestrian street with an area of nearly 20,000 square meters; in combination with the sightseeing, it attracts the streams of people on the bottom floor to the top level, thus forming a customer attraction effect with floating proportions. The unique nature and the advanced property of the “Aerial corridor” structural layout will make the project substantially distinctive and further it will be uplifted to the brand recognition so as to gain the customers recognitions during the experiencing process, thus promoting the shaping of the commercial plaza on Weidu boulevard;

3) Transportation system: for the Base's vehicle transportation system, the separation of people and vehicles was realized, and the underground parking lots were all designed as underground vaults, and the pedestrian system adopted the compound type pedestrian transportation system; the commercial streams of people were permeate across the whole Base's framework linking the various shopping malls, thus realizing the maximization of the commercial space utilization.

4) Space design: space presents a combination of a large square with the commercial pedestrian street and a multi-level open patter, and sufficient use of made of the roof tops as the leisure and sight-seeing sites, and the integral commerce had a terrain layout featuring falling from the west to the east, thus creating a commercial plaza with a charming environment and filled with novel experience.

4.2 重庆总部经济园区

本项目位于渝中区西部，靠近沙坪坝区，沿高九路两侧，占地472.82亩，是渝中区最后一块成片的相对较大体量的待开发用地。基地在城镇空间结构上处于渝中组团、观音桥-人和组团、沙坪坝组团和大杨石组团交界处，距离中央商务区9公里。

本次规划采用国际先进的规划理念与设计手法，探索以位于高九路中心位置的控制性节点为联系纽带，发散各向轴线引导并整合区域规划设计，以多样化的实体空间为载体，互动整合办公、商务、酒店、商业、居住五大主题，力求打造兼具经济促动力、引发城市活力、环境真魅力的高端总部基地。

4.2 Chongqing Headquarter Economic Park

This Project is located in the west of Yuzhong District, and is adjacent to Shapingba District and along the two sides of Gaoju Rd. With an area of 472.82mu, it is the last undeveloped land with relatively bigger volume in Yuzhong District. With a distance of 9 kilometers from the CBD, the Base is located in the intersection area of the Yuzhong Cluster, Guanyin Bridge-Renhe Cluster, Shapingba Cluster and Dayangshi Cluster with regard to the urban and town spatial structure

For this development, the internationally advanced planning concepts and design approaches were adopted, and explorations were made to use the control junctions in the central locations of Gaoju Road. as the linkages and radiate into the various axial lines to guide and integrate the regional planning and designs, and, using the divers entity space as the carrier, conduct the interactive integration of such five major themes as office, commerce, hotels, commerce and accommodation, with the aim of casting a high-end headquarter base that concurrently features economic enhancing capacity, the ignition of urban vitality and true environmental charm.

重庆项目鸟瞰图

Bird's View of Chongqing Development

重庆项目办公区鸟瞰图

Bird's View of Office Area of Chongqing Development

重庆总部经济园区

1）地标设计：在定位研究结论和规划理念的指引下，制定了具有内聚力的规划方案，以位于高九路中心节点处的具有地标性的大型景观节点构筑物—世纪之眼，诠释渝中区经济中心的个性，并作为交通及景观的主导控制点向外发散轴线以引导各区位的规划设计结构。世纪之眼同时作为立体交通系统的交汇枢纽中心，进行地上及地下立体交通的转换与承接。

2）各区域设计相互关联并各具特点：总部办公区设计引用“自然生长”的概念，即在尊重和认可现实条件的基础上，对现状用地在规模上加以扩张，使其更趋完整，从而形成独立的功能单元，充当母体的子细胞。在这个规划中，建筑和自然已然形成一个可持续发展的生命有机体。商务酒店及创意loft办公区的设计通过功能丰富的空中连廊练成整体，并设计了围合的中庭以改善办公区的生态环境。生活区的住宅通过空中花园相连接，从而使每户都有开阔的视野以及良好的自然通风和景观。

3）立体路网系统快捷高效：遵循交通分流规划设计思想，采取“立体交通”策略，分地面、地下和地上三个层次组织基地的立体交通网络，其中地面交通系统主要是城市道路网和地面步行系统，地下交通系统主要由轨道交通、地下步行系统和解决基地内部车行交通的地下环路组成，地上交通系统为空中步行系统；并采用“建筑交通一体化“策略对城市建筑空间进行整合，将建筑内部交通与外部城市交通无缝衔接，是一种新型的、能充分挖掘建筑空间潜力、大大开拓城市交通空间的、可持续发展的规划模式；

4）景观设计：景观系统结合水体、绿地和休息广场，自高九路中心—世纪之眼发散的轴线对景、水域节点等位置，设立标志性建筑物和构筑物，如生态酒店、世纪之眼、商务酒店等，通过景观道路、河道与绿廊，对各区域景观，完善视觉通廊，引导主要视线，强化视觉焦点，塑造地区整体、独特、富有活力的景观环境；

5）可持续设计：充分利用当地的自然资源条件，利用江水水源作为重庆总部经济园区中央空调及生活热水系统的冷热源，即采用江水水源热泵系统，冬季供暖、夏季空调、提供全年卫生热水。

Chongqing Headquarter Economic Park

1) Landmark design:under the guidance of the conclusion of the positioning research and the planning concepts, stipulated the planning scheme featuring the cohesive force, and, with the central junction located on Gaojiu Road, set up a large-scale landmark landscape functional building—the Centennial Eyes, which the characteristics of the economic center of Yuzhong District, and served as the mainstream controlling pint of transportation and landscapes and radiate axes outward so as to guide the structures of the planning and designs of various locations. Meanwhile, the Centennial Eyes, as the confluence and hub center of the tridimensional transportation system, conducted the transformation and inheritance of the maps and underground transportation.

2) The designs of the various areas are mutually correlated and feature their own characteristics: the design of the Headquarter Office introduced the concept of “natural growth”, i.e. on the basis of respecting and acknowledging the realistic conditions, conducted expansion, making it tend to be more integral so as to form an independent functional unit and serve as the sub-cell in the mother maternal body. In this planning, the architectures and nature have formed a life's organic body of sustainable development. The design of the commerce hotels and the creative loft office zone were refined as the integral body through the aerial passage corridors with rich functions and the enclosure central courtyard was designed so as to improve the ecological environment of the office zone. The residences of the living quarter were conjoined through the aerial gardens, thus making each household have a broad field of view and excellent nature ventilation and landscapes.

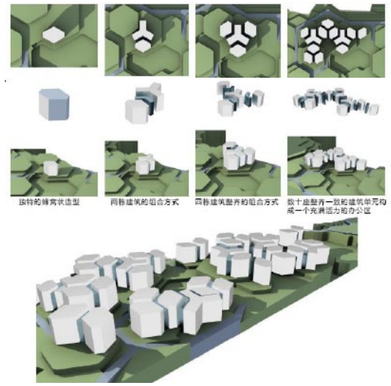
3) The tridimensional road network system is rapid and highly efficient: followed the planning and design thoughts of separated transportation, and the Base's tri-dimensional transportation network was organized based on the, such three levels as the ground, underground and above ground, among which the ground transportation system is mainly the urban road networks and the ground pedestrian system, and the underground transportation system is mainly composed of the rail transportation, underground pedestrian system and the underground circular roads that solve the vehicle type transportation within the Base's interior, while the ground transportation system is the aerial pedestrian system; and the strategy of the “integration of architectures and transportation” was adopted for conducting integration of the urban architectural space, thus making the architectures' internal transportation with the external urban transportation have seamless tracking, which is a new type planning mode that can sufficiently tap the potentials of the architectural space, greatly expanded the urban transportation space and has sustainable development;

4) Landscape design:Landscape system was combined with the water bodies, green land and leisure plazas, and on such locations as the opposing scenes radiated from the center of Gaojiu Road. - the Centennial Eye and water junctions, landmark architectures and structures were provided, such as the ecological hotels, the Centennial Eyes and the commerce hotels, Through landscapes roads, river courses and green corridors, perfected the visual passages, guided the main viewing lines, strengthened the visual foci and shaped the areas' integral, unique and vibrant landscapes environment ;

5) Sustainable design:sufficient utilization was made of the local natural resources, and the water source of the river was used as the cooling and heating sources for the centralized AC and living hot water in Chongqing Headquarter Economic Park, i.e. using the heat pump system of the river water source for providing heat in winter and air conditioning in summer and provide healthy hot water all year round.

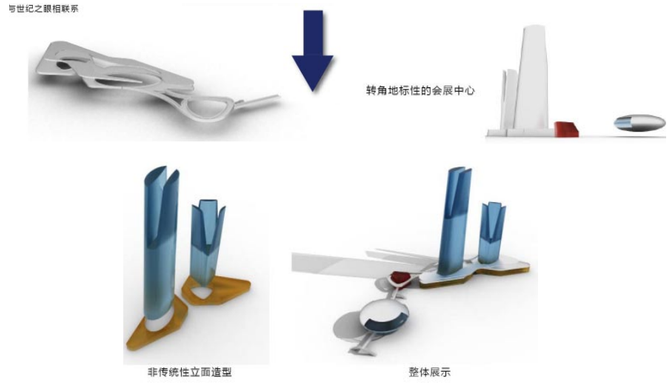
重庆项目办公区的形体演化过程

Physical Evolution of Office Area of Chongqing Development



重庆项目商务酒店及loft办公区的设计理念

Design Concept of Business Hotels and Loft Office of Chongqing Development



4.3 连云新城企业总部基地B地块

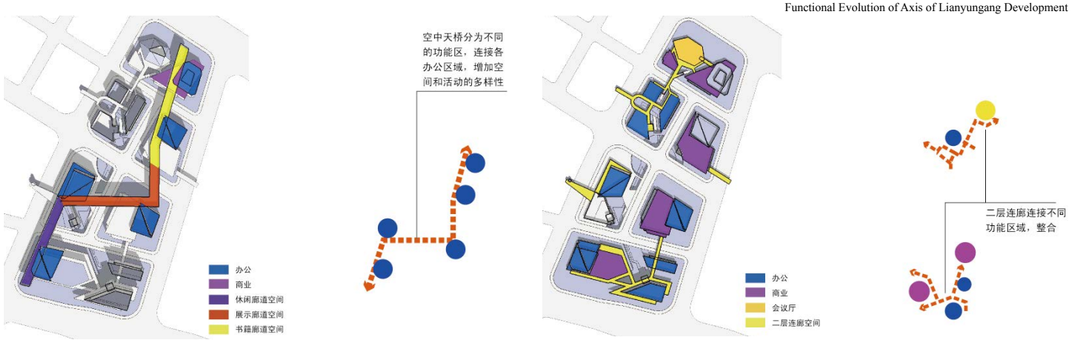
项目所在地在连云港，从场所各种综合因素来作为思考的机遇，再从纵向的发展形式中去探索各种综合因素的实现，遵循此原则，设计出发点筛选连云港众多城市特性中的东海第一胜景的山海气场加以承传，从整体效应上提高场所形象，满足城市和城市人的期许，并对上位规划欲形成的场所特征进行研究，寻找其空间特色和城市历史记忆的元素——海和水晶，以实现各种功能空间的有效整合，创造商业、办公、展览等不同活动有序展开的磁力场。

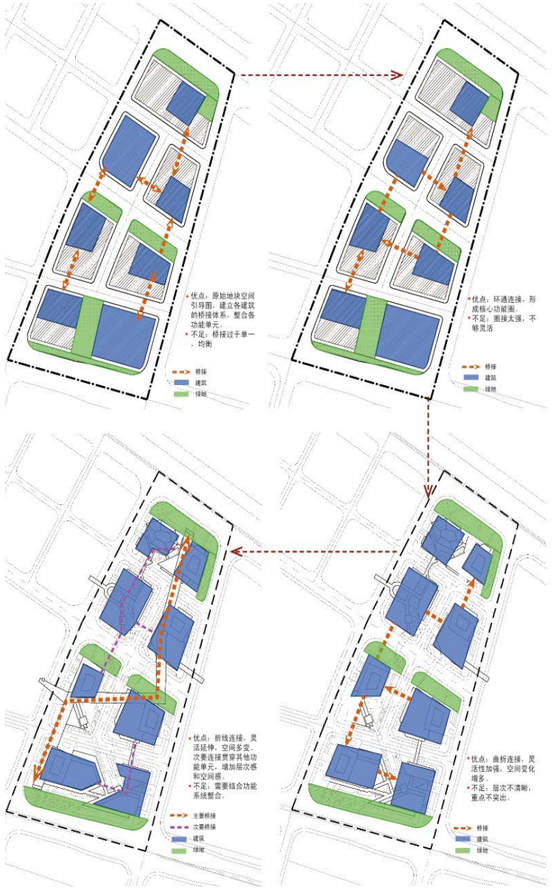
4.3 Parcel B of Corporate Headquarter Base in Lianyungang

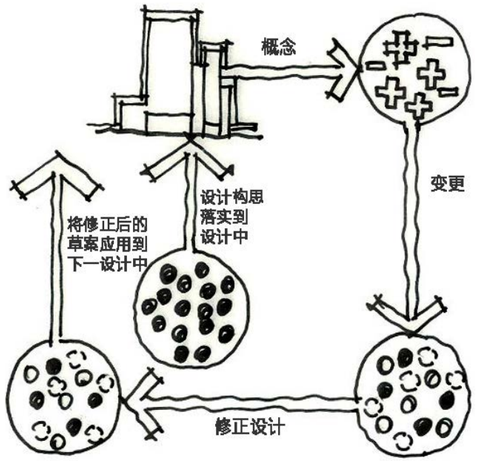
The Project is located in Lianyungang, and various kinds of comprehensive factors of the site were regarded as the opportunities for thinking, and then explorations were made in the longitudinal developmental trend on the realizations of various kinds of factors; following this principle, designed the starting point and screened out the atmospheric field featuring mountains and sea of the first spectacles among the multiple urban traits of Lianyungang and carried it forward, with the aim of elevating the site's image from the integral effect and satisfy the anticipations of the City and the city dwellers; and also research was made on the characteristics of the sites that the high-level planning intends to create in search the spatial features and the elements of urban historical memories--the sea and crystal so as to realize the effective integration of various kinds of functional spaces and create a magnetic field for the orderly expansion of such different activities as commerce, office and exhibitions.

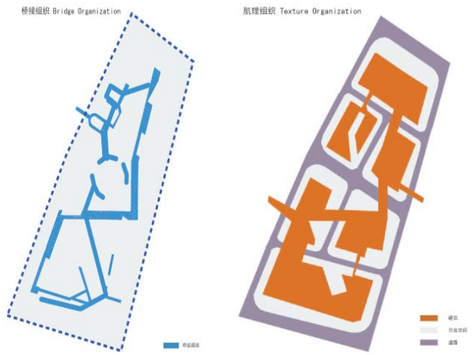
连云港项目的桥轴功能演变

Functional Evolution of Axis of Lianyungang Development









连云新城企业总部基地B地块

1）平面、立面及空间构思：以“东海双龙戏珠”为平面构思，平面构成以龙的游动体态和张力引申为地下、地上、空中的步行道和连廊。立面构思采用了“水晶森林”的概念，棱角分明的水晶，晶莹剔透的质感，演绎为具有这种特质的建筑立面形态，形成直入云霄的延伸和张力。纵向空间构思以下沉，上挑，盘绕，穿插等路线结构形式创造出不同层次，可供人们眺望，攀爬，穿越，游离，停留等的功能空间。并在不同高度的纵向空间形成丰富视线交流和空间体验。此外，不同连廊有效整合各功能场所，使人们能便利有序地穿梭于商业、办公、展览等空间，分散人流并创造多样空间活动；

2）规划结构：呈现“五珠，两轴，三节点”的布局结构。五珠：均衡布置的五栋办公楼，为整个地块的主要建筑核心；两轴：空中连廊的明轴与景观绿廊的暗轴相互交错铺设，有机串联各个建筑体，构架起地块结构脉络；三节点：位于景观轴线上的开放广场，多元化城市空间；

3）空间设计：立体空间打造具有城市贡献性的立体景观空间系统，注重空间轴线的塑造，各类使用空间的穿插，形成丰富的商业办公界面，让各个相对较紧张用地的分地块形成更具有活力的场所，贯穿南北的多功能立体天街系统是本案的亮点，有效从空中联系人流，避免地块紧张的机动车动线系统；

4）人车分流：真正实现人车分流理念，充分挖掘地上和地下空间的使用效率和开发品质，通过大型采光天井、大型景观下沉式广场等；

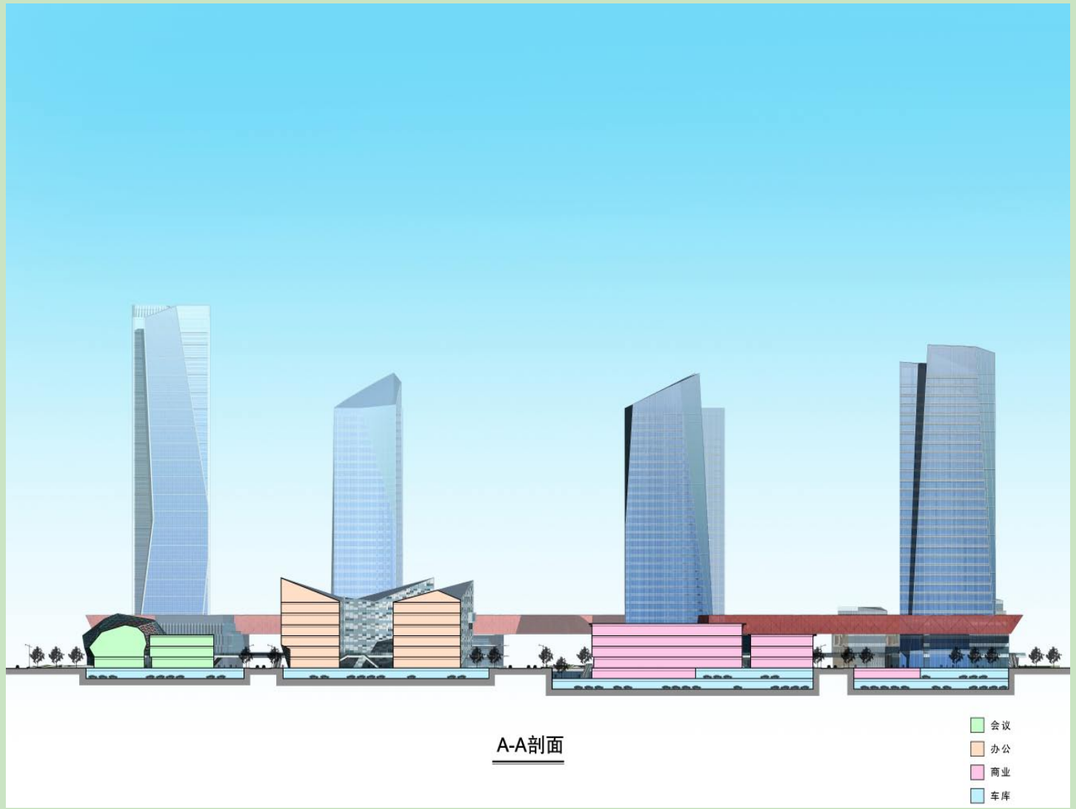
5.3 Parcel B of Lianyungang Corporate Headquarter Base

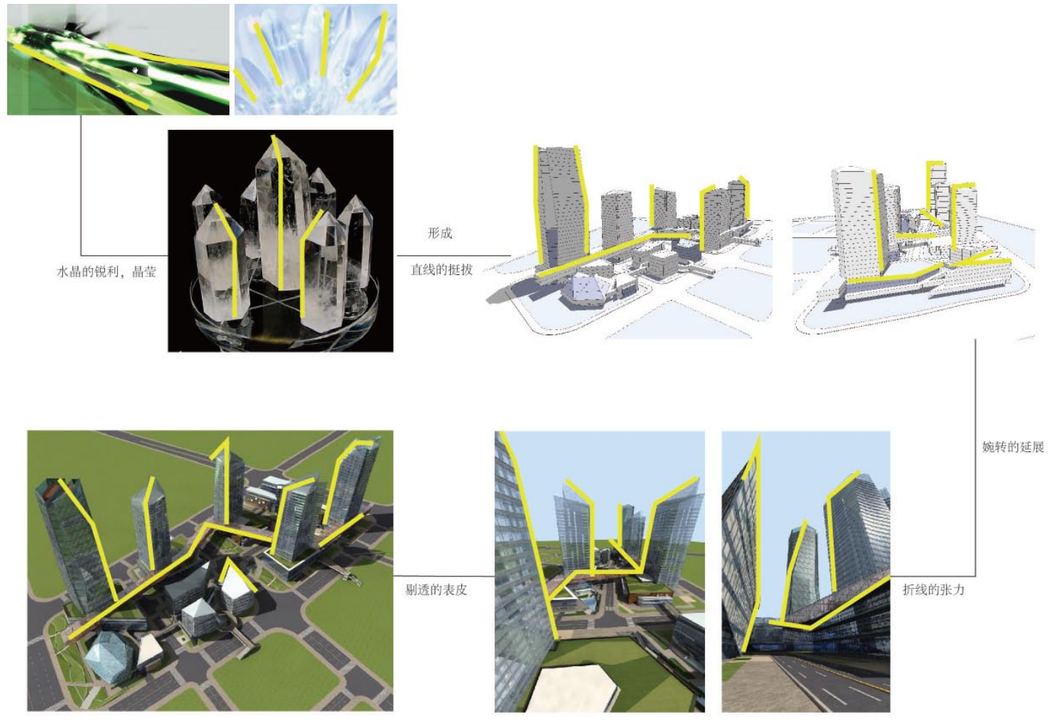
1) Conceptions of planes, facades and space: With the “Two dragons playing with a pearl in the East Sea” as the planes conception, the planes formations, with the swimming shape and tension of a dragon, were extended into the underground, ground and aerial pedestrian lanes and passage corridors. The concept of the “Crystal forest” was adopted for the façade conception, and the crystal with clear-cut edges and corners and the translucent textures were transformed into the architectural façade forms featuring such a trait, thus forming the extension and tension surging into the sky. The longitudinal spatial conceptions, with such routing structural forms as sinking, upward tilting, winding and intersecting to create different levels, the functional space for people to overlook, climb, pass through, wander about and stay. Also, in the longitudinal space of different heights, form the rich visual exchanges and spatial experience. In addition, different passage corridors effectively integrated the various functional locations, enabling people to conveniently shuttle back and forth such spaces as commerce, office and exhibitions, dispersing streams of people and creating diverse spatial activities;

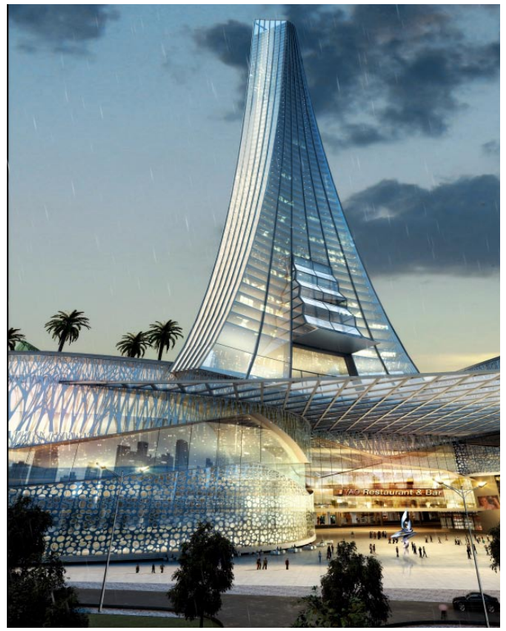
2) Planned structures: It will manifest a layout structure featuring “Five pearls, two axes and three junctions”. Five pearls: five office buildings are evenly distributed, becoming the main architectural center of the whole parcel; two axes: the exposed axis of the aerial passage corridors and the hidden axis of the landscape green corridors were laid in an interlaced form, thus organically linking the various architectural bodies and construing the veins of the parcel structure; three junctions: the open squares located on the landscape axis and diversified urban space;

3) Space design□regarding the tridimensional space, cast a tridimensional spatial system featuring urban contributions, and emphasize the shaping of spatial axis; the intersecting of various kinds of utilization spaces formed the rich interfaces of commercial office, thus enabling the various sub=-parcels with relatively tense land use to form a site with even greater vigor, and the tridimensional aerial street system that runs across from south to north is the highlight of this case, which effectively link the streams of people in the aerial level and avoid the dynamic lines of motorize vehicles rare to the parcel;

4) Separation of people and vehicles: Really realized the concept of separation of people and vehicles, sufficiently tap the utility efficiency and development quality of the ground and underground space, through large-scale lighting patios and large-scale landscapes sink-type plazas;







4.4 杭州水晶城

杭州水晶城项目占地1045亩，作为杭州的超大规模的城市综合体，集商业服务、文化娱乐、康体运动、休闲度假、旅游居住等功能为一体，在共生、互利的前提下，实现多功能的综合。本次规划打破传统的轴线组团关系形式，以中央大峡谷为中心，周边围合各形态功能的建筑，将商业群房有机分割，面对城市外围形成时尚、富有张力、层次丰富的视觉印象，对内营造出私密、别有洞天的空间体验。

4.4 Hangzhou Crystal CityOccupying a land area of 1045 mu and as Hangzhou's hyper-sized urban complex, Hangzhou Crystal City Project integrates such functions as commercial services, culture entertainment, fitness sports events, leisure and vacationing, tourism and residence, thus realizing the integration of multiple functions under the preconditions of mutual existence and mutual benefits. This plan broke away from the traditional relation form of axial clustering, and, with the Great Canyon as the center, the surroundings are enclosed with the architectures of various forms and functions, had organic division of the commercial group buildings so as to, faced with the City's periphery, form a fashionable, tensile visual image with rich layers, while casting an internally private and spatial experience with unmatched charms.

杭州水晶城项目效果图

Perspective View of Hangzhou Crystal City

5.4 杭州水晶城

1）引入了灵活多样的交通游览形式：利用丰富的景观水系引入水上游览交通系统，从特色水面巴士到达整个区域内各个重要商业节点，极富江南水乡特色。环绕的巨型天幕使空中游览动线更快捷高效，也提高了各个区域内空中商业价值。游览小火车的引入更使我们的行程增添一份乐趣与便捷。

2）打造高舒适度的绿色建筑：不同气候条件下的室内舒适的温度保证，能够坚持与自然的互动，引入更多地自然要素。充分应用可再生能源和新能源，导入日照、自然通风、自然水体及绿化等内容，创造与自然零距离的建筑，让人们能充分感受到绿草、白云等自然状态的元素在建筑中、建筑外存在。

5.4 Hangzhou Crystal City1) Introduced flexible and diversified transportation tourism forms:Using the rich landscape water system, introduced the system of water tours and transportation, and from the featured water bus to the various important junctions of the whole areas, they feature rich characteristics of the water land in the south of the Yangtze River. The surrounding gigantic canopy makes the dynamic lines of the tourism faster and more highly efficient, and it also elevated the aerial commercial values within the various areas. The introduction of tourism mini-trains adds our trips with even more pleasure and convenience.

2) Cast green architectures with high degree of comforts: The temperature ensuring of indoor coziness under different climate conditions can adhere the interactions with the nature and introduce more natural key elements. Sufficient use was made of renewable energy and new energy, and introduced such contents as the sunlight, nature ventilation, natural bodies and the greening introduction of natural key elements, created the architectures with zero distance from nature, thus enabling people to sufficiently sense the existences of the elements of such natural statuses as green grass and white clouds.

绿色交通的规划理论与实践

Planning Principles and Practice in Green Transport

绿色交通理念是在城市和城市交通发展面临一系列交通难题和发展瓶颈的客观条件下提出的。1994 年，克里斯·布拉德肖(Chris Bradshaw)提出绿色交通体系(Green Transport Hierarchy)概念，主张城市中交通方式的地位和发展优先级应按照以人为本的原则进行排序，依次为步行、自行车、公共交通、合乘小汽车、单独驾驶小汽车。其核心理念是实现城市交通的可持续化发展，即实现城市交通系统的“高效、公平、安全、环保、低耗”。

一、绿色交通规划内涵

1）绿色交通是实现可持续发展交通的必由之路

2）绿色交通将改变我们的城市格局和道路形式

3）绿色交通会改变我们的城市生态环境

4）缓解小汽车快速增长和道路资源不足的矛盾

5）绿色交通将改变我们的出行模式和出行心理

6）在规划项目中加入绿色交通内容使项目更科学合理，符合规划学科向低碳生态发展的需要

The concept of green transport was presented under the conditions that urban development and urban transport development were confronted with some traffic challenges and development bottlenecks. In 1994, Chris Bradshaw put forward the concept of Green Transport Hierarchy, suggesting that the position and development priority of urban transport means should be sorted according to the principle of "People First", namely, go on foot, by bicycle, by public transport, by car shared, and by car driven alone in order. The core concept of Green Transport Hierarchy is to realize the sustainable development of urban transport, namely, realizing an “efficient, fair, safe, environment-friendly and energy saving” urban transport system.

I. Significance of Green Transport Planning

1) Green transport is the only way to realize the sustainable transport development.

2) Green transport will change our urban pattern and road forms.

3) Green transport will change our urban ecological environment.

4) Green transport will ease the conflict between fast growing cars and insufficient road resources.

5) Green transport will change our travel models and travel psychology.

6) Adding green transport content to the planning project will make this project more scientific and reasonable, thus meeting the needs of developing planning subjects towards low-carbon ecology.

二、绿色交通规划目标

1）城市交通与环境目标

宣传交通对环境和健康影响的基本知识；推广使用环保汽车和燃料；在城市不同的地区和时间中，限制不同车型的车辆的通行权；进行交通和土地使用规划对环境影响的评估。

2）城市交通与城市发展目标

当代规划令城市向区域性、多城镇核心方向发展；研究交通容量对城市规划布局的影响，保持适度规模的交通容量来引导城市布局结构的调整和完善；研究城市开发强度与交通容量和环境容量的结合，将绿色交通概念注入到城市规划法规中；交通基础设施的建设既要求能满足目前的需求，也要求能适应未来城市的发展；做好土地开发的交通影响评估和管理；在进行道路修建时，需要考虑经济与环境的得失，并做好景观设计工作；对于道路修建和拓宽的评估，应包含交通系统管理与交通需求管理的可能替代方案与配合措施。

3）公共交通发展目标

建立公交优先系统，达到公共交通的观念优先、设施优先、效率优先、管理优先和安全优先，以换乘为主研究公交布局，设立高效的公交专用道；协调公共交通各方式之间的便捷换乘和合理收费，建立一套完整的交通策略计划，并做好轨道交通与其它交通方式的结合；配合城市的长期发展以及土地使用与财政能力进行公共交通的综合规划。

4）非机动车交通发展目标

在交通法规中，规定绿色交通体系中的各种交通方式的权利和义务，尤其是行人和骑自行车的人；建立自行车专用道系统，比如机动车道与自行车道的分隔，自行车道与人行道的分隔；交通管理以改善“人和物的移动”为主，而不是机动车辆。

5）停车交通发展目标

把停车设施建设规模、布局以及静态交通管理措施结合起来考虑，强化“以静制动”的观念和管理方法。

6）智能技术发展目标

发展智能交通系统，就是说在交通系统中运用计算机、通信等先进技术，其中包括先进的交通管理系统、先进的交通信息系统、先进的车辆控制系统、先进的物流系统、先进的公共交通系统、先进的不停车收费系统等等。

II. Objectives of Green Transport Planning

1) Objectives in Urban Transport and Environment

Publicize the basic knowledge of traffic impact on environment and health; extend the use of eco-cars and environmentally friendly fuel; restrict the right of way of different models of vehicles; and evaluate the environmental impact caused by the transport and land use planning.

2) Objectives in Urban Development

The contemporary planning is to allow cities to develop toward the core direction of regionality as well as multiple cities and towns. Analysis the impact of traffic capacity on urban planning and layout, and maintain moderate scale of traffic capacity to guide the adjustment and improvement of the urban layout structure; study the combination between urban development intensity and traffic and environment capacity, and introduce the concept of green transport into the laws and regulations on urban planning; ensure that transport infrastructure construction can meet current needs as well as future urban development needs; evaluate and manage the traffic impact caused by land development; consider gains and losses in terms of economy and environment, and do a good job of landscape design in the road construction. Evaluation of road construction and widening should embrace the possible alternative solutions and cooperation measures of transport system management and transport need management.

3) Objectives in Public Transport Development

Establish the public transport priority system, ensure the idea, facility, efficiency, management and safety priority of the public transport; study the public transport layout with focus on transfer, and set the efficient bus lanes only; coordinate convenient transfer and reasonable fees between different public transport means, develop a complete transport strategy plan, and well combine rail transit with other transport means; conduct comprehensive planning of the public transport in collaboration with the long-term urban development, land use and fiscal capacity.

4) Objectives in Non-motor Vehicle Transport Development

Traffic laws stipulate the rights and obligations of transport means in the Green Transport Hierarchy, particularly those for pedestrians and cyclists; set up bicycle lane system, e.g., separating motor vehicle lanes from bicycle lanes, isolating bicycle lanes from sidewalks. Traffic control focuses on improving "movement of people and objects" rather than movement of motor vehicles.

5) Objectives in Parking Traffic Development

Combine the construction scale and layout of parking facilities with static traffic control measures, and intensify the idea and management method of "respond to any action through inaction".

6) Objectives in Intelligent Technology Development

Develop intelligent transport system, namely, apply advanced technologies□such as computer and communication into transport system, including the advanced transport management system, traffic information system, vehicle control system, logistics system, public transport system and electronic toll collection system.

三、绿色交通规划理念

1. 创建“绿色”城市结构

交通的重点是可达性而不是移动性，人们出行的目的是为了获取另外一个地方的物品和服务，而不是为了“移动”而出行。因此，通过“绿色”的(紧凑的、功能复合的)城市结构和功能布局可以减少人们的出行次数和出行距离。

特定的城市结构可以导致相应的交通模式，反之亦然。美国波特兰市就是一个通过限制UGB、选择紧凑的城市空间结构、适度的城市发展密度、TOD的发展模式、功能的复合利用而成功减少城市交通量、构建宜居的城市环境的典范。

因此，在中国城市建设过程中，应从整体上对交通系统及城市布局、土地利用等进行综合考虑，发展相对紧凑的城市空间结构，促进城市用地结构与交通体系的良性互动。

2. 发展“绿色”交通模式

近年中国越来越多的家庭拥有小汽车。同时，由于生产汽车、鼓励买车被认为是提升GDP、拉动经济增长的主要措施之一，从中央到地方不断推动交通政策、城市交通规划向汽车交通倾斜，造成大马路、大街区比比皆是，原有的自行车道、人行道被侵占。

美国的教训表明，坚持可持续发展的理念，发展公共交通、小汽车、自行车、人行等多模式并存的交通体系是必须的。针对中国的实际情况，应该关注以下4个方面：①大力发展公共交通，建立价格合理的公共交通系统；②注重步行、自行车体系的构建，为其发展预留空间；④建立城市快速路及快速轨道网络等“快速通道”，提高运输效率；④注重公路交通与水路、铁路、航空运输的协调。

3. 采用“绿色”交通工具

我国大多数城市城区主要污染源已由工业污染变为机动车尾气污染。在当前全球变暖的危机下，环境保护已经成为全球的共同课题。中国应该建立与环境保护政策协调统一的交通政策，设定汽车尾气排放的标准，鼓励研发、使用清洁能源交通工具，发展有轨、无轨电车，鼓励清洁交通模式的发展。

4. 体现“绿色”人文思想

为满足机动功能需求而进行大规模的基础设施建设，到兼顾人文关怀，再到以后向提高交通安全、注重交通运行效率、关注环境保护、以人为本的可持续的绿色交通政策转变，可以看出，以人为本是绿色交通体系建设的主要目标。

目前我国仍处于交通基础设施快速发展的阶段，在基础设施快速建设的同时，应制定合理的交通政策，支持社会经济发展与改善居民生活质量并重，加强交通管理，注重交通安全，将缩短居民上班时间等提高居民生活质量的目标纳入交通发展政策制定中。同时，交通政策制定必须对社会居民中弱势群体(残疾人、贫困群众、外来民工)的生活给予特别的照顾。

III. Planning Concept of Green Transport

1. Create "Green" Urban Structure

Traffic focuses on accessibility other than mobility. The purpose of people's travel is to obtain articles and services at another place but not for "mobility" purpose. Therefore, "green" (compact and functional composite) urban structure and function layout may reduce travel times and distance of people.

A specific urban structure may result in corresponding transport model, vice versa. Portland in USA offers such a model. By restricting UGB and selecting the compact urban spatial structure, moderate urban development density, TOD development model and functional composite use, this city successfully reduces urban transport volume and builds a livable urban environment.

Therefore, in China's urban construction process, we should consider the transport system, urban layout and land utilization as a whole, develop the relatively compact urban spatial structure, and promote the positive interaction between urban land use structure and transport system.

2. Develop "Green" Transport Mode

In recent years, China has seen more and more households own cars. Meanwhile, automobile production and encouragement of car purchase are considered one of the main measures for improving GDP and driving economic growth. Therefore, central government to local governments constantly promote the transport policy and urban transport planning to favor car traffic, thereby leading to appearance of trunk roads and large blocks everywhere, which occupy the original bicycle lanes and sidewalks.

USA's lesson shows that it is imperative to stick to the concept of sustainable development, developing transport system with coexistence of multiple models such as public transport, cars, bicycles and walk. According to the actual situation of China, we should focus on the following four areas: (1) energetically develop public transport, and establish reasonably priced public transport system; (2) emphasize the construction of pedestrian and bicycle system, and reserve space for developing this system; (4) build urban expressway, rapid rail network and other "fast channel" and improve transport efficiency; (4) stress coordination among road transport, water route, railway and air transport.

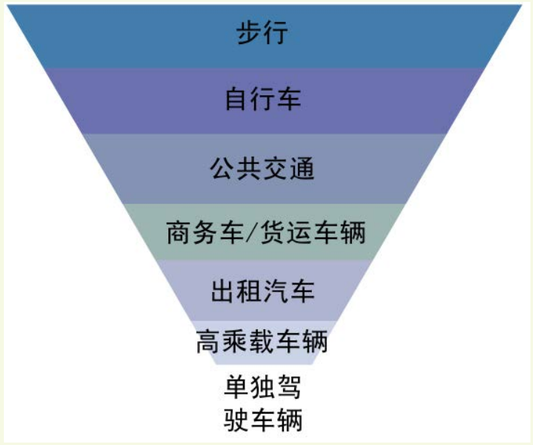
3. Adopt "Green" Transport Means

Main pollution sources in urban areas of most Chinese cities are from exhaust of motor vehicles rather than industrial pollution. Against the current background of global warming crisis, environmental protection has become the common subject globally. China should establish the transport policy in coordination with the environmental protection policy, set the emission standard for tail gas of automobiles, encourage R&D and use of clean energy transport means, and develop tramcars and trolley buses, and encourage the development of clean transport model.

4. Reflect "Green" Humanistic Ideas

From infrastructure construction on a large scale to meet the motor function demand to humanistic care, and to the sustainable green transport policy for improving traffic safety, emphasizing traffic efficiency, focusing on environmental protection and people first, we can see that "people first" is the main objective of construction of Green Transport Hierarchy.

At present, China remains at the stage of fast growing transport infrastructure. While the infrastructure is developing fast, China should work out reasonable transport policy, lay equal stress on supporting the development of society and economy and improving the life quality of residents, strengthen traffic control, emphasize traffic safety, and put the objectives of improving the life quality of residents such as shortening their commuting hours into the transport development policy. Meanwhile, special care must be given to the life of disadvantaged groups (the disabled, poor people and migrant workers) among social residents in formulating the transport policy.



四. 绿色交通评估标准

1. 绿色交通指标体系构建——法定体系

建设部、公安部2003年颁布《绿色交通示范城市考核评分标准（试行）》。按照各项指标的评价标准和分值范围，总分按100分计，共66项，各考核项目的权重为：

1)组织管理10%

2)规划建设15%

3)公共交通30%

4)基础设施30%

5)交通环境15%

2. 和谐交通指标体系构建——指标探索

北京市对和谐交通评价指标体系进行实证分析，总共采用15个评价指标，评价对象为北京市2001年到2008年的交通情况。

1)求指标权重

IV. Evaluation Standards for Green Transport

1. Construction of Green Transport Index System - Legal System

The Ministry of Construction and the Ministry of Public Security released the "Assessment and Scoring Standard for Green Transport Demonstration Cities (trial)" in 2003. According to the assessment standard and score scope of indicators, the total score is set as 100 points, including 66 items. The weight of each appraisal item is:

1) Organization management 10%;

2) Planning construction 15%;

3) Public transport 30%;

4) Infrastructure 30%;

5) Transport environment 15%;

2. Construction of Harmonious Transport Index System - Index Exploration

Beijing conducts the demonstration analysis of the harmonious transport assessment index system, with 15 assessment indicators in total. The assessment object is the transport condition of Beijing city from 2001 to 2008.

1) Obtaining Index Weight

表 5-1 北京市和谐交通评价指标具体数据（2001-2008）

Table5-1 Beijing Harmony Transport's index data (2001-2008)

评价指标 \ 年份	2001	2002	2003	2004	2005	2006	2007	2008
万车交通事故率(次/万车)	132.66	71.34	53.24	37.46	23.88	18.91	14.72	9.3
万车交通事故死亡率（人/万车）	8.8	7.9	7.73	7.59	5.96	4.78	3.8	2.8
平均交通事故直接经济损失（万元/起）	0.3552	0.3412	0.4023	0.4754	0.41	0.4773	0.4294	0.5172
照明线路设置率（%）	31.31	33.71	34.38	41.25	44.25	30.19	28.6	26.2
万人拥有公共交通车辆（辆/万人）	13.74	12.35	13.29	14.54	13.55	12.96	12.57	13.7
道路网密度(km/km2)	2.68	2.67	2.72	2.97	2.98	3.23	3.26	4.52
人均道路面积（m2/人）	7.492	7.822	10.509	10.304	10.323	9.662	10.235	11.79
道路面积率（%）	3.7114	3.9026	5.361	5.3255	5.4395	5.1793	5.5776	6.5343
路口电视监视器(台)	135	212	390	390	440	439	449	537
空气二级和好于二级的天数占全年比例(%)	50.68	55.62	61.37	62.7	64.1	66	67.4	75.1
可吸入颗粒物年日均值（mg/m^3）	0.165	0.166	0.141	0.149	0.142	0.161	0.148	0.122
二氧化氮年日均值（mg/m^3）	0.071	0.076	0.072	0.071	0.066	0.066	0.066	0.049
建成区道路交通干线噪声平均值［dB(A)］	69.6	69.5	69.7	69.6	69.5	69.7	69.9	69.6
公共交通客运量比重（%）	87.64	88.52	88.69	88.87	88.87	87.96	88.39	89.57
公共交通投资比重（%）	12.6	10.8	11.7	11.4	18.5	21.5	17.2	18.6

2) 用灰色关联分析模型进行综合评价

2) Conducting Comprehensive Assessment by using Grey Relational Analysis Model

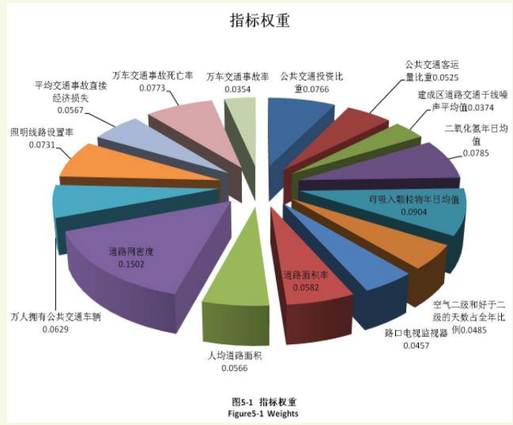


图5-1 指标权重

Figure5-1 Weights

3）评价得出城市交通和谐程度

3) Concluding on Urban Transport Harmonious Degree by Assessment

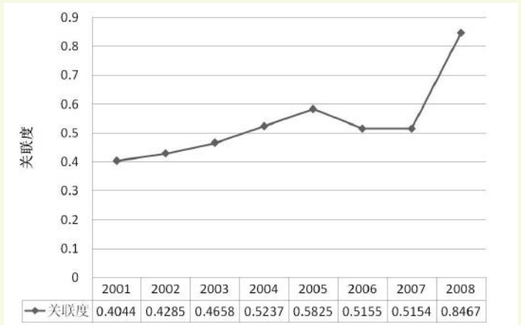


图5-2 北京城市交通和谐程度的变化趋势

Figure5-2 Trend of Beijing transport's harmony degree

4） 绿色交通影响因素

用熵权法以及灰色关联分析法相结合的综合评价模型可以对城市历年交通的和谐程度进行评价，而其选择的收集指标的影响因素主要有：

1. 万年交通事故率

2. 万年交通事故死亡率

3. 平均交通事故直接经济损失

4. 照明线路设置率

5. 万人拥有公交车辆

6. 道路网密度

7. 人均道路面积

8. 道路面积率

9. 路口电视监视器

10. 空气二级和好于二级的天数占全年比例

11. 呼吸入颗粒物年日均值

12. 二氧化氮年日均值

13. 建成区道路交通干线噪声平均值

14. 公交客运量比重

15. 公交投资比重

4) Influence Factors on Green Transport

With the comprehensive assessment model combining the entropy weight method and grey relational analysis method, we can assess the harmonious level of urban transport over the years. Here, the selected influence factors of collected metrics are mainly as follows:

1. Traffic accident rate every 10,000 years

2. Traffic accident death rate every 10,000 years

3. Average direct economic loss caused by traffic accident

4. Lighting line setting rate

5. Public transport vehicles owned per 10,000 people

6. Road network density

7. Road area per capita

8. Road area ratio

9. TV monitor at the road junction

10. Proportion of days with Class II air and above to the whole year

11. Daily mean value of breathed particulate matters every year

12. Daily mean value of nitrogen dioxide every year

13. Noise mean value of vital communication lines in the built-up areas;

14. Proportion of passenger transport volume by bus

15. Proportion of investment in public transport

五. 绿色交通规划的运用

1. 绿色交通在城市设计阶段的运用

1) 设计适宜行走的街道和人行尺度的街区

研究表明，大型街区会产生更高的私人汽车使用频率和驾驶里程数。规划应设计低等级道路密集的路网分散行人，自行车以及机动车交通。街区大小控制在1. 5-6公顷，150*300米；缩短人行横道长度，使行人以最快速度过马路。

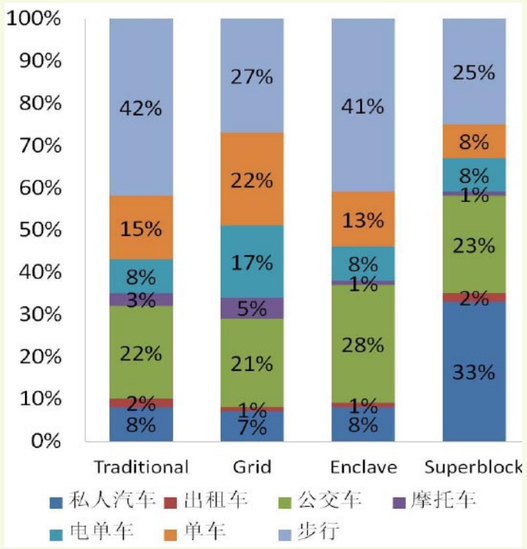
V. Application of Green Transport Planning

1. Application of Green Transport in Urban Design Stage

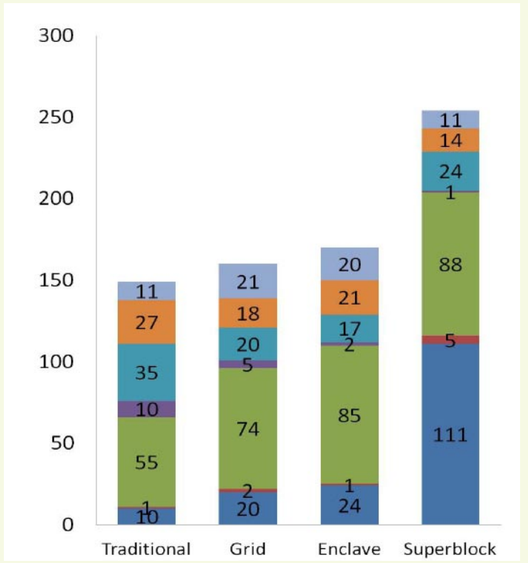
1) Design Pedestrian-friendly Streets and Blocks

Research shows that a large block can result in the higher use frequency of private cars and more mileage traveled. The planning should design the low-level dense road network to disperse pedestrians, bicycle and motor vehicle traffic. The block size should be controlled at 1.5-1.6 ha, 150 m x 300 m; the pedestrian crossing length should be reduced so that pedestrians can cross the road as soon as possible.

四种街区模式下普通家庭周平均出行模式



四种街区模式下普通家庭周平均出行距离（千米）



2) 营造方便自行车交通的路网来降低机动车需求

在每一条街道设置独立自行车道。

限制自行车道上的机动车出入口。

在自行车道与人行区域间设置安全护栏。

3) 建造以公交为导向的街道和社区增加公共交通使用率

设置仅为公共交通，自行车，行人开放的道路，作为快速公交，轨道系统的线路。

主干道上设置公交专属线路。

公交站场周边高强度开发。

4) 提倡混合型土地利用模式

在步行可达范围内混合设置工作岗位，服务业，零售商业，娱乐休闲以及住房。

适当聚合日常公建服务，使人们步行即可获得服务。

5) 步行可达范围内设置公共绿地及公共服务

建设社区中心，按一定服务半径设置公园，市政服务以及学校。

将公共开放空间连成系统。

6) 建设节能建筑和社区降低二氧化碳排放

环保设计及节能技术应用到新建筑中。

重视能源供给管线系统的科技更新，尽可能用可再生能源。

2) Create Bicycle-priority Road Network to Reduce Motor Vehicle Demand

Every street is set with an independent bicycle lane.

Restrict the entrance/exit of motor vehicles on the bicycle lane.

Set the safety guardrail between the bicycle lane and pedestrian area.

3) Build Public-Transit-Oriented Streets and Communities to Encourage Public Transport

Set the roads open only to the public transport, bicycles and pedestrians, and take them as the lines of rapid buses and rail system.

Set the exclusive bus line on the trunk road.

Implement the high-intensity development around the public transport stop.

4) Advocate Mixed Land Use

Arrange the jobs, service sector, retail commerce, recreation and housing in the walk scope.

Appropriately gather the daily public construction services, so that people can receive services in walk scope.

5) Arrange Public Green Space and Public Service Facilities within Walking Distance

Build the community center, and set the park, municipal service and school within the service radius.

Connect public open spaces to form a system.

6) Build Energy-efficient Buildings and Community to Reduce Carbon Dioxide Emission

Apply the environmental protection design and energy conservation technology into new buildings.

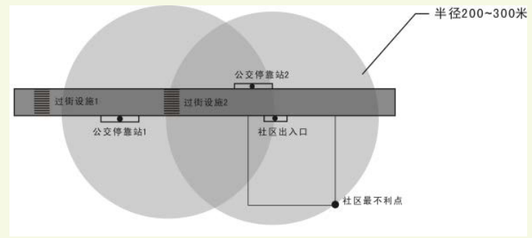
Emphasize the technological update of energy supply pipeline system, and use the renewable energy as far as possible.

2. 绿色交通在法定图则中的运用

深圳市绿色交通规划设计导则

2. Application of Green Transport in Statutory Plan

Design Guideline for Green Transport Planning of Shenzhen



3绿色交通城市设计引导

引导要点：从规划建设、公共交通 、基础设施 、交通环境和设计布局五大方面确立绿色交通相关要素，对规划区的绿色交通进行引导。

3. Urban Design Guideline for Green Transport

Key points of guide: Establish related elements of green transport in the areas of planning and construction, public transport, infrastructure, transport environment and design layout, and guide the green transport in the planning area.

引导要素	目标	技术措施
规划建设	1.大型公共建设项目	快速路、主要交叉口、枢纽、场站、停车场等，与城市生态环境建设同时设计、同时施工、同时验收。
	2.城市交通基础设施建设	重视城市交通基础设施建设投入，重视对城市公共交通的经济支持，保持城市公共交通行业的可持续发展。
公共交通	1.公交线路网	大城市公共交通线网布局合理、密度高，站点覆盖率按300米半径计算大于建成区的50%，中心区覆盖率大于70%。
	2.公交站点	1.公共交通站点布局合理、设施齐全，主要交通干道上的公共汽（电）车站点均为港湾停靠站。
		2.大型居住区有符合公共交通设站的用地条件，2 3万人的居住区同步建有公共交通首末站，0.7 2万人的居住小区同步建设中间站或首末站。
		3.城市主要客运走廊上换乘距离不大于150米。
	3.公交设施	1.主要道路交叉口设有公共汽（电）车优先通行信号。
		2.公共交通使用了非接触式IC卡收费系统、乘客信息服务系统、智能化公交车辆运营调度系统等。
		3.公共汽（电）车、出租车等公共交通站牌标识清晰，符合国家标准 。
基础设施	1.道路设施	1.道路建设注重以人为本，体现绿色交通倡导的优先等级依次为步行、自行车、公共交通、轨道交通、小轿车的出行理念，建立了相应的措施。
		2.在城市中心区因地制宜设立了步行街或步行区。
		3.建成区内道路网密度大于8.5公里/平方公里，主次干道密度大于4公里/平方公里，人均道路面积大于10平方米。
		4.建成区内支路密度大，连通性好，路面铺装整洁美观，满足交通要求。
		5.主要交叉口按优化交通组织的渠化设计方案建设，机非分离、人车分离，建有非机动车、行人过街的安全措施。
	2.枢纽设施	1.综合枢纽设计科学、交通组织有序、便捷，方便各种交通方式换乘。
		2.大、中型公共交通枢纽站，设有非机动车及机动车停放场所及相应设施，鼓励非机动车、机动车使用者换乘公共交通。
	3.停车设施	停车设施利用情况良好，无配建停车设施挪作它用。次干道临时停车场占道不超过30%，并且设置明显的停车或禁停标志、标牌。
	4.管理设施	1.道路交通标线、标志清晰规范，无障碍设施满足相关技术规范要求。
		2.道路交叉口交通控制管理设施完善、符合道路等级和交叉口交通流特性，主要交叉口按照规范要求和有关规定设置交通信号灯和行人信号灯。

引导要素	目标	技术措施
交通环境	1小街区	1.增加路网密度，分散机动车，自行车及人行交通。
		2.中心区街区大小控制在1.5-7公顷。
	2自行车路网	1.设立单独自行车道。
		2.限制单车道出入口。
		3.单车道人行道设置隔离。
	3公交为导向	1.设置仅为行人，自行车，公交开放的线路，作为快速公交轨道系统的线路。
		2.主干道上设置公交专属线路。
	4混合用地	1.步行可达范围内混合设置功能。
		2.主干道上设置公交专属线路。
	5绿地及公建	约800米半径内设置公园，商业及学校。
交通环境	1.道路绿化	1.道路红线内宽度大于50米的道路绿地率不小于30%；红线宽度为40-50米的不小于25%；红线宽度小于40米的不小于20%。
		2.车站、码头、机场的集散广场集中成片绿地不应小于广场总面积的10%；城市公共活动广场，集中成片绿地不应小于广场总面积的25%。
	2.道路照明	道路照明满足行人、车辆通行和安全需要。主干道亮灯率大于99%。
	3.环境	1.机动车，公交车，货运车尾气排放符合标准。
		2.有控制交通噪声污染的措施，主要道路和交叉口的交通噪声不超过70分贝。

六. 绿色交通规划的项目实践

1. 苏州太湖科技产业园城市设计

本项目处于中国经济目前最活跃的长三角经济圈核心区，苏州西部区域，苏州光福镇东侧，由230省道、苏福公路及吴中区与高新区边界线构成规划范围，面积为7.5平方公里，是苏州太湖国家旅游度假区的北门户。

VI. Halcrow's Practice on Green Transport Planning

1. Urban Design for Taihu Lake Sci-Tech Industrial Park, Suzhou

With the planning area of 7.5 km2 surrounded by 230 Provincial Road, Sufu road and the border between Wuzhong District and High-tech zone, this project is located in the east of Guangfu Town, west Suzhou, a core region of the Yangtze River Delta economic circle, and is the north gateway of Suzhou Taihu Lake National Tourism Resort.

1） 道路交通策略

强化区域联系、构建快捷的交通网络

规划强调规划区内与周边区域的交通联系、通过绕城高速（光福出口）、230省道及苏福公路，规划主干道，次干道及支路等多种方式与周边进行沟通，形成四通八达的交通网络。

2） 道路系统规划

规划范围内道路系统划分为主干路、次干路、支路三级。

主干路作为科技产业园的骨架，规划形成“三横两纵”的格局，是科技产业园区与周边地区联系的主要通道，其中230省道是连接太湖旅游度假中心与G312的快速道，苏福公路是连接光福镇区与苏州的快速道。

230省道，苏福公路为对外交通干道，规划红线为50米。

主干道规划红线宽度为40米及30米。

次干道是科技产业园内各个功能片区交通联系的主要通道，承担集散交通功能，兼有生活服务功能，规划红线宽度为30米及24米。

支路作为通达性道路，主要承担进出街坊、居住小区等短距离交通，是补充完善科技产业园区中心区道路系统的组成部分，规划红线宽度为15米。

地块区域内考虑远景设置轨道交通站点，以满足最大服务半径，站点设置在塔山路与230省道，并结合园区入口广场节点设置。

3) 公共交通系统

公共交通规划以投资经济性和出行便捷性为目标，通过分析人流方向、道路布局、以及周边城市组团的交通情况确定公交路线和公交站点。

规划2个公交首末站，一个位于福湖路，230省道交叉口东南角，为旅游集散中心服务；另一个位于南东园路，福湖路交叉口东南角，便于进出园区的换乘。为了提高不同线路站点间的换乘效率，规划强化公交线路网密度，以300米为服务半径设置站点，减少人们步行距离。

1) Road Transport Strategy

Intensify the regional connection and build the rapid transport network

The planning emphasizes the transport connection between the planning area and surrounding area, and designs this area to communicate with surrounding areas through the ring expressway (Guangfu exit) and 230 Provincial Road and Sufu road, and other means such as the trunk road, secondary trunk road and branch in order, to form a transport network extending in all directions.

2) Road System Planning

The road system within the planning scope falls into the trunk road, secondary trunk road and branch road.

As the framework of the Sci-Tech Industrial Park, the trunk road is planned to form a "three horizontal roads and two vertical roads" pattern, and becomes the main passage connecting the industrial park and its surrounding areas. Here, 230 Provincial Road is the fast track connecting Taihu Lake National Tourism Resort and G312; Sufu road is the one connecting Guangfu Town and Suzhou.

230 Provincial Road and Sufu road are the trunk roads for external transport, with the planning boundary lines being 50 m wide.

The trunk road is designed with the width of boundary lines of 40 m and 30 m.

The secondary trunk road is the main passage of communication between functional zones in the industrial park, and assumes the function of dispersing traffic and life service, with the width of planning boundary lines of 30 m and 24 m.

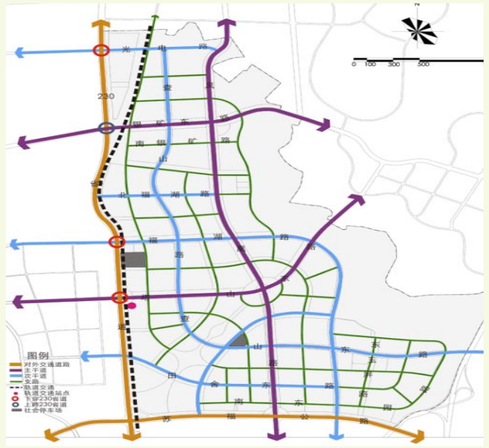
As the accessibility road, the branch road assumes the short-distance transport such as entering/leaving the neighborhood and residential quarter, and complements and improves the road system of the central area of this industrial park, with the width of planning boundary lines of 15 m.

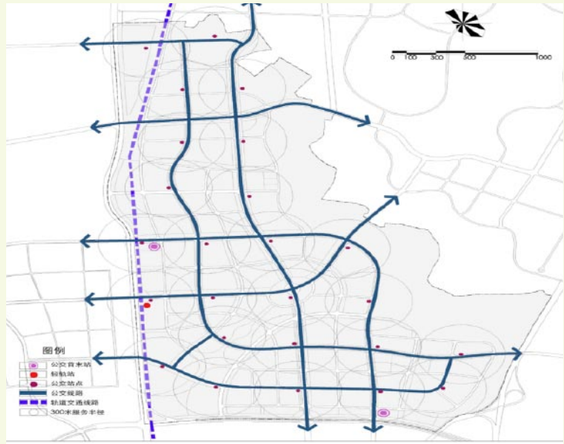
In the plot area, some rail transit stations will be set with a view to the long range to satisfy the maximum service radius. The stations will be set in Tashan Road and 230 Provincial Road in light of the entrance square node of this park.

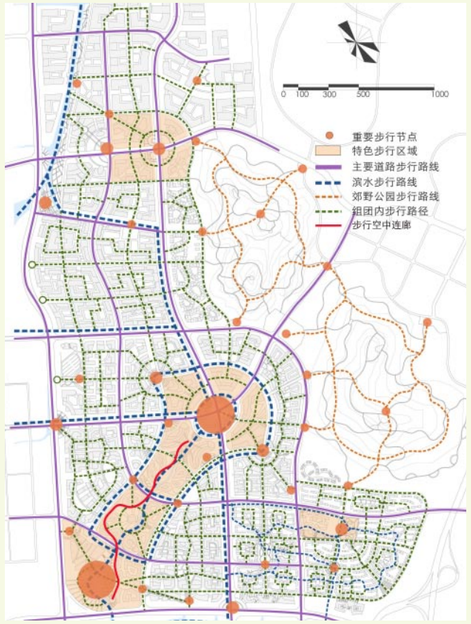
3) Public Transport System

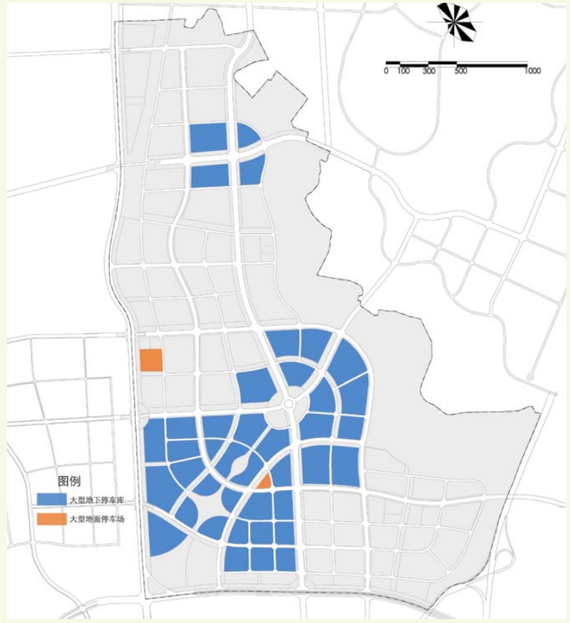
With the objective of investment economical efficiency and travel convenience, the public transport planning determines bus routes and bus stops by analyzing the direction of people stream, road layout and the traffic condition of surrounding urban groups.

According to the planning, there is an original bus stop and a terminal to be set: one is set in the southeast corner of the intersection between Fuhu Road and 230 Provincial Road to serve the tourist distribution center; the other one is set in the southeast corner of the intersection between Nandongyuan Road and Fuhu Road to serve the transfer of people entering/leaving this industrial park. To improve the transfer efficiency between stops at different routes, this planning intensifies the density of public transport route network, sets up stops with a 300m service radius to reduce the walking distance.









4）慢行系统

利用规划区内的滨水资源、林荫大道、绿地公园和广场构建慢行交通系统，建立一个适宜步行的慢行区域，为市民提供一个安全、便捷、舒适、优美的出行环境。

5）静态交通系统

地下停车：园区内强制开发的地下停车空间主要集中在凤凰路与塔山路交界的西南与东北面，服务于容积率较高的，集聚度较强的现代服务业及创意文化产业集聚区，另外在研产公共服务区也配套规模较大的地下停车库，保证人车流中心地段的交通集散需求，而其余地块则鼓励发展商按实际需求进行地下开发；

地面停车：园区内集中设置两处地面停车场，分别位于福湖路，230省道交叉口东南角以及查山东路，中央水系交叉口东部，其余地块均需根据用地性质及建筑面积配建地面停车位。

2 广州空港ABD国际商务区城市设计

项目位于广州二环与珠三角环形高速中间位置，且毗邻广清高速与机场高速，直接对接京珠高速，广州市将从物流网络体系和人流网络体系两层面构建起铁路与区域网络、城际网络及内部交通网络一体化的交通系统。 本项目区域南向至广州及珠三角地区、北向进入珠三角、内陆腹地，均极为便捷。

本区域规划交通网络发达，轨道交通、区域性高速路、城市主干道在规划区内纵横交错，，将交通优势迅速转化为区域综合优势，形成引领空港经济区经济腾飞态势。

4) Slow Traffic System

Taking advantage of the waterfront resource, boulevard, greenbelt, park and square in the planning area, build a slow traffic system to create a safe, convenient, comfortable and beautiful travel environment for citizens.

5) Static Traffic System

Underground parking: The forcedly developed underground parking space in this industrial park concentrates in the southwest and northeast of the border between Fenghuang Road and Tashan Road, to serve the concentration area of highly concentrated modern service sectors and creative culture industries with a high floor area ratio. Additionally, the public service area of R&D and production is equipped with a large-scale underground parking garage to meet the traffic distribution need of the central area of people and vehicle volume, whereas developers are encouraged to implement underground development in other plots according to actual needs.

Ground parking: The park is set with two ground parking lots, which are respectively located in the southeast corner of the intersection between Fuhu Road and 230 Provincial Road, and in the east of the intersection between Chashan East Road and the central water system. For other plots, some ground parking spaces are built according to the land use nature and building area.

2. Urban Design for ABD International Business District of Guangzhou Airport

Located in the middle position between the second ring road of Guangzhou and the ring expressway of the Pearl River Delta, this project is bordered on Guangzhou-Qingyuan Expressway, airport expressway, and can directly connect Beijing-Zhuhai Expressway. Guangzhou will build the transport system with integrated railway and regional network, intercity network and internal transport network in terms of logistics network and people flow network. This project extends southward to Guangzhou and the Pearl River Delta region, and reaches northward the Pearl River Delta and inland, with convenient traffic.

According to the planning, this area has a developed transport network, in which there is interlaced rail transit, regional expressway and urban trunk roads. It will quickly turn the transport advantage into the regional comprehensive advantage, thereby forming the momentum of leading the economic take-off of Airport Economic Zone.

1）道路系统

次干通达，联系南北

道路支持，商贸优先

道路系统延续上位规划的高速公路，快速路，主干道，次干道和支路的五级划分体系，根据对上位规划功能布局的重新判断及梳理，将部分道路的等级稍作调整，减少同等级道路呈丁字路出现的频率。具体措施如下：

①保持原规划高速路，快速路及主干道线型不变；

②次干道中将合和中路往北延伸接入清塘路，增强南北交通的联系；

③同时合和中路次干道往南延伸，与镜湖大道相接，将迎宾大道上的各类交通流往南部区域疏散；

④仁福路次干道功能往北延伸，沿仁福西路往西延伸至镜湖大道北，有效服务酒店集群及商业地块；

⑤迎宾大道、106国道交叉口处设两条分离式高架，快速疏解用地外过境的目的性交通流；

⑥增加支路网密度；

⑦设置仅限右转交叉口，保证高级别道路交通顺畅。

2)综合交通系统

轨交先行，公交配套

换乘方便，无缝接驳

规划形成以轨道交通为主干，公共交通为骨架的二级公交体系

①轨道交通

轨道交通分为地铁与轻轨两种。

1) Road System

Accessible secondary trunk road connecting the north and south

With road support and priority on trade

The road system continues the superior planning level-5 division system, that is, expressway, fast road, trunk road, secondary trunk road and branch road. According to the rejudging and combing of the superior planning function layout, the road level is slightly adjusted to reduce the T-road appearance frequency of the roads at the same level. The detailed measures are as follows:

(1) Maintain the originally planned expressway, fast road and trunk road routes;

(2) In the secondary trunk road, extend Hehe Middle Road northward to connect Qingtang Road, so as to increase the communication from north to south;

(3) Extend the secondary trunk road of Hehe Middle Road southward to connect Jinghu Avenue, so as to disperse the traffic flow on Yingbin Avenue to the south area;

(4) Extend the secondary trunk road of Renfu Road northward along Renfu West Road to north of Jinghu Avenue, in order to effectively serve the hotel cluster and commercial land;

(5) Set two separated-type overhead bridges at the intersection between Yingbin Avenue and 106 National Road, so as to quickly ease the purposeful traffic flow crossing this area.

(6) Increase the density of branch road network;

(7) Set the intersection for turning right only to ensure that the high-level road has smooth traffic.

2) Integrated Transport System

Rail transit priority supplemented by public transport

Convenient transfer with seamless connection

This planning aims to form a secondary public transport system with focus on rail transit and using public transport as the framework

1.Rail transit

Rail transit falls into metro and light rail.

地铁：地铁9号线已经在建设当中，站点也基本确定，是联系花都汽车城——广州火车北站——花都老城区——基地内沿迎宾大道一线——仁和地铁站的东西向线路，其中到仁和地铁站可换乘3号线通达白云机场。规划在基地内除已规划的清布站外，结合现状公交站点与未来可能设置的轻轨站点在迎宾大道清塘路交叉口东侧增设一处地铁站，以满足核心区的出行要求。

轻轨：规划一条轻轨线从广州火车北站出发，经迎宾大道，仁福路直通新白云机场北；在地铁9号线清布站旁，清塘路迎宾大道交叉口以及瑶新大道仁福路口分别设三处站点；其中在迎宾大道上的两个站点与地铁9号线可换乘。

地下预留APM线

②公共交通

规划在清布站与瑶新站旁设置两处公交首末站，方便与轨交的换乘；

公交站点按半径300米结合各个功能组团紧密布局；

主要的公交线路覆盖各条道路，基本能服务到规划用地的各个角落。

③慢行系统

规划强调低碳出行，各级道路均设人行道，慢行系统分三个层次：

——在交通要道等人流集中处设地下步行通廊连通周边街坊， 106国道迎宾大道交叉口设置下沉广场连通金融区以及科研区；

——每个街坊内的广场开敞空间完全用于步行，是独立的步行系统；

——二层步行连廊从轻轨站出发，有效联系核心区各大街坊，避免地面城市道路的干扰；

行人在三个层次的步行通道间转换便利。

Metro: Metro line 9 is under construction. Its stations are also basically determined. It will connect Huadu Auto City, Guangzhou North Railway Station, Huadu old city, the route along Yingbin Avenue in this base and Renhe Metro Station from east to west, in which you can transfer to Line 3 at Renhe Metro Station to go to Baiyun Airport. In addition to the planned Qingbu Station, this planning will add a metro station in the east of the intersection between Yingbin Avenue and Qingtang Road in light of current bus stops and possible light rail stations in the future, so as to meet the travel requirement of the core district.

Light rail: Plan a light rail line, which will start from Guangzhou North Railway Station, pass Yingbin Avenue and Renfu Road, and get to the north of Baiyun airport; set three stations near Qingbu Station of Metro Line 9, at the intersection between Qingtang Road and Yingbin Avenue, and at the intersection between Yaoxin Avenue and Renfu Road respectively. Here, you can transfer to Metro Line 9 at two stations on Yingbin Avenue.

The APM line is reserved underground

2. Public Transport

This planning will set a bus original stop and a terminal near Qingbu Station and Yaoxin Station for convenient transfer to rail transit.

Closely lay out the bus stops with a 300m radius in light of each function groups.

The main bus routes cover each road, basically being able to serve every corner of the planning land.

3.Slow Traffic System

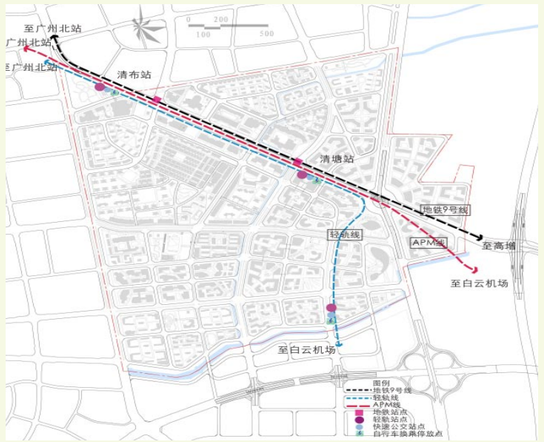
The planning emphasizes the low-carbon travel, and sets sidewalks on road at various levels. The slow traffic system falls into three levels:

——Set the underground walk corridor at the vital communication line with dense people flow to connect surrounding blocks; set the sunken square at the intersection between 106 National Road and Yingbin Avenue to connect the financial district and scientific research area;

——The open space of the square in each block is completely used for walk and is an independent walk system;

——Two-level walk corridor starts from light rail station to effectively connect each large block in the core district, so as to avoid the disturbance of ground urban roads.

Pedestrians can conveniently transfer between three-level walk corridors.



3） 核心区交通系统——地下、地面、空中三层立体交通系统

①道路系统

六路通行，两路宜达

支路细分，绿色交通

核心区周边共有清塘路，瑶新大道，仁福路，迎宾大道以及雅瑶东路五条次干道以上等级的道路贯通，区位良好，通行条件便利，而且内部有三条支路承载着到达基地内部的功能：其中支路进出高等级道路时尽量右进右出，限制地块往高等级道路开口，以避免商务繁华地段高峰期出现交通拥堵的现象；

重点考虑清塘路与迎宾大道相接处以下穿形式组织交叉口，以保证迎宾大道的通畅无阻。

同时，增加地块支路的密度，在现有支路基础上再十字切分地块形成更多的步行空间，提倡绿色交通。

3) Transport System in Core District- 3D transport system integrating underground, ground and aerial level

(1) Road System

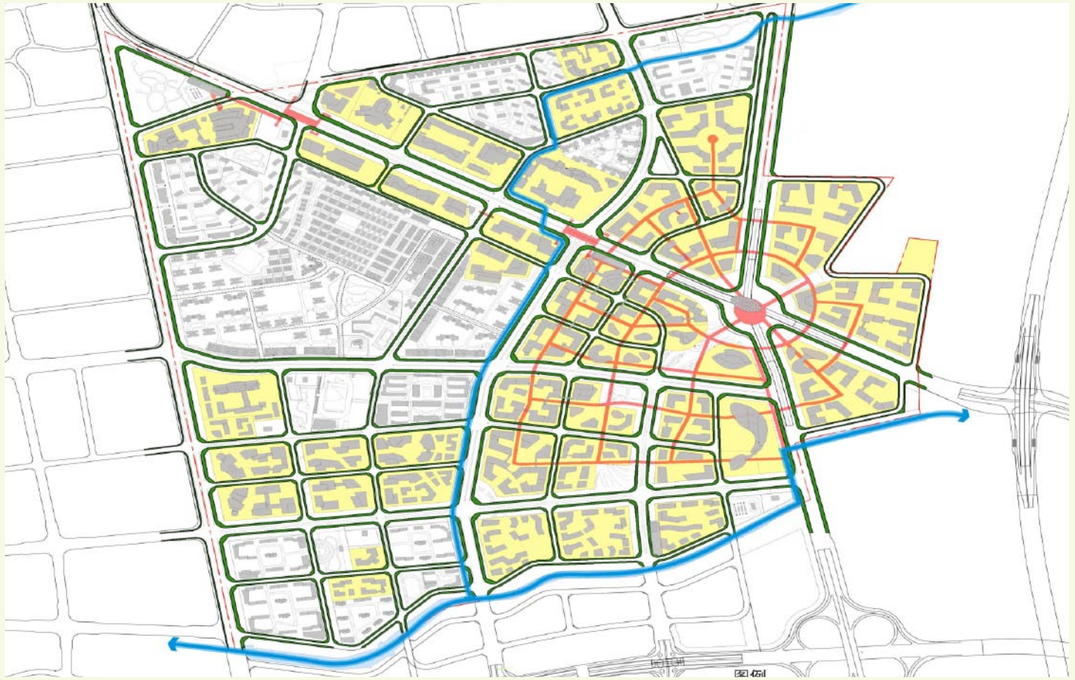
Six roads is put into service and two roads are easily accessible

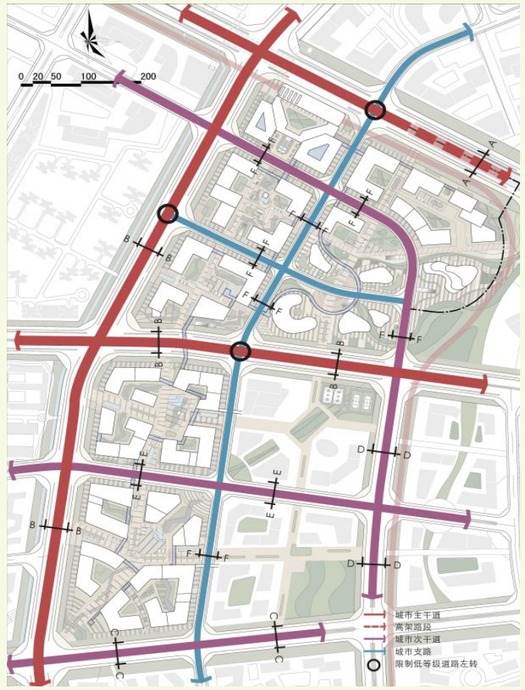
Branch roads are segmented, with green transport

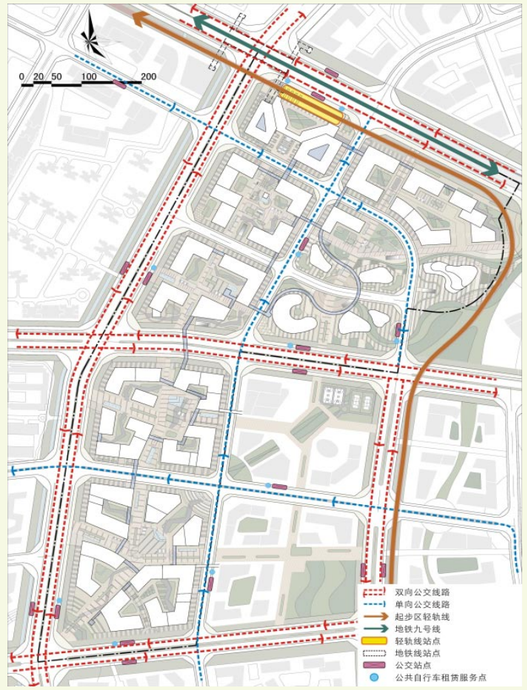
Around the core district, there are roads above the secondary trunk level, namely, Qingtang Road, Yaoxin Avenue, Renfu Road, Yingbin Avenue and Yayao East Road, with good location and convenient traffic. In the core district, three branch roads bear the function of reaching the base inside; to enter or depart from the high-level road, you should try to enter from the right and depart from the right, and the restricted land is set with an opening at the place towards the high-level road to prevent the prosperous business section from traffic jam in the rush hours.

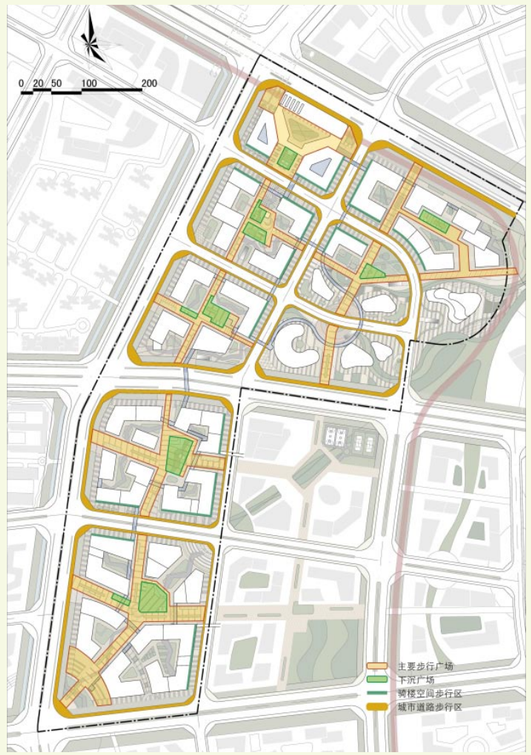
Major consideration is given to organizing the intersection in the underpass form at the connection between Qingtang Road and Yingbin Avenue, so as to ensure that smooth traffic on Yingbin Avenue.

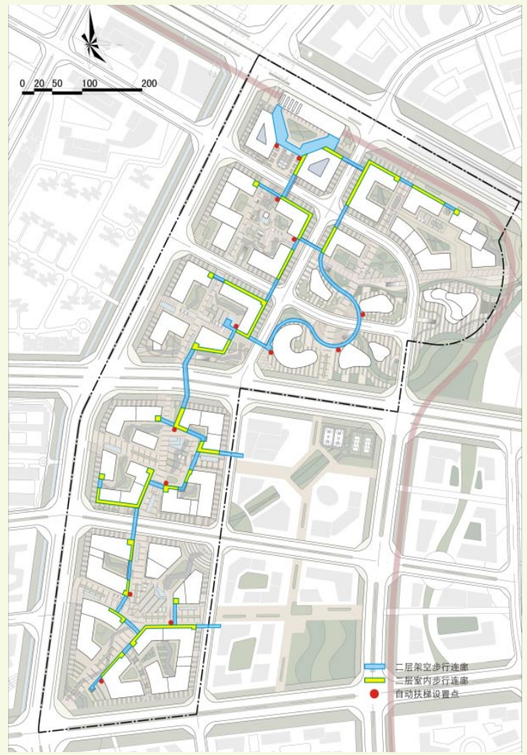
Meanwhile, increase the density of plot branch roads, and cut the plot in a cross-shaped way on the basis of the current branch roads, so as to form more walk spaces and advocate green transport.











②交通系统

公共交通组织

公共交通共有三种类型：地铁、轻轨及地面公交车。其中，地铁、轻轨在核心区内设有一个换乘站，位于迎宾大道及清塘路交叉口处，结合地面公交车站，此处将成为核心区小型公共交通枢纽；规划在迎宾大道、清塘路、雅瑶东路、仁福路、瑶新大道等干道设置双向公交线路，构建区域间公交主干网络；规划在其他道路设置单向公交线路，形成区域内小型公交环线。

地面步行系统

核心区内地块的地面层禁止机动车进入，以步行广场为基本空间元素，结合地下广场步行区域，形成地块内核心步行空间系统；

在局部商业界面，规划骑楼空间，形成建筑趣味性较强的商业步行区域。

二层连廊步行系统

规划在商务建筑群之间以二层空中连廊贯穿，打造宜行宜景的二层步行空间系统。结合城市道路两侧步行区域及城市绿地公园步行路径，形成立体步行空间体系。

地下交通系统

核心区地下空间分两层开发，重点安排商业，停车两大功能。

地下一层为商业空间，穿插行人步道、地下广场庭院，并设叠水景观；庭院内设置楼梯及自动扶梯与地面相连；设置地下商业街坊间通道，提高流通性。

地下一层商业规模为26.68万平方米。

(2) Transport System

Public Transport Organization

The public transport falls into three types: metro, light rail and ground bus. Among them, a transfer station for metro and light rail is set in the core district at the intersection between Yingbin Avenue and Qingtang Road. In line with the ground bus stops, this place will become the small public transport hub in the core district. Plan to set the bi-directional bus lines on trunk roads such as Yingbin Avenue, Qingtang Road, Yayao East Road, Renfu Road and Yaoxin Avenue, so as to form the inter-regional public transport trunk network; plan to set the unidirectional bus lines in other roads to form a small public transport loop line in this region.

Ground Pedestrian System

Motor vehicles are prohibited from entering the plot ground in the core district. The pedestrian plaza is used as the basic spatial element to form the core pedestrian spatial system in this plot on the basis of the underground plaza.

In the local business interface, plan the overhang space to form a business pedestrian area with strong architectural interest.

Two-level Corridor Pedestrian System

The planning intends to run through business building groups through a two-level air corridor, in order to build a two-level pedestrian spatial system appropriate for walk and watching. This will form a 3D pedestrian spatial system based on the pedestrian area at both sides of the urban road and the walk paths of urban greenbelt park.

Underground Transport System

The underground space of the core district falls into two levels for development, with focus on arranging business and parking functions.

Basement 1 is set as business space, with the sidewalks, underground square courtyard and water landscape; the courtyard is set with stairs and automatic escalators to connect with the ground; the passage between underground business blocks is set to improve circulation.

The business scale of basement 1 is 266,800 m2.

城市综合客运交通枢纽规划研究

Planning for Integrated Transportation Hubs

1 问题的提出

1 Proposal of the Issue

1.1 研究背景

随着国家高速铁路的迅速发展，新机场的规划和旧机场的改扩建，以及各大城市轨道交通线网的着力开发，全国掀起了以这些重要交通设施为核心的城市综合客运交通枢纽规划建设的高潮。

另外，为促进公交优先发展，近年来我国许多特大及大城市都相继编制了专门的《综合客运交通枢纽布局规划》，以指导各市交通枢纽建设的有序开展。由此可见，城市综合客运枢纽的建设越来越受到重视。

1.2 存在的问题

目前我国大多数城市综合客运枢纽普遍存在场站布局不协调，交通组织不合理、换乘效率低下、容量不足、设施不完备、环境质量较差、接驳系统不完善、土地与空间使用欠集约、主要枢纽辐射范围小、枢纽地区局部路网交通拥挤严重等问题。乘客的需求和感受没有受到足够重视，换乘距离过长，等候环境不佳，安全隐患频现，导致客运系统的效率无法得到充分发挥，公共交通吸引力不足。

剖析城市客运枢纽建设和运营水平低的原因，主要有四个方面：①管理体制不完善；②枢纽重要性意识不够；③枢纽建设投资不足；④枢纽规划设计理论研究薄弱，缺乏相应的设计规范和技术标准。

1.3 地位与作用

城市客运枢纽是连接人们各种交通出行行为的纽带，是交通出行链的重要环节，可以说没有交通枢纽就形成不了交通网络，更谈不上一体化的交通系统。在城市综合交通体系的构建过程中，城市综合客运枢纽作为城市内外交通的衔接点，其地位和作用越来越突出。

城市客运枢纽的合理布局与设计对改善整个交通系统功能，提高运营效率和解决出行换乘问题具有重要意义。因此，在城市综合客运枢纽的规划中，不仅应清楚认识不同类别枢纽的功能、区位要求及组合关系，还要掌握枢纽规划的基本原则、理念、流程与方法，从而保证规划的科学性和前瞻性。

1.1 Background

The development of national high-speed railway network, rail transit systems, planning, renovation and expansion of new and old airports in big cities, there is an upsurge of planning and construction for passenger transport hubs in China. Major transport facilities are being developed all over the country.

To accelerate public transport development as a prior transport mode in mega cities and big cities in China, Comprehensive Passenger Transport Hub Layout Plans were formulated in recent years to guide the development of transport hubs. This shows the development of urban comprehensive transport hubs is getting more public attention.

1.2 Problems

The problems in most of the existing urban comprehensive passenger transport hubs in China lie in uncoordinated station layouts, irrational traffic operation, low transfer efficiency, insufficient capacity, deficient facilities, poor environment, poor-connected feeder system, under-utilized land and space resources, small range of radial effect, and overcrowded road network in the hub area. The needs and feelings of passengers who use the facilities are not receiving enough attention. Long transfer distances, upsetting waiting environments and the sense of insecurity lead to low efficiency and made public transport unattractive to people who use it.

The reasons for the unsatisfying situation can be concluded in following four aspects: (1) under-developed institutional system. (2) lack of awareness of the significance of transport hubs. (3) insufficient investment in hub development. (4) weak theoretical support in hub planning and design, and lack of technical standards and codes.

1.3 Role

Urban Passenger Transport Hubs act as links among a variety of people’s travel behaviors, and are crucial in the traffic chain. Transport networks are non-exixtant, not to mention a comprehensive transport system without transport hubs. In the process of the development of urban comprehensive transport system, the role of comprehensive passenger transport hubs is becoming increasingly important.

A well-designed and rationally-distributed urban passenger transport hub means significantly to upgrading the functions of the entire transport system, improving operation efficiency and solving transfer problems.

For this reason, a clear understanding of function, location and combination of hubs with different types are required in the planning for urban comprehensive passenger transport hubs. At the same time, fundamental principles, philosophies, process and methodologies of hub planning are also important.

合乐工程-l龙华路1960地块

2 相关定义及发展趋势

2 Definition and Trend

2.1 基本概念

城市综合客运交通枢纽是实现客流集散、交通功能转换的场所，是不同交通方式或相同交通方式在不同方向（线路）之间进行相互衔接、换乘的交通设施，是城市交通系统中的重要节点与不可或缺的组成部分。

2.2 基本功能

城市交通枢纽除了具有运输生产组织、场站作业服务、交通信息服务和中转换乘等基本交通功能之外，还兼具广场及窗口形象功能、城市功能（引导城市空间发展，如商业、办公等）和经济功能（与周边用地融为一体作为地区发展核心或城市副中心）等辅助功能。

2.3 基本类别

通常，城市客运交通枢纽可以按照交通功能、交通方式、交通组织、布局形式、建设形态或服务范围来进行分类（表1）；交通枢纽的等级则根据城市需求、土地利用以及枢纽的功能定位来划分（表2）。

表1 城市客运交通枢纽类型划分

Table 1 Categorization of Urban Passenger Transport Hub

分类依据	类型	特征
交通功能	对外客运交通枢纽	以城市对外客运交通设施为主
	内部客运交通枢纽	以城市市内公共交通设施为主
交通方式	交通方式换乘枢纽	不同交通方式间相互衔接的城市客运交通枢纽
	交通线路换乘枢纽	不同线路交汇处的交通枢纽站，如公交车站等
交通组织	公交首末站换乘枢纽	设有1条以上的始末线路，以及停车、候车、调度等交通设施
	公交中间站换乘枢纽	多条线路中途站的路网交汇节点
布局形式	立体式交通枢纽	枢纽站设施分为地上、地面或地下多层结构形式
	平面式交通枢纽	枢纽站设施全部布置在地面上
建设形态	独立建设枢纽	以市政交通设施为主的枢纽，用地性质简单，基本不含商办住宅等经营性开发设施
	综合建设枢纽	市政交通设施结合新建或改建的经营性开发项目统筹规划的枢纽，混合用地性质，可同步建设包括公共服务和居住等设施
服务范围	都市级枢纽	吸引全市范围和对外交通客流的大型城市交通枢纽
	地区级枢纽	设在地区性区域中心或城市组团内的客流集散点的枢纽
	市郊级枢纽	连接卫星城镇与市内公交线路的城市客运交通枢纽

表2 城市客运交通枢纽等级划分

Table 2 Grading of Urban Passenger Transport Hub

分类依据	类型	特征
一级枢纽	具有很强的城市功能	为城市交通网络的结构性重要枢纽，服务于整个市域，与全市各城区均有快速直接的联系，该级枢纽往往涉及对外交通设施或靠近大型客流发生吸引源
二级枢纽	以交通和广场功能为主，兼具一定的城市功能	为一级枢纽的接驳枢纽，服务于全市区或城市地区级客流发生吸引源，该级枢纽往往以轨道交通为中心，将商业交通融为一体，可发展成为区域的中心
三级枢纽	交通功能为主	是一级、二级枢纽的客流来源点，服务于小范围的地区交通联系，与集散交通方式有良好衔接，主要提供市内不同交通方式间的换乘服务

由此可见：任何一种单独的指标都不能作为交通枢纽划分的唯一依据，交通枢纽的划分必须基于上述定性和定量指标的综合判断。为了便于研究城市客运交通枢纽的规划方法，我们基于枢纽的内涵，从交通功能和城市功能的角度出发，以枢纽的区位、可达性以及交通设施等条件为主要依据，综合考虑服务人口、客流需求和服务标准等其他影响因素，将城市客运交通枢纽分为A、B、C、D四类，具体划分标准见表3。

2 Definition and Trend

2.1 Basic Concept

An Urban Comprehensive Passenger Transport Hub is a place for passenger aggregation. It dispersion as well as for transport function conversion, a linking and transferring facility among different transportation modes or among different directions (or lines) of same transportation modes. It is a key node and an indispensible part in urban transport system.

2.2 Basic Function

In addition to the basic functions such as transportation organization, station operation service, traffic information service and transferring, urban transport hubs also bear urban functions (guiding the development of urban space, e.g. commercial, office etc) and economic functions (forming regional core or city sub-center with surrounding area). They serve as window images of the city.

2.3 Basic Type

Generally speaking, urban passenger transport hubs can be categorized according to transport functions, modes of transportation, traffic operation, forms of layout, development modes, and ranges of services (Table 1). The grade of transport hubs can be identified according to urban demand, land use and the functions of the hub (Table 2).

Therefore, any single indicator cannot be regarded as the sole basis for transport hub categorization. The categorization of transport hubs must be based on the comprehensive analysis results of the abovementioned qualitative and quantitative indicators.

Based on location, accessibility and transport facilities of the hubs and other influencing factors such as population, passenger demand and service standard, we categorize urban passenger transport hubs into four types: Type A, B, C, and D, see Table 3.

表3 城市客运交通枢纽类别划分（合乐标准）

Table 3 Types of Urban Passenger Transport Hub (Halcrow Standard)

类别	定义	功能	
A	以航空、铁路、公路、水运等大型对外交通设施为主体，配套设置轨道交通车站、公交枢纽站、社会停车场、出租车营运站等市内交通设施的城市综合客运交通枢纽	城市功能（强） 广场功能 交通功能	①将城市对外交通和内部交通整合起来 ②服务范围是全市性的，枢纽客流量大 ③提供市域各城区直接快速的交通联系，可达性好 ④涉及的交通方式种类多，设施间衔接、换乘和管理复杂，综合性强
B	以二线及二线以上轨道交通换乘站为主体，结合公交站点、出租车营运站、社会停车场等其他交通设施的大、中型综合交通换乘枢纽	城市功能（中等） 广场功能 交通功能	①提供全市区或城市地区级的交通服务 ②提供市内直接快速的交通联系，可达性较好 ③多条线路交汇点，对畅通性和便捷性要求较高 ④一般设在城市内出行强度较大的主要客流发生吸引源，如CBD地区等
C	以一线轨道交通站点为主体，结合公交站点、出租车营运站、社会停车场等其他交通设施形成的客运交通枢纽	城市功能（弱） 广场功能（部分具有） 交通功能	①在市区，单条轨道交通线路的中间车站可视为这类枢纽 ②在市郊，靠近主要公路和轨道交通站点，设置大中型社会停车场，形成的停车换乘（P&R）枢纽
D	在距离轨道交通站点较远处，由多条公交线始末站集中布局而成的以单纯公交换乘站点为主体的小型客运交通枢纽	交通功能	①位于道路条件好，公交线路通达性高的路网节点 ②站点设置、人流组织是此类枢纽设计的重点 ③往往是平面式交通枢纽 ④服务于小范围的地区交通联系，并在此区域的交通出行中占有核心地位

2.4 发展趋势

从国内外城市综合客运枢纽系统的现实背景来看，其发展趋势呈现如下特征：

枢纽规模大型化——城市内外交通需求的增加、接驳方式的聚集，促使枢纽呈现大型化趋势。

枢纽功能综合化——结合经营性开发项目统筹规划建设的枢纽，不仅满足交通功能，还兼顾购物、休闲、娱乐、办公、居住等需求，使枢纽发展为集多种功能于一身的交通综合体。

换乘方式多元化——城市内外多种交通方式的充分整合，形成了换乘方式多元化的一体化枢纽。

枢纽用地集约化——不同接驳方式的场站集中布置，充分利用地下和地上空间，提高枢纽用地的容积率等都是城市综合客运枢纽用地集约化的表现。

枢纽布局协调化——主要表现为不同层次的枢纽系统与综合交通网络布局及城市用地布局能够相协调。

枢纽管理智能化——以信息化、网络化为基础，路径导航系统、综合信息服务系统等智能化技术正逐步应用于枢纽的管理与服务。

枢纽服务人性化——基于“以人为本”的理念进行枢纽设计与管理，主要从换乘条件、步行组织、诱导标识、安全保障等方面提供人性化服务。

交通方式联运化——为了提高交通系统的综合效益，枢纽在不同的交通方式或不同的运营公司间采取联运策略，主要包括设施衔接、车票统一、票价优惠、时间协调等措施。

2.4 Development Trend

The development of urban comprehensive passenger transport hubs both in China and abroad shows the following trends:

Large Scale – the increase of external and internal traffic demands of the city and the aggregation of access modes require larger hubs.

Integrated Function – integrated hub development with other operational projects (shopping, leisure, recreational, office, residential, etc) will meet varied demands of the development region.

Diversified Transfer Modes – fully integrated external and internal transport modes form comprehensive hubs with diversified transfer modes.

Intensive Land Use – aggregation of different access modes, better utilization of aboveground and underground space, and the raise of FAR all indicate that intensive land use is a trend in hub development.

Coordinated Layout – the layout of hub systems of different levels should be coordinated with the layout of transport network and urban land layout.

Intelligent Management – intelligent technologies are being applied to the management and service sections of the transport hubs.

User-oriented Services – the design and management for the hubs, including transfer conditions, pedestrian system, sign system and security issues, are being considered in the planning stage from the perspective of the facility users.

Intermodal Strategy – to improve the efficiency of the transport system, intermodal strategy is used for different transport modes or among different operators.

合乐工程-l龙华路1960地块

3 规划方法研究

3.1 基本原则

经实践检验，各类城市客运交通枢纽的规划应该遵循下列各项原则：

（1）适应城市总体规划的要求，与城市空间结构、用地功能协调一致，促进城市发展目标的实现；

（2）适应城市综合交通规划的要求，与城市交通走廊相协调，促进交通发展战略的实现；

（3）满足、引导客流吸引区范围内的交通需求，综合协调各种交通方式，形成合理的交通结构；

（4）规划以“公交优先”为首要原则，确保各类交通设施获得安全、可靠、舒适、便捷、高效的换乘条件和运营环境，保证各类交通流组织的连续性、通畅性及无干扰；

（5）统筹城市客运交通枢纽的规划、设计、建设、运营和管理，实现五者一体化考虑。

（6）在满足交通需求的前提下，枢纽综合开发应遵循集约用地、适量开发的原则。中心城枢纽以改善交通条件，提高交通效率，集约利用土地为规划原则；郊区枢纽以增强城市交通可达性，提高土地利用率，促进交通和城市的可持续发展为规划原则。

3.2 规划理念

城市化——在交通枢纽的规划中引入城市设计的理念，让城市活动渗透于枢纽之中，使交通枢纽成为城市的一个有机组成部分。如：充分利用地下空间，以减少枢纽对城市空间完整性和连续性的负面影响。

网络化——交通枢纽的正常营运需依靠城市交通网络的支持，因此，引入网络化规划理念，基于系统的综合交通网络对枢纽进行合理的功能定位。

人性化——切实地分析和掌握人在交通枢纽中的活动规律，将“以人为本”的设计理念落实于交通枢纽的规划实践之中。

可持续发展——交通枢纽的功能定位是随着城市实际发展需求的变化而变化的，因此，应采取动态的观点进行枢纽规划，以增强交通枢纽的适应能力，确保它的可持续利用性。

生态环保——把生态环保的规划理念体现于交通枢纽设计的各环节之中，最大程度降低交通工具所产生的噪音、震动、废气等对城市环境与空间质量造成的负面影响

3 Planning Methodology

3.1 Basic Principle

The planning for urban passenger transport hubs should be based on following principles:

(1)Subject to urban master plans in terms of urban spatial layout and land use.

(2)Subject to urban transport plans and coordinated with urban transport corridor.

(3)Meeting and steering the traffic demand of passenger flow, coordinating various modes of transportation, and creating rational transport system structure.

(4)“Public Transport Priority”; providing safe, convenient and efficient transport conditions and environment.

(5)Integrating the process of planning, design, construction, operation and management of urban passenger transport hubs.

(6)Intensive land use and rational development are fundamental principles in hub developments. Hubs in downtown should be planned with objectives to improve transport conditions and land use efficiency; while hubs in the outskirts of the cities should be planned in the purpose of improving accessibility and accelerating the sustainable development of the transport system and the city.

3.2 Planning Philosophy

Urbanization – integrate concepts of urban design with transport hub planning to make it an integral part of the city. For example, to fully utilize underground space will reduce the negative impact of the hub on the integrity and consistency of urban space.

Networked – a well-operated transport hub must be supported by a rational urban transport network. So the network concept should be guiding the planning for transport hubs.

User-oriented – analyze the patterns of people’s activities, and implement user-oriented principle into the practice of the design.

Sustainable Development – the function orientation of transport hubs changes with the change of urban development needs, therefore, sustainability is crucial in the planning for transport hubs.

Eco-friendly – employ eco-friendly philosophies in the design for transport hubs, minimize the negative impact of noise, tremor and waste gas generated by transport on the urban environment quality.

3.3 规划流程

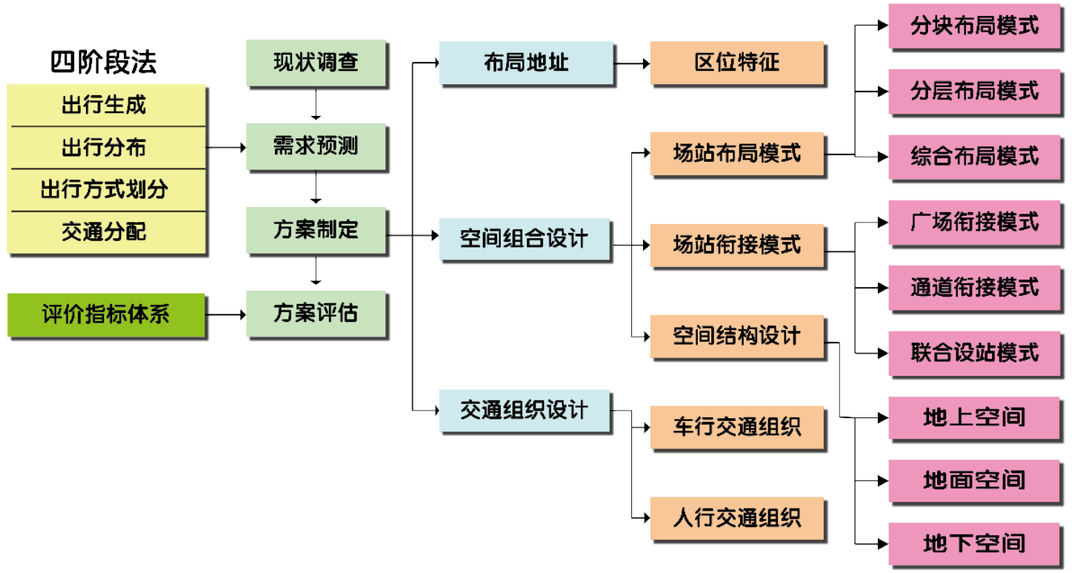
城市综合客运交通枢纽的规划整体流程。

3.3 Planning Process

The planning process for urban comprehensive passenger transport hubs .

表2 城市客运交通枢纽等级划分

Figure 1 Planning Process for Urban Comprehensive Passenger Transport Hub



现状调研——主要内容包括：城市经济与产业、城市空间结构与土地使用、城市交通特征、对外交通、城市道路交通设施、公共交通、非机动交通、交通运行与管理、交通政策与法规、交通研究成果及相关规划等。

需求预测——交通需求分析的主要内容包括：城市居民出行预测、城市流动人口出行预测以及城市对外及过境客运交通预测。预测方法通常采用四阶段法。

方案制定——以交通需求预测为基础，结合城市地形地貌、空间形态及功能布局进行规划方案编制。方案应体现城市综合交通发展的总体目标和相关要求。

主要内容包括枢纽选址、空间组合设计和交通组织设计等。

方案评估——通过建立科学的评价指标体系对城市综合交通枢纽作多方案比较。评估通常从枢纽选址、枢纽布局、换乘衔接、周边路网适应性、各种交通方式间的运能匹配、环境效益、社会效益以及经济效益等方面进行。

Investigation – studies should be conducted in urban economic and industrial conditions, urban spatial structure and land use, transport characteristics, external transport, urban road transport facilities, public transportation, non-vehicle traffic, traffic operation and management, transport policies and regulations, research results and existing plans related to transport.

Demand Forecast – traffic demand forecasts mainly include travel forecast of urban residents, travel forecast of transient population and external & transiting passenger transport forecast. 4-Stage method is usually adopted for such forecasts.

Scheme Formulation – based on the results of demand forecast, as well as the landform, spatial configuration and function layout of the city, planning scheme is formulated in which the development objectives and requirements for urban transport system should be stated including site selection, spatial combination design and traffic operation design of the transport hubs.

Scheme Evaluation – compare different schemes for the urban comprehensive transport hub by establishing a scientific evaluation index system. Usually the evaluation will be conducted through aspects of site selection, hub layout, transfer link, peripheral road network suitability, capacity match among various transport modes, environment consideration, social and economic benefits etc.

合乐工程-l龙华路1960地块

3.4 布局规划方法

3.4.1 布局选址

目前枢纽的布局选址方法主要有四类：①单一的数学物理模型，如重心法、微分法和效益成本分析法，采用的是连续模型；②运筹学模型，如整数和混合整数规划法，采用的是离散模型；③交通规划理论模型，指交通规划理论与前两者相结合，如交通配流法（包括节点流量法和节点经过次数法）和枢纽分级布局模型（由吕慎博士提出的“宏观总体布局，微观分级建模”两步式枢纽布局规划方法）；④专家咨询法，如Delphi法。

为了对城市综合客运交通枢纽选址问题有一个清晰的认识，首先应依据不同分类视角，对这类选址问题做全面、系统的归类分析（如表4）。

由上述分析可见，进行城市客运交通枢纽布局选址时，应根据枢纽的类别和特点，选择合适的选址方法、模型和规划约束条件。根据规划实践经验，总结出城市综合客运交通枢纽的区位特征如表5。

表4 城市综合客运交通枢纽选址问题归类汇总表

Table 4 Summary Table of Site Selection Issue for Urban Comprehensive Passenger Transport Hub

分类依据	类型	特性
选址的离散程度	连续型选址	不限于特定的待选点，自由度大
	离散型选址	待选位置有限
设施数量	单设施选址	为一个设施选址
	多设施选址	为多个设施选址
时间维度	静态设施选址	永久性设施（如大中型建构筑物）
	动态设施选址	多用于紧急设施选址
优化目标	单目标选址	选取一核心目标求最优解
	多目标选址	将多个优化目标均衡考虑
参数确定与否	确定型设施选址	输入条件为确定值，属静态分析
	随机型设施选址	输入条件具不确定性，属动态分析
设施是否有容量限制	无容量限制设施选址	服务设施的容量不受限制
	有容量限制设施选址	服务设施的容量受限制
设施是否分级分类	单级设施选址	服务设施不存在等级差别
	多级设施选址	服务设施依不同需求分类分级

表5 各类客运枢纽的区位特征汇总表

Table 5 Summary Table of Different Types of Passenger Transport Hub

枢纽类别	主体设施	区位特征
A	机场航站楼	城市外围，距城市边缘10km以上，通过专用高速公路、城市快速路联系
	铁路客运站	城市核心区边缘，或距市中心区2-3km，通过城市快速路和交通性干路联系
	公路长途客运站	城市中心区或核心区边缘，通过干线公路、城市快速路和交通性干路联系
	客运海港、河港	选址受自然条件影响较大，通过干线公路、城市快速路和交通性干路联系
B	轨道交通换乘站	位于中心城区内，靠近城市大、中型客流发生吸引源，通过城市干路联系
C	轨道交通站点	位于市区、卫星城和城市新开发区，通过城市干路联系
	公交换乘站	距离轨道交通站点较远的客流发生吸引源，如大型居住区或大型产业区等，主要与集散型交通干路衔接

通常，城市综合客运交通枢纽选址遵循定量分析与定性分析相结合、静态分析与动态分析相结合的原则，根据交通需求预测结果，分析枢纽选址的相关影响因素，宏观确定枢纽的理论分布位置，而后参照有关设计标准和参数，充分考虑现状和规划中的城市用地情况，综合确定枢纽选址方案。

3.4 Layout Planning Method

3.4.1 Site Selection

Normally speaking, combining quantitative analysis with qualitative analysis, and static analysis with dynamic analysis is a fundamental principle of site selection process for passenger transport hubs planning. Based on the results of demand forecast, analyses are conducted on the related factors of site selection and a theoretical range of location is determined. Then, design standards and indicators are applied, with considerations on existing and planned land use conditions, to finalize the site location. To have a better understanding of site selection of urban passenger transport hub, a comprehensive classification analysis is required (see Table 4).

There are four solutions for site selection of transport hubs: 1.Mathematical and Physical Model, e.g. gravity method, differential method, and benefit cost analysis method, and using continuous model; 2. Operational Research Model, e.g. integer and mixed integer planning method, using discrete model; 3. Theoretical Model of Transport Planning, which combines abovementioned models with transport planning theories, e.g. traffic assignment method and hub hierarchical layout model; 4. Delphi Method. It follows that suitable method, model and restraining planning conditions should be used according to different types and characteristics of the hubs when identifying the site location. Conclusions of location characteristics of urban passenger transport hubs are summarized in Table 5.

3.4.2 空间组合设计

枢纽空间组合设计是通过场站设施配置及空间布局优化来保证各类设施衔接顺畅、运能协调、功能匹配、布局合理，并提升枢纽空间环境品质与综合利用效能，以实现枢纽空间利用的集约化、枢纽功能开发的多元化和枢纽综合效益的最大化。

城市综合客运枢纽的场站设施主要有三种布局模式：①分块布局模式：指在不同的地块分别设置不同交通方式的衔接场站，并通过水平通道进行一体化设计；②分层布局模式：指在同一地块内分层设置不同交通方式的衔接场站，并通过竖向交通设施进行一体化设计；③综合布局模式：指上述两种布局模式的复合形式，即部分场站设置在同一地块，采用分层布局，而其它场站设置在不同地块，采用分块布局。

城市综合客运枢纽的主体交通设施与其它接驳交通方式的场站的衔接模式主要有三种：①广场衔接模式：指接驳交通方式的场站（可采用地上、地下或地面）及其出入口设置在枢纽广场，乘客通过广场的集散功能与枢纽主体交通设施联系；②通道衔接模式：指通过换乘通道将接驳交通方式的场站与枢纽主体交通设施相连，该模式减少了人流与车流的冲突，增强了换乘的安全性；③联合设站模式：指将枢纽主体交通设施与接驳交通方式的场站联合设置、无缝衔接，这种垂直换乘方式大大减少了换乘的步行距离。

过去，城市客运枢纽通常采用平面组合方式，随着技术的进步和土地利用集约化的迫切需求，越来越多地开始考虑采用立体形式，即建立地上、地面、地下空间一体化系统，而且通过合理安排不同层面交通设施的衔接关系，可有效减少枢纽用地平面面积，缩短乘客换乘的步行距离，提高换乘安全性和舒适性。根据规划理论与实践经验，总结城市客运枢纽的典型空间组合设计方案如表6。

3.4.2 Spatial Combination Design

The objective of spatial combination design for transport hubs is to ensure smooth operation and rational functions and layouts of various station facilities through configuring the facilities, optimizing spatial layout and arranging linkages, to achieve intensified utilization of space, high quality service environment and maximized benefits.

The station facilities of urban passenger transport hubs are usually distributed in three modes: 1.Block Layout: station facilities of various transport modes are distributed in different blocks, connected by horizontal links; 2.Layered Layout: station facilities of various transport modes are distributed on different layers in the same block, connected by vertical links;3. Comprehensive Layout: a composite mode of the first two modes, where part of the station facilities are distributed in blocks while part of them are distributed in different layers.

The main facilities and transfer facilities of urban passenger transport hubs are connected in three ways: 1.Square Connection Mode: transfer facilities or their entrances are located on a square, where passenger flows are gathered and distributed; 2.Passage Connection Mode: main facilities and transfer facilities are connected by passages to reduce conflicts between pedestrians and vehicles; 3.Joint Station Mode: main facilities and transfer facilities are combined with vertical transfer links which minimize passengers' walking distance.

In the past, the facilities of urban passenger transport hubs are often organized in flat combination. However, as technology advances and with the requirement for intensified land use, tridimensional layout has become a trend in hub planning where ground space, space aboveground and underground are integrated. In addition, through rationally-designed links among transport facilities in different layers, land area occupied by hub will be reduced, walking distance will be minimized for passengers, and the transfer experience in such hubs will be safer and more satisfying. Based on planning theories and practical experience, typical options of spatial combination design are concluded in Table 6.

3.4.3 交通组织设计

城市综合客运枢纽交通组织设计是指在有限的时空范围内，通过科学合理地分时、分路、分车种、分流向，对人流和车流进行组织安排，从而使枢纽内外交通始终处于安全、通畅、有序、高效的运行状态。枢纽交通组织设计以枢纽的空间布局方案为基础，并反作用于空间布局，两者经不断调整与反馈，最终使枢纽规划设计达到最优。

交通组织设计的原则包括：①分块循环，快进快出；②高进低出，到发分离；③专用通道，分类集散；④人车分流，避免交织；⑤公交优先，以人为本；⑥交通连续，衔接顺畅；⑦考虑弱势群体出行需求；⑧完善信息服务与诱导系统。

合理的交通组织不仅可以解决乘客集散和换乘的问题，还可以避免各种流线的相互交叉和干扰，缩短步行距离，提高枢纽使用效率。判断交通组织是否合理的最直接的一个指标就是交通冲突点的数量，通常采用“单位面积交通流冲突点”这一指标来反映综合交通枢纽的流线交织程度。

根据研究对象的不同，城市综合客运枢纽交通组织主要包括车行交通组织和人行交通组织两方面内容：

（1）车行交通组织

车行交通组织根据空间位置的不同，可分为内部交通组织、外部交通组织和内外结合部衔接组织三个部分，并以外部组织为研究重点。借助于微观仿真软件，可以模拟枢纽内、外部以及出入口处的道路交通设施布局，从而对车行交通组织方案进行定量、客观地分析评价。

表6 各类客运枢纽的典型空间组合设计方案

Table 6 Typical Spatial Combination Design Options for Passenger Transport Hubs

枢纽类别	交通设施	布局模式	衔接模式	空间结构		
				地上空间	地面空间	地下空间
A	以航空设施为主体	综合布局模式	广场衔接模式 通道衔接模式 联合设站模式	磁悬浮场站 城市轨道交通场站	机场航站楼 铁路场站 长途巴士场站 公交场站（常规和快速两种，下同） 公共停车场 出租车停靠场	铁路场站 城市轨道交通场站 公共停车场 出租车停靠场
	以铁路设施为主体			高铁线路 铁路客运站 城市轨道交通场站	城铁、普铁线路 铁路客运站 长途客运站 公交场站 公共停车场出租车停靠场	高铁线路 铁路客运站 城市轨道交通场站 公共停车场 出租车停靠场
	以公路设施为主体			长途客运站 公交场站 城市轨道交通场站	长途客运站 公交场站 公共停车场 出租车停靠场	城市轨道交通场站 公共停车场
	以水运设施为主体			城市轨道交通场站	港口码头 长途客运站 公交场站 公共停车场 出租车停靠场	城市轨道交通场站 公共停车场
B	以轨交换乘站为主体	分层布局模式 综合布局模式	广场衔接模式 联合设站模式	城市轨道交通场站	公交场站 公共停车场 出租车营运站	城市轨道交通场站 公共停车场
C	以轨道交通站点为主体	分层布局模式 综合布局模式	广场衔接模式 联合设站模式	城市轨道交通场站	公交场站 公共停车场 出租车营运站	城市轨道交通场站 公共停车场
D	以公交换乘站为主体	分块布局模式	广场衔接模式		公交场站 公共停车场（非机动）	

（2）人行交通组织

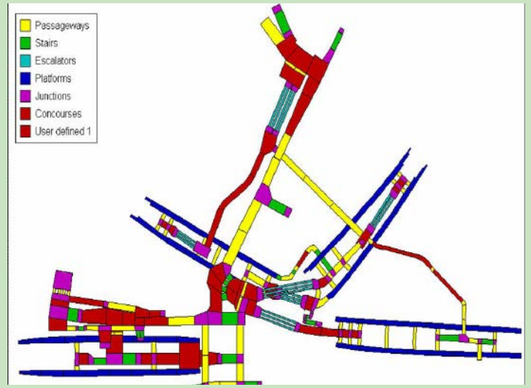
人行交通组织同理可分为内部、外部、内外结合部三个部分，并以内部交通组织为重点内容。采取清晰明确的人流引导方式是合理组织步行系统的有效措施，如通过指示标志、建筑空间限定、空间连接通道、垂直交通空间、公共共享空间、进出口设备等对人流进行引导。借助于行人仿真软件，能够对步行环境中复杂动态的行人多向流动进行模拟，再现现实场景中各种常见的活动，进而对人行交通组织方案做出评估与优化。

车行交通组织仿真分析

Simulation Analysis on Vehicle Traffic Operation

人行交通组织仿真分析

Simulation Analysis on Pedestrian Traffic Operation



3.4.3 Traffic Operation Design

The objective of traffic operation design for transport hubs is within limited time and space to organize the pedestrian and vehicle flows through rational separations of periods of time, roads, vehicle types and flow directions, to provide safe, smooth, ordered and efficient internal and external transport conditions for the hub.

Here are the basic principles in traffic operation design for transport hubs: “separated circulation in blocks, fast in an fast out”, “entrances on higher level and exits on lower level, separated departure and arrival”, “exclusive passages, sorted distribution”, “separated vehicle and pedestrian flows”, “public transit priority, user-oriented”, “coherent transport linkages”, and “disadvantaged-friendly”.

In accordance with the subject of study, traffic operation is categorized into vehicle traffic operation and pedestrian traffic operation. (1)Vehicle traffic operation: It is divided into three parts by spatial location, including internal operation, external operation and connecting operation, among which external operation is of most significance. By applying stimulation software to create a model for the layout of road and transport facilities inside and outside the hub and at the entrances, quantitative evaluations can be conducted on options of vehicle operation.

(2)Pedestrian traffic operation: It is also divided into three parts where internal operation is of most significance. Adopting clear flow guidance mode is an effective way of organizing a rational pedestrian system. Pedestrian flow can be guided through several ways, for instance, signs, architectural space, spatial links, vertical transport space, public space and entrance facilities. By applying stimulation software to create a model for complicated pedestrian movements and activities in varied directions, evaluations and improvements can be made on options of pedestrian operation.

4 合乐项目实践

4.1 济南西客站项目

4.1.1 概况

济南西客站是京沪高速铁路沿线的五个主客站之一，目标是形成在全国有较大影响的交通枢纽港，直接服务人口将达3000万左右，作为带动济南西部地区发展的增长极，其建设对于进一步提升济南都市圈的功能与辐射力具有重要意义。

西客站位于济南市主城区的西部腊山新区，范围为北到小清河、南到经十西路、东到拥军路、西到京福高速公路所围成的区域，距主城区约3km。规划将形成以高速铁路客运站为中心，配套设置长途汽车站、轻轨站、BRT车站、常规公交枢纽站、出租车蓄车场及社会停车场等一系列对内、对外交通服务功能于一体的大型综合客运交通枢纽。依据枢纽类别划分标准，济南西客站属于A类城市综合客运枢纽。

济南西客站的高铁站设8个站台，15条到发线，据预测，铁路旅客发送量在2015年达到1924万人，2020年达到2507万人次，最高积聚人数4000人。枢纽总换乘量预计为40.6万人次/日，高峰小时产生吸引交通流量9600标准车，至少需要24条疏解车道。其中长途客运站日发送旅客量为2.5万人次，最高聚集人数2500人。规划公交线路15条，其中BRT线路4条，常规公交线路11条。规划有两条轨道交通线路经过该枢纽。

4 Halcrow’s Practice

4.1 Jinan West Railway Station

4.1.1 Profile

Being one of the five main stations along Beijing-Shanghai High-speed Railway, Jinan West Railway Station is targeted to be a national transport hub directly serving a population of some 30million, and to drive the development in West Jinan to further strengthen the functional role of Jinan Metropolitan Area.

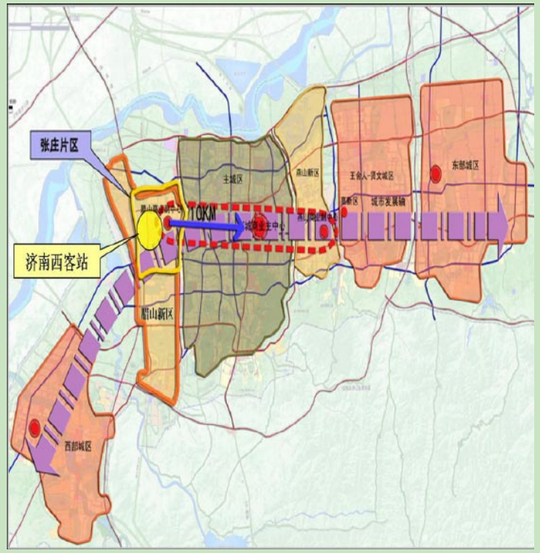
Located in Lashan New Area west to the main town . The site of Jinan West Railway Station (3km from the main town) is bound with Xiaoqing River in the north, West Jingshi Road in the south, Yongjun Road in the east and Beijing-Fuzhou Expressway in the west. A large-scale comprehensive passenger transport hub is planned here, consisting of a high-speed railway station and integrated internal and external transport service facilities including coach station, light rail station, BRT station, bus station, taxi garage, and social parking lot etc. Based on hub categorization standards, Jinan West Railway Station will be a Type A urban comprehensive passenger transport hub.

There are 8 platforms and 15 arrival & departure sidings planned for the high-speed rail station in Jinan West Railway Station. It is predicted that the passenger transport volume will reach 1.924million by 2015 and 2.507million by 2020 with a maximum gathering passenger number of 4000.

The total transfer amount of the hub is 406,000 passengers per day. A traffic flow of 9600 standard car per hour occurs in peak hours which would require at least 24 vehicle lanes to digest the traffic. The passenger transport volume of the coach station reaches 25,000 daily, with maximum gathering passenger number of 2,500. 15 bus lines are planned including 4 BRT lines and 11 regular bus lines. Two planned rail transit lines pass through the hub.

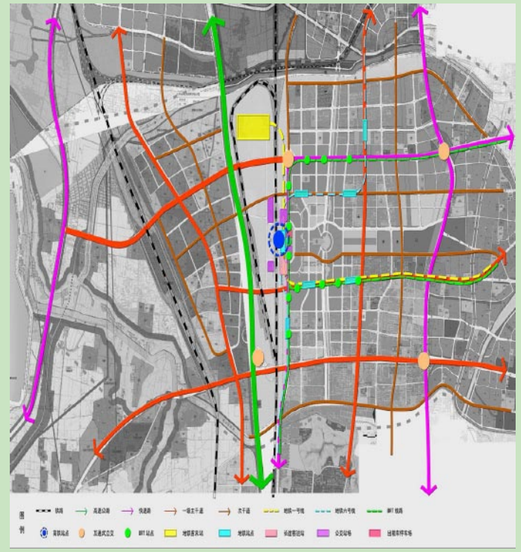
济南西客站综合交通枢纽总体区位图

Location of the Comprehensive Passenger Transport Hub of Jinan West Railway Station



济南西客站地区综合交通规划图

Integrated Transport Plan for Jinan West Railway Station



4.1.2 空间组合设计

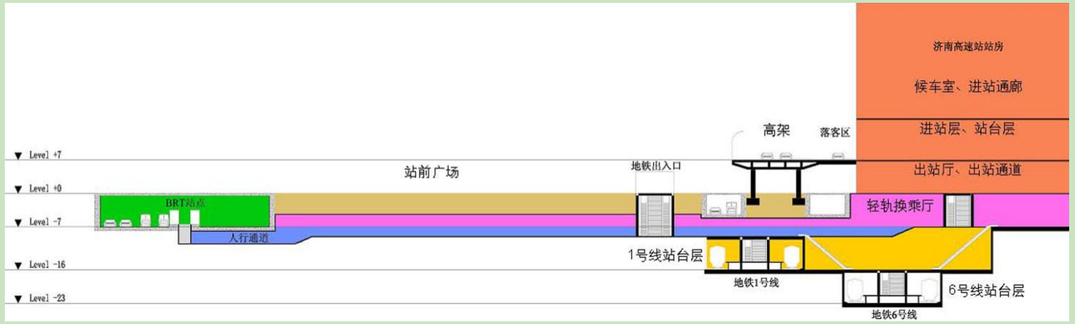
在概念性规划方案中，济南西客站综合客运枢纽的场站设施采取的是综合布局模式：通过广场衔接方式和通道衔接方式，将长途汽车站、轻轨1号线车站、BRT车站、常规公交始发站、出租车蓄车场及社会停车场分块布置在高铁站前广场的周围或地下，保证了各交通方式间的便捷换乘；而高铁站房与轻轨6号线车站则以联合设站衔接方式进行分层布局。

在竖向布局规划方案中，该综合交通枢纽共分6层：①地下三层：轻轨6号线站台层，直接布置于高铁站房下方，乘客通过竖向交通设施在两者间实现换乘；②地下二层：轻轨1号线站台层，位于环形高架辅路下方，乘客通过竖向交通设施和换乘通道进出铁路站房；③地下一层：BRT车站和轻轨换乘站站厅层，轻轨站厅层置于高铁站房下方，提供检票服务，BRT车站布置在下穿于站前广场下方的大金路上，以通道衔接方式与轻轨换乘大厅相连；④地面层：高铁站房的地面层由出站通道、出站厅、辅助生产用房和商业开发用房四部分组成，出站厅有垂直交通通往轻轨换乘厅，旅客出站后可直接换乘布局在站前广场周围地面层的长途车、公交车、出租车和社会车辆；⑤地上一层：为高铁旅客进站层与站台层，站房由候车室、辅助生产用房和商业开发用房组成；⑥地上二层：由候车室和进站通廊组成。

4.1.2 Spatial Combination Design

In the concept plan, the station facilities of Jinan West Railway Station are organized in comprehensive layout: through square and passages as links, coach station, station of Light Rail Line 1, BRT station, bus station, taxi garage and social parking lot are distributed in blocks on or under the high-speed railway station square, forming a transfer area of compactness and convenience; on the other hand, high-speed railway station building and the station of Light Rail Line 6 are distributed in different layers with the connection mode of joint station.

Jinan West Railway Station Transport Hub is divided into six layers: 1.3rd floor underground: platform layer of Light Rail Line 6, located directly beneath the high-speed railway station; 2.2nd floor underground: platform layer of Light Rail Line 1, located under the elevated ring road; 3. 1st floor underground: BRT station which is located on Dajin Road under-passing the station square, and light rail transfer hall which is located under the high-speed railway station; 4. ground floor: the station building on this layer consists of outbound tunnel, reception hall, production space and commercial space, and direct accesses to coach station, bus stop, taxi and social vehicles are provided at the station square on the ground layer; 5.1st floor aboveground: entrance layer and platform layer of the high-speed railway station, and the station building consists of waiting hall, production space and commercial space; 6.2nd floor aboveground: consisting of waiting hall and entrance corridor.



4.1.3 交通组织设计

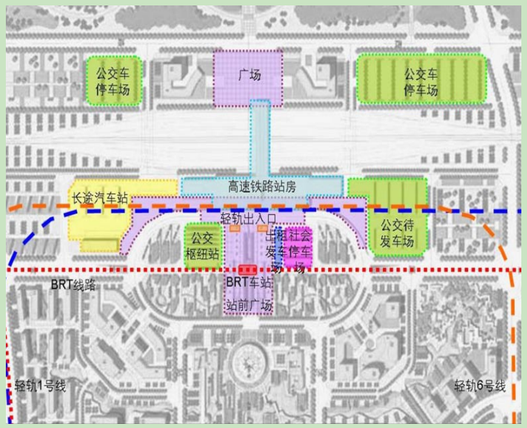
车行交通组织：遵循高效、便捷、顺畅、连续的原则，规划采用高架与地面单向循环的车流组织方式，利用环形道路便捷到达各个方向的原理，迅速、无交叉冲突的将各种车流疏解到城市道路或交通场站中。枢纽专用道路集散系统呈立体组织形式，主要包括高架衔接段、高架落地匝道、地下道路、地下道路连接段、单向循环地面道路、地面道路过渡段等。规划西客站综合交通枢纽的长途车、公交车、出租车和社会车辆的进、出站流线。

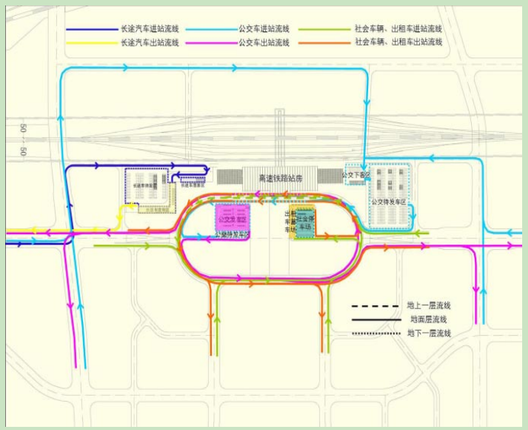
人行交通组织：规划方案采取“上进下出，次进主出，进出分离”的客流组织方式，在设计上尽量缩短换乘距离，提供各种交通方式间的直接衔接及增强旅客引导功能来优化进出站过程。①进站：乘坐社会车辆和出租车的旅客在地上一层进站；乘坐长途车和公交车的旅客分别从地面南北次入口进站；来自轻轨和BRT的旅客通过垂直交通，经轻轨换乘厅进站。②出站：铁路旅客出站层设在地面层，也是换乘其它交通方式的换乘层；换乘公交车、长途车、出租车和社会车辆的旅客，可直接出站抵达相应的停车场；换乘轻轨和BRT的旅客可通过垂直交通，经轻轨换乘厅和专用通道抵达车站。

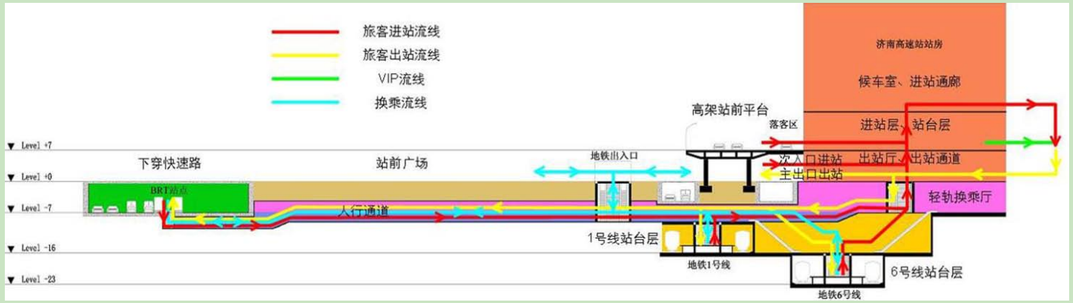
4.1.3 Traffic Operation Design

Vehicle Traffic Operation: A one-way loop traffic operation mode is planned for the site, consisting of elevated and ground roads. A ring road can access to any direction easily distributing vehicle flows to urban roads and transport facilities rapidly without crossing. The hub-exclusive road distribution system is designed in a tri-dimensional way including convergence section of elevated road, ramp of elevated road, underground roads, linkage section of underground roads, ground one-way loop road, and transition section of ground road. The inflow and outflow lines of Jinan West Railway Station .

Pedestrian Traffic Operation: The pedestrian traffic is organized with entrances on higher layer and exits on lower layer and with separated inflow and outflow lines1. Entering the station: social vehicles and taxis enter the station through 1st floor aboveground; coaches and buses enters the station through minor entrances in the south and north on the ground floor; passengers who travel by light rail and BRT enter the station through vertical transfer; 2.Exiting the station: the reception hall of the railway station is located on the ground floor; passengers who travel by coaches, buses and social vehicles can leave the station with direct accesses to parking area; passengers who travel by light rail and BRT can reach the station through transfer hall and channels by vertical transfer.







4.2 东莞市轨道交通会展中心站项目

4.2.1 概况

会展中心站位于东莞市主城区的新城市中心，是轨道交通R1线与R2线的换乘枢纽，其定位为市区的中心站，是东莞市区与广州、深圳对外联系的关键交通节点，其建设对改变东莞现状粗放型发展，实现产业升级具有重要作用和意义。

会展中心站周边集中了办公、商业和会展等大型公共建筑，为充分发挥换乘站对腹地的服务与带动作用，规划建立以轨道交通车站为主体，结合公交站点、出租车停靠站和社会停车库等多种交通方式协调运作的综合交通换乘枢纽，以提高交通系统运作效率，扩大车站影响范围。依据枢纽类别划分标准，会展中心站属于B类城市综合客运枢纽。

根据交通需求预测，会展中心站远期最大高峰小时客流量为33512人次/小时，配套接驳场站设施中，常规公交始发线路5条，出租车泊位20个，社会停车泊位200个。

4.2.2 空间组合设计

在概念性规划方案中，东莞会展中心站综合换乘枢纽的场站设施采取的是分块布局模式，通过通道和广场衔接方式，将公交首末站、出租车停靠站和社会停车库分块布置在轨道交通换乘站周边，以建立一体化的网络系统。

在竖向布局规划方案中，该综合交通换乘枢纽共分4层：①地下三层：轨道交通R1线站台层，由垂直交通通往R2线站台层和换乘站站厅层；②地下二层：地下停车库及轨道交通R2线站台层，由垂直交通通往R1线站台层和站厅层；③地下一层：R1线和R2线共用的站厅层及地下停车库；④地面层：布置有公交首末站和出租车停靠站，通过人行道、广场、地下空间出入口和地下步行通道与轨道交通换乘站联系。

4.2 The Convention Center Station of Dongguan Rail Transit Line

4.2.1 Profile

Located in the new urban center, The Convention Center Station is a transfer hub of Rail Transit Line R1 and R2 . The station is oriented to be the central station in the downtown area and a key linking node of external transport system of Dongguan towards Guangzhou and Shenzhen. The construction of the station means significantly to the industrial upgrade and the development transformation of Dongguan from extensive mode to intensive mode.

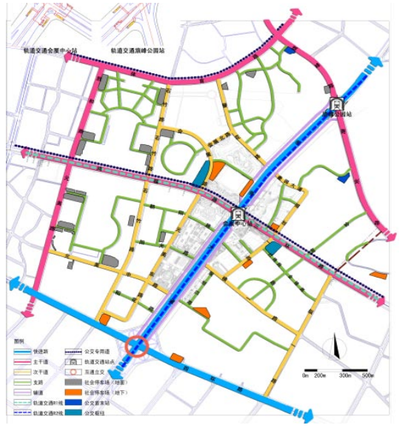
Large-scale public buildings integrating office, commercial and exhibition space stand around the Convention Center Station. To play a better role as a transfer station, bus stop, taxi bay and social garage are planned in addition to a rail transit station as the main facility, forming a comprehensive transport transfer hub with coordinated operation of various transport modes which improves the efficiency of the transport system and extends the influence range of the station. Based on hub categorization standards, the Convention Center Station falls in Type B Urban Comprehensive Passenger Transport Hub.

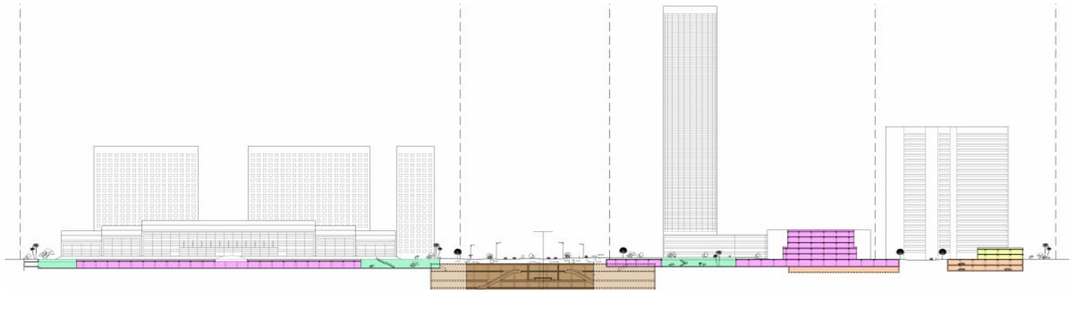
According to traffic demand forecast, the maximum peak-hour flow of the Convention Center Station will reach 33512 passengers per hour in long-term. In terms of service transfer facilities of the station, 5 bus routes, 20 taxi berths, and 200 pieces of parking space for social vehicles are planned.

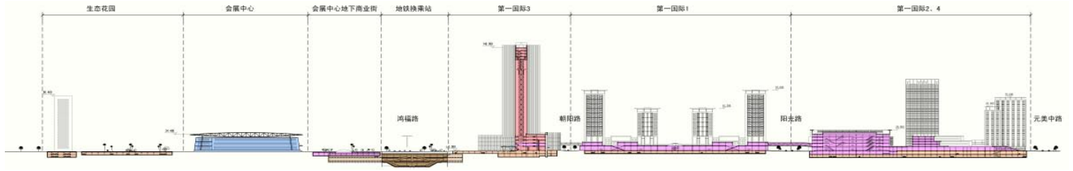
4.2.2 Spatial Combination Design

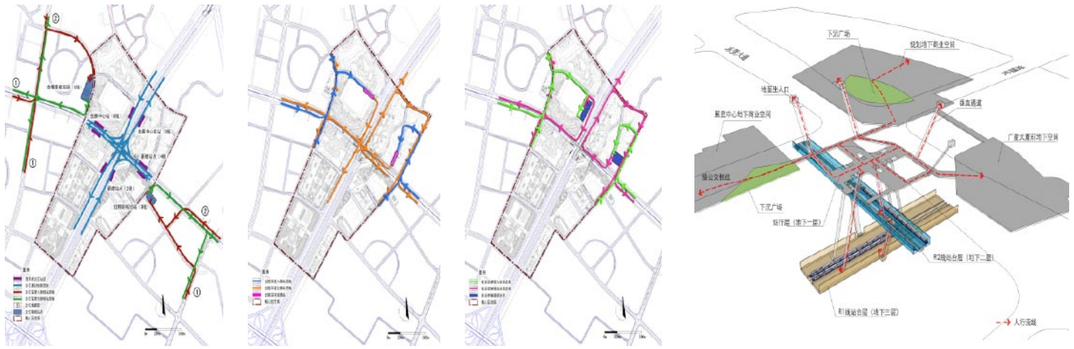
In the concept plan scheme, the facilities of the Comprehensive Transfer Hub of Dongguan Convention Center Station are distributed in block layout and connected by a square and passages. Bus terminals, taxi berths and social garage are planned around the rail transit transfer station forming an integrated transport network.

Speaking of vertical layout, the transfer hub is divided into four layers: 1.3rd floor underground: 2.2nd floor underground: underground garage and the platform layer of Rail Transit Line R2, connected to the platform layer of R1 and the transfer station hall layer through vertical links; 3.1st floor underground: shared station hall of R1 and R2, and underground garage; 4. ground floor: bus terminals and taxi berths, connected to the rail transit transfer station by sidewalks, square, entrances and exits to underground space and underground passages.









4.2.3 交通组织设计

在优化路网结构与交通容量的基础上，对各类交通如公交车、出租车和社会车辆进行合理组织和有效疏导，建立起综合换乘枢纽区高效、简捷、流畅的车行交通组织系统。

会展中心站换乘枢纽区的地下轨道交通、周边建筑地下连接以及地下商业空间的发展将引起人流大量集中，因此，规划采取立体化交通策略，将人行系统分为地上（二层步行系统）、地面和地下三个层次，通过平面与竖向步行交通组织的紧密衔接，分离人车通行空间，减少冲突，确保客流疏散的安全与便捷。

4.2.3 Traffic Operation Design

In addition to improving the road network and traffic capacity, rationally organize the traffic routes for various transport modes including buses, taxis, and social vehicles, and establish a efficient, compact, and smooth vehicle traffic operation system within the comprehensive transfer hub area.

The underground rail transit traffic, the underground links of surrounding buildings and the underground commercial space in the transfer hub area of the Convention Center Station will bring heavily concentrated pedestrian flow. In respect of that, the pedestrian system is divided into three levels: aboveground (double-layer pedestrian system), ground and underground level. These levels are closely connected by vertical pedestrian links. Thus, pedestrian traffic is separated from vehicle traffic, reducing possible conflicts and providing security and convenience for the passengers.

5 合乐的观点

合乐在城市综合客运交通枢纽规划方面积累了丰富的项目实践经验，在此总结所持规划建设观点如下：

（1）设施组合方面：强调“恰当综合”，将区位合理、衔接必要的配套设施组合成一体，避免盲目地求大求全，结果导致客运枢纽功能过于庞杂，设施布置困难，连接转换空间繁复，旅客换乘距离过长，给出行带来不便。

（2）枢纽规模方面：由于需求能决定供给，而供给也能决定需求，因此，综合客运交通枢纽的规模决策过程应特别强调“动态平衡”的供需分析思想，建议规模“适度超前”，变“追随型”为“开发引导型”，合理引导土地开发和交通需求，确保枢纽的可持续发展。

（3）布局选址方面：目前我国交通枢纽布局规划实践中，采用量化分析模型进行选址的并不多，或者定量计算的结果仅作为定性分析的参考。综合客运枢纽选址应从城市交通发展需求、城市空间形态与功能布局以及在城市中的地位关系等方面科学决策，并重点强调枢纽与交通运输网络布局及城市用地布局的协调性。

（4）空间组合方面：为了提高地下、地上空间资源开发利用的有效性和经济性，客运枢纽空间组合从平面布局到竖向布局需进行统一协调规划，并合理选择场站间的衔接模式。推荐联合设站模式，该模式实现了场站的无缝对接和零换乘，对乘客来说是最好的换乘方式。

（5）交通组织方面：客运枢纽的交通组织设计是一个十分复杂的课题，它不仅与枢纽本身的需求相关，还与枢纽周边乃至所在片区的交通网络密切联系，因此，推荐借助仿真分析手段，真实客观地再现车流与人流的动态活动，定量地对交通组织方案做出评价和改善。

（6）建设体制方面：目前我国综合客运枢纽建设仍存在投资主体不同、协调难度大等问题，造成枢纽在布局与组织等方面诸多受限，因此，建议从体制上进行改革，形成综合一体化的规划建设与管理保障机制。

5 Halcrow’s Perspective

Halcrow has a wealth of experience in planning for urban comprehensive passenger transport hubs, which can be summarized in following aspects:

(1)Combination of Facilities:

Appropriately integrate necessary service facilities with suitable location to form the hub instead of irrationally pursuing large scale and comprehensiveness which will lead to redundant functions of the hub and difficulties in facility arrangement and space connecting.

(2)Scale of the Hubs:

As demand determines supply and supply can also determine demand, the decision for the scale of a comprehensive passenger transport hub should be based on the supply & demand analysis philosophy of “dynamic equilibrium”. The scale should be planned with moderate advance to rationally guide the land development and transport demand and to achieve sustainable objectives.

(3)Location & Layout of the Sites:

Currently, quantitative analysis model has not been extensively applied in transport hub planning practice in China and the results of quantitative calculation are only being used as references for qualitative analyses. The site selection procedure of a comprehensive passenger transport hub should combine the factors of transport development demand, urban spatial form & function layout, and its position in the city, while the key issue would be the coordination between the hub and the layout of the transport network as well as the urban land use layout.

(4)Combination of Space:

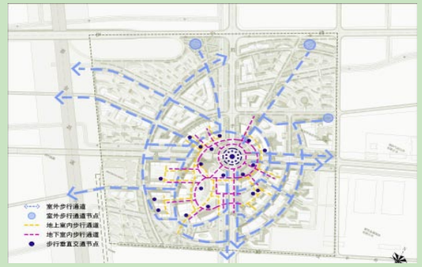
To better utilize the underground and aboveground space resources, a coordinated combination of space is required both in plane layout and in vertical layout and a rational connection mode is essential for the design. We recommend joint-station mode which provides seamless connection and zero-distance transfer within the hub.

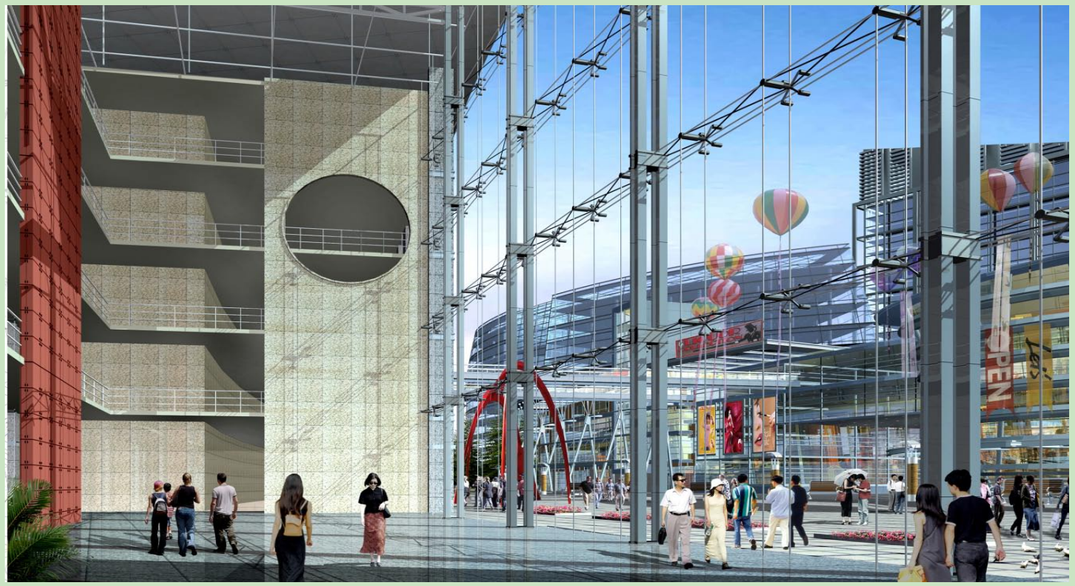
(5)Traffic Operation:

The traffic operation design has always been a complicated issue in transport hub planning, not only for it is related to the demand of the hub, but also because it is closely connected to the transport network in peripheral areas even that of the region. Therefore, we recommend the application of virtual analysis tool to reproduce the dynamic activities of vehicles and pedestrians and to evaluate and improve the traffic operation options.

(6)Institutional Building:

Disconnected investment entities and inefficient coordination are key problems existing in the development of comprehensive passenger transport hubs in China, leading to restraints in hub layout and operation design. That is why the fundamental institutional system should be reformed into an integrated planning and administrative safeguard system.





上海市轨道交通11号线嘉定新城站站点核心区详细规划

作为上海市轨道交通网络规划中极为重要的市域级骨干线路和贯通上海南北地区的交通大动脉，轨道交通11号线的规划实施将有效地缓解经济迅猛增长所带来的城市交通问题，并满足上海市的整体公交出行需求。

嘉定新城站站点核心区总面积110.3公顷，东临合作路，南临双单路，西临嘉金高速，北临伊宁路。

站点核心区在嘉定新城主城区占有重要的地理位置，位于RBC(区域商业中心)的中心位置，兼具商务、宾馆、娱乐、商业等功能，支持着5个居住区、5个镇以及安亭和南翔等发展区域。不仅将建成F1赛事及有关大型活动的重要配套服务区，而且将结合快速公交系统、地面交通等多种交通形式，形成嘉定新城公共交通枢纽。

本项目运用了“大平台综合开发区”（CDA）和“公共交通导向型发展模式”（TOD）的规划设计理念。