

2008 ASLA Annual Meeting & EXPO

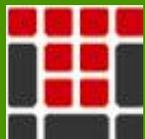
The Premier Event for Landscape Architecture Professionals

Sustainable Practice in China

The Olympic Forest Park, Beijing

Presenter

Prof. Landscape Architect **Hu Jie**, ASLA



Planning & Design Branch of Landscape Architecture
Beijing Tsinghua Urban Planning & Design Institute

October 2008



MAN

follows

EARTH

EARTH

follows

HEAVEN

HEAVEN

follows

DAO

DAO

follows

NATURE

——LAO'ZI

Natural Considerations:

- **Natural Resources**

land, climate, soil, vegetation, water, landform, ...

- **Energy Resources**

solar, wind, ...

- **Materials**

enduring, harmless, re-used, ...

- **Flora, Fauna & Local Existing Patterns**

Culture Considerations:

- **Local Traditions and Lifestyle**

- **History**

- **Design Culture**

- **Development of New Lifestyle Patterns**

How do we negotiate between the human-social needs and the ecological considerations in every part of the design?

Our conviction in the planning & design of the park is that in order to attain sustainability, we would need to find a way for the human and the ecological systems to find a certain harmony on site, and to do so, we must recognize what each can actively contribute to the relationship on the ground.



Sustainable Development Should Consider:

- **Nature**
- **Culture**

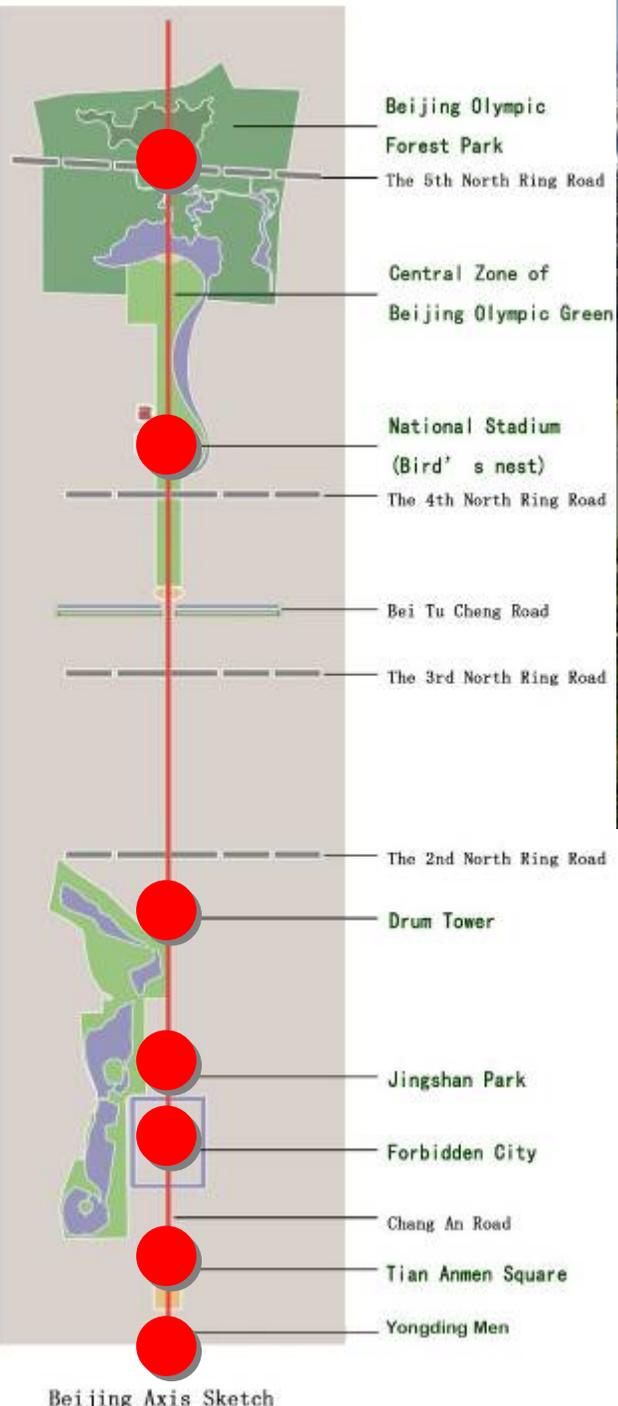


2008 Olympic Games has extraordinary significance to fast developing China.

It is a stage for Beijing to show itself to the world, and the center of the stage, is the **Olympic Green** located on the Central Axis.



Olympic Green





In 2002,
the Beijing Municipal
Commission of Urban Planning
organized an international
competition for
conceptual planning and design
of

Beijing Olympic Green

**The Plan of
Sasaki Associates, Inc. (USA)
won the competition.**

In 2003,
the **A02 Plan**,
designed jointly by
Sasaki Associates, Inc.
and
**Beijing Tsinghua Urban
Planning & Design
Institute**
won the competition.



The Olympic Green under Construction

National Aquatics Centre

“Water Cube”



Olympic Forest Park



National Stadium

“Bird’s Nest”



National Stadium

“Bird’s Nest”



National Aquatics Centre

“Water Cube”



2008 9 13

National Gymnasium

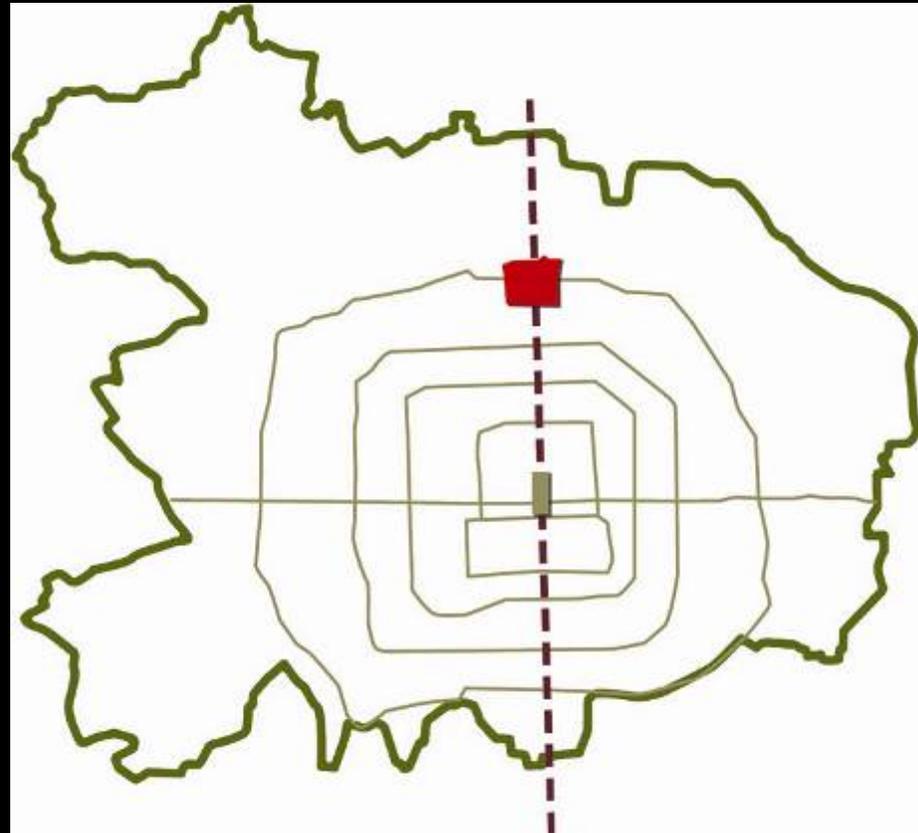


International Conference Center



Olympic Forest Park:

- Is 680ha
- Located in the north of urban Beijing
- Is on the historical south-north central axis
- Is in the north of the Olympic Green





Olympic Forest Park Master Plan

Site Plan
0 50 100 200 300m



Olympic Forest Park is the largest green space ever to be built in Beijing.



- The urban planning and construction of Beijing are outstanding achievements in human history.
- The historical south-north axis is the greatest axis in urban construction history. The ancient structures such as Tian An Men Square, the Forbidden City and Jingshan Park are situated on the axis and establish great importance to the axis.
- The axis has witnessed the changes in the history of Beijing and has carried the symbol and memory of history, culture and politics.
- **How to continue history and culture of central axis on the Olympic Forest Park site is the first tremendous challenge that we are facing.**

- **Green Olympics, Hi-tech Olympics and People's Olympics** are the three themes of Beijing 2008 Olympic Games.
- With BOCOG Green Commitment to the world, we as landscape architects are challenged to create a Green Olympic based Olympic Forest Park with the application of new environmental protection and energy saving technologies, as well as new materials.



Axis to Nature

1. Culture Considerations

Urban Contexts:

- Rapid Urbanization
- Increasing Population Density
- Large-scale Construction & Development
- Upsurge in Traffic Volumes
- Aging Urban Infrastructure
- Water Shortage
- Diminishing Open Green Space

We have attempted to resolve these issues through modern technological application.

This new green infrastructure is public recreation & leisure environment to benefit all residents and visitors of Beijing.

Olympic Forest Park merges traditional Chinese landscape arts with contemporary design concepts and ecological techniques.

Functions

- Urban Green Lung & Ecological Buffer
- Leisure Park for Olympics
- Healthy Forest for Local Residence



Scenic Spot Views of Axis

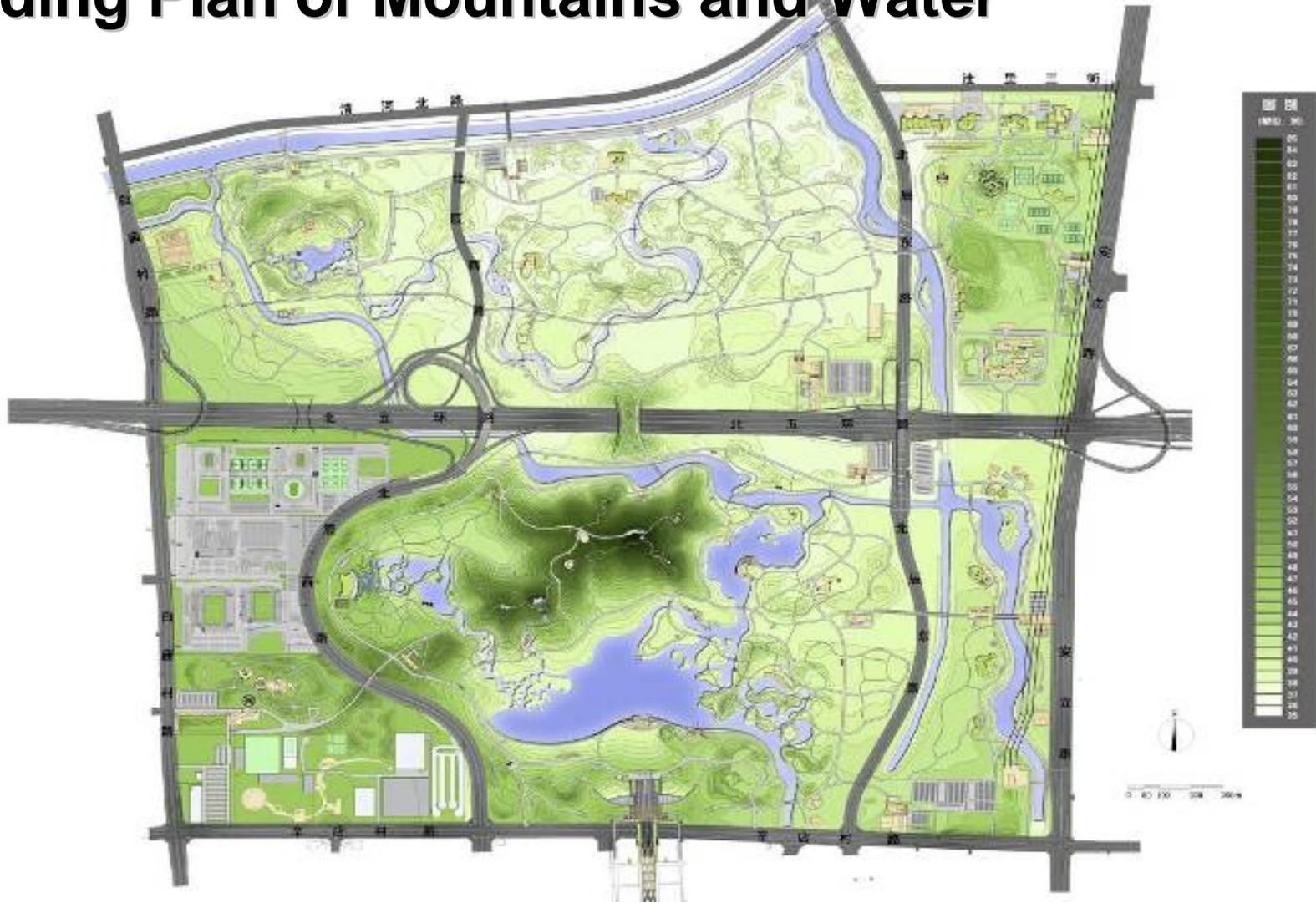


Located on the ancient imperial Central Axis of Beijing, the site's importance and cultural significance has a great influence on the Feng Shui of Beijing.

Our study therefore began with an in-depth historical study and traditional analysis of the Central Axis.

- The principles of traditional Chinese landscape art emphasize on the artificial to appear natural and in which mountain piling and water forming are among the most crucial elements.
- These principles were all examined and interpreted for the planning and design of the Olympic Forest Park.
- In accordance with these principles, an artificial mountain has been planned, with its highest point on the Central Axis line, and just south of it, a dragon-shaped body of water and winding system flowing along the axis, has been designed.

Grading Plan of Mountains and Water



As a national landmark project Olympic Forest Park must respect the balance and integrity of the axis and the other monuments situation along it.

02 | Feng Shui

Classic Feng Shui Diagrams

- 1 Ancestral Mountain
- 2 Minor Ancestral Mountain
- 3 Major Mountain
- 4 Black Dragon
- 5 White Tiger
- 6 Guardian Mountain
- 7 An' Mountain
- 8 Chao' Mountain
- 9 Water Source Mountain
- 10 Dragon Pulse
- 11 House of Dragon



Located at the Northern-most point of the ancient imperial Central Axis of Beijing, the site's importance and cultural significance has a great influence on the Feng Shui of Beijing, a fact that influenced the formation of the new landforms.

5th Ring Road

Forest Park

Olympic Green Central Area

4th Ring Road

3rd Ring Road

2nd Ring Road

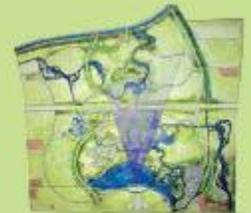
Bell and Drum Tower

Classical Imperial Palace Garden
Coal Hill

Forbidden City

TianAnMen Square

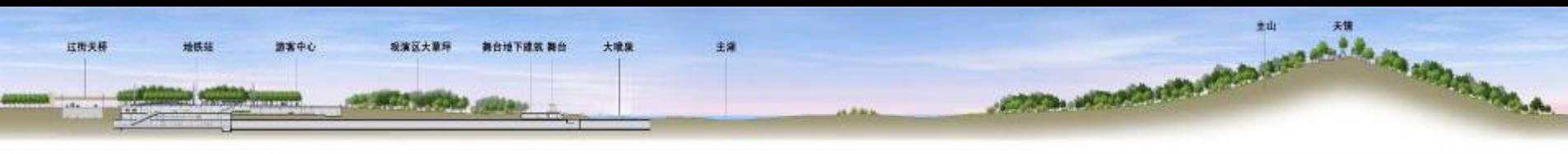
Beijing's Central Axis



Feng Shui Studies

Olympic Forest Park Main Mountain—Yangshan Mountain

The analysis of other important mountains in Beijing helped to establish the location, orientation, dimensions and design of our new landforms.

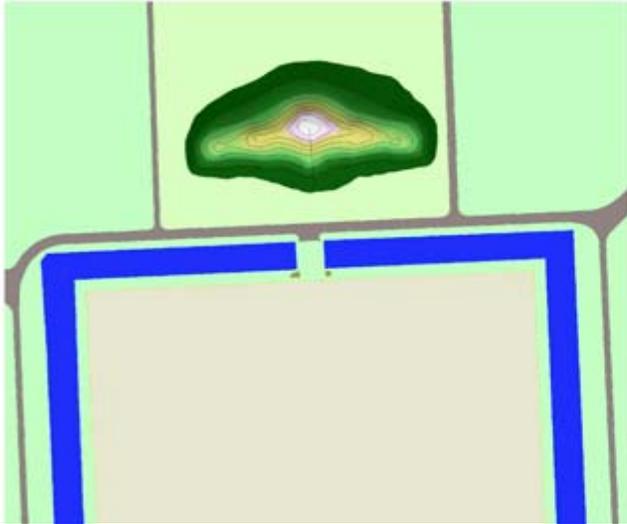


Section of Axis

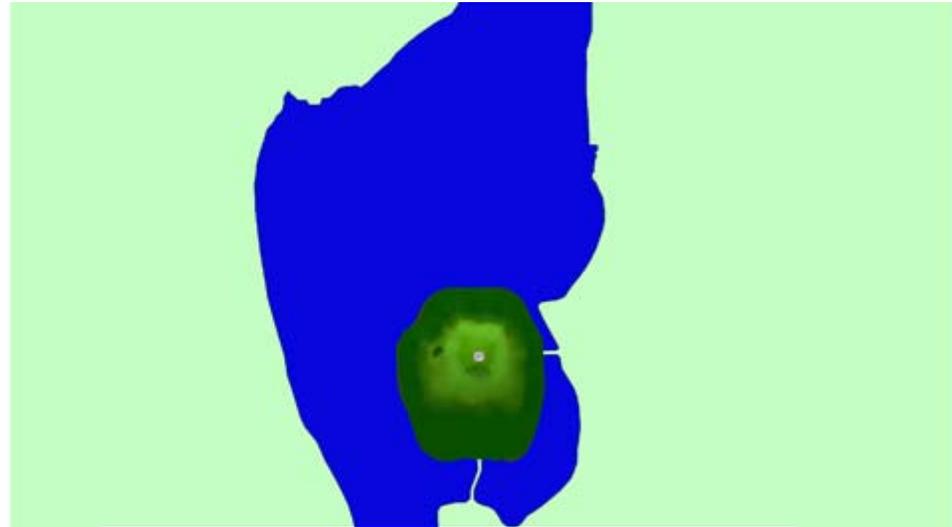


The Shape of Yangshan Mountain

Earthwork Comparison with Other Ancient Parks



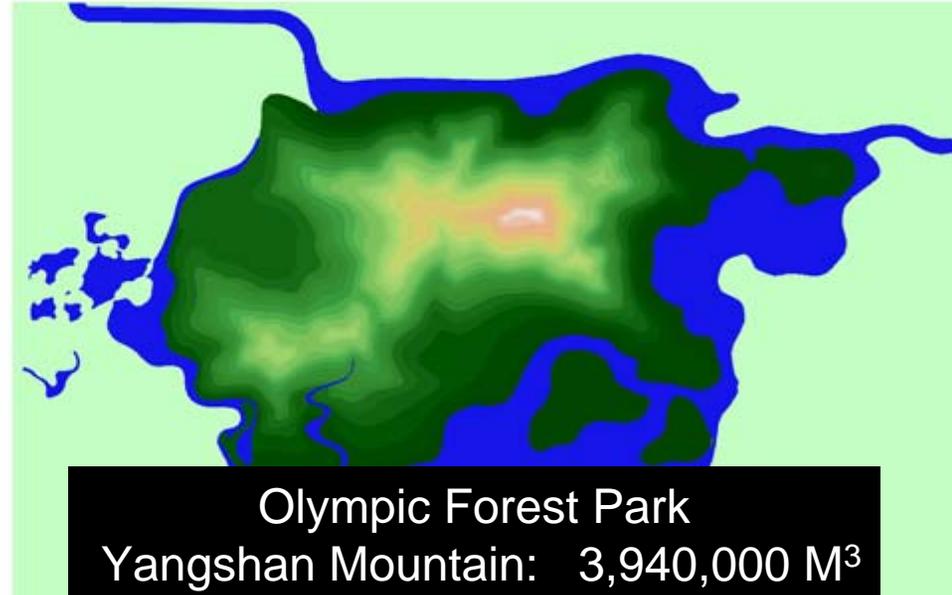
Jingshan Mountain: 860,000 M³



Qionghua Island: 580,000 M³

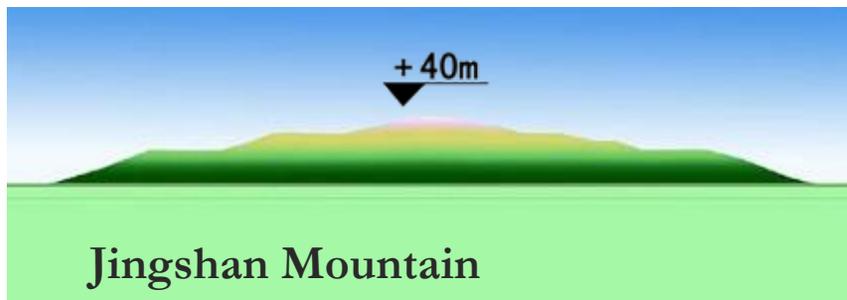


Summer Palace: 5,810,000 M³



Olympic Forest Park
Yangshan Mountain: 3,940,000 M³

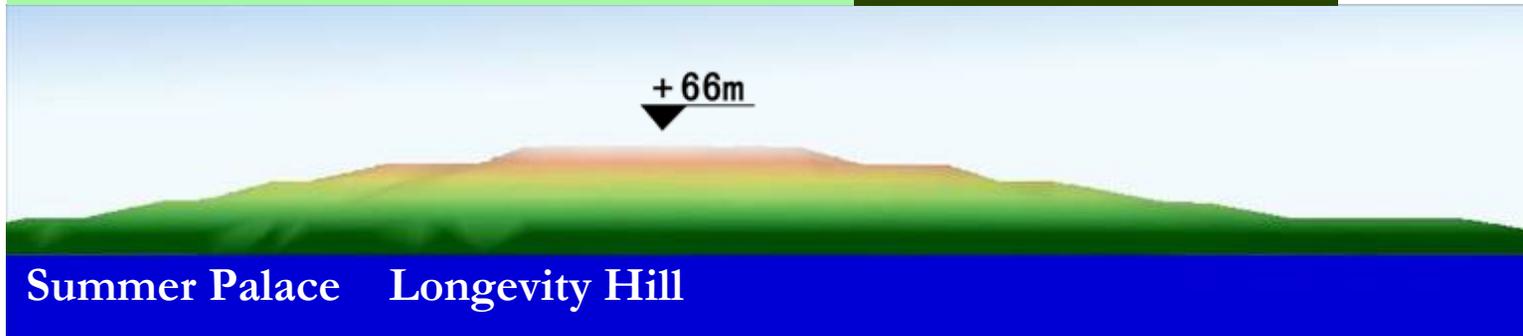
Elevation Comparison with Other Parks



Jingshan Mountain



Beihai Park
Qionghua Island



Summer Palace Longevity Hill



Olympic Forest Park
Yangshan

Excavation:	3.33 Million m ³
Fill:	4.83 Million m ³
Hill Fundus Area :	42 Ha
Hill Gradient:	Lower than 30%
Hill Height:	48 m

Why we build an artificial mountain here:

- The mountain was constructed with the construction and excavation for the Olympic Subway, Olympic Avenue and adjacent development area.
- No new soil was brought into the Olympic Forest Park site to construct the mountain.
- The mountain is a new landmark in the north of the city.

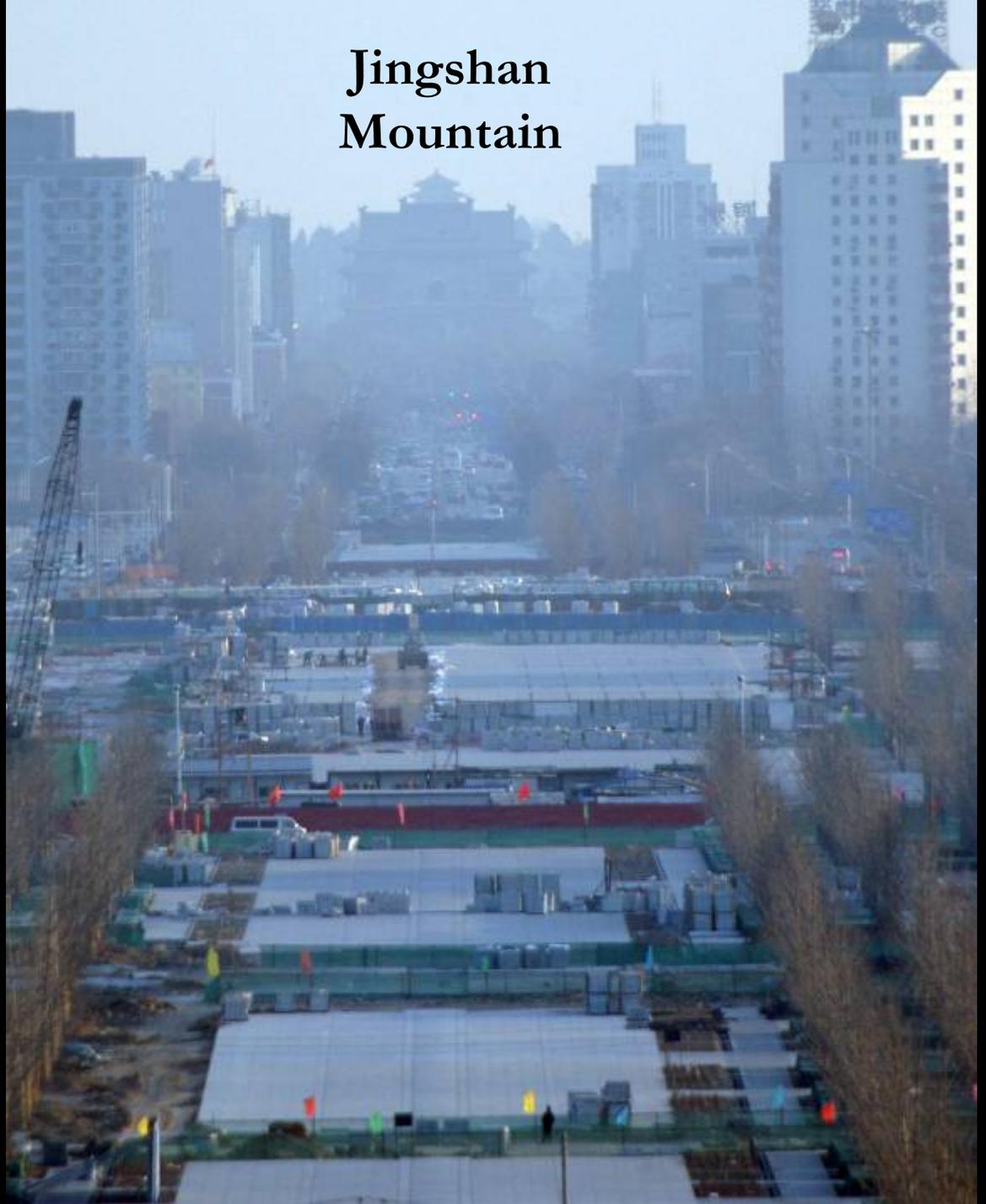


Looking South along Central Axis



**Looking
South along
Central Axis**

Jingshan
Mountain



Taishan Stones on the South Entrance Plaza



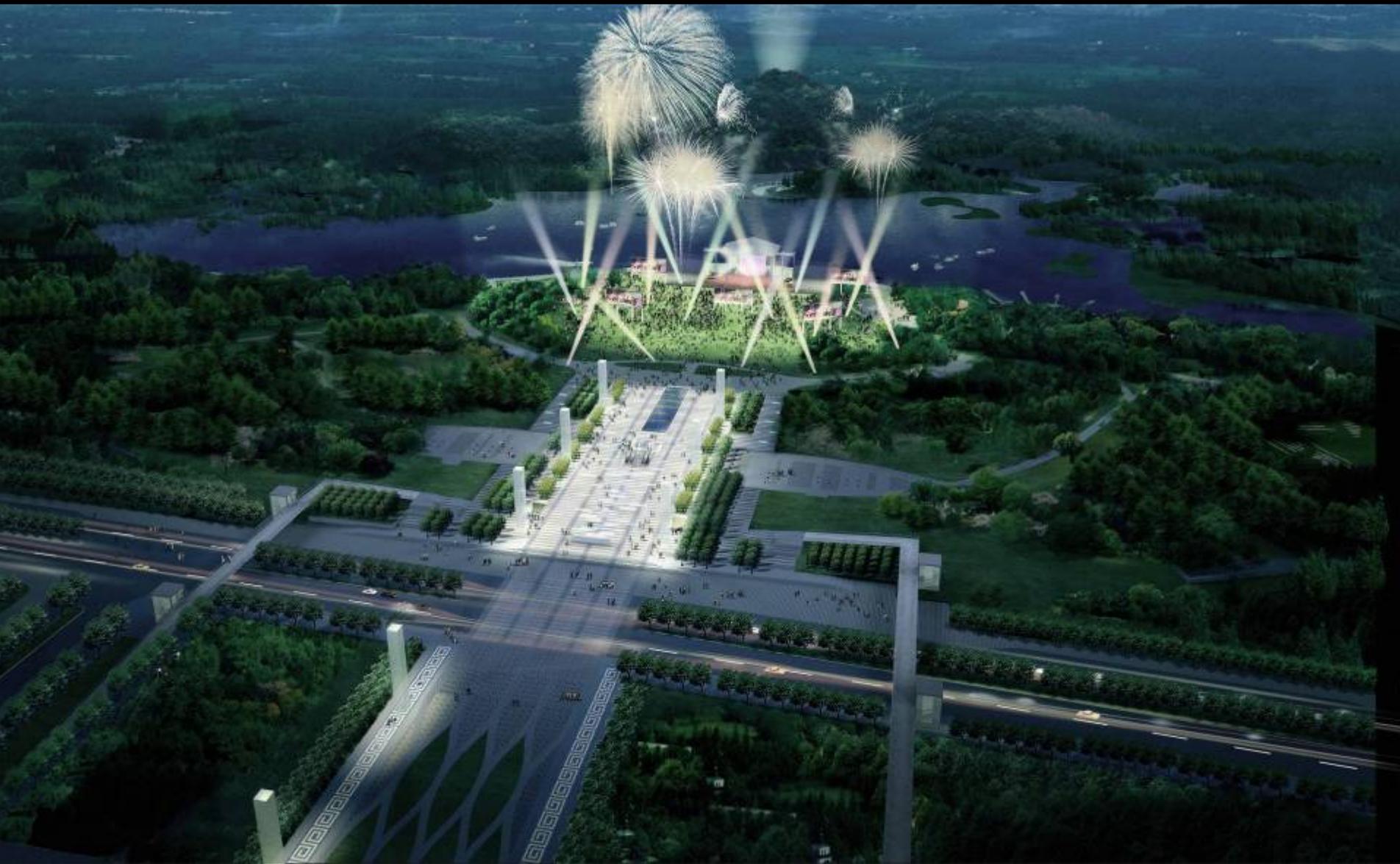
The South Entrance Plaza



Amphitheater as Leisure Lawn

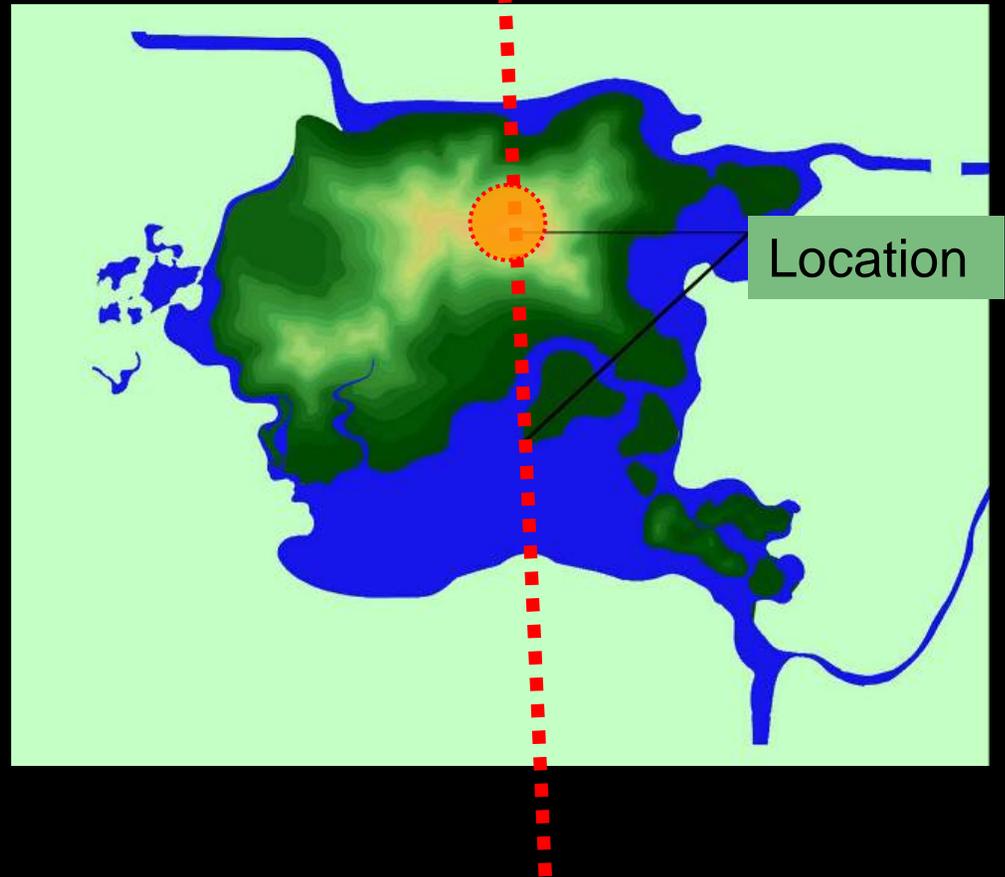


Perspective Rendering of Amphitheater



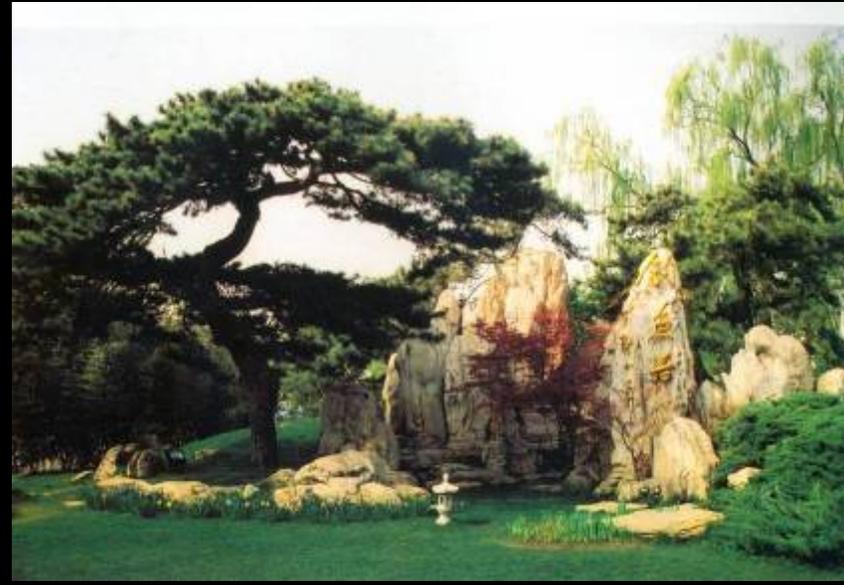
Tian Jing (Land of Heaven)

The Peak of
Yangshan Mountain

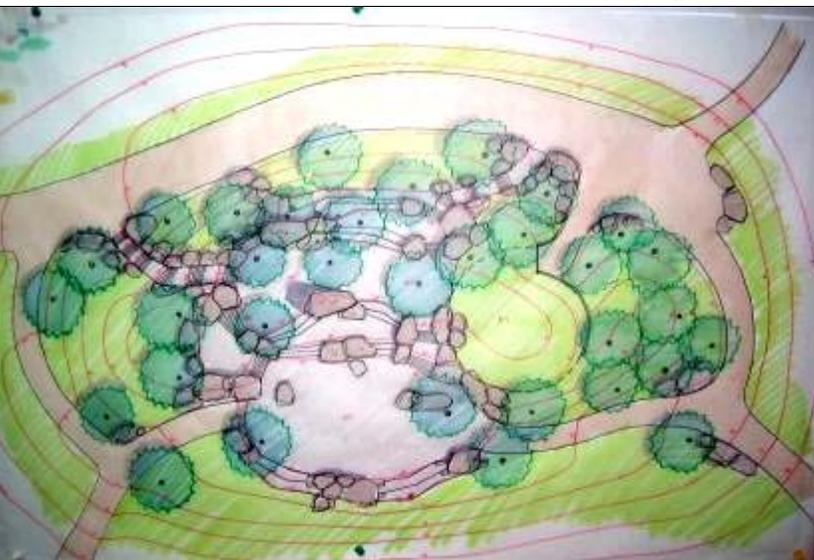


- To Consider Cultural Design Heritage
- To Refer to Chinese landscape Art
- To Express the Harmony between Man and Nature

Perspective Rendering of Tian Jing



- Tian Jing is enhanced with tall Chinese pines, scenic stones and a sight-seeing platform.
- Visitors can pause here for a brief appreciation of the views of the Lake and central axis.
- Visitors can linger longer to enjoy the enchanting scenes.



Sketch of Tian Jing

Model of Tian Jing



Selecting Rock Material at Taishan Mountain



2000 x 2000 x 800



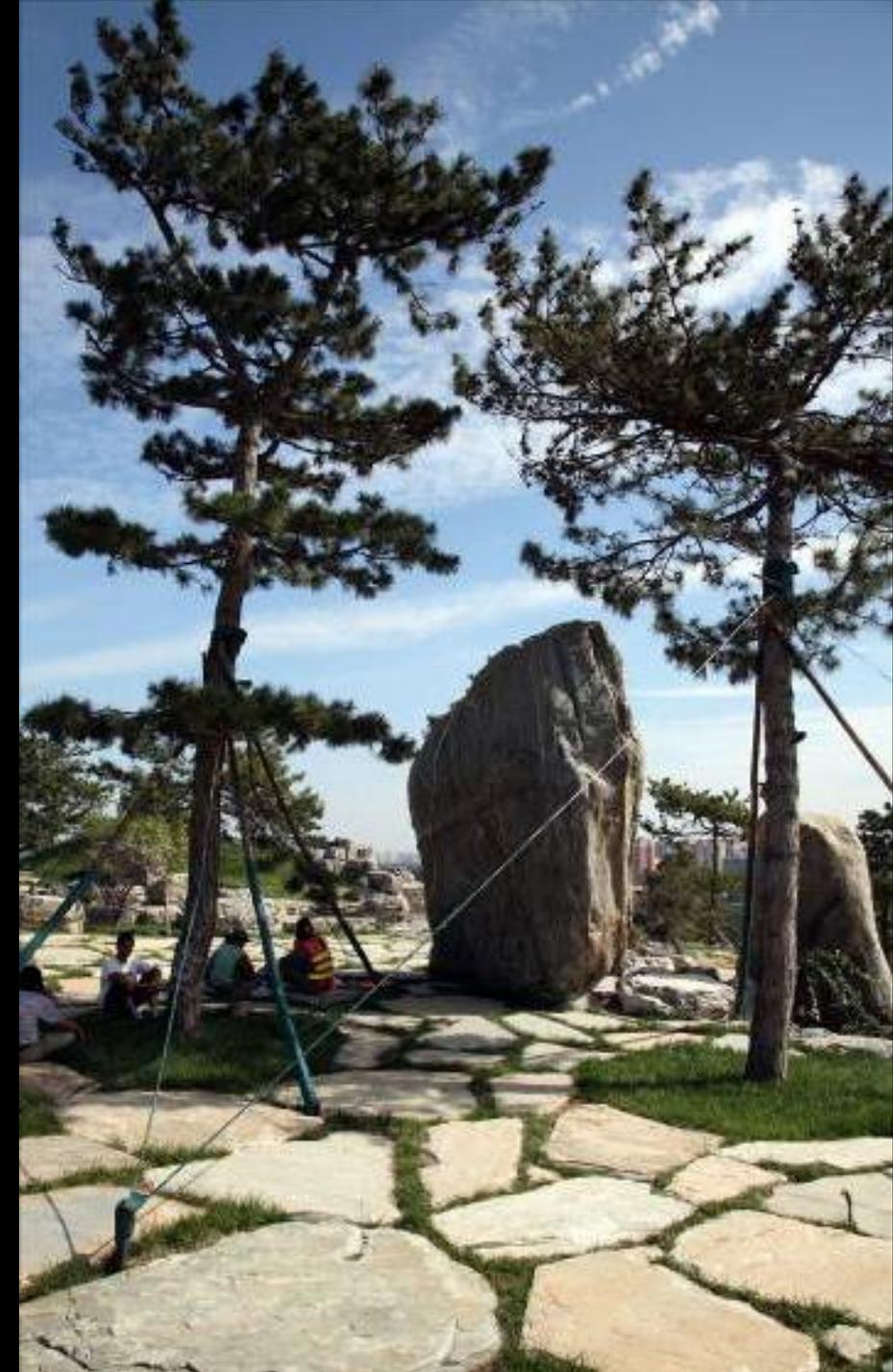
2000 x 2000 x 800

Loading Progress



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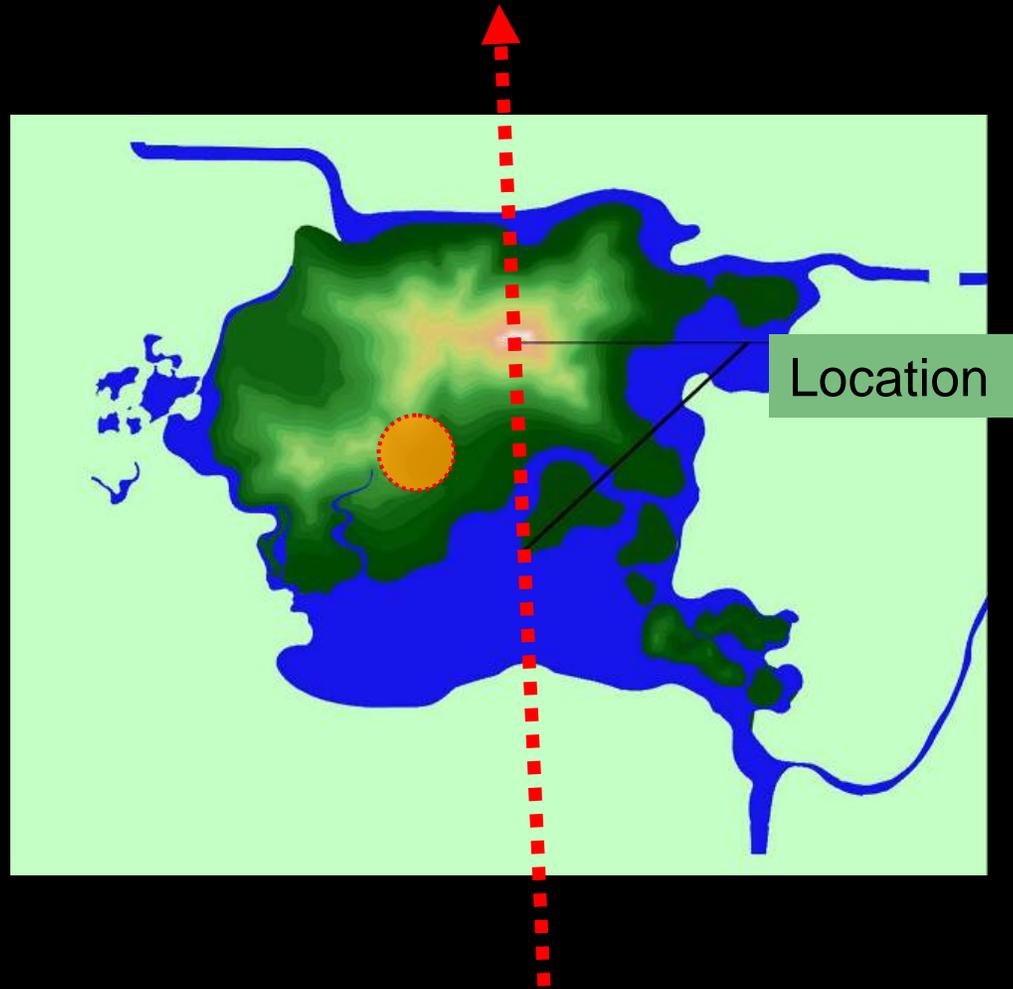




Olympic Volunteers at Tian Jing

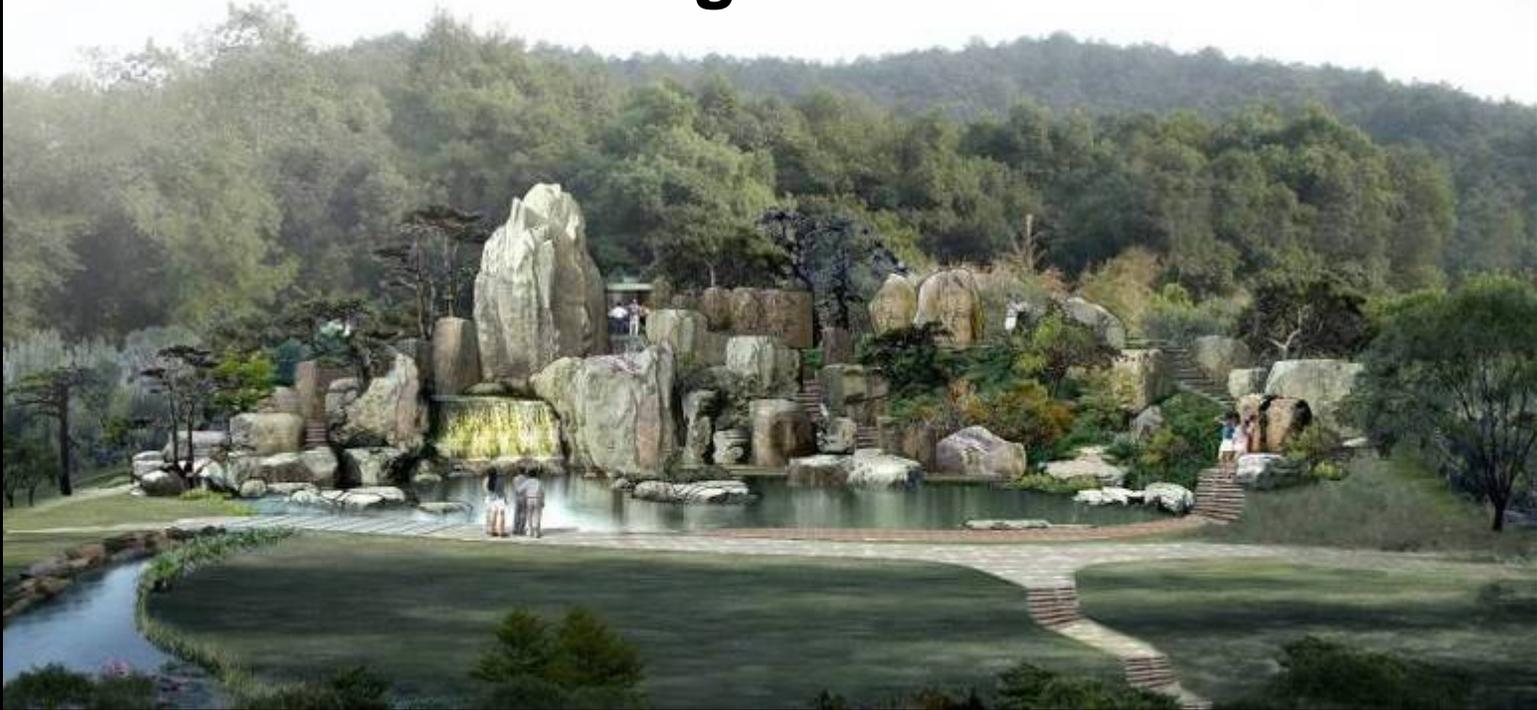


Brooks Running down the Forests



Situated at the Southwest of Yangshan Mountain

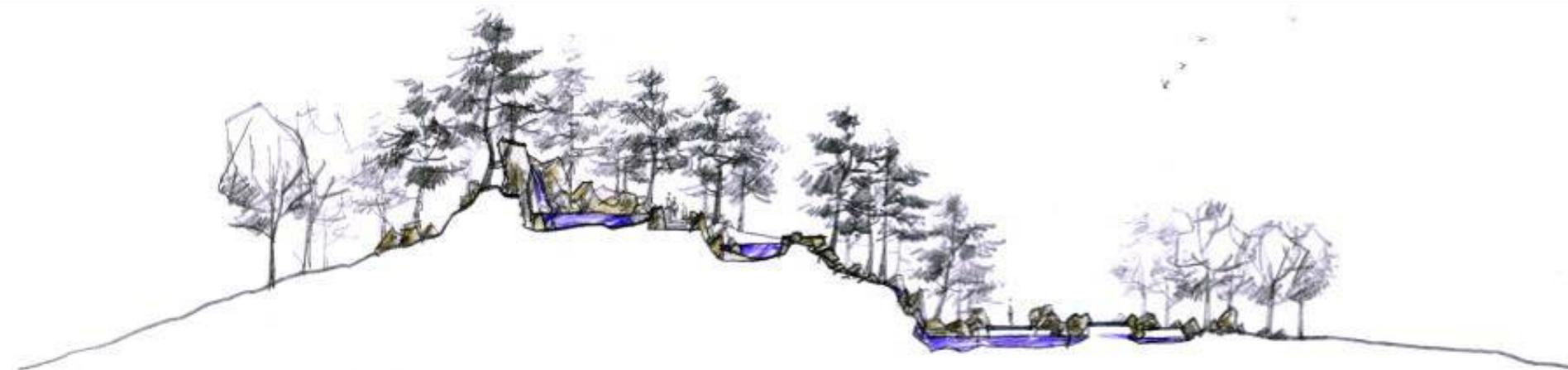
Perspective Rendering of Brooks Running down the Forests



Water falls from the mountain to form brooks that flow through forests to the main lake.

A series of scenes are designed around the brooks which progressively pass through ecological plant communities of mixed woods, grassland, and lakeside wetlands.

Sketch of Brooks Running down the Forests



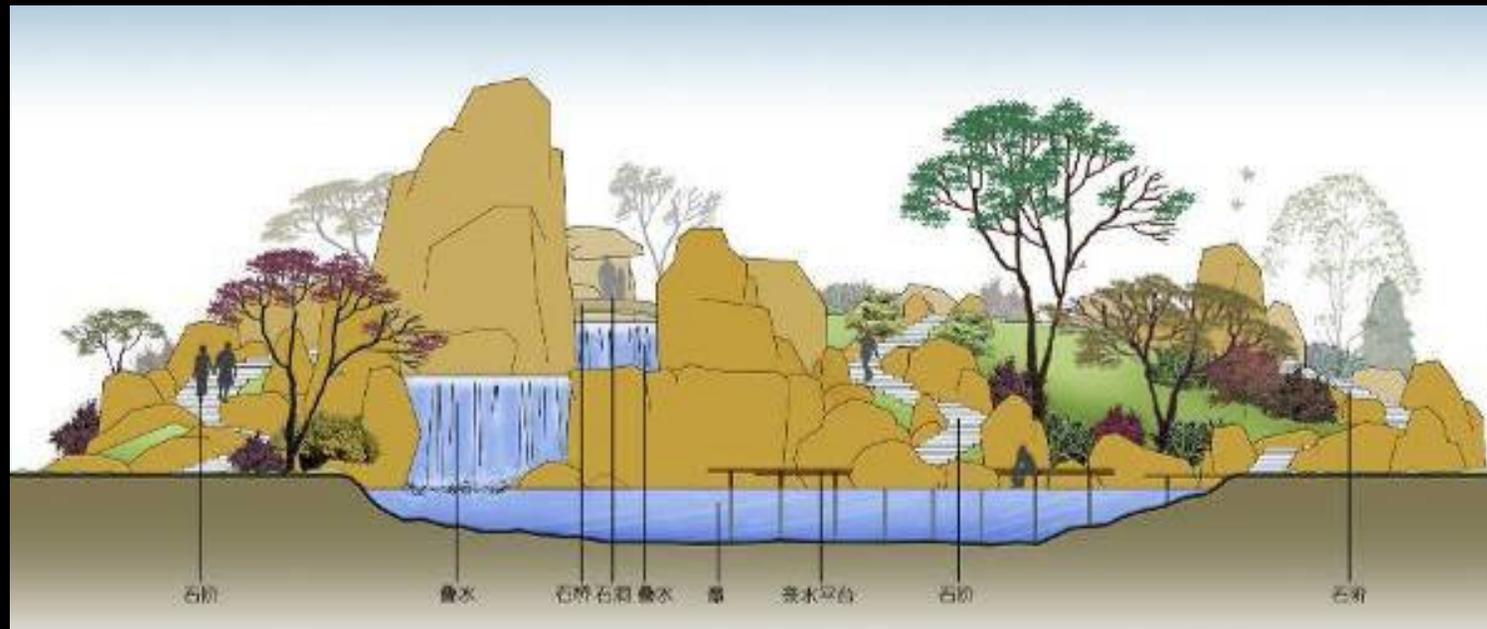
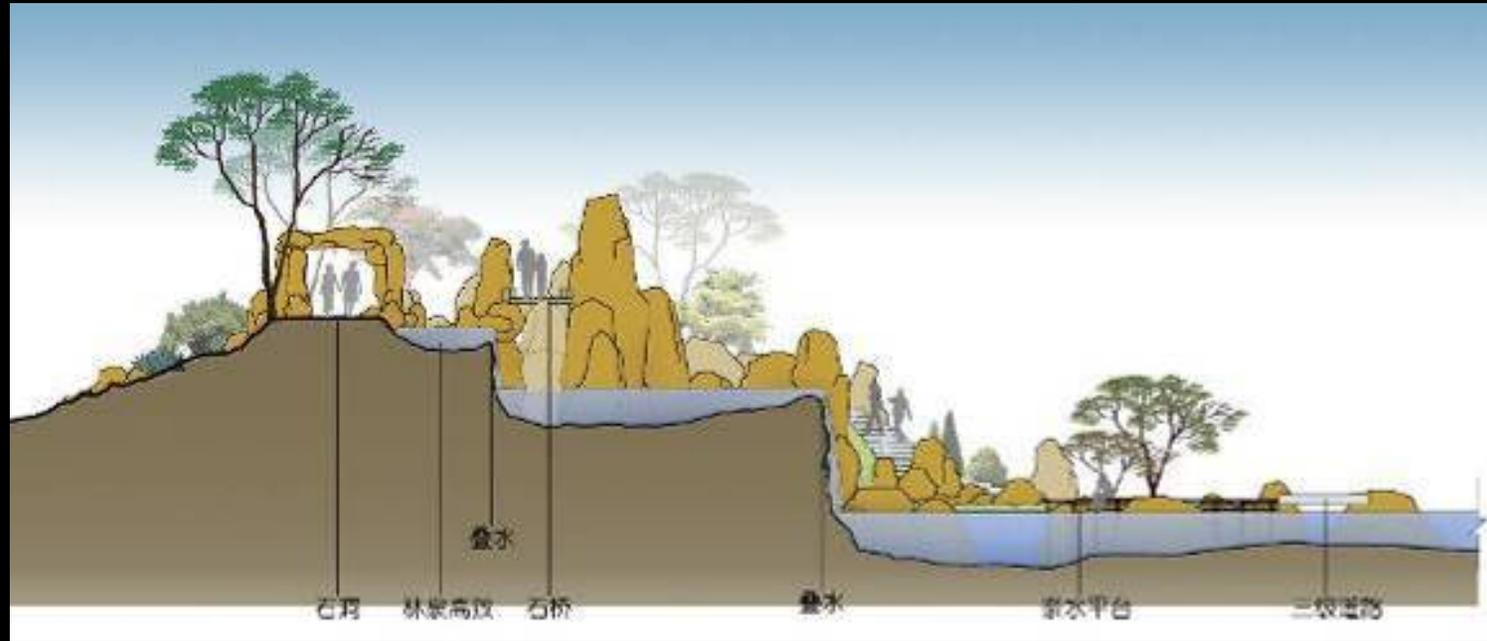
Models of Brooks Running down the Forests



Model of Brooks Running down the Forests



Section of Brooks Running down the Forests



Brooks Running down the Forests



Brooks Running down the Forests





To create a Long-Term Sustainable Eco-System that through research and analysis, can develop a model where tradition meets contemporary ideas and technologies to simulate a natural ecosystem, maintaining regional biodiversity, conserving energy, reclaiming water, and relying as little as possible on municipal services, facilities and resources.





Rich landforms - mountain chain, islands in the Lake, downhill streams and a variety of waterfronts - offer opportunities for diverse eco-habitats to be created.

The analysis of their characteristics set the foundation for identifying plant communities and animal habitats as part of the design.

Offer attractive platforms for traditional activities such as group dancing and tai chi.



We analyzed the effects that diverse terrains and landforms - hilltops, sloping banks, valleys, lakes and wetlands, ecological forests integrated with other landscape types – have on the city in sheltering it from wind and sand, tempering humidity and temperature, increasing storm water detention and collecting precious rainwater.

Located on the central axis, the Olympic Forest Park with its Green language and the grand Shan Shui pattern gives new extension of the axis, and becomes a new landmark in Beijing.

In the future, The Olympic Forest Park along with the growth of time, will bring more benefits for the city of Beijing.



An Axis To The Nature

2. Nature Considerations



To balance Urban Ecology with the incredible strain upon the inner city's resources and open spaces resulting from mass development, and an upsurge in population over the last decades.

Water System Planning

Total Water Surface

67.7 hectare

Water Surface of the Main Lake

20.3 hectare

Constructed Wetland Surface

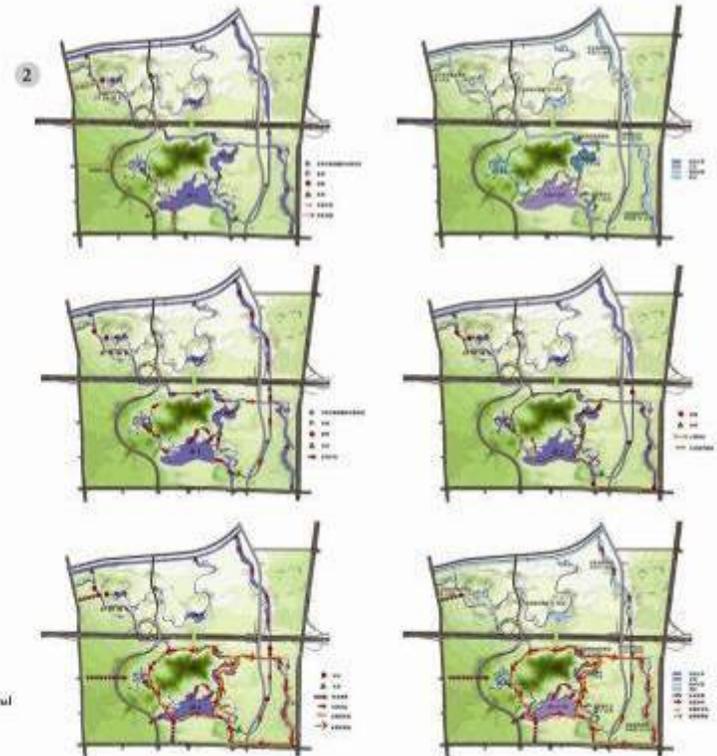
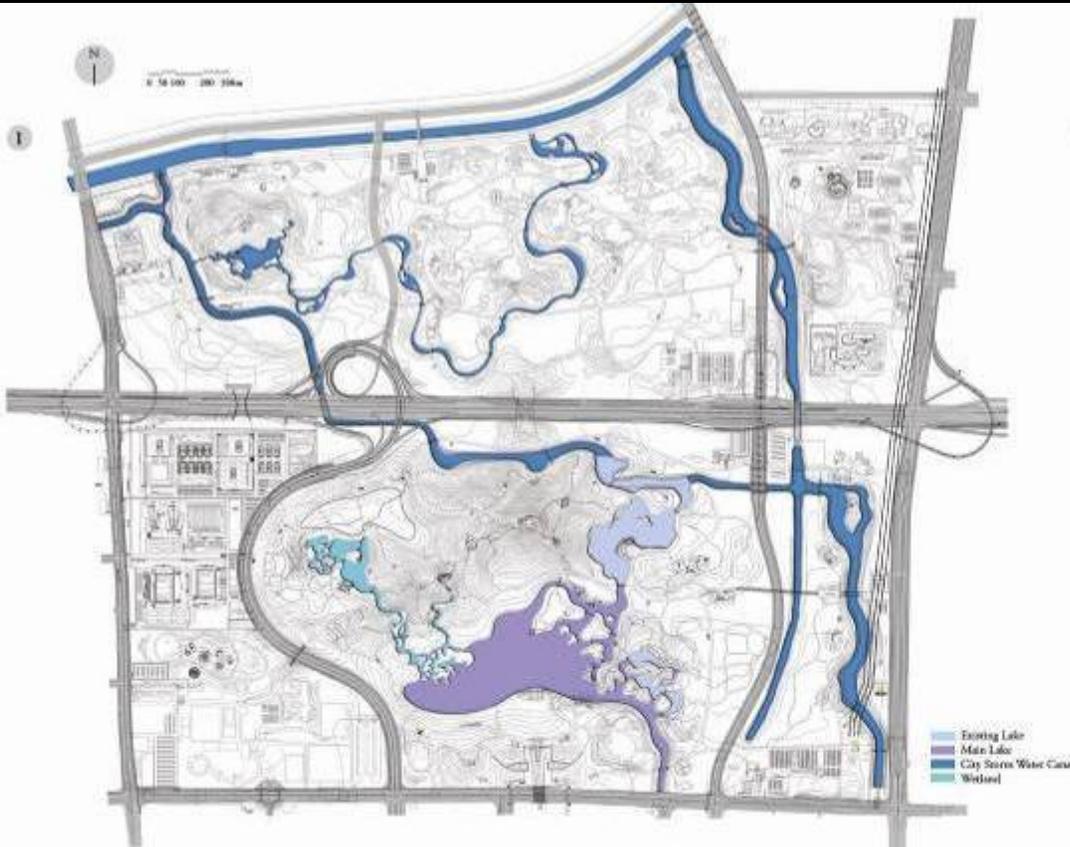
5.71 hectare

Municipal River Surface

25 hectare

Existing Water System

16.69 hectare



The largest technical challenges of Olympic Forest Park involves construction of a self-sustaining and self-regulating water body.

Require solutions to problems associated with dry climate and high evaporation rate.

Necessary to ease ecological pressures on the city.



Therefore, studies were necessary to evaluate how to best use the existing natural water on and around the site, how to collect and reclaim rain and flood water, how to plan an effective water purifying and maintenance system, how to optimize the water circulation and irrigation system through recycling waste water.



Different patterns of water circulation have been analyzed and implemented to address the differences between the flood and other seasons.

A hydrological and water quality simulation process (EFDC, WASP) was used to study water system maintenance.

A compound water treatment system of hierarchical processes was established.



Constructed Wetland

Olympic Forest Park is the first domestic urban park overall making use of reclaimed water as the source of water system and recharge for landscape water.

Functions:

- Increase the liability of the entire water treatment system
- Demonstrate a variety of water treatment technologies
- Integrate water treatment functions with scenic effects
- Construct a natural and ecological treatment system
- Provide an educational center for ecological education

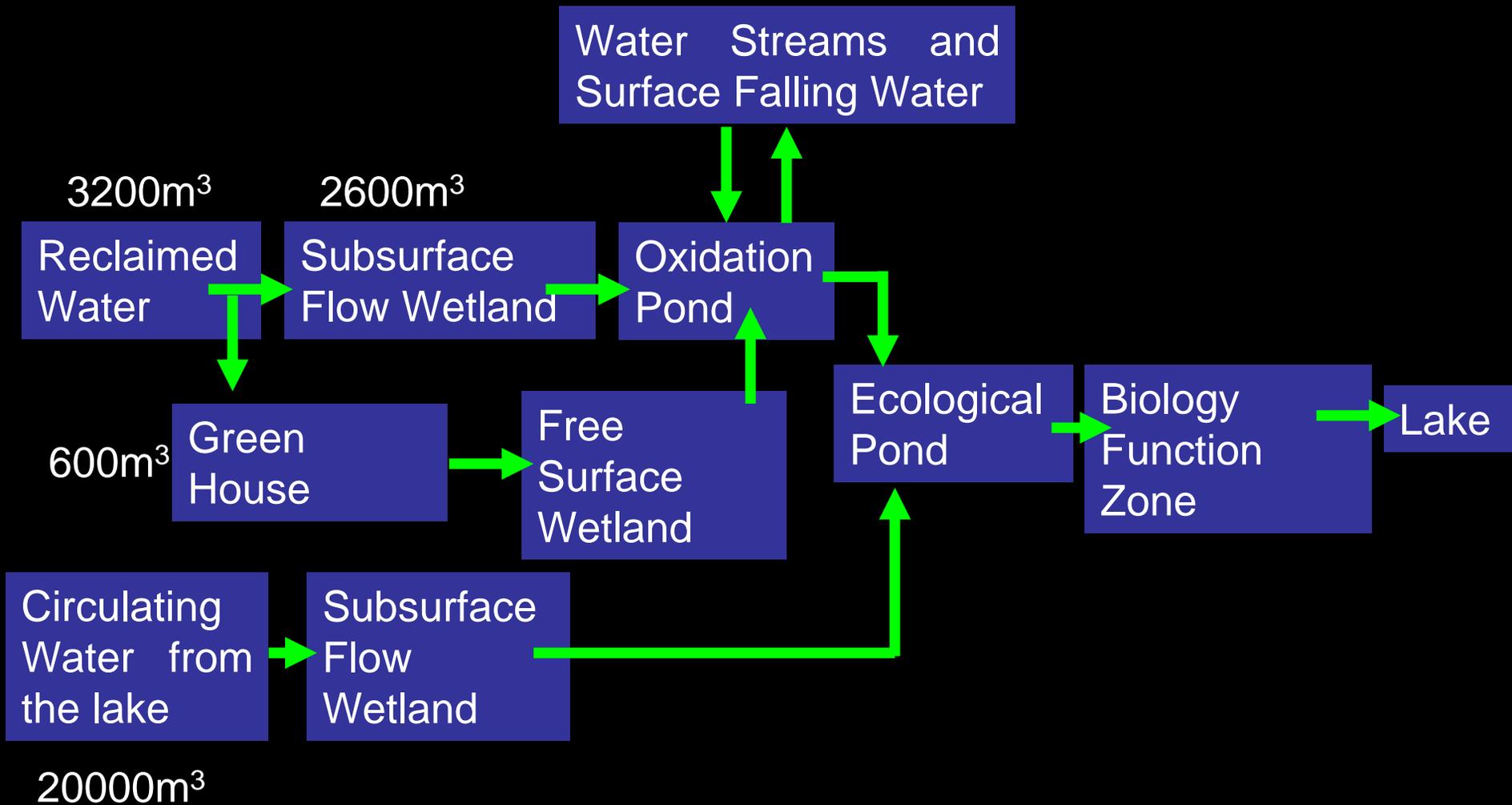
The constructed wetland can dispose reclaimed water 2,600 cubic meters a day, circulating water from the Lake 20,000 cubic meters a day.

Treated Water shall reach the Standard of China for Landscape Water

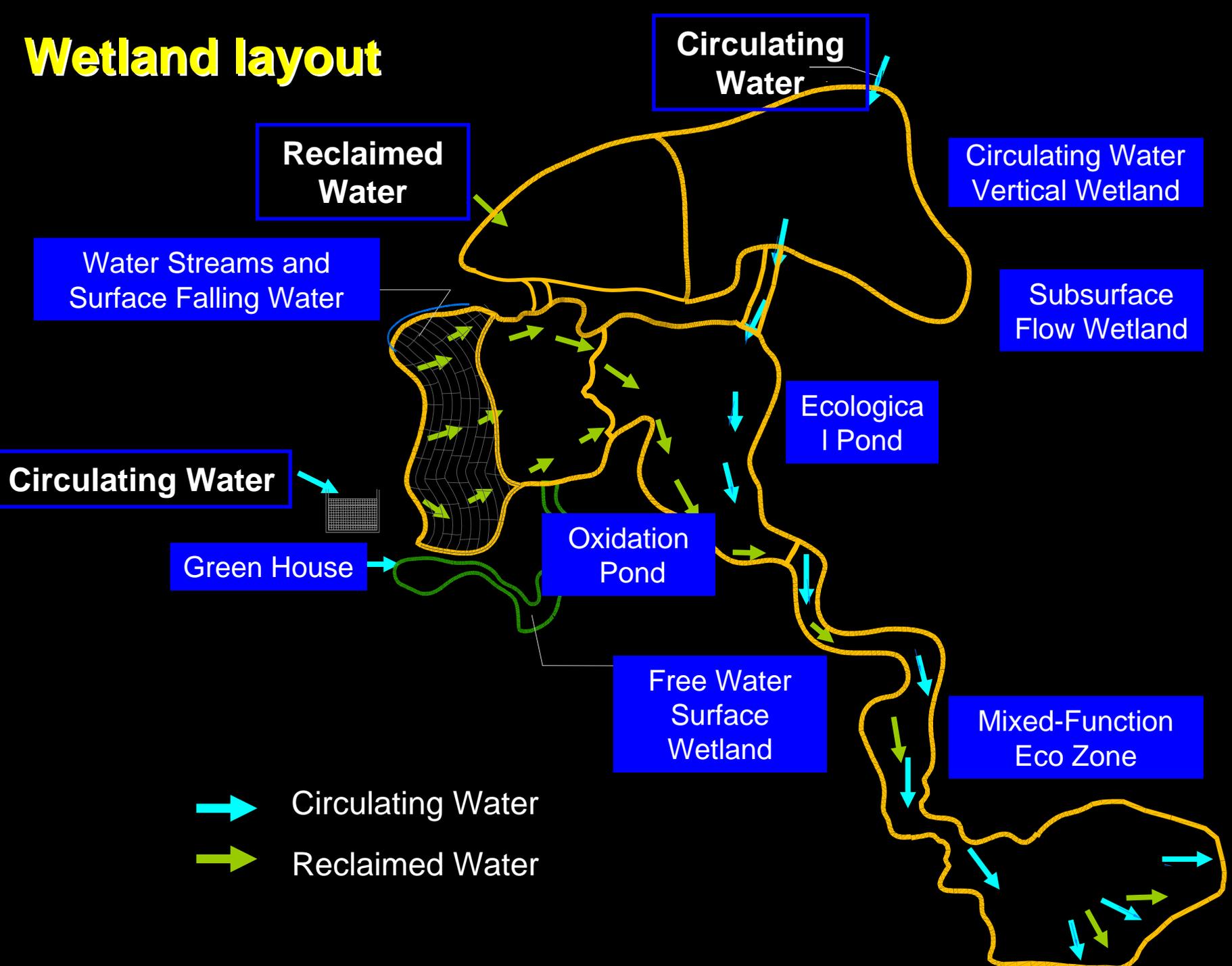




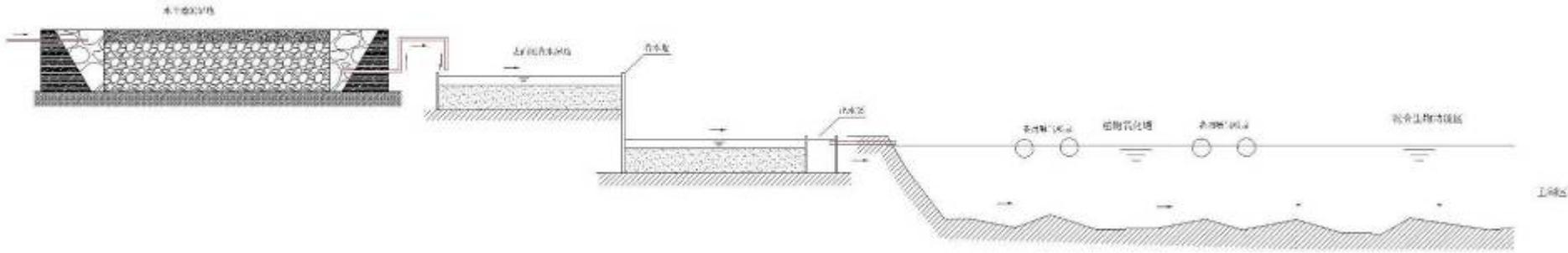
Process



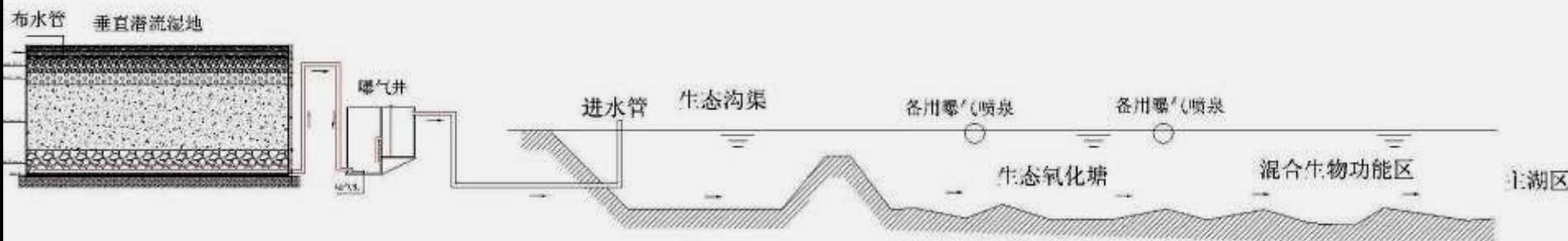
Wetland layout



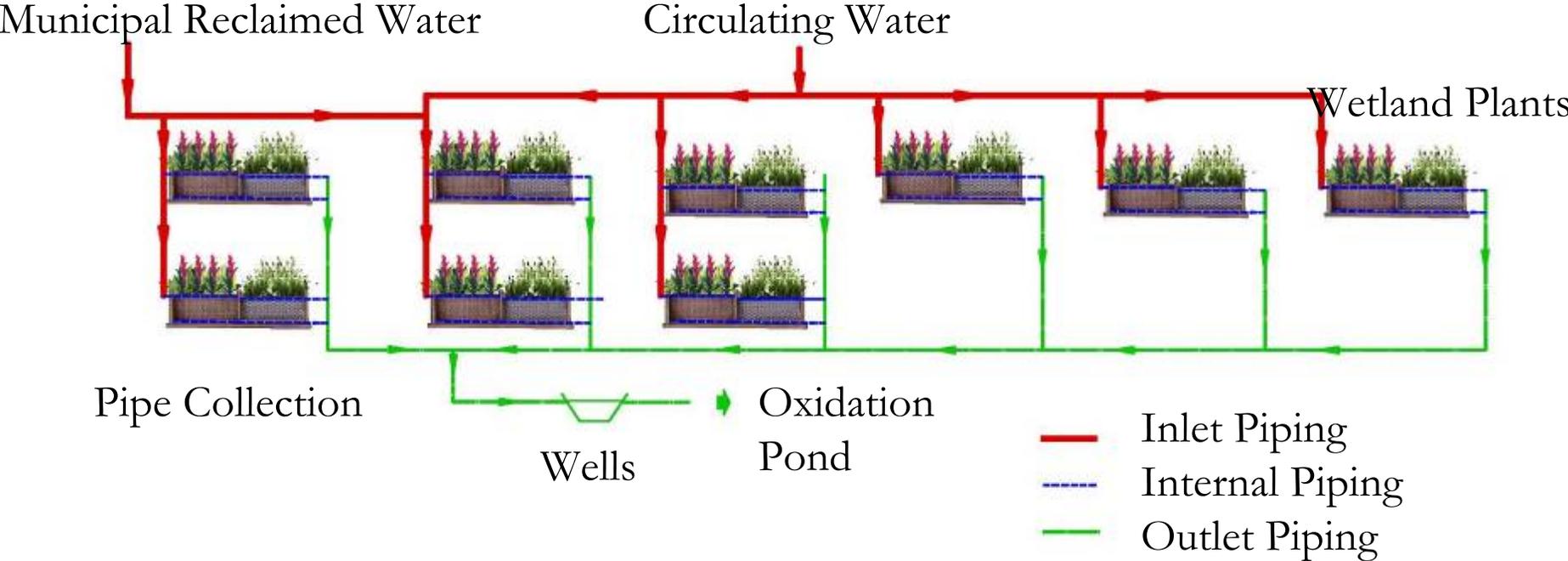
Wetland System for Reclaimed Water



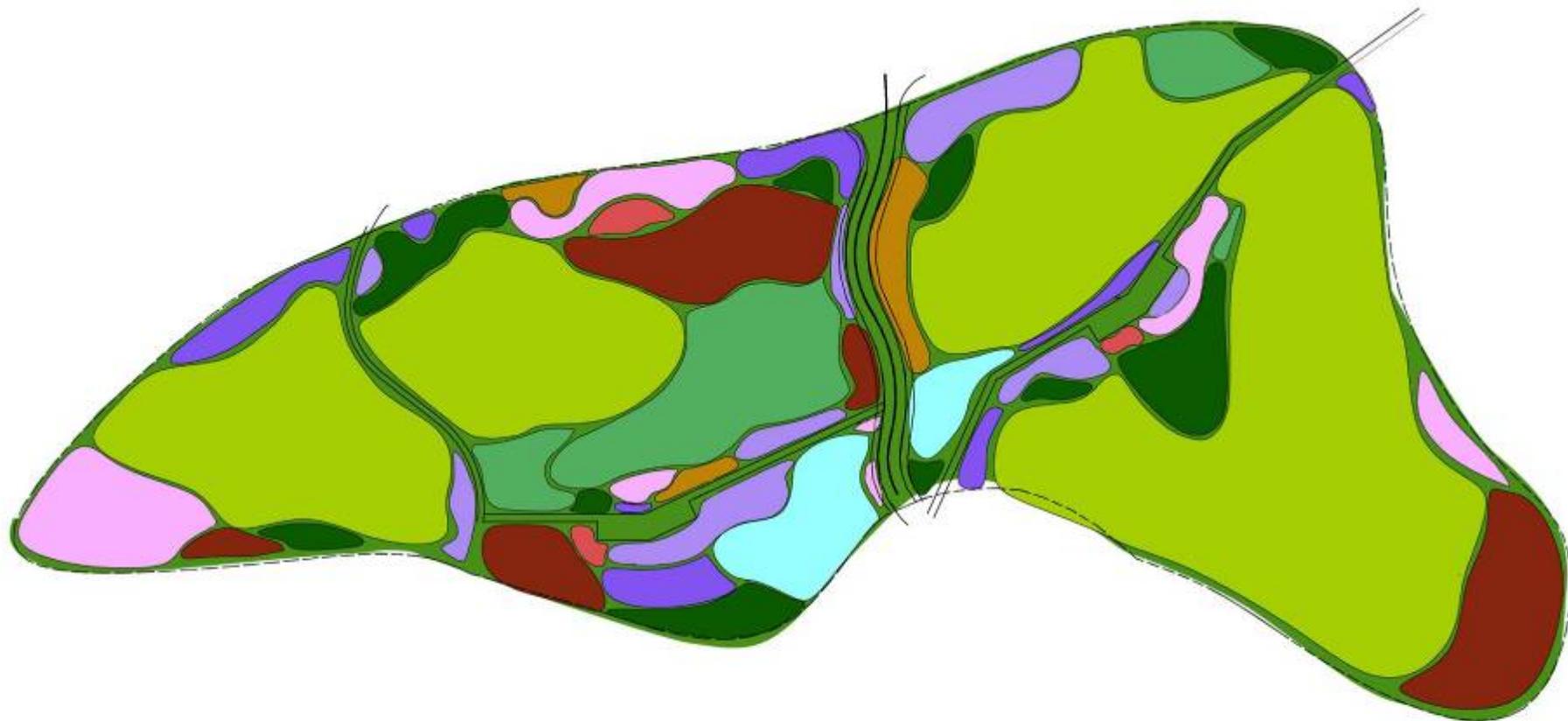
Wetland System for Circulating Water



Wetland Section



Subsurface Flow Wetland Planting Plan



泽泻 *Alisma orientale*

红廖 *Polygonum orientale*

千屈菜 *Lythrum salicaria* Linn.

菖蒲 *Acorus calamus* Linn

三棱草 *Cyperus iria*

鸢尾 *Iris*

芦苇 *Phragmites communis*

水葱 *Schoenoplectus tabernaemontani* (C.C. Gmel.) Palla

菰 few-flower wildrice

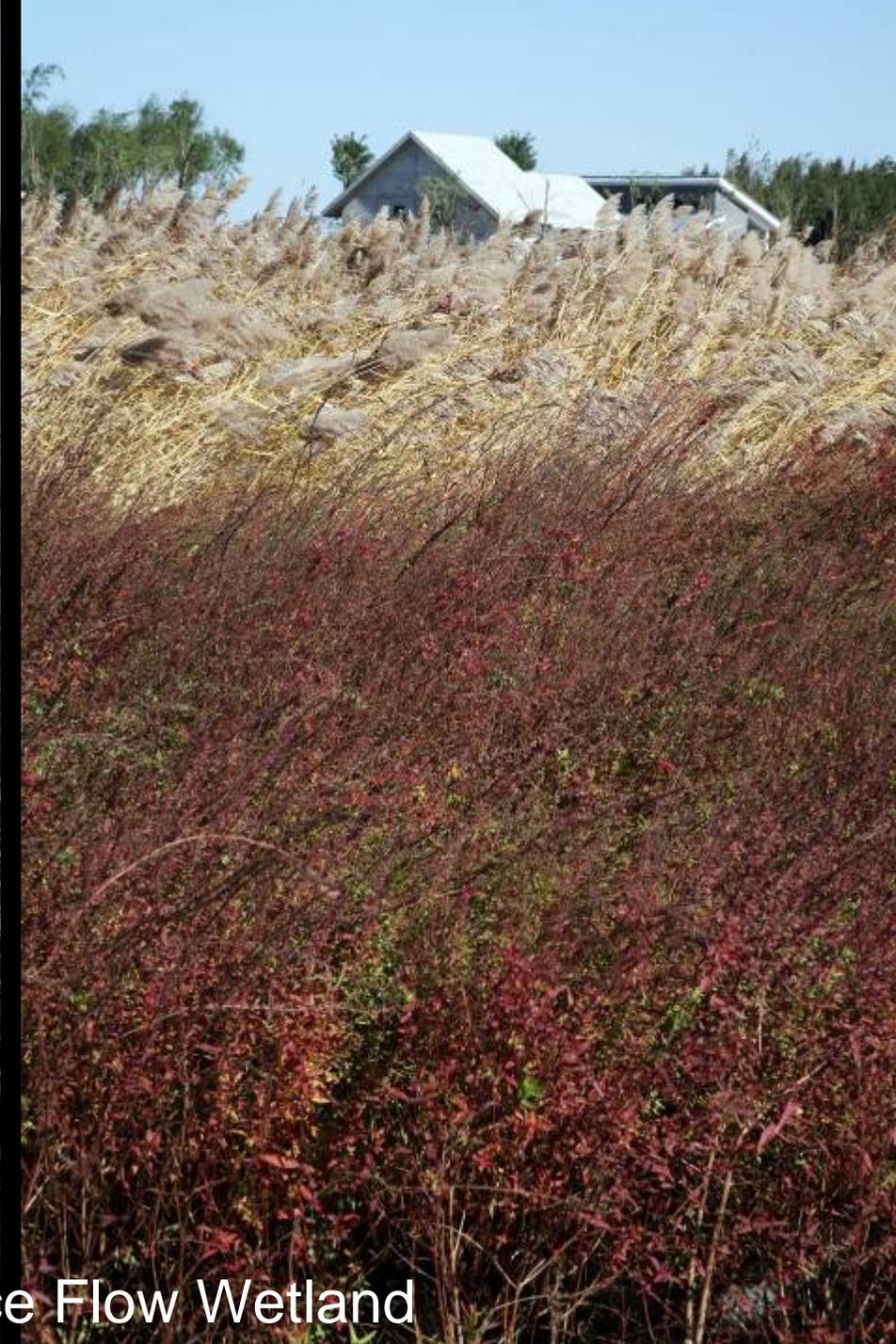
香蒲 *Typha orientalis* Presl



Subsurface Flow Wetland



Subsurface Flow Wetland



Subsurface Flow Wetland



Free Water Surface Wetland



Free Water Surface Wetland



Free Water Surface Wetland



Birds at Wetland

Underwater Corridor

Functions:

- Observation of wetland from a different view
- Education for the structure of wetland
- Block off water flow
- Slow water speed





Underwater Corridor

Flowers Terrace

Functions:

- Aeration
- Scenic Effects



Greenhouse for

Ecological Purification of Water Quality

Functions:

- Reduce pollution content in the water and improve water quality
- Offer a scientific and interest scenic spots for the public
- Show a new and secure sewage water ecological treatment technology
- Provide a design demonstration of urban landscape water purification system



雨水收集系统
Rainwater Harvesting System

雨水收集系统示意图

生态驳岸
Ecological Embankment

生态驳岸示意图

生态驳岸
Ecological Embankment

生态驳岸示意图

生态驳岸
Ecological Embankment

生态驳岸示意图

结合太阳能光伏板的景观廊架
Night Corridor With Solar Photovoltaic Board

结合太阳能光伏板的景观廊架示意图





Total Construction Area: 2200m²

Reclaimed Water Treatment Capacity: 600m³/day

Treated Water shall reach the Standard of China for Landscape Water.

According to the principle of "low cost and high efficient, ecological coordination, and environmental friendly", the greenhouse adopted All-weather eco-system for water purification.

Treatment Process

Inlet

Enhanced Denitrogenation Wetland

Water Plants Purifying Units

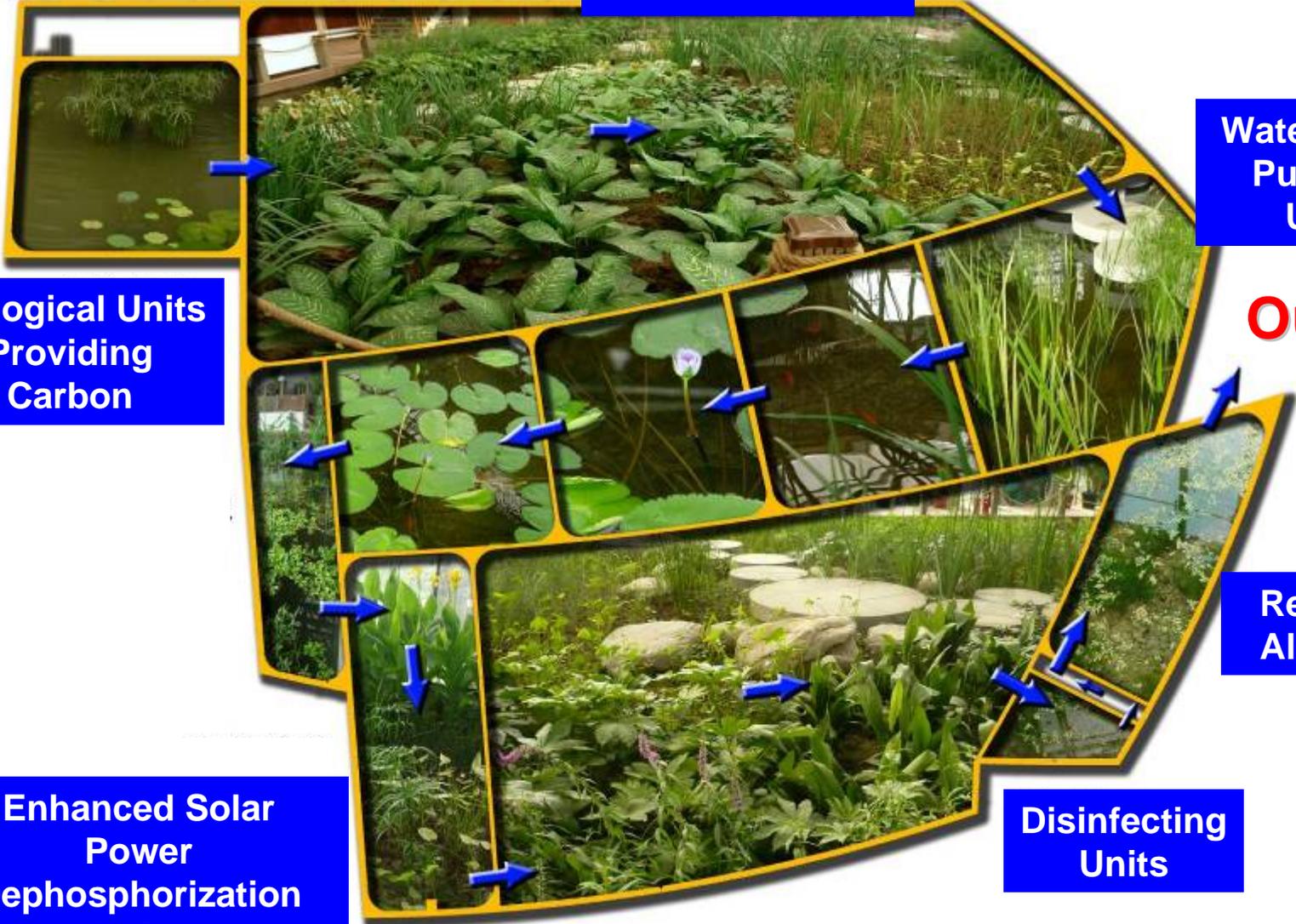
Outlet

Biological Units Providing Carbon

Restraining Algae Units

Enhanced Solar Power Dephosphorization Units

Disinfecting Units



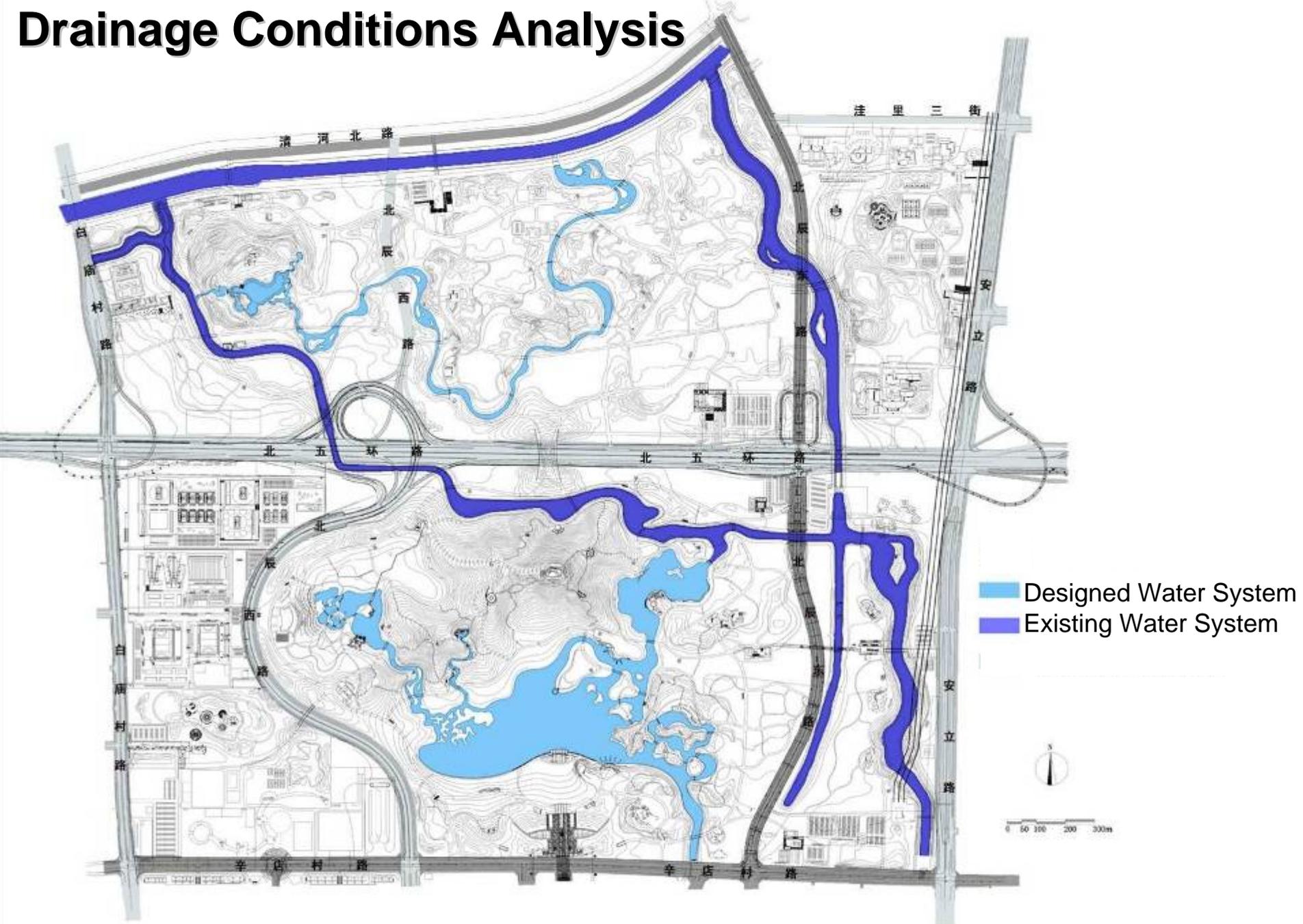


Stormwater Utilization System

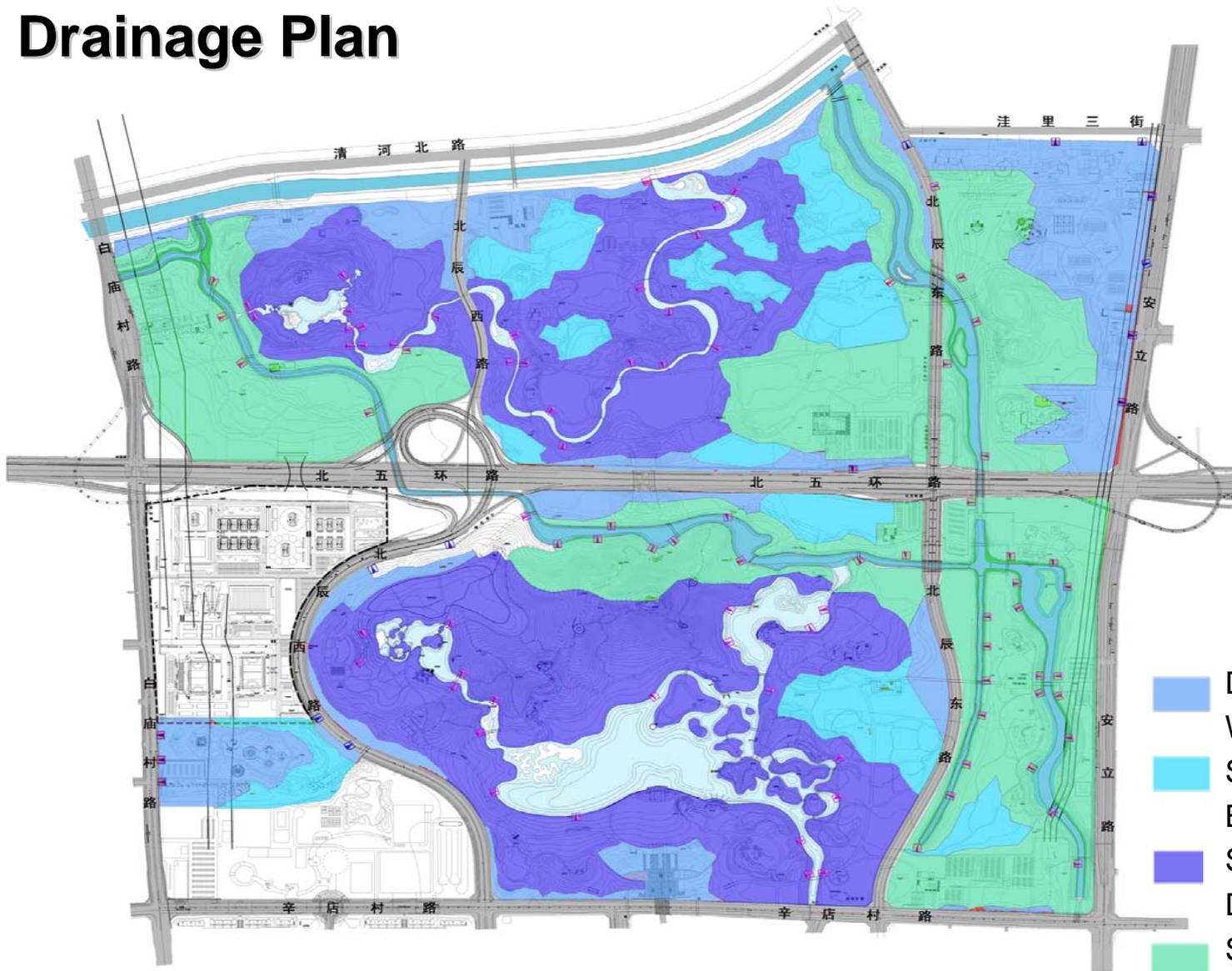
Design Principles

1. Make use the conditions of topography, hydrology and municipal storm water.
2. Make use of municipal river-ways and lake water system to collect rain water.
3. Make use of the collected water to irrigate and to wash the roads.
4. Make use of green lands in the park to increase the permeability of hard paving.

Drainage Conditions Analysis

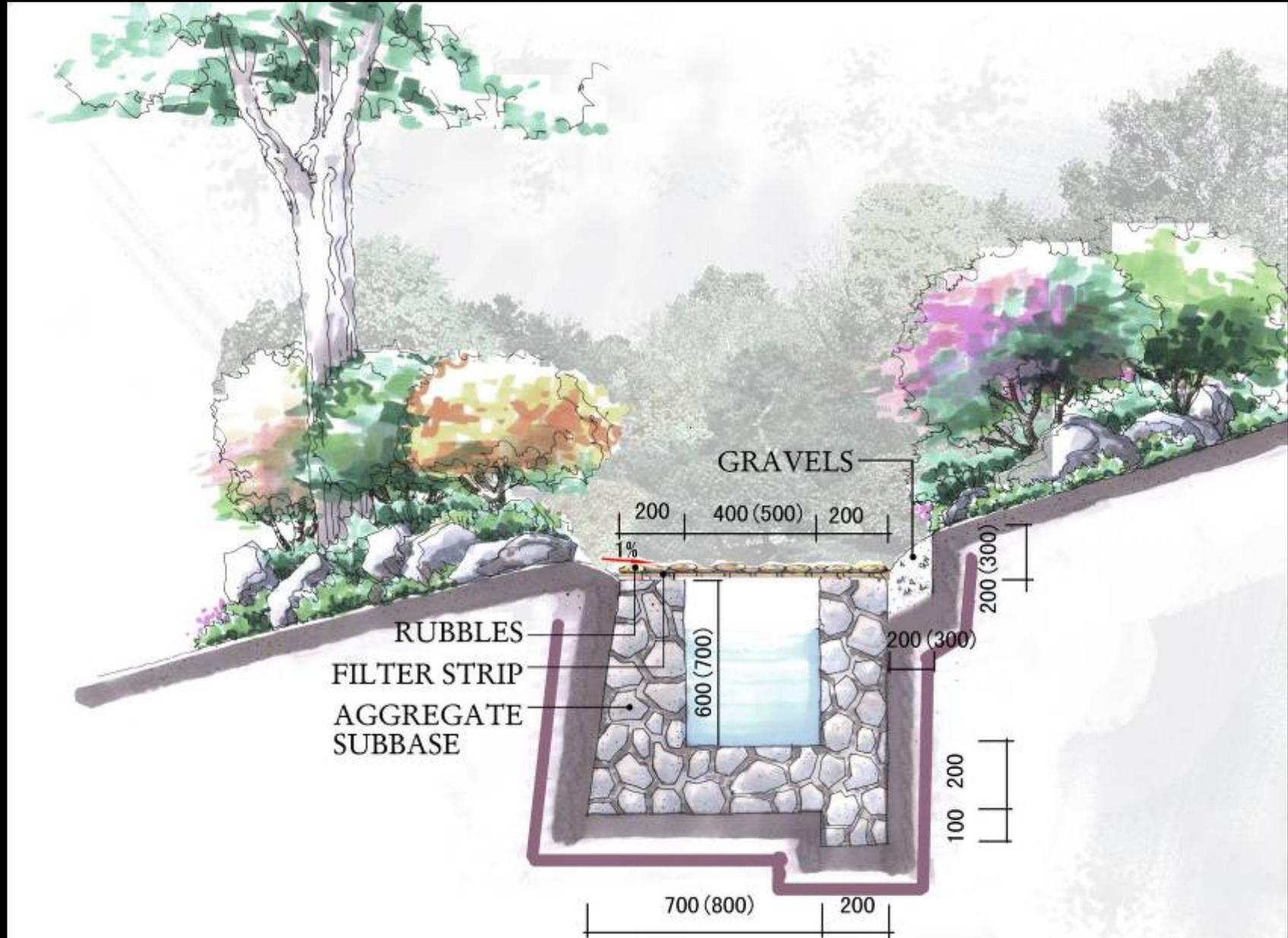


Drainage Plan



- Drain to Municipal Water System
- Storage Systems of Basins, Trench, Wells
- Storage Systems of Domestic Water
- Storage Systems of Municipal Rivers
- Municipal Roads
- Domestic Water System
- Municipal Rivers

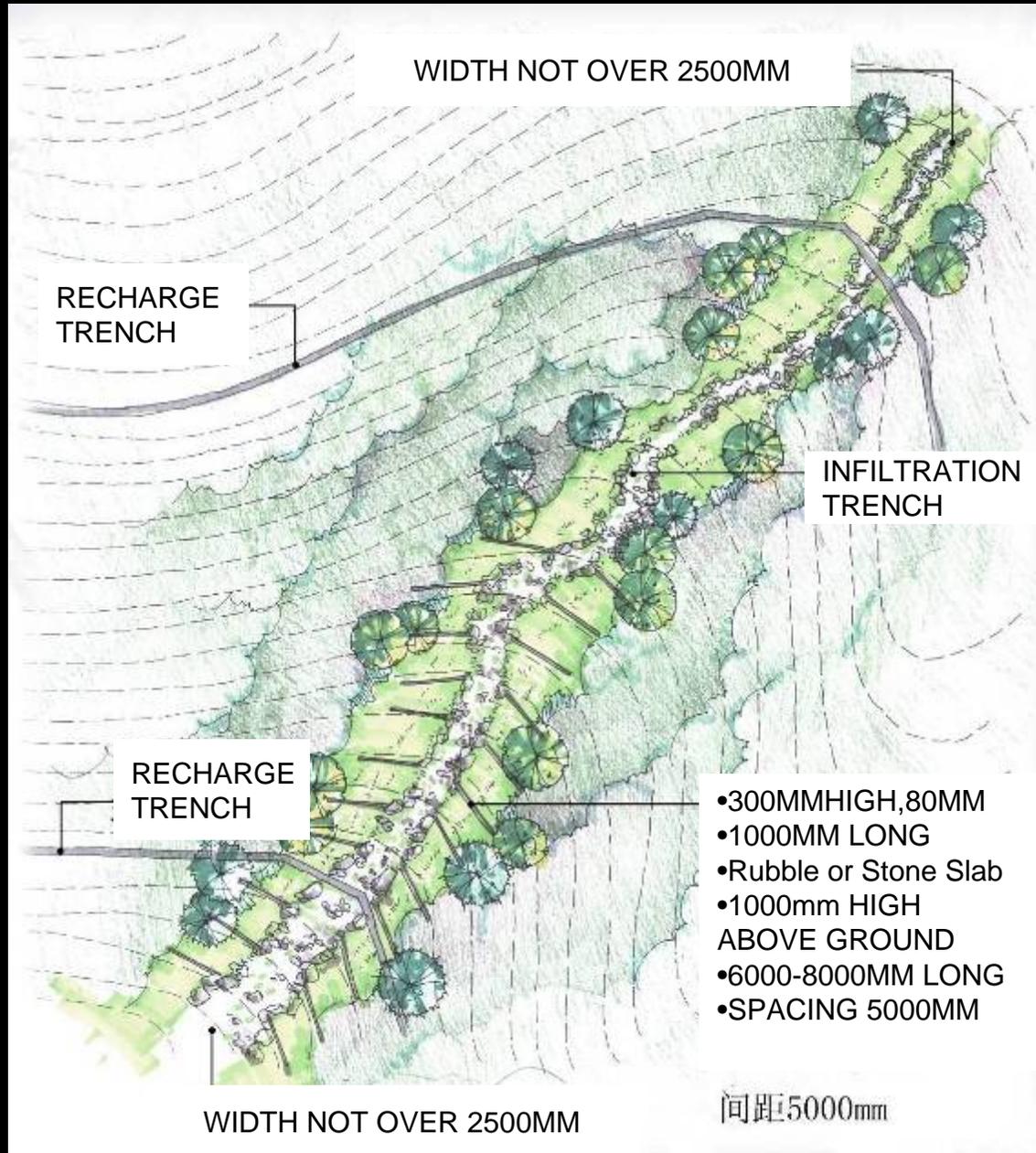
Recharge Trench Schematic Section



Infiltration Trench Schematic Section



Infiltration Trench Schematic Section



Ecological Permeable Roads

All the roads in north park use graded sand gravel with 100% permeability.

The roads in south park adopt different measures according to the grades.

Car park Area: 122825m²
Grass Car park



Zero Sewage Discharge in the Park

Sewage Discharge in the Park (Prediction)

Tourists of the OFP: 5,300,000 per year

Staff of OFP: 4280

Quantity of Prediction Drainage: 86400m³/year

The Designed Sewage Discharge: 1590.91m³/d

The Characteristics of Drainage

- dispersed layout and various functions of buildings;
- changing landform;
- no existing municipal pipeline;
- Unstable tourists flow leads to obvious seasonal changing drainage.

Therefore, waste water need to be discharged within the park.

Goals

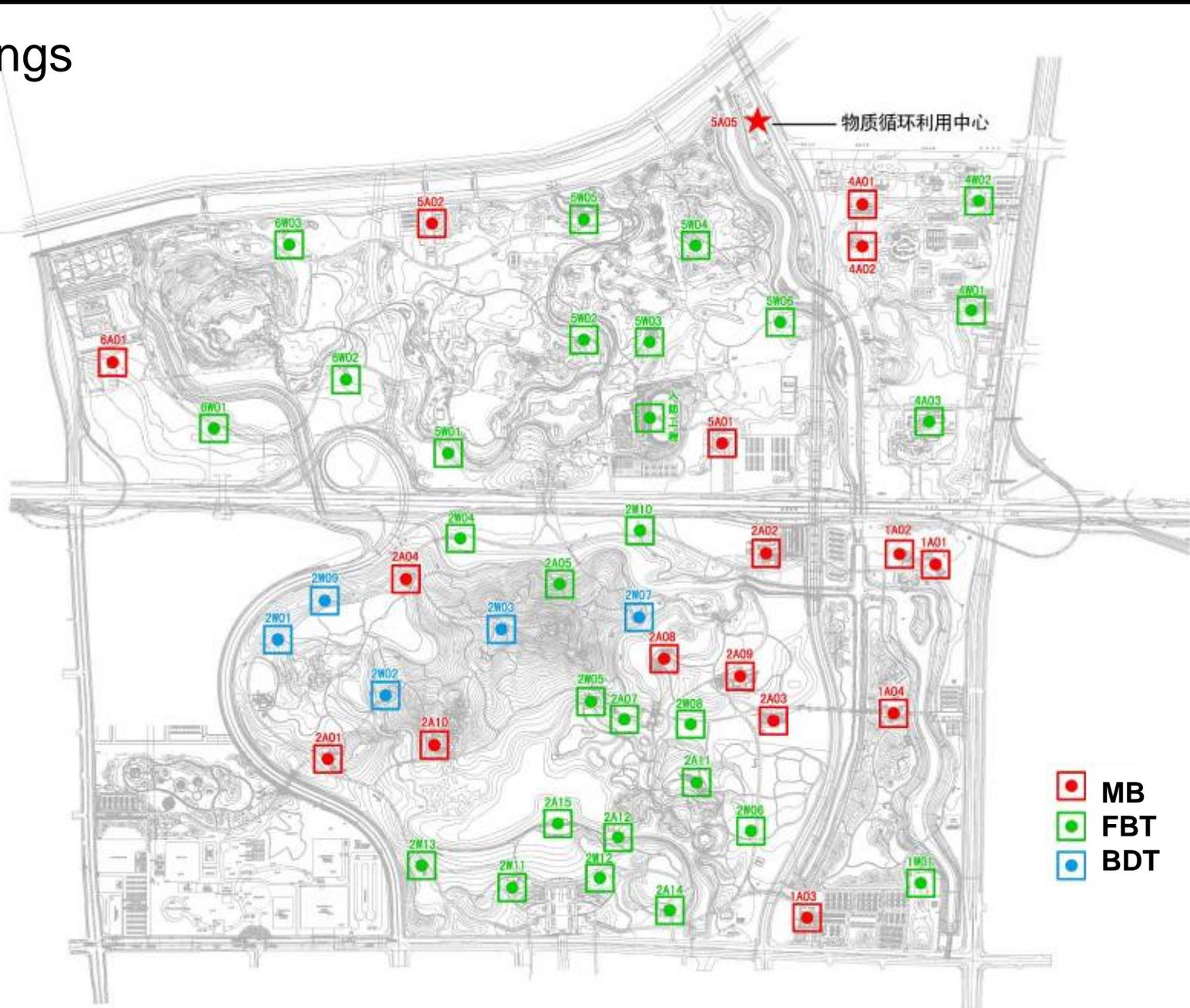
Zero discharge and reclamation ensures **zero pollution** to environment

Main Techniques

1. Membrane Bioreactor (MB)
2. Fast Bio-degradation Treatment (FBT)
3. Bio-Degradation of Dejection Treatment (BDT)

Distribution of the buildings that adopt sewage treatment techniques

48 buildings



Planting and Biodiversity Design

Investigation & Modeling of Beijing Indigenous Plant Community

Value of Indigenous Plant

- Tolerance Capability
- Eco-efficiency
- Biological Features
- Aesthetic Value

Living Conditions

- Natural
- Semi-natural
- Artificial

Conditions in OFP

- Site Conditions
- Transport
- Geology & Hydrology
- Vegetation

Modeling in OFP

- Landscape Consideration
- Zoning of Planting
- Plant Community Modeling

Planting Design Classification

Trees + Shrubs + Grasses



Trees + Grasses



Waterfront + Forest Edge



Waterfront



Wetland



Grassland



Area of Green	Quantity of Trees	Shrubs	Groundcovers
>450 ha	>530,000	>60 species	>80 species

Diagram of Planting Space



Ecological Contributions to Beijing

- Annual output of Oxygen: **5400t**
- Absorption of CO₂: **7200t**
- Annual absorption of SO₂: **32t**
- Annual dust detainment by trees: **4905t**
- Annual recharge of water: **67.5m³**
- Forest Humidity : **27% higher than the other place**
- Forest Temperature: **3-5°C** lower in Summer,
2-4°C higher in Winter





Ecological Consideration Design

Swift Tower



Apus apus pekinensis

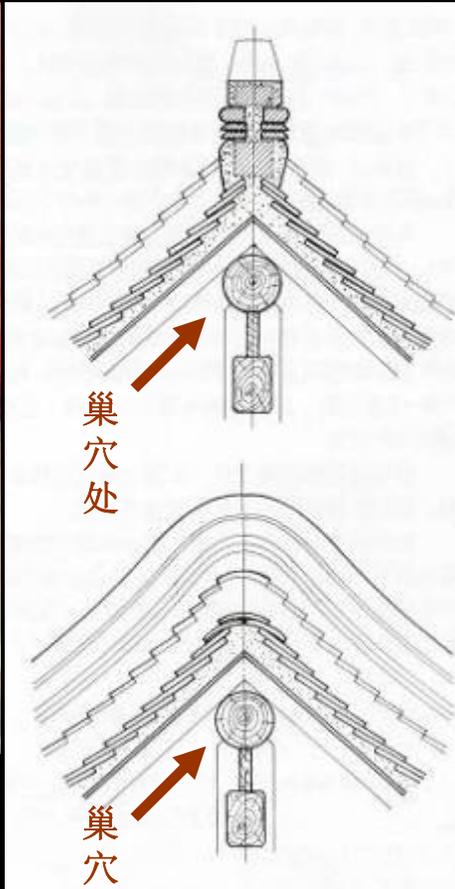
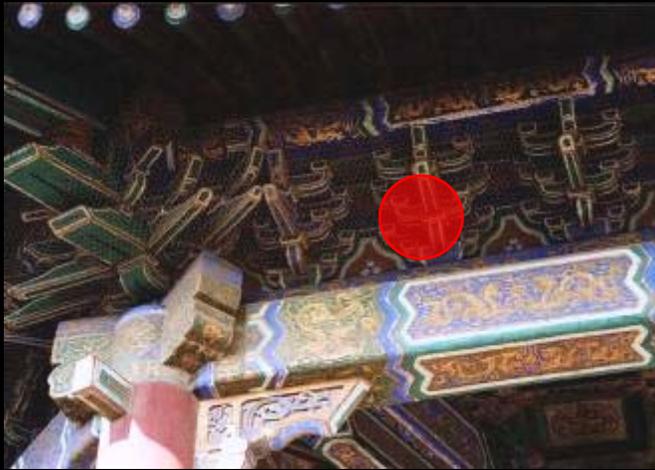
- Beijing local bird specie
- An indicators of the urban environment quality
- Important to the biodiversity within the city, and to urban pest control
- Nest mainly on buildings
- The observation tower can be combined with the existing resources of the Forest Park to provide them with an ideal habitat

Fuwa Nini



Nests of Swift

- Location: 4-45m, average of 10.18 ± 8.0 m
- Weight: 12.49 ± 6.53 g
- Outer Radius: 11.13 ± 1.46 cm;
- Inner Radius: 8.74 ± 1.29 cm;
- Height: 2.69 ± 1.03 cm



Three Challenges of Tower Design

Protection: Protect Beijing Swift Species and Biodiversity

Combination: Ideal Habitat and Special Landscape

Creation: Scientific Techniques and Artistic Form



The First Swift Tower in China



Ecological Corridor

Location:

Over the highway known as the 5th Ring Road, which divide the Forest park as a northern and a southern part.



Section

Functions:

- To link southern part and northern part of Olympic Forest park.
- To provide pathway for the movement of animals.







Measurement and Position



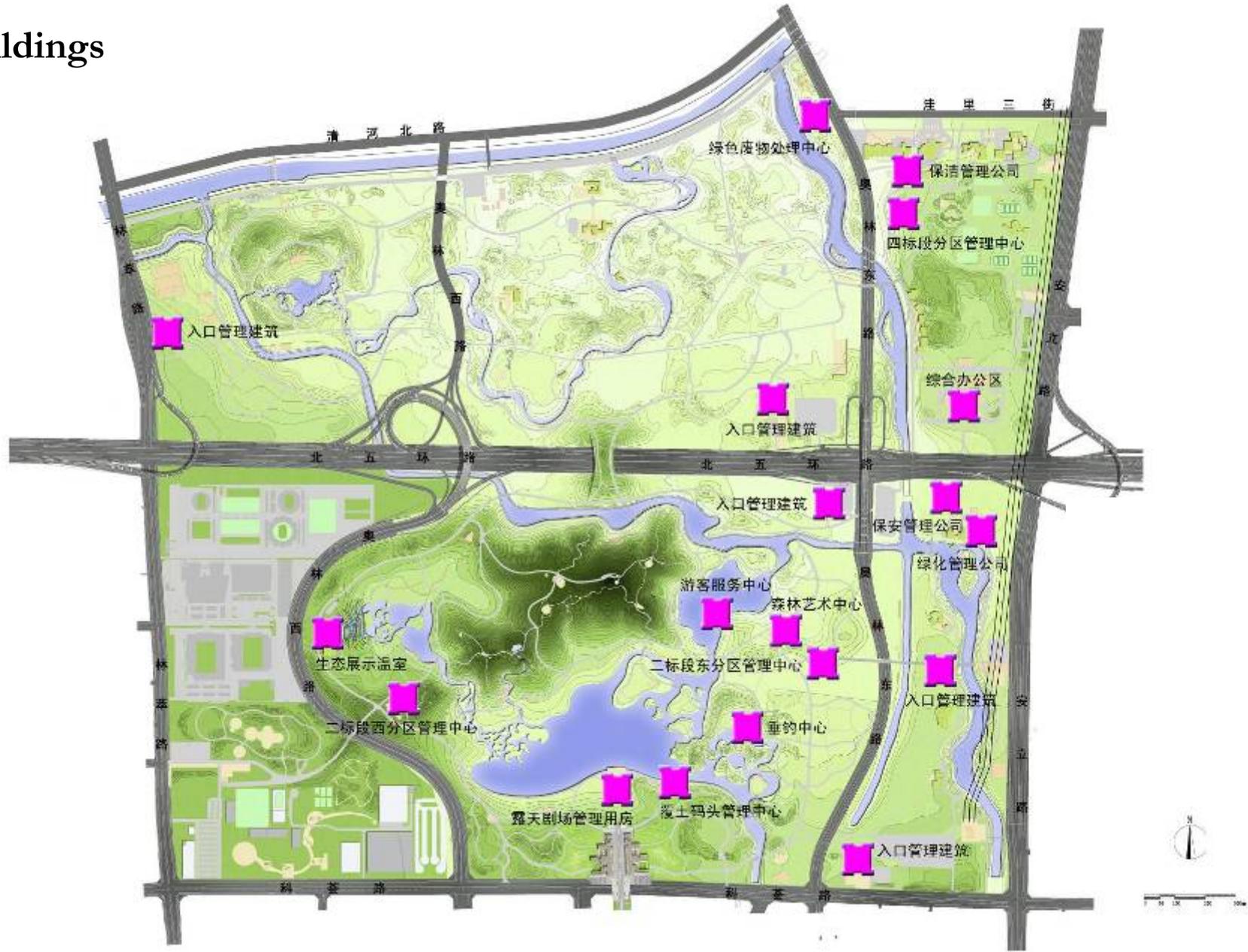
Pipeline Installation



Drilling

Distribution of the Buildings Used Geothermal Pumps

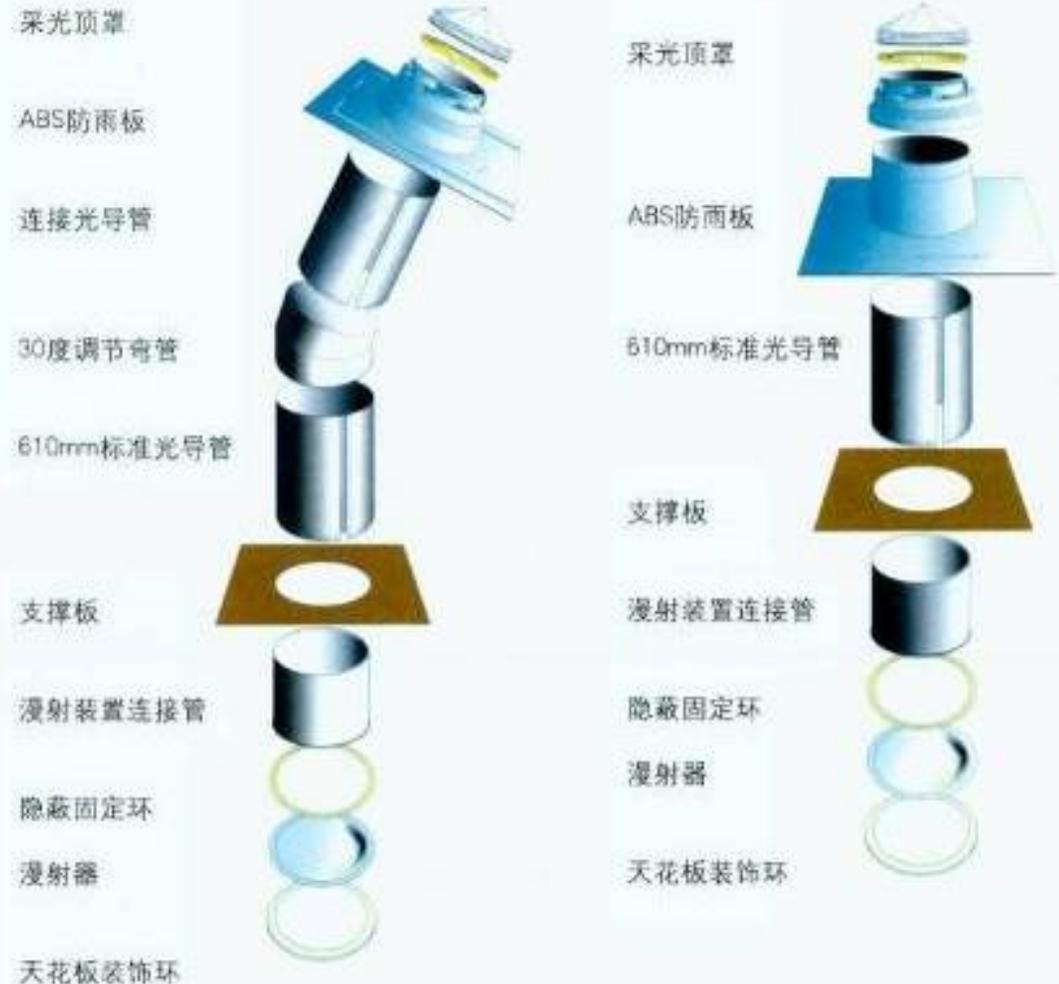
21 Buildings



Optical lighting

Advantages:

- Application of Nature Light
- No Cost of Electricity
- Durable





Solar Photovoltaic Panels

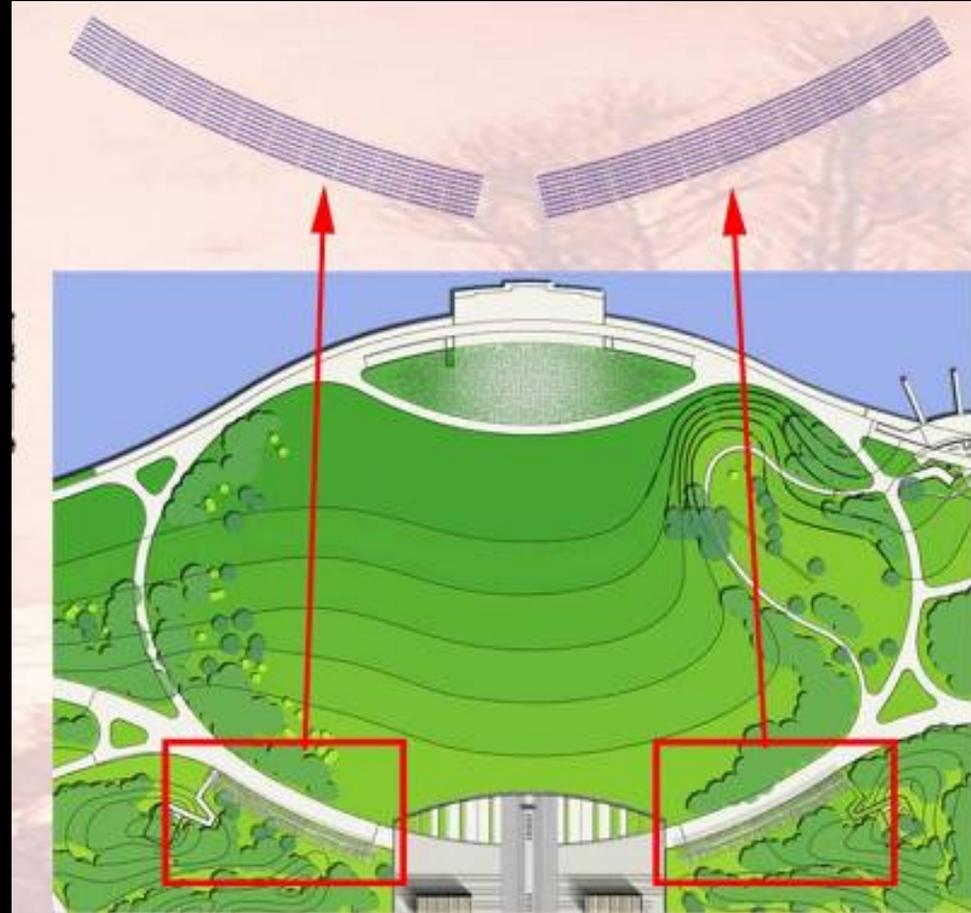
Advantages:

- Non-polluted
- Educational
- Environmental benefits

Area: 950m²

Power: 80Kw

Annual Electricity Generation:
80,000°C





Solar Photovoltaic Panels
Combination with
Landscape Furniture



Application of Wood-Plastics Composite

Advantages:

- Plastifying
- Economic
- Environmental Protective
- Recycling



Recycling and Reuse System of Solid Waste

The first domestic urban park to make use of recycling solid waste

The prediction of Annual Sewage and Waste product

According to the prediction of annual tourists as 5,300,000 and staff as 4280 to calculate as follows:

- Annual Sewage Product: 121980M³;**
- Annual Recycling Yellow Water: 3230M³;**
- Sludge of 95% Moisture Content: 7860M³;**
- After Dehydration Sludge of 70% Moisture Content:
1304M³**
- Reusable Green Plant Waste in Southern Park: 3000M³**

Keywords

SOURCE SEPARATE :

Life wastes are separated in the discharge source and then were treated separately and effectively. It's a different treatment technique from environmental protection projects in the past which treating at the end of the process.

RECYCLING :

Turn the materials rich in organic matters such as life and garden waste, into fertilizer and spread in the park after processing hazards. This not only solutes the visual impact of waste and other environmental problems, but also format the a virtuous circle of biomass resources in situ use.

Classification of Waste Discharge and Environment Problems

- Sewage — 49 buildings, The designed maximum treatment per day: 1696 m³

With the usual sewage treatment technique, N and P can not reach the national standard of landscape water

- The sludge from Septic pond is reach to 7800t/year

High transportation fee and resource waste

- Huge green waste, only south park 3000t/year

Separate compost fertilizer products low

Objectives:

- Collection
- Reuse of Green Fertilizer
- Low Operation Costs
- Garbage-obturation Process
- Participating the Ecological Recycling



without any fertilizer
未添加任何肥料

hygienised urine
尿液

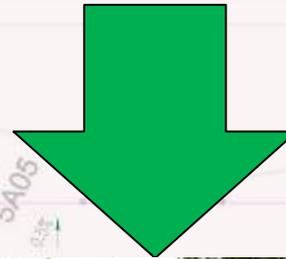
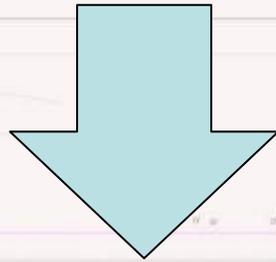
digester effluent
发酵废物

urea carbamide
尿素

N,P,K fertilizer
氮、磷、钾复合肥

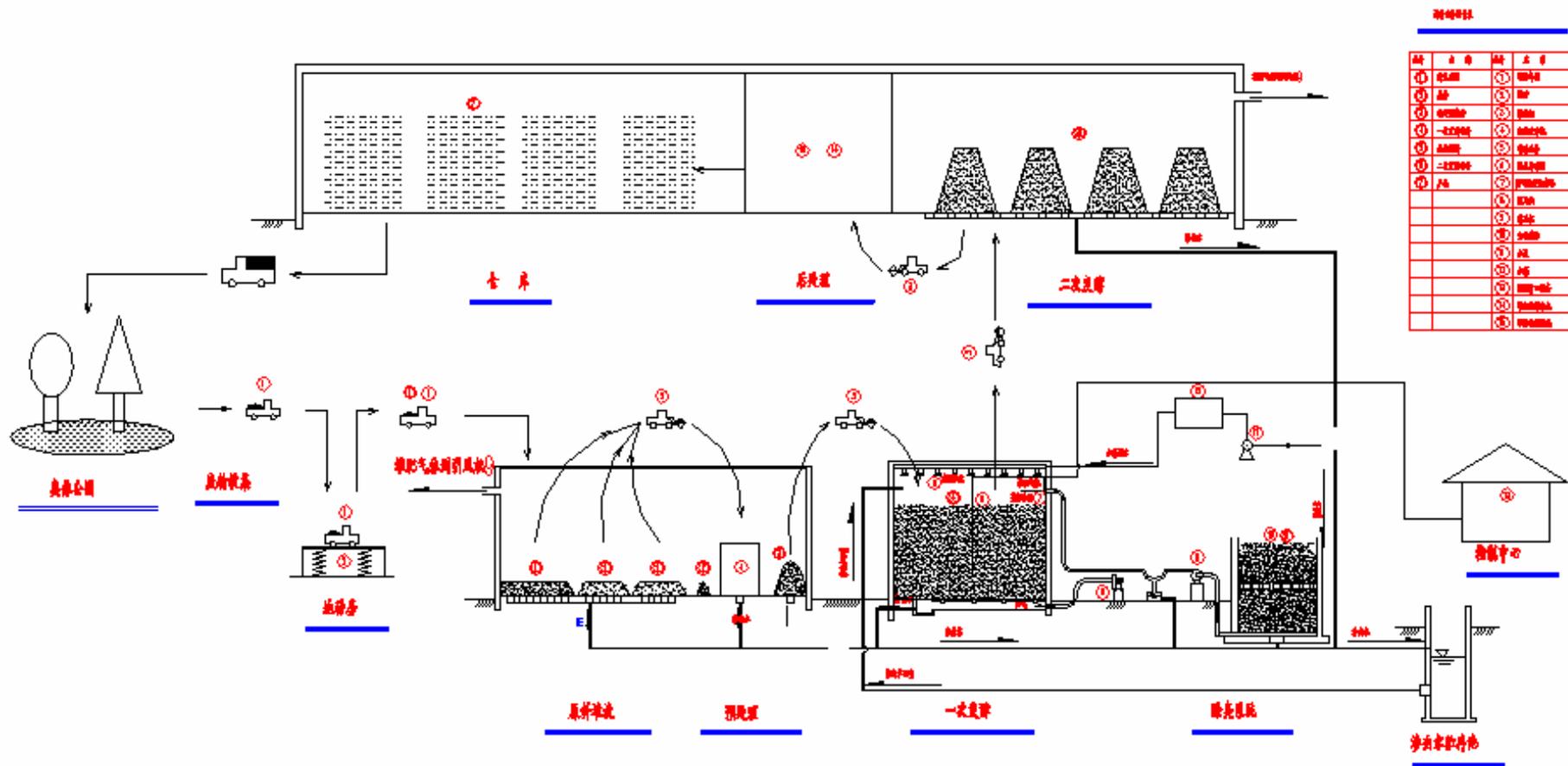
Urine Treatment Center

Green Waste Treatment Center



Waste Recycling and Reuse Center

Process





Source Separation Toilet



“Yellow Water” Collection & Transportation Truck

Functions:

- Transport the collected yellow water to Urine Treatment Center
- Transport the liquid organic fertilizer to the trees



- **Sarah Liao Sau Tung**, (left) who was former Secretary for the Environment, Transport and Works of the Hong Kong Special Administrative, visited Olympic Forest Park.
- **Achim Steiner**, (right) who is UN Undersecretary General and Executive Director of the UNEP, visited Olympic Forest Park.



Germer, the delegate from GTZ organization investigated on Olympic Forest Park site and had meeting with designers together.

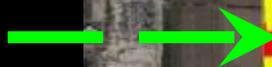
GTZ, the international cooperation enterprise for sustainable development with worldwide operations.

Changing With Time

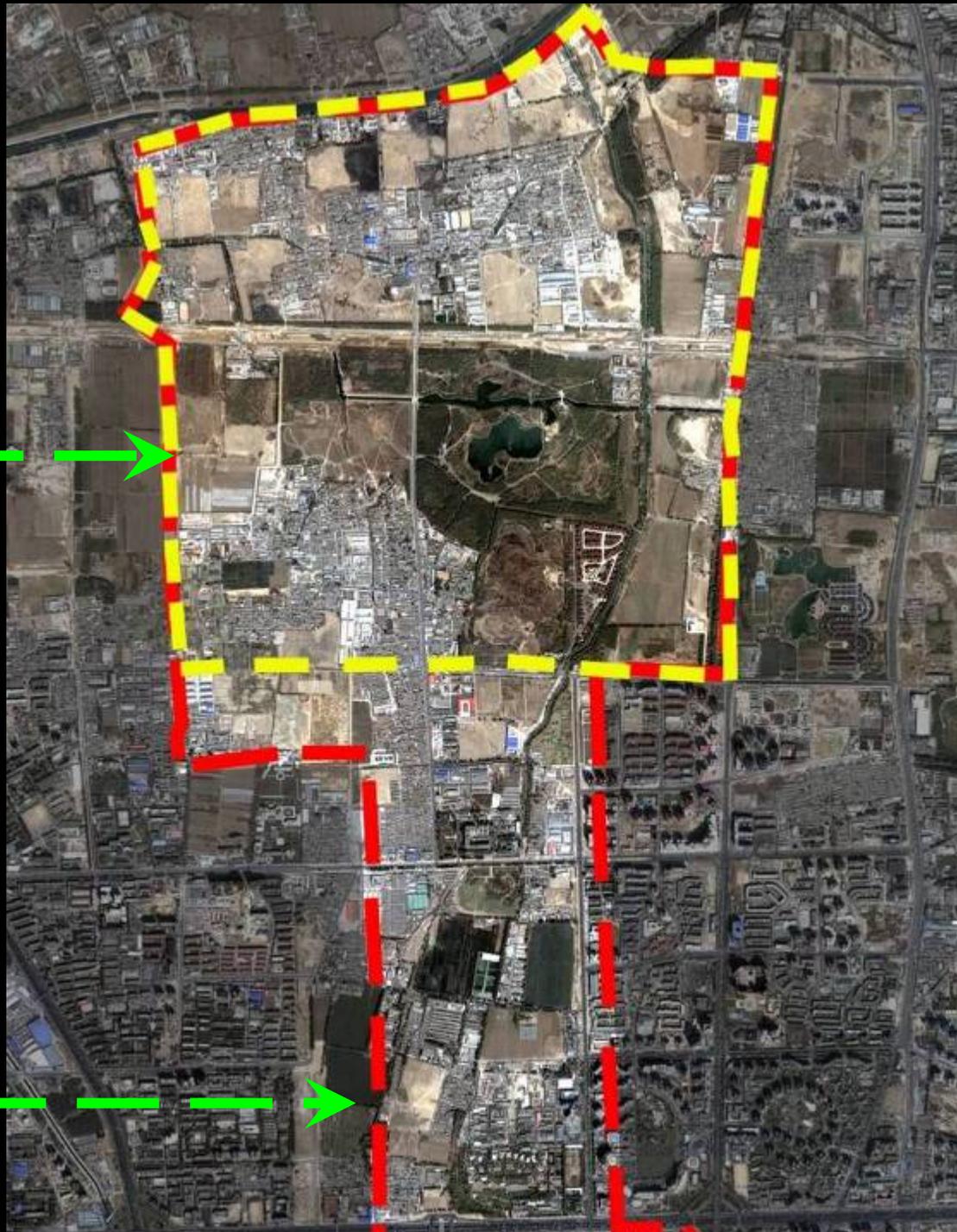
From 2001 to 2008

Apr. 2001

Olympic Forest Park



Olympic Green

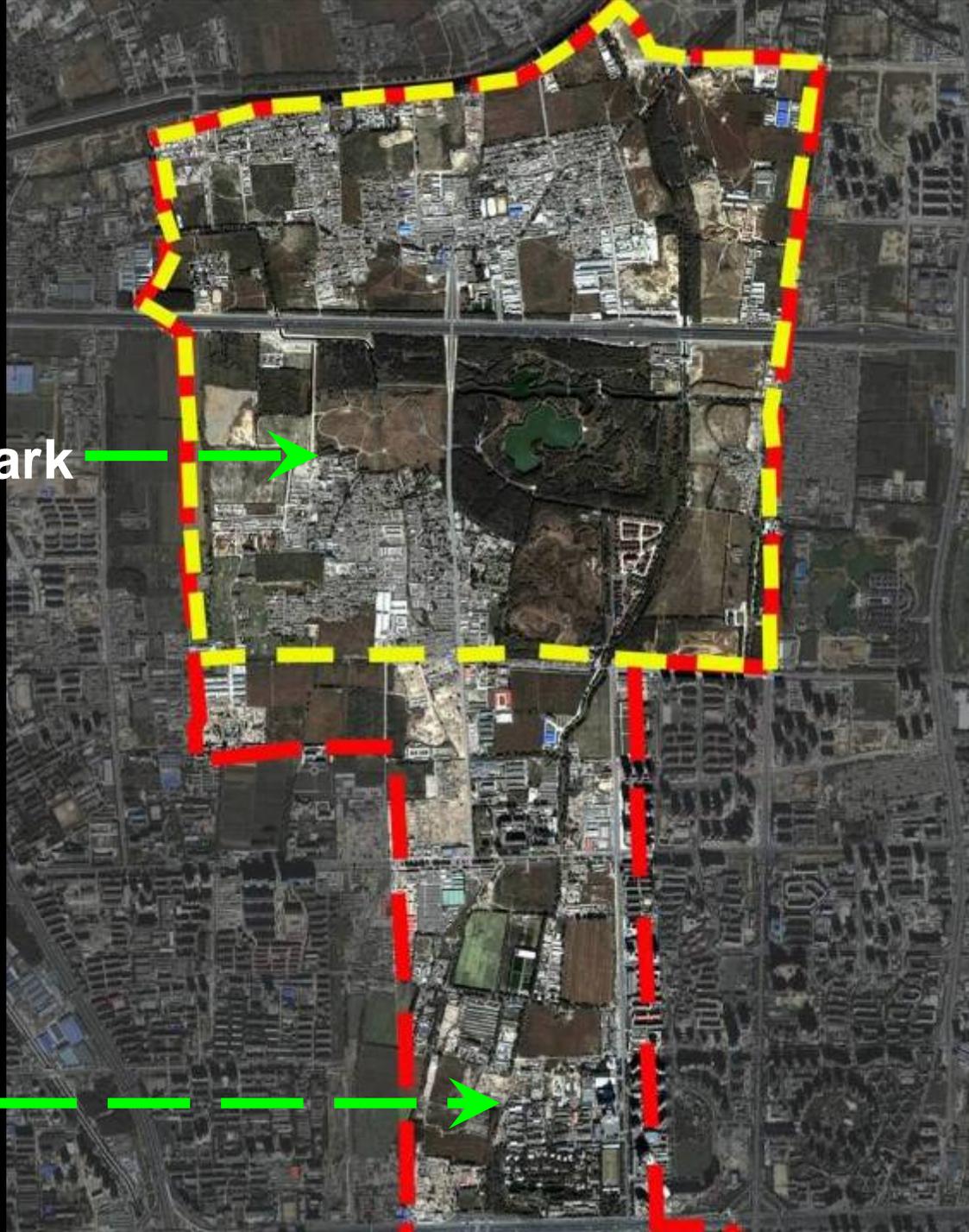


Oct. 2002

Olympic Forest Park



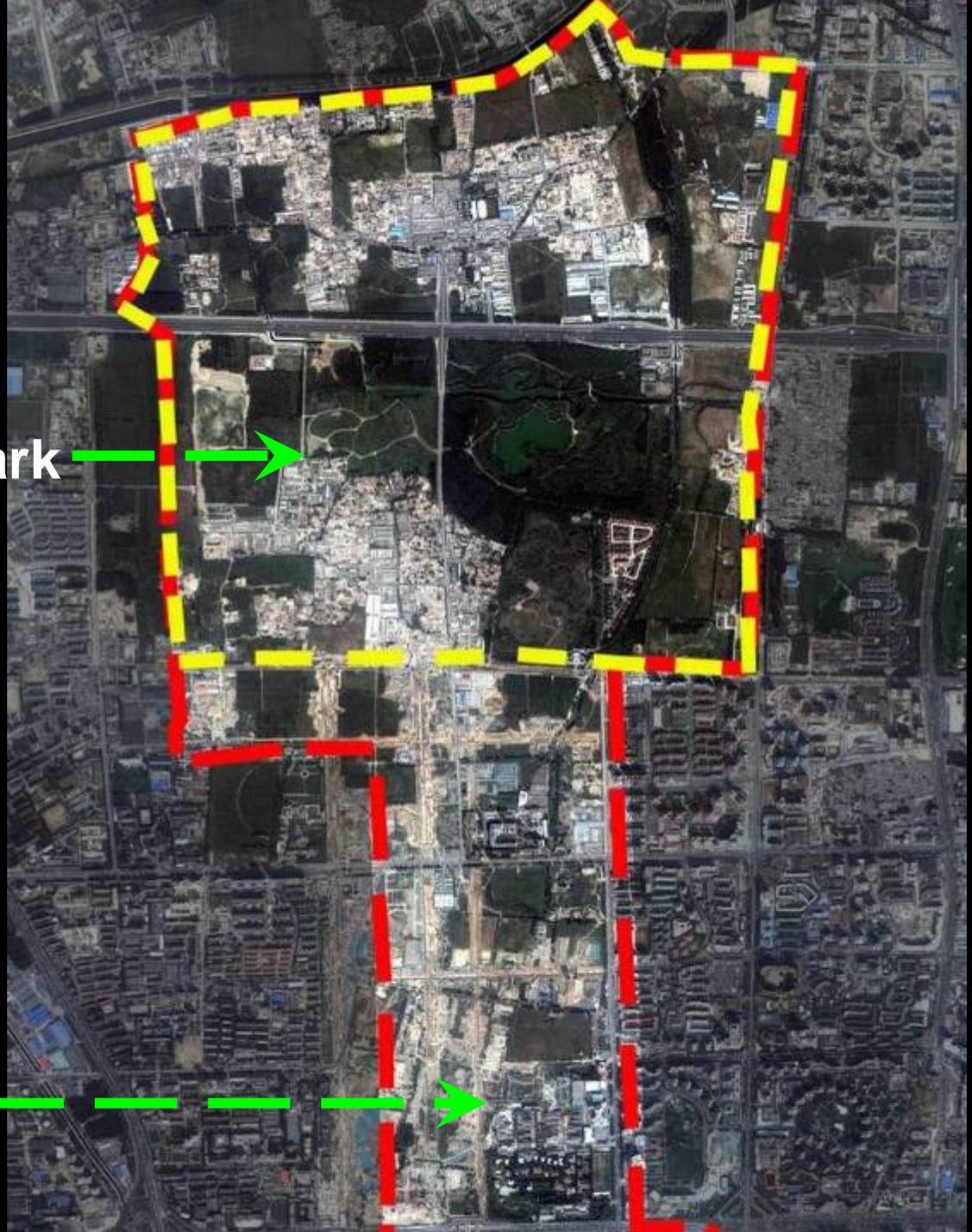
Olympic Green



Sep. 2003

Olympic Forest Park →

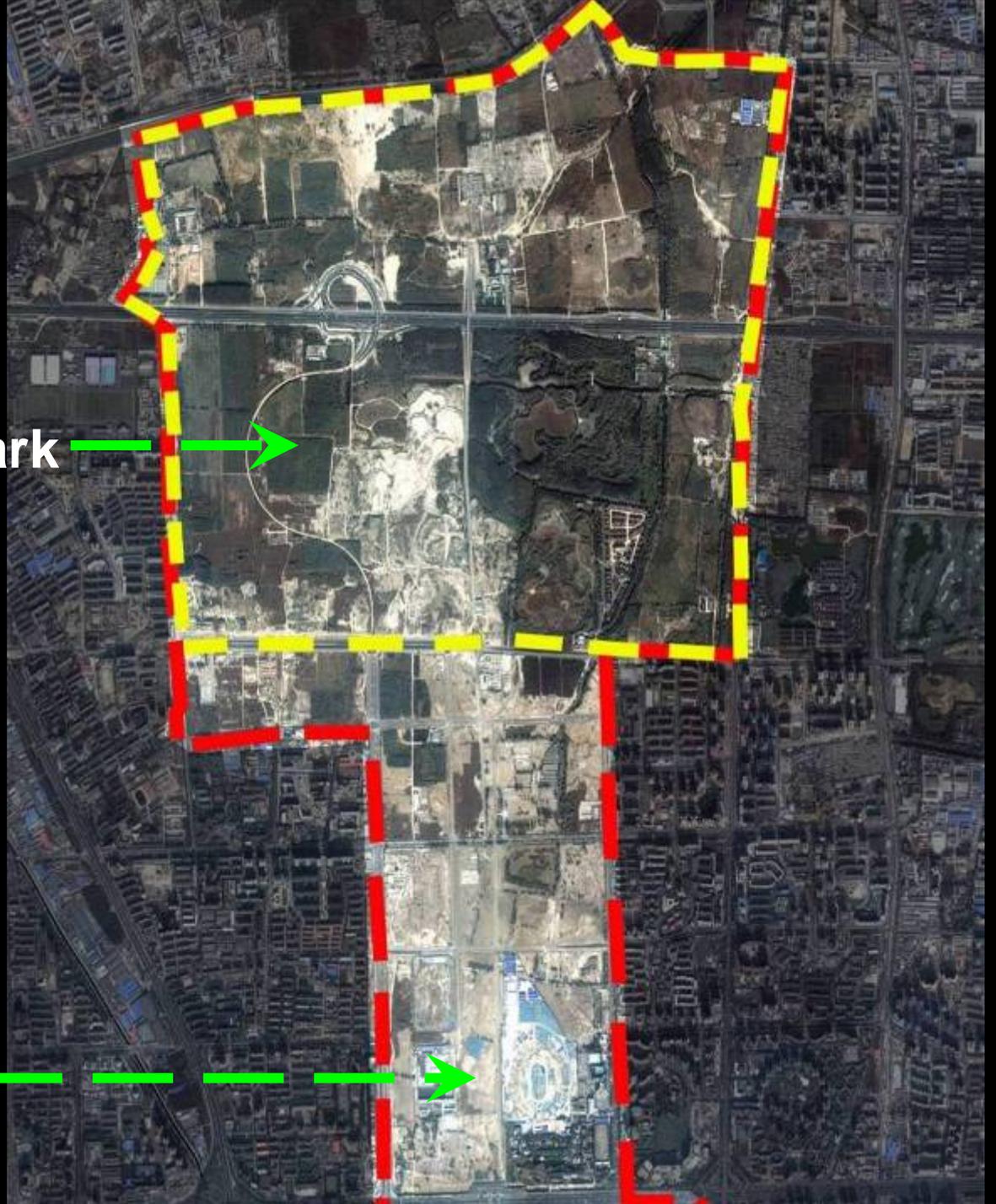
Olympic Green →



Oct. 2004

Olympic Forest Park →

Olympic Green →



Mar. 2005

Olympic Forest Park →

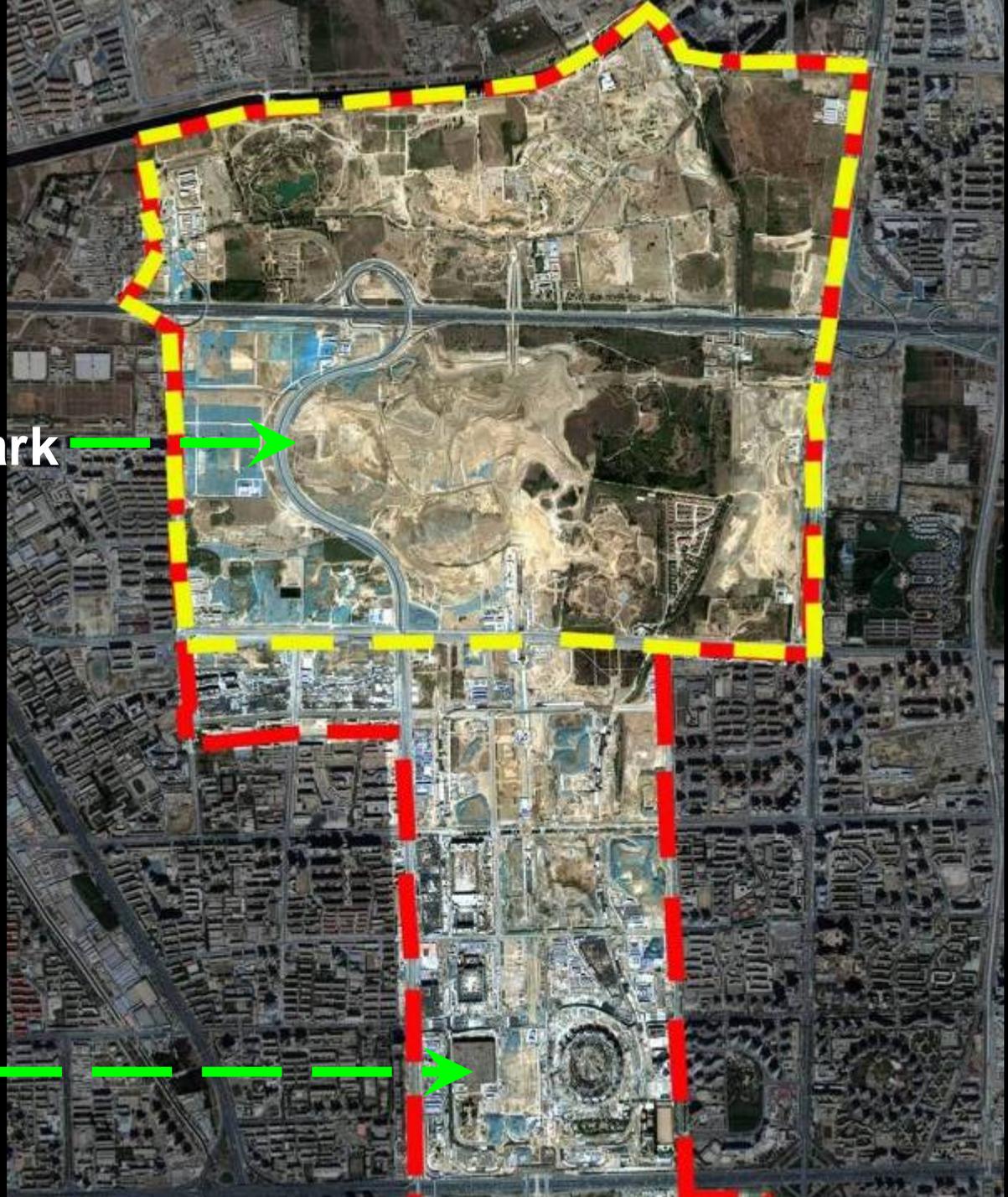
Olympic Green →



Apr. 2006

Olympic Forest Park →

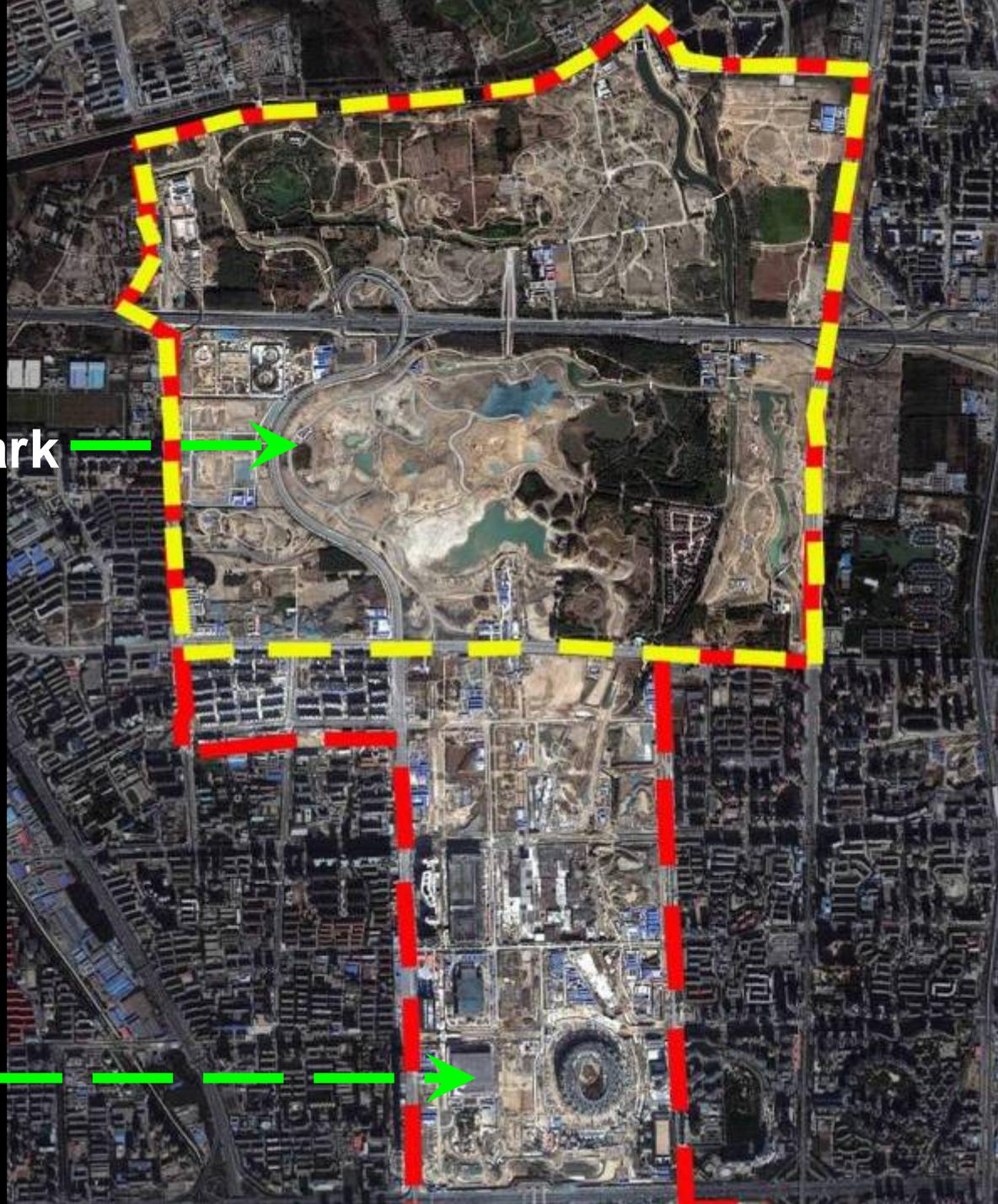
Olympic Green →



Oct. 2006

Olympic Forest Park →

Olympic Green →



Feb. 2007

Olympic Forest Park →

Olympic Green →



Oct. 2007

Olympic Forest Park →

Olympic Green →



May. 2008

Olympic Forest Park →

Olympic Green →



Evaluations and Prizes

GTZ, the international cooperation enterprise for sustainable development with worldwide operations have evaluations to OFP based on their report:

- In accordance with the Green Olympics motto the park symbolizes the need to take care for a healthy sustainable environment. The plentiful vegetation, the comprehensive closed loop ecosanitary system and the lake fed with recycled water from a nearby waste water treatment plant are to convey the green message to the visitors.

- The OFP sanitary system and nutrient reuse strategy is new and unique.
- Local research institutions would profit from the fact that they do not need to invest into trial establishment as with the OFP sanitary concept is already set up. Further, cooperating institutions will work with innovative technology that is apt to have a significant future impact on national and international level.
- Beyond basic research tasks including in-depth nutrient flow analyses, hygienic safety and environmental impact, the OFP provides an incomparable research ground for all eco-sanitary questions: From acceptability studies, over sanitary installation improvement to cutting edge micro-toxin research.



Achim Steiner, UN Undersecretary General Executive Director of the UNEP



- The UNEP's report praised the city for waste management, cleaner transport systems, water treatment capabilities and creating urban green belts including the 580-hectare Olympic Forest Park.
- "These things not only benefit Olympic athletes but are also a legacy for the citizens of Beijing. Most importantly, these are a demonstration of where other cities in China and many parts of the world should strive to move in the years ahead"

The Greenpeace gave evaluation on Beijing 2008 Games Environmental Performance:

- Olympic Forest Park: Geothermal heat pump technology is in use throughout 43 buildings in the Forest Park, covering an area of 59 976 m² of construction area.
- Olympic Forest Park: A small solar photovoltaic power station with an area of 1,000 m² and a generation capacity of 65kW. 79 is currently being constructed at the south main gate of the Forest Park for energy provision and educational purposes and is scheduled to be completed in time for the Games.

- A number of new Olympic venues and refurbished venues such as the national Stadium (Bird's Nest), the Olympic Green, and the Olympic Forest Park include water saving design including rainwater collection, water efficiency, water re-use and water recycling features to reduce water demand during and after the Games.
- The Park contains an advanced enclosed water circulation system. Official figures say that about 1.34 million m³, or about 95% of rainwater inside the park can be reused for irrigation. This system will also support an ecological wetland area designed for educational purposes.

- During drought periods, reused water will come from the Qinghe Wastewater Treatment Plant. Sewage and human waste derived from visitors are treated using advanced composting and source separation methods that allow the waste to return to the park as fertilizer. All park toilets will make use of these advanced technology.
- Selective venues at the Games have undertaken zero-waste approaches to waste management. The Olympic Park produces 5000-7000 tons of green waste a year, which includes grass, leaves and branches that are produced by plant life in the park. The treatment center at the north end of the Park can process about 3000 tons of waste per annum. There will also be a unique “yellow water” treatment system that will process human waste to allow these waste products to return to the park as fertilizer.

Olympic Forest Park Project Won
Torsanlorenzo International Prize 2007——
Landscape Design and Protection 1st Prize
(Section B: Urban Green Spaces)



Premio Torsanlorenzo per l'Ambiente

"Torsanlorenzo International Prize" 2007

LANDSCAPE DESIGN AND PROTECTION

1st PRIZE

SECTION B: URBAN GREEN SPACES

The quality of projects in cities: squares, neighbourhood green spaces, urban parks

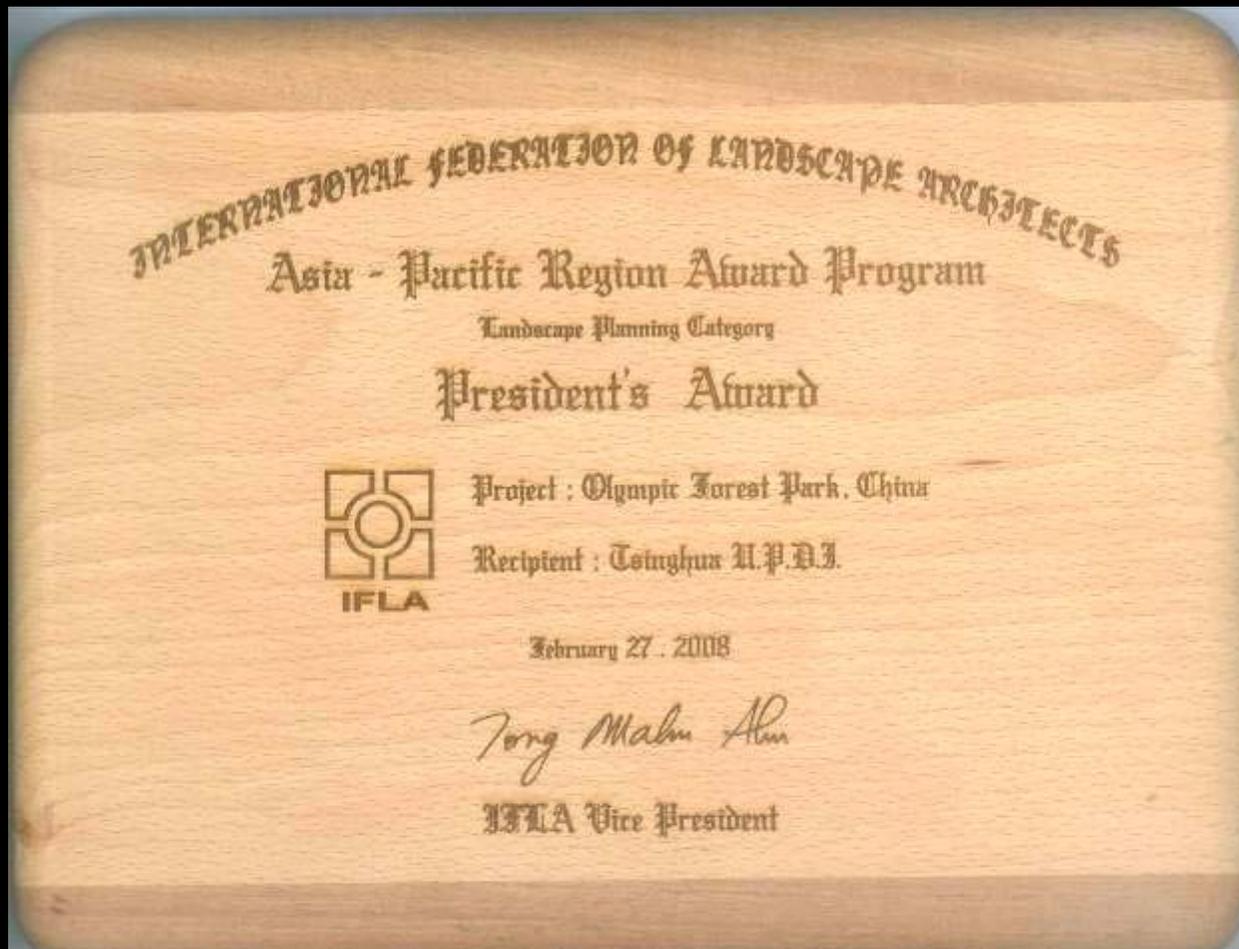


Olympic Forest Park Project Won

2008 IFLA Asia – Pacific Region Award Program

Landscape Planning Category

President's Award



To fulfill Beijing's Olympic commitment, we have organized a large expert advisory team. Through our untiring efforts, the Olympic Forest Park has been put into reality.

Main Design Team

Planning & Design Branch of Landscape Architecture
Beijing Tsinghua Urban Planning & Design Institute

Chief Designers

Hu Jie, Wu Yixia, Lu Lushan, etc.

Consultants

Sasaki Associates, Inc. (USA)

Meng Zhaozhen, Chen Jining, Yin Zhi, Laurie Olin, etc.

Cooperation Companies and Institutes:

China Research Center of Landscape Architecture Design and Planning

Beijing Top-Sense Landscape Design Limited Co.

Beijing Beilin Landscape Architecture Institute Co. Ltd

Beijing Institute of Landscape and Traditional Architecture Design and Research

Branch of Urban and Architectural Ecology Research, THUPDI

Branch of Environment and Infrastructure, THUPDI

Branch of Lighting Design & Research, THUPDI

Branch of Transport Planning & Design, THUPDI

Branch of Acoustics Design & Research, THUPDI

Branch of Public Security Design & Research, THUPDI



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GREEN Infrastructure

LINKING
LANDSCAPES
+COMMUNITIES



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EXPO: October 4-5, 2008

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