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11.307 Beijing Urban Design Studio  
Summer 2008

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绿色首钢：全球可持续发展研究中心

**Greening Shougang Factory:  
A Global Sustainability Institute in Beijing**

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Tsinghua / MIT

Beijing Urban Design Studio

Summer 2008

# **SUSTAINABILITY** 可持续发展

**ENERGY:** solar, wind, cooling / air-conditioning,  
能源 ocean / wave / tidal, and geothermal

**TRANSPORTATION:** rail networks, smart bikes,  
交通 other transportation alternatives

**FUELS:** hydrogen, other alternative fuels

**CLEANUP AND POST-POLLUTION:**  
工业污染的清洁 toxics, industrial pollution (air, water, land)

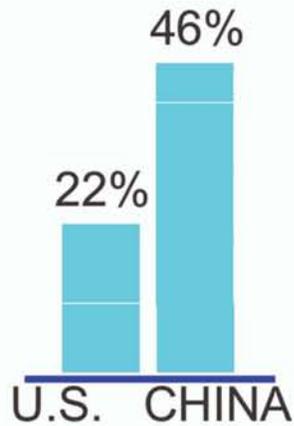
**FARMING / AGRICULTURAL** 农业

**WASTE MANAGEMENT:** garbage, recycling, compost  
废物处理

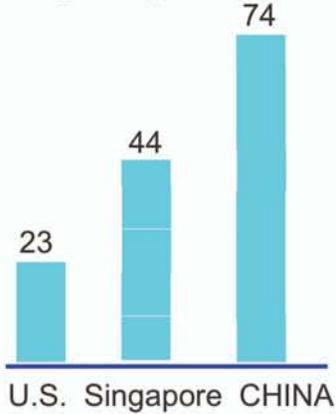
**ENERGY EFFICIENCY** 能源效率

# WHY SUSTAINABILITY MATTERS TO CHINA RIGHT NOW

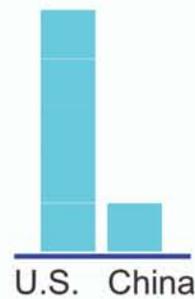
Industry's share of GDP



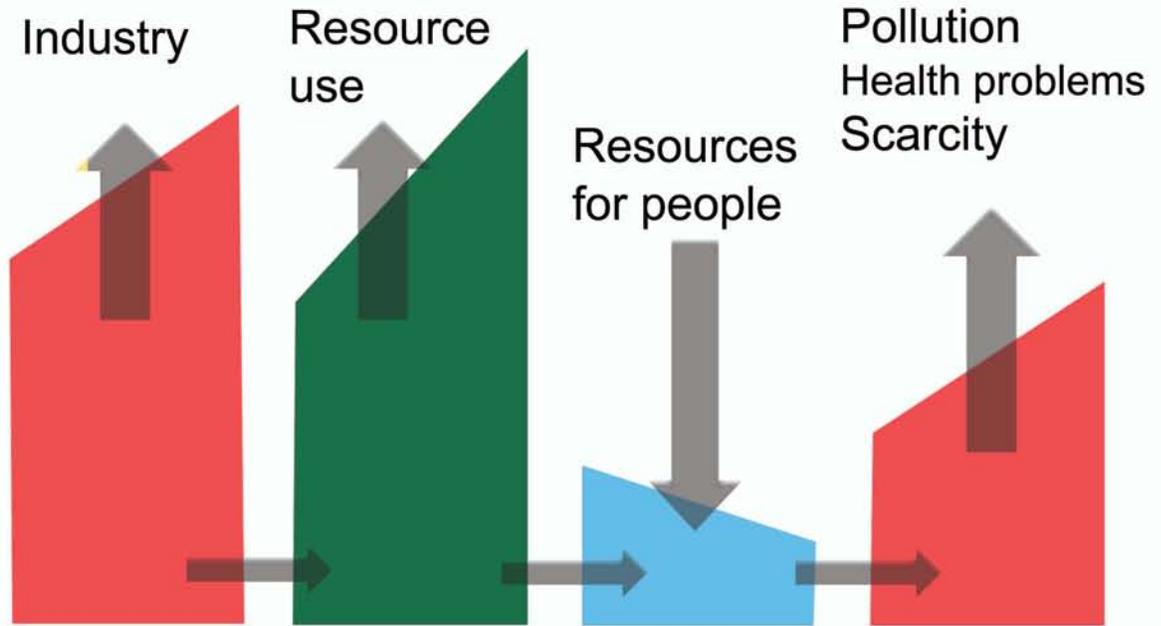
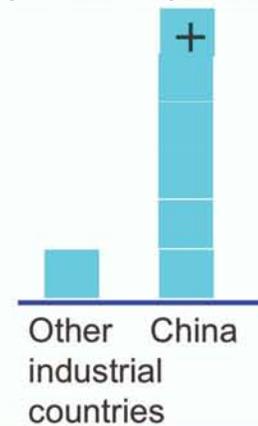
Air pollution  
In micrograms per cubic meter



China has one-fifth as much water per capita as the United States.



Industrial Water Use, per unit of production



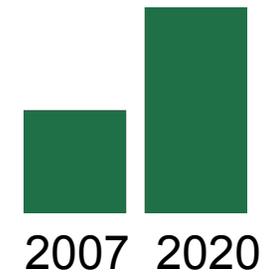
## SUSTAINABILITY IN CHINA: AN EMERGING INDUSTRY

Demand is increasing for green building

Construction Ministry:  
Buildings must be 50% more efficient by 2010



Energy Plan:  
Double the share of renewable energy by 2020



CHINESE GOVERNMENT PLANS TO GIVE TAX INCENTIVES TO  
BOOST ENERGY SAVINGS AND RENEWABLE SECTORS

# SITE CONTEXT

Beijing: East / West Axis  
Shijingshan Mountain  
Yong Ding River

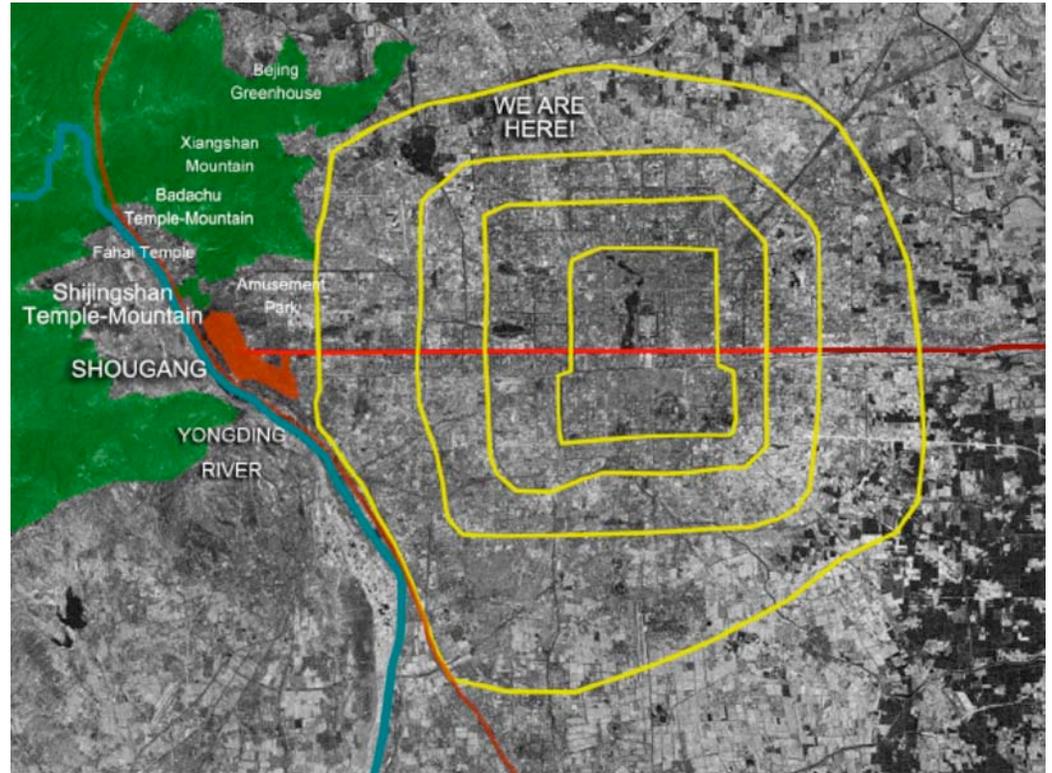
Pre-Industrial History

Famous steel producing site

Factory closing due to pollution

Skilled workforce available

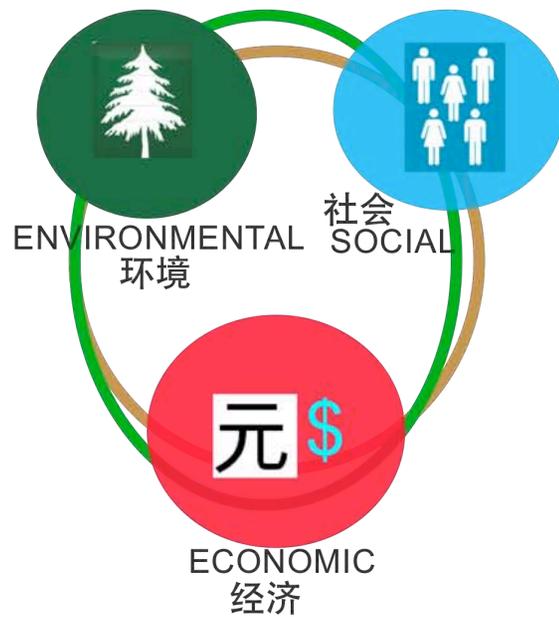
Dramatic vertical structures



# 首钢可持续发展的定义 SUSTAINABILITY AT THE SHOUGANG SITE

旧为 anew, 保留场地的历史元素, 并满足首钢和北京的未来发展需求。

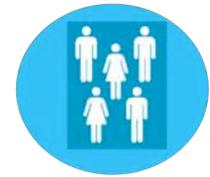
“manage the transition to new uses, preserving elements of the site’s past and creating a pathway for future generations to meet their needs.”



环境



经济



社会

MOUNTAIN ACCESS  
RETREAT CENTER  
石景山的公共性与开放性  
休闲中心



HISTORIC BUILDINGS  
TOURISM / EDUCATION  
工业遗存 旅游 教育



WATER CONSERVATION  
WETLANDS  
水体与湿地的保护



TRANSPORT HUB  
RETAIL HUB  
污染土地的处理



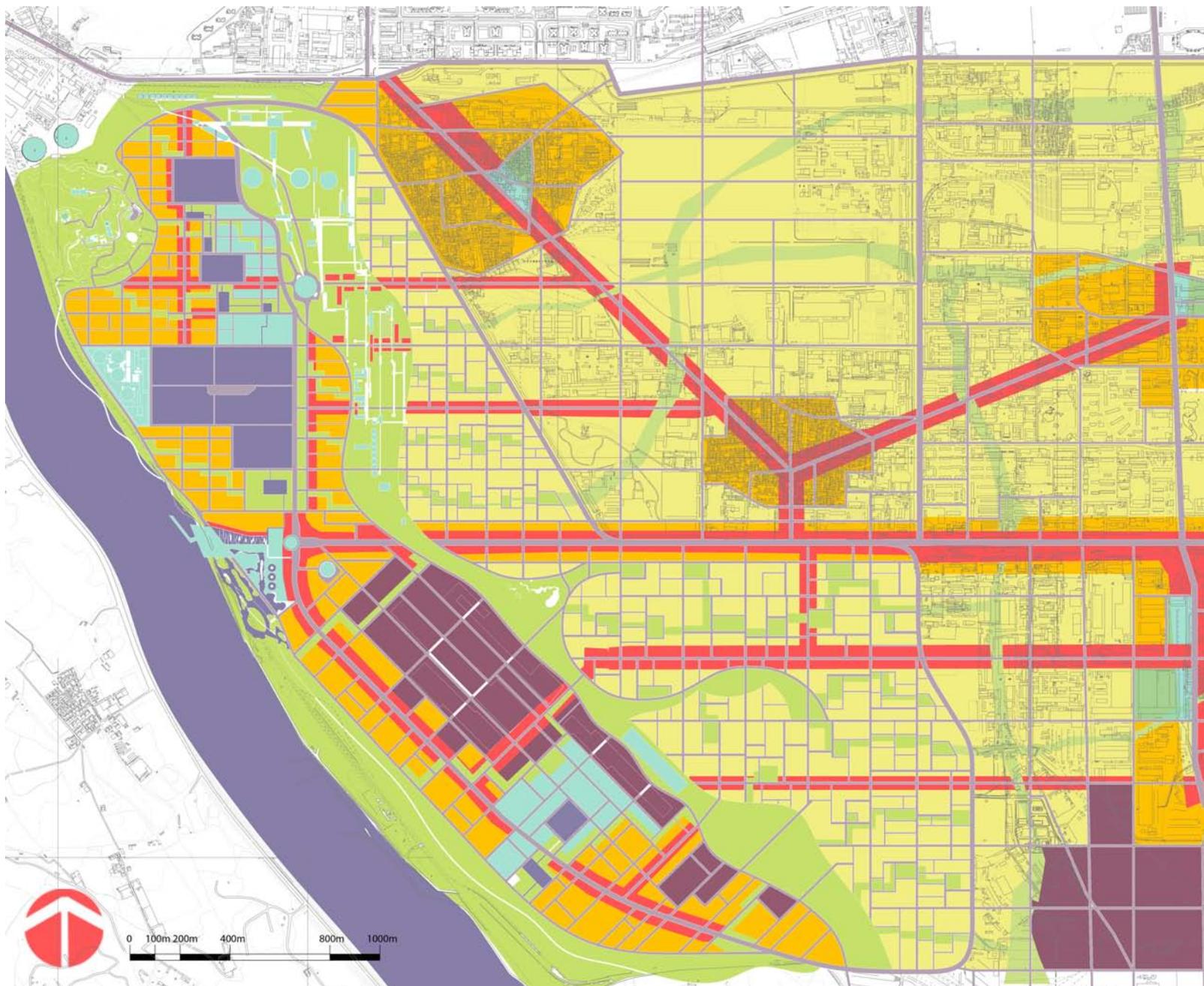
CONTAMINATED LAND  
交通与商业枢纽



RAILWAY NETWORK  
TRANSPORT  
原有铁路系统的利用



# MASTER PLAN



# ILLUSTRATIVE SITE PLAN

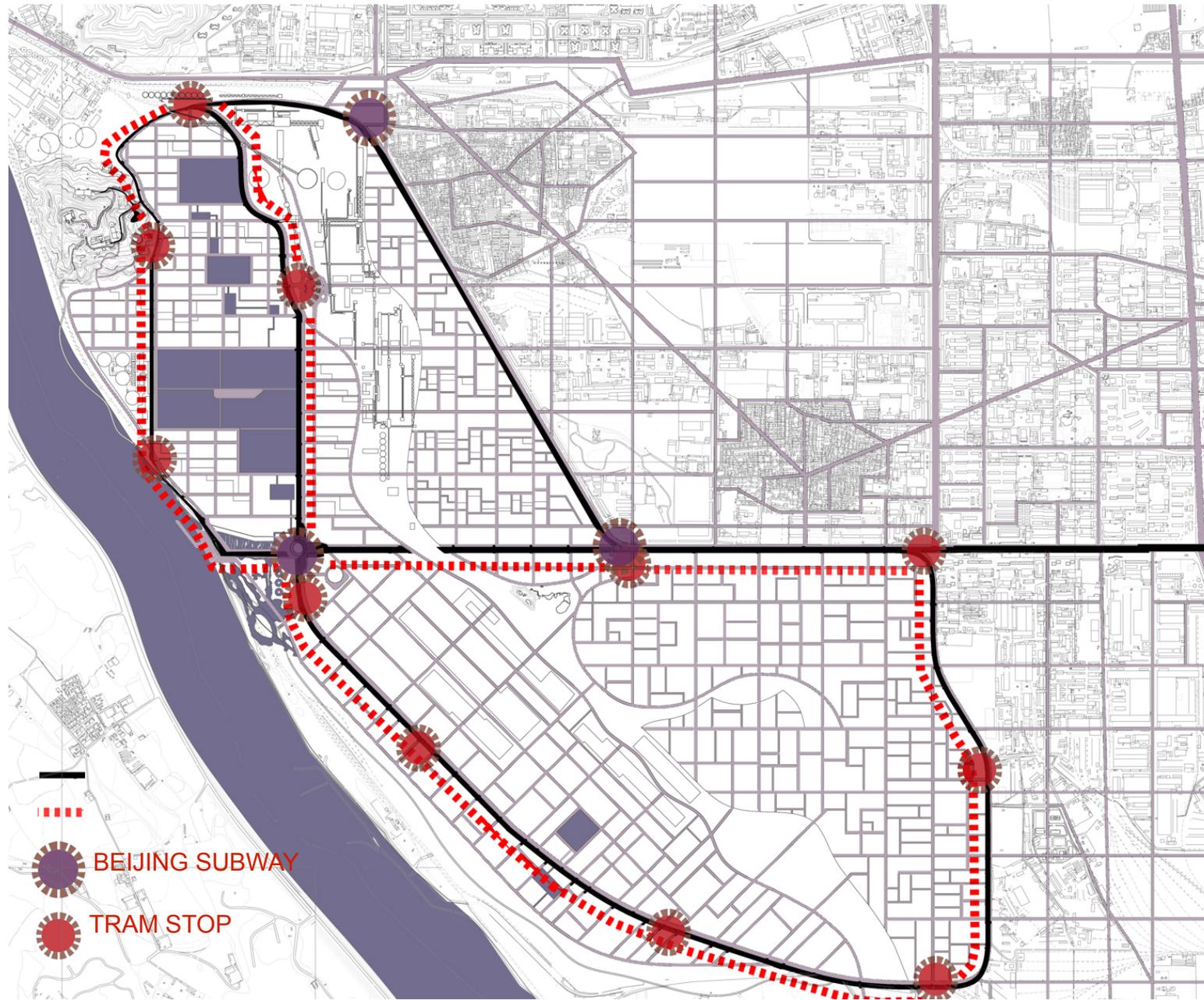


# 湿地的生态功效

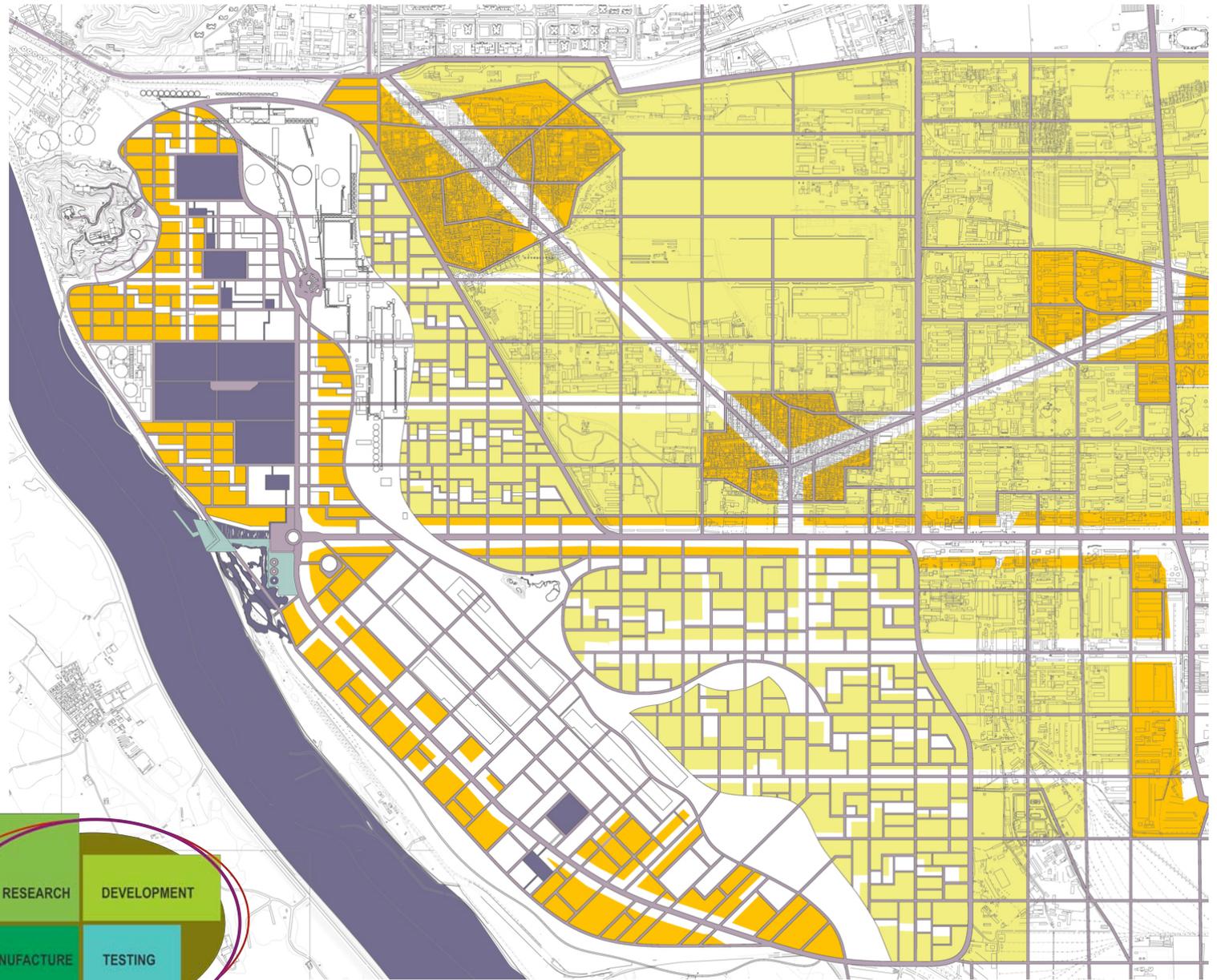
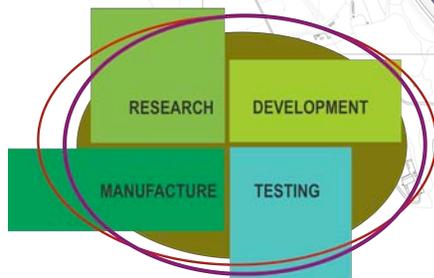
GREEN NETWORK  
AND WETLAND SYST



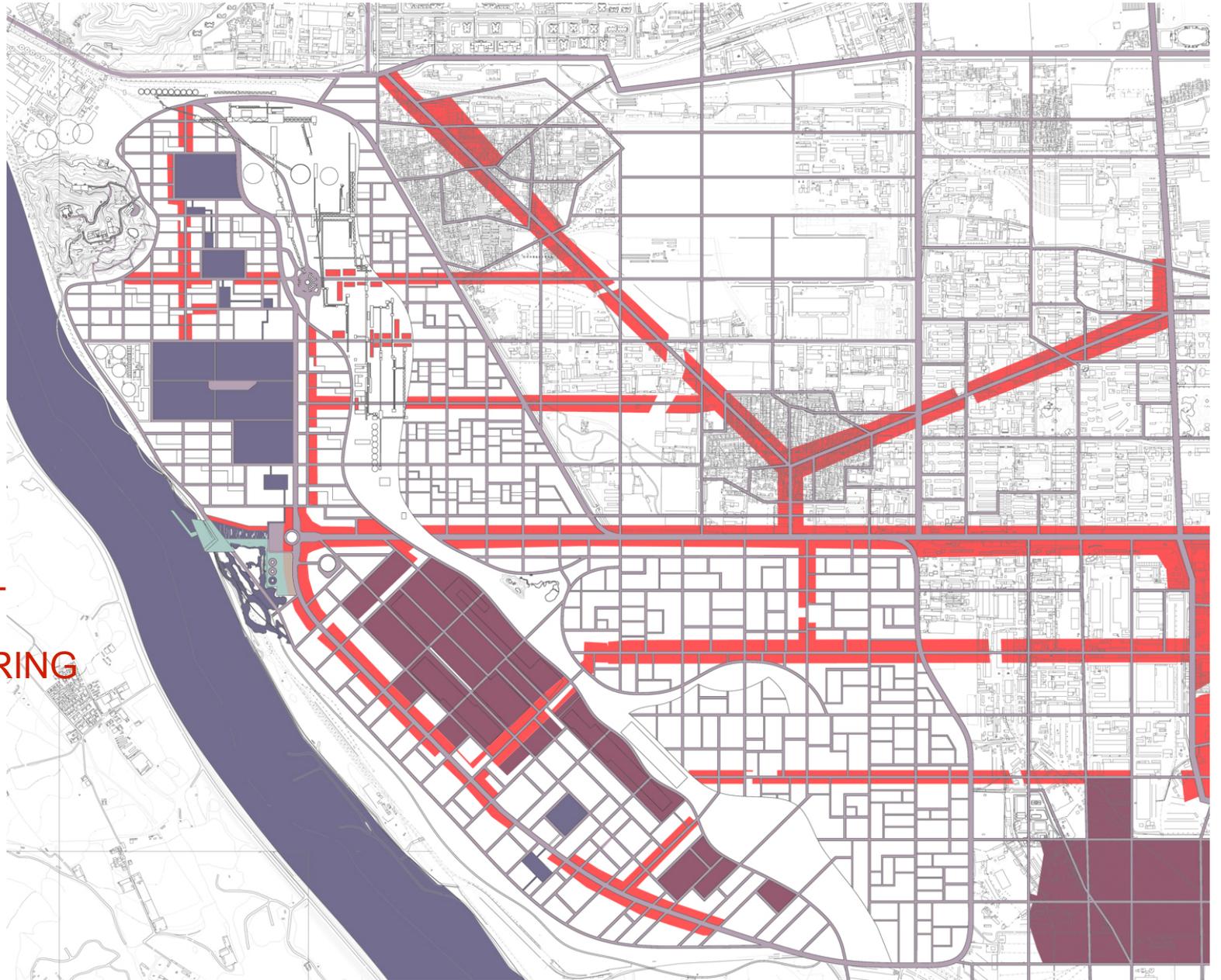
# CIRCULATION



# HOUSING and RESEARCH CLUSTERS

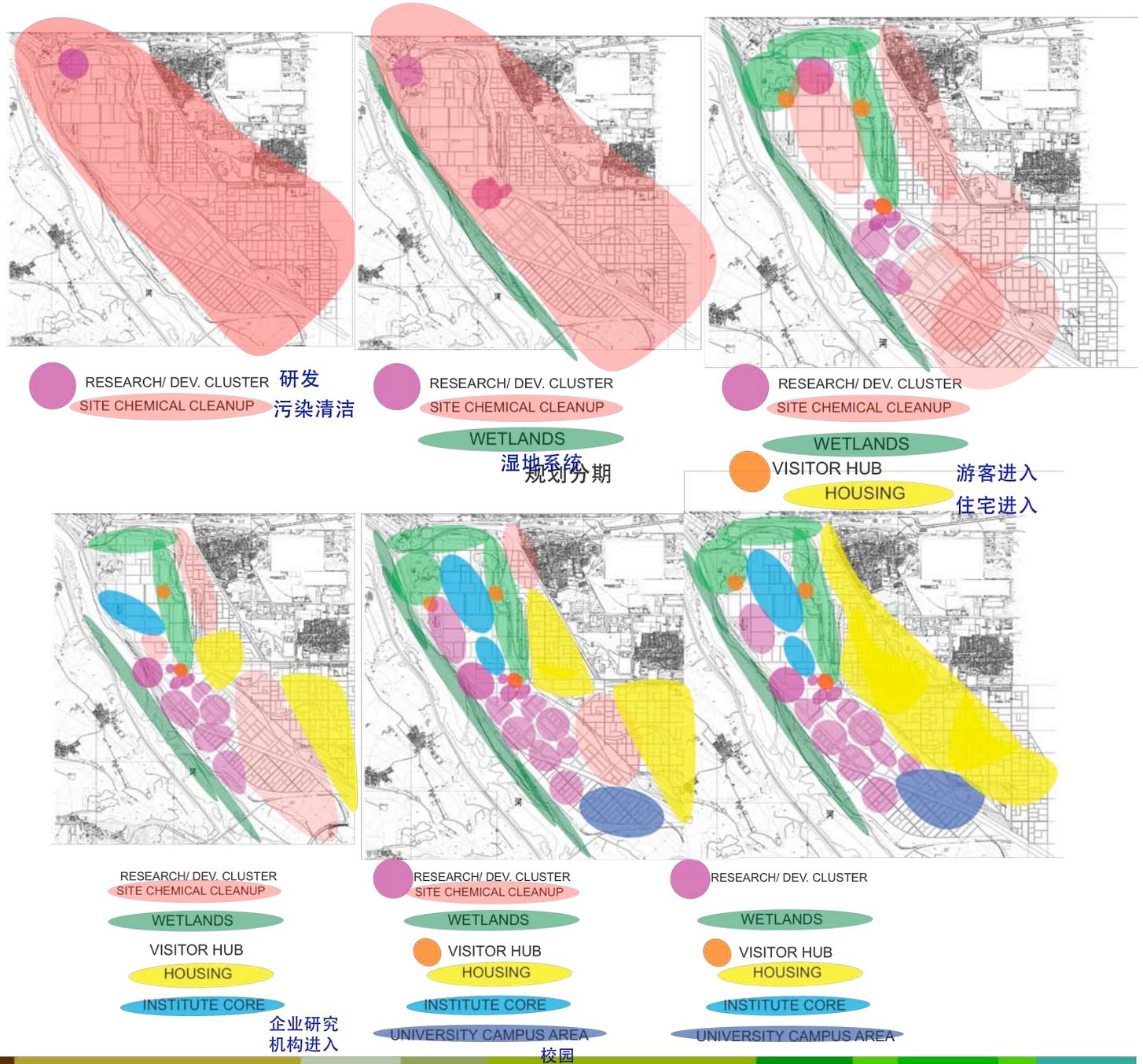


COMMERCIAL  
AND  
MANUFACTURING

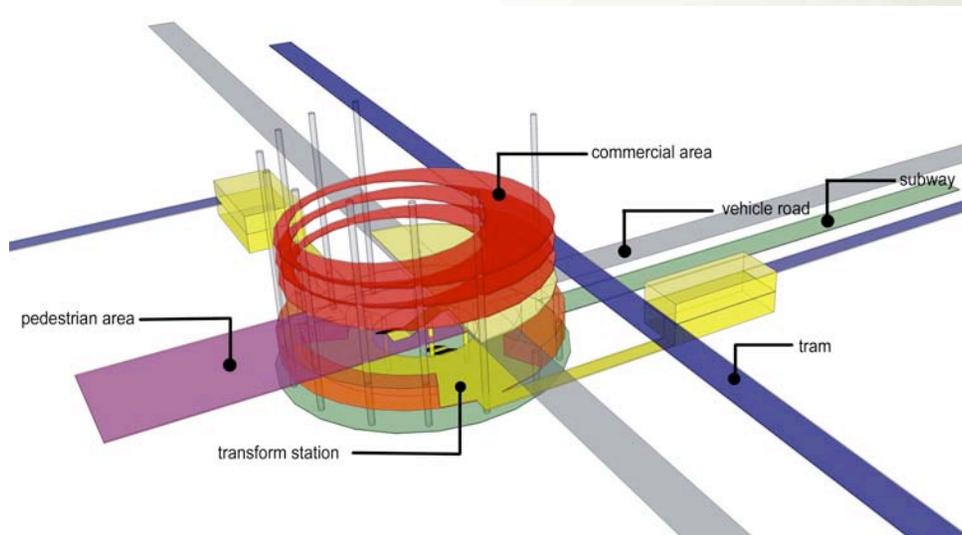
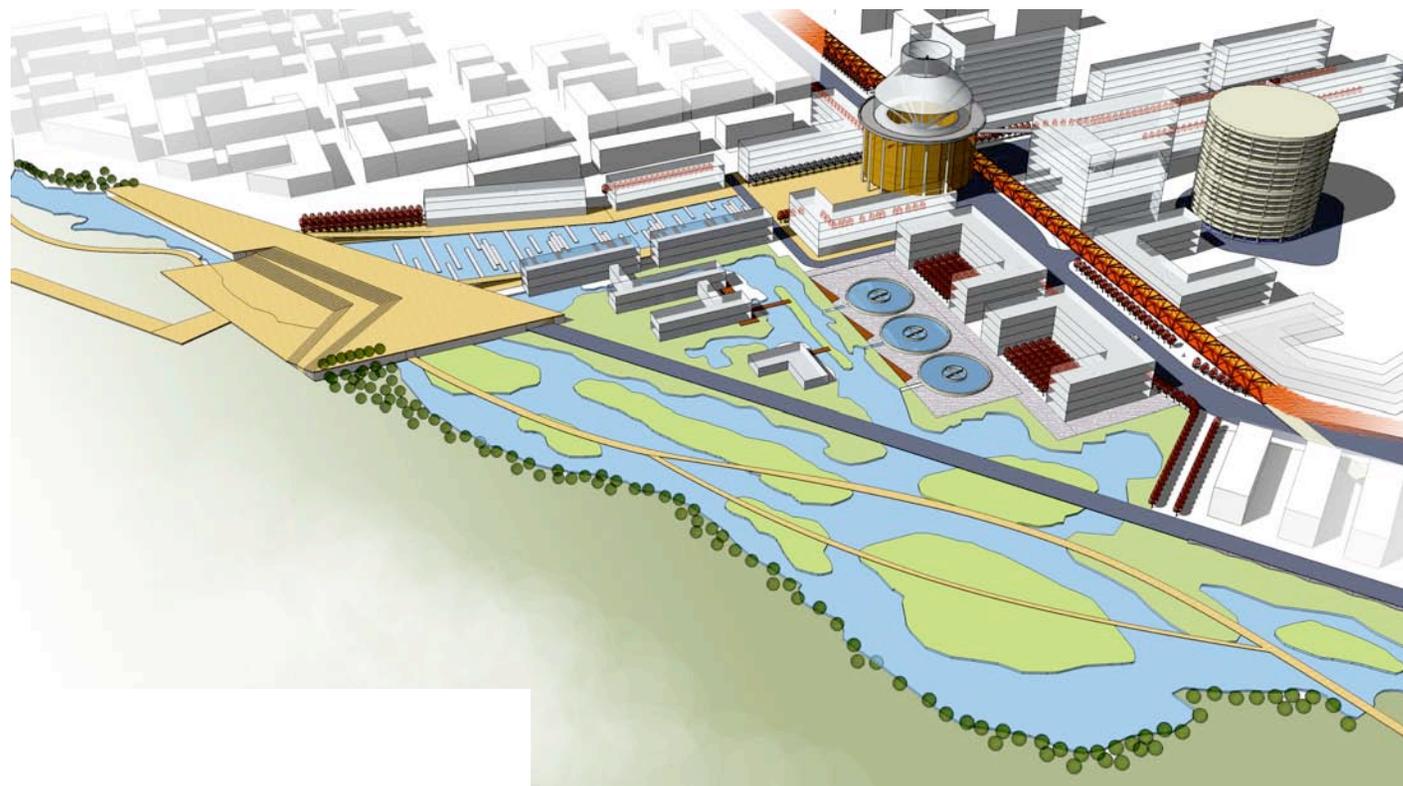


# 规划分期

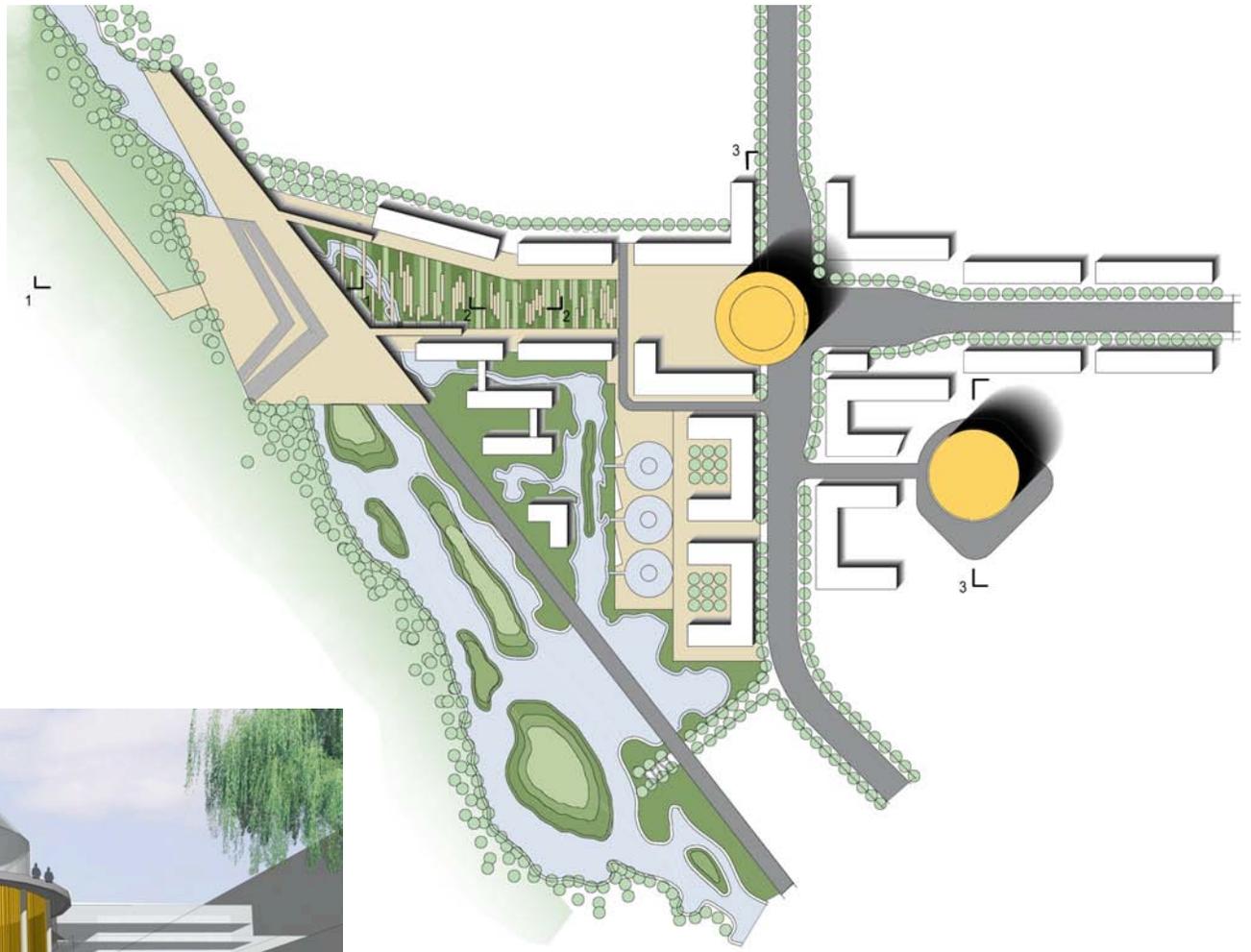
PHASING  
DEVELOPMENT  
OVER TIME



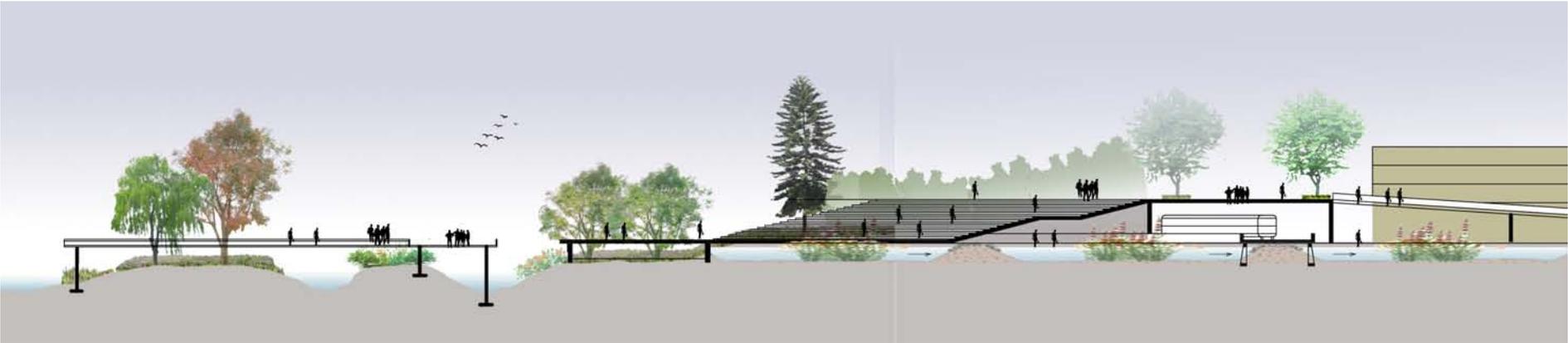
# 交通枢纽 TRANSIT HUB



# 交通枢纽 TRANSIT HUB



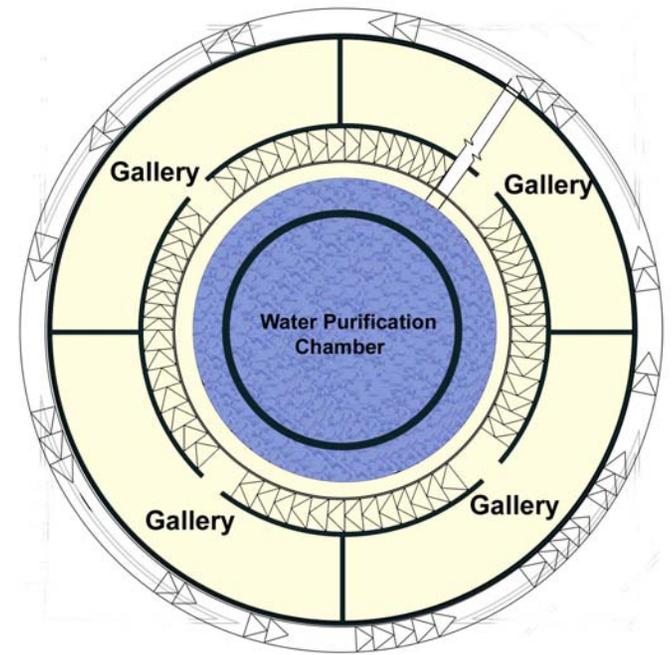
# 交通枢纽 TRANSIT HUB AND WETLANDS AREA



# 四号高炉 BLAST FURNACE / EXHIBITION CENTER

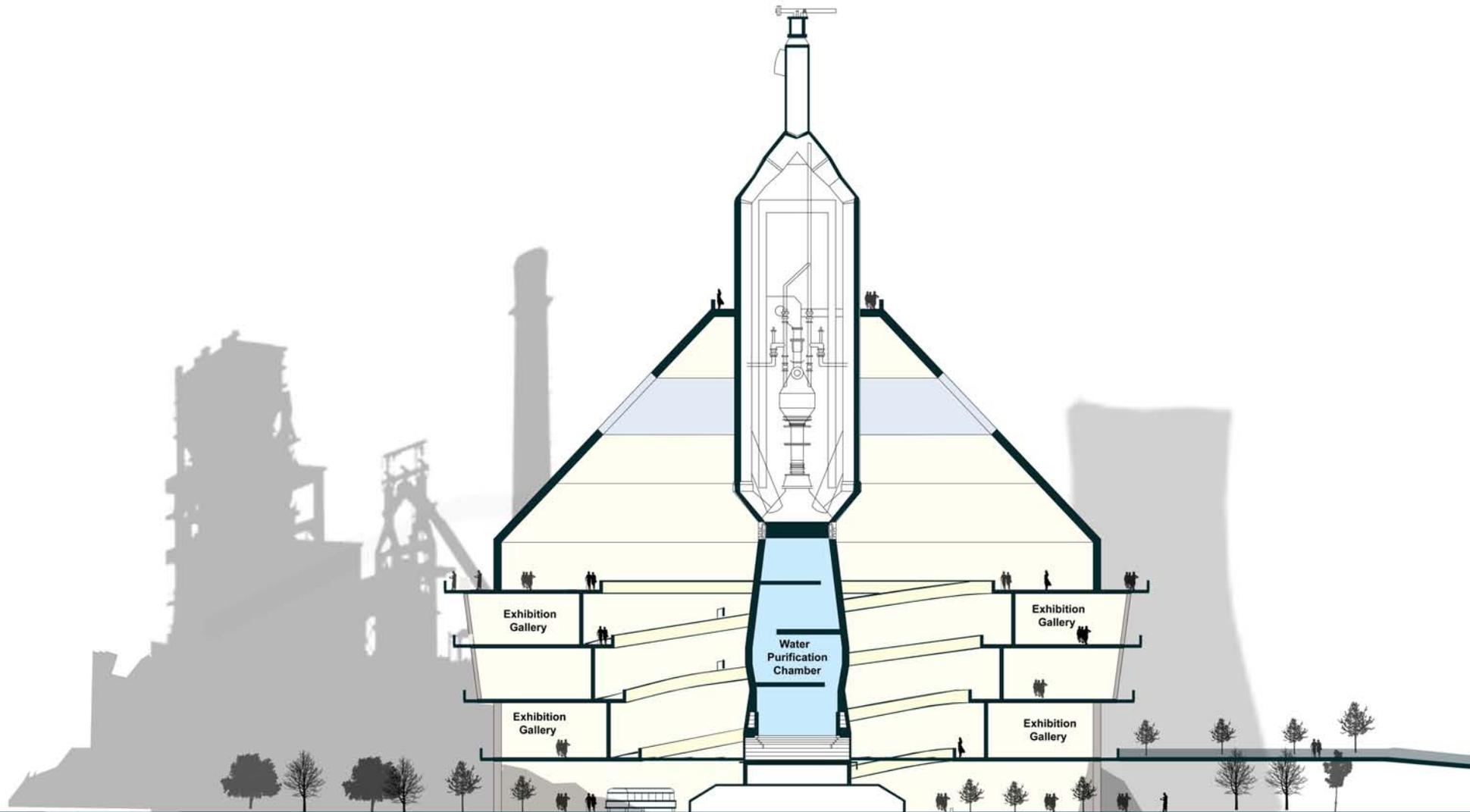


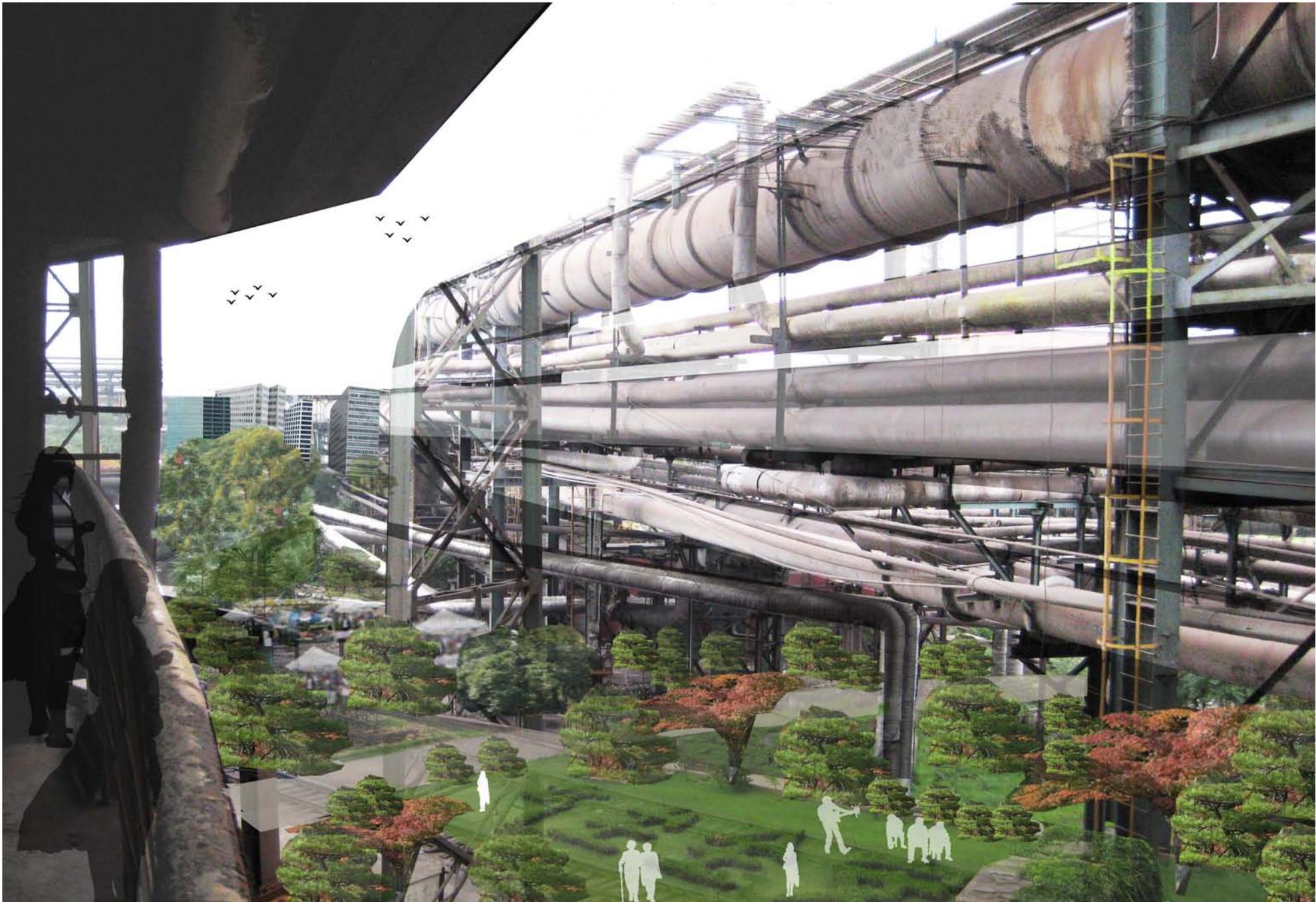
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View looking north



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BLAST FURNACE /  
EXHIBITION CENTER

Perspective view



