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Revitalizing Shougang: urban agriculture as a social, economic, and physical force

首鋼遺址復興：作為社會，經濟，空間發展動力的都市農業規劃

MITsinghua Beijing Design Studio 2008

Group 5

Sandra Frem • Deborah Helaine Morris • Pamela Ritchot • Colin Zhao • Sara Zheng

problems

問題

explosive and sprawling growth
loss of industrial economy
site contamination
integrity of industrial structures
dependence on imported food products

**城市無序擴張
工業產值減少
環境污染
重工業建築的完整性
對進口食品的依賴**

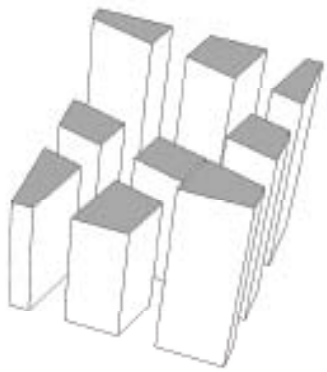
solution

解决措施

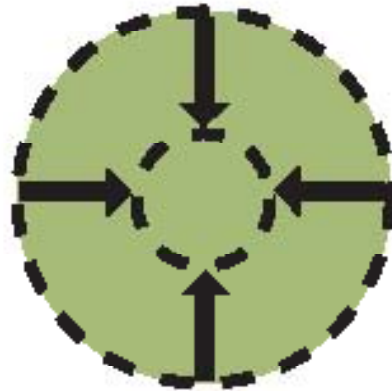
develop a new global center for research surrounding brownfield remediation and urban agricultural production

建設以棕地修復和都市農業為核心的研究中心

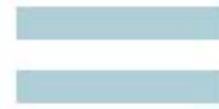
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28% increase in population



32% decrease in agricultural land



skyrocketing food prices

rapid population growth creates conflicting land use demands

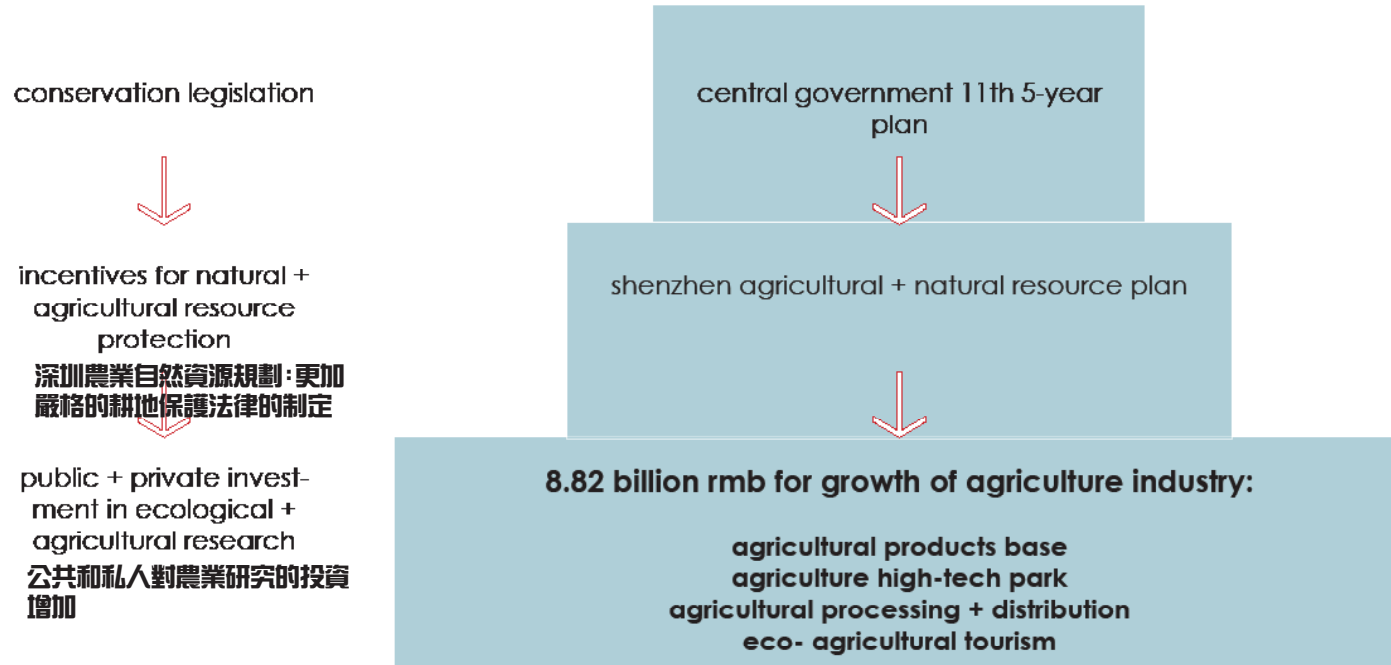
不斷增長的人口導致矛盾的用地需求：農業用地或者是建設用地？這是一個問題

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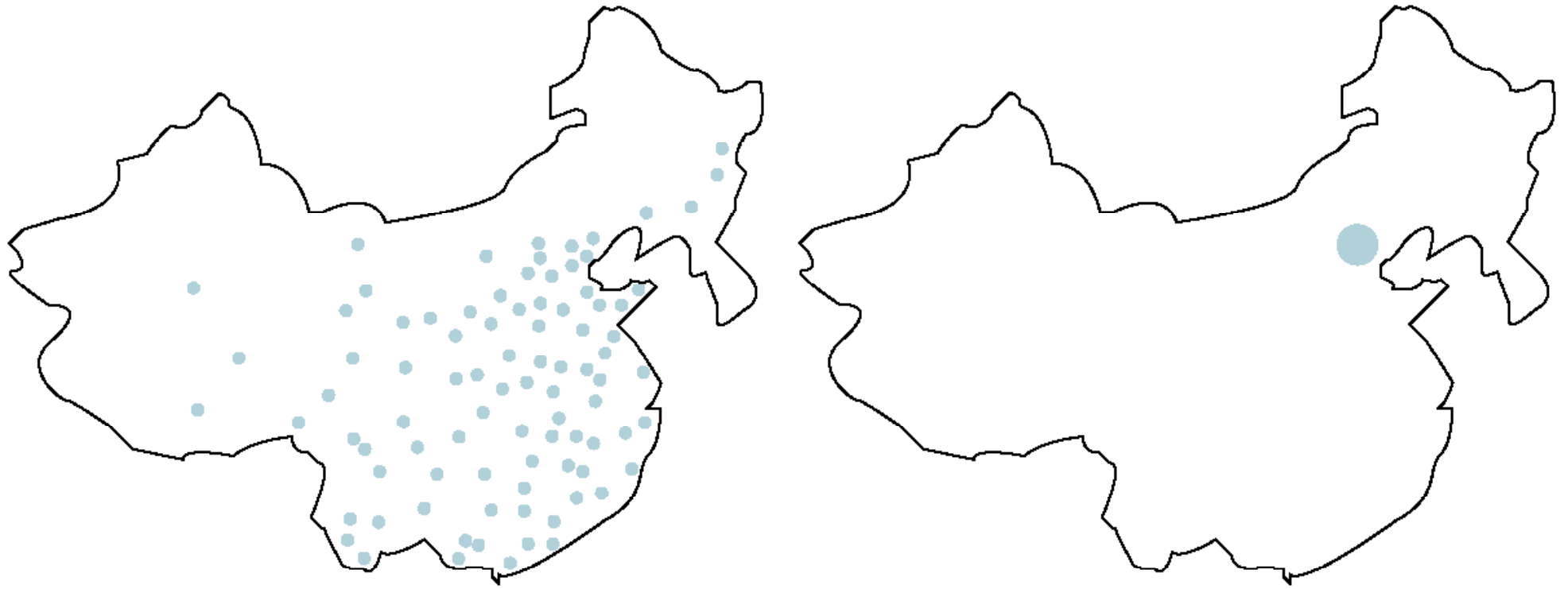
case study: shenzhen

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中國的農業研究機構分布示意圖

China's national agricultural research system is the largest publicly funded and administered research system in the world. About 60,000 researchers and technicians work in about 400 research institutes and 70 agricultural universities distributed across China.

remediation + agriculture + research hub = international knowledge cluster

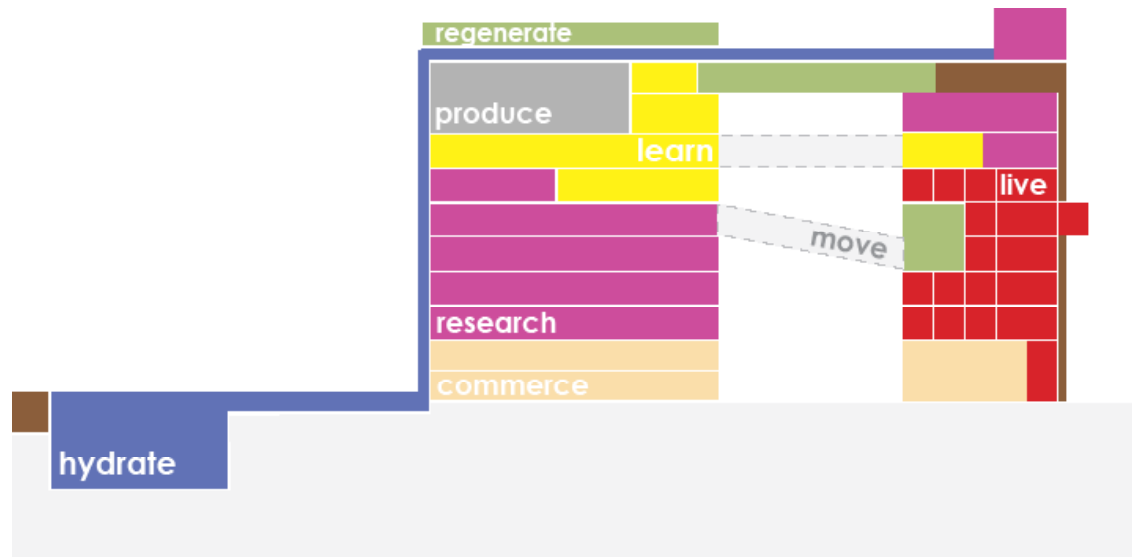
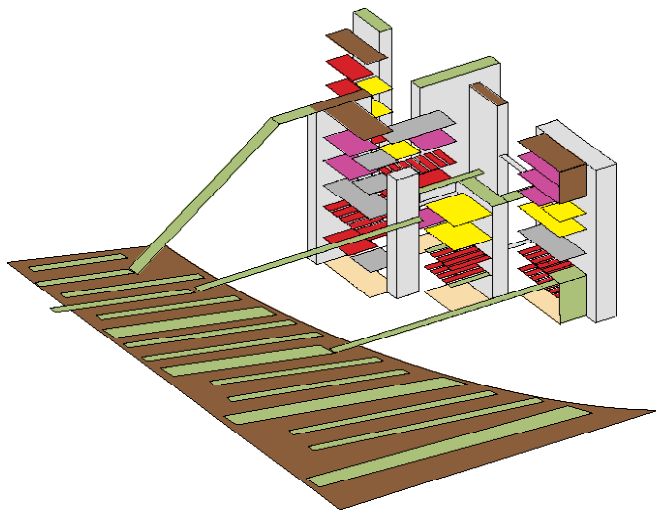
土地修復+都市農業+研究中心=國際性知識中心

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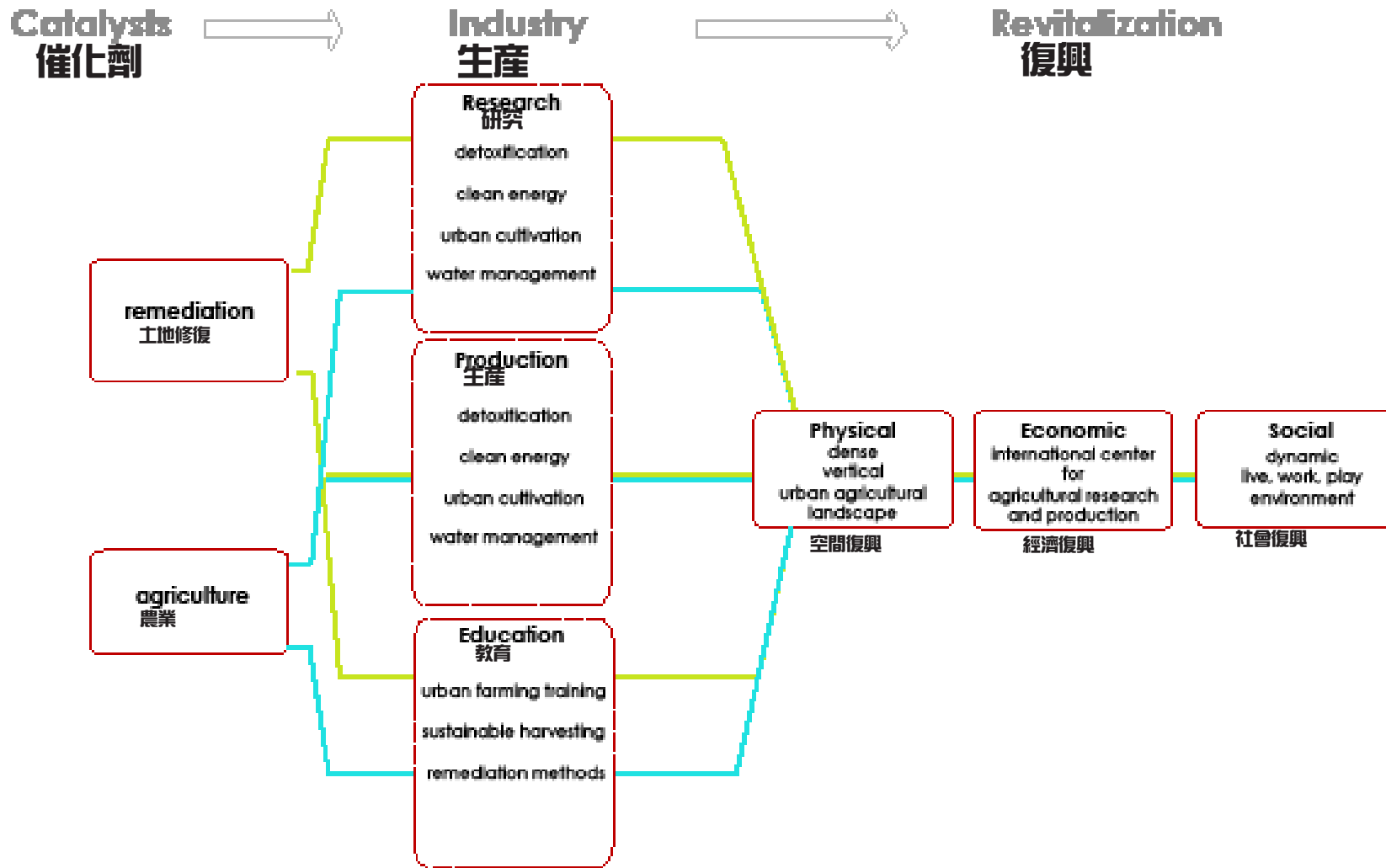


vertical farms + stacked uses
垂直農田+堆疊式功能混合

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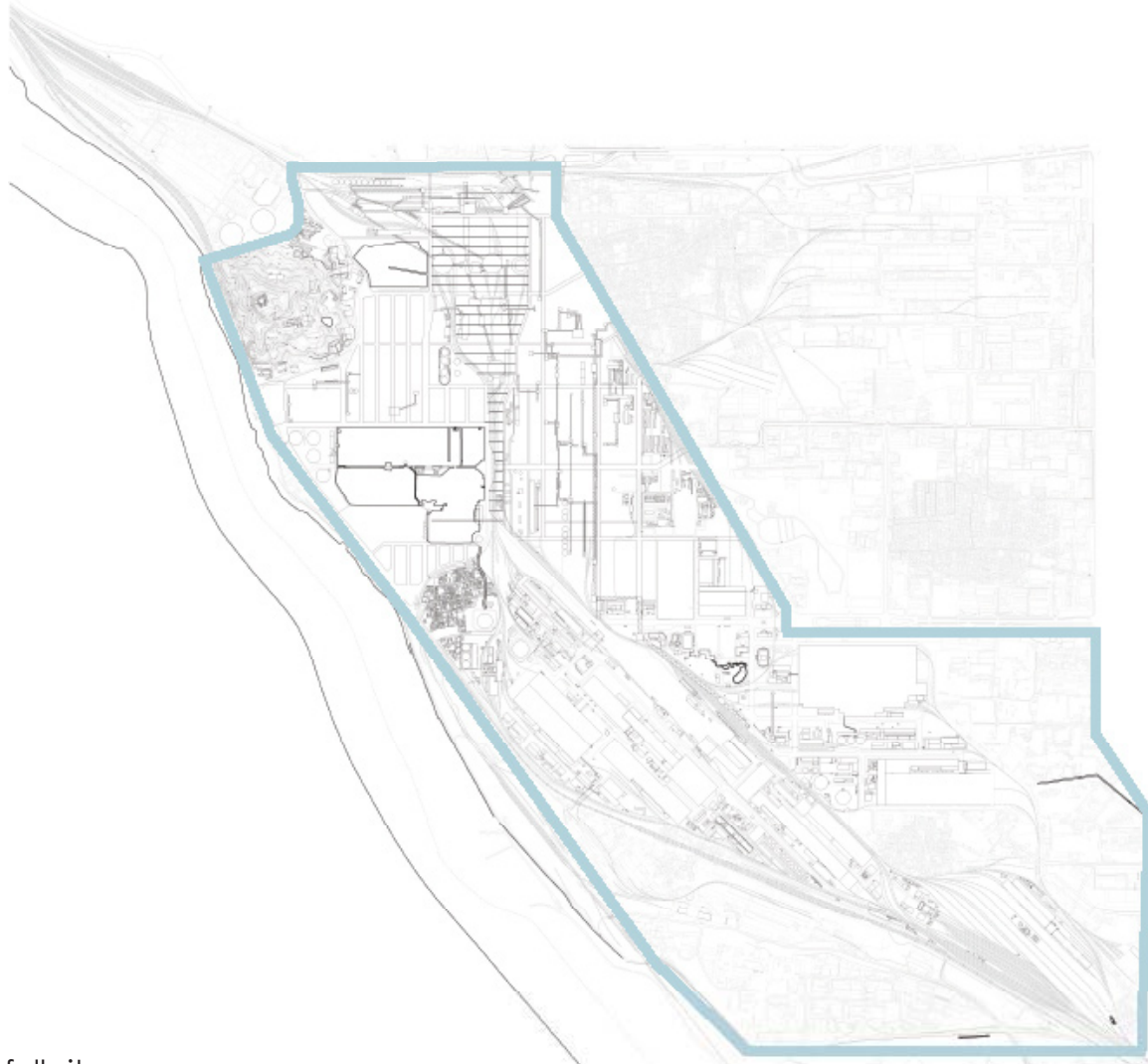
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remediation + agriculture + research = international knowledge cluster

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full site program

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contamination level: varied
污染程度:多样

programming:

remediation crops:

food crops:

development projections:

發展設想:

- 40% research facilities **研究機構**
- 25% office facilities **辦公設施**
- 5% education facilities **教育機構**
- 6% flat agricultural space **農業用地**
- 10% recreation space **公共娛樂**
- 3% retail spaces **零售商業**
- 1% convention space **會展**
- 10% residential units **居住區**

employment types:

提供工作崗位

- land maintenance (unspecialized)
- land maintenance (specialized)
- agricultural workers (unskilled)
- custodians
- administrative support
- remediation lab technicians
- climate-control technicians
- researchers
- engineers
- agri-business technicians
- managers
- educators
- retail staff
- restaurant staff
- tourism service



重度污染區

contamination level: high

**處理方式：
強度植物淨化**

required remediation:
expanded phytodegradation + extrac-
tion

過程：
興建研究棕地改造的實驗室和研
究設施、教育中心
並且以此為核心引入關於改造技
術和都市農業的商業機構
發展空間垂直 + 溶液培養農業系
統作為研究和消費使用

remediation crops:
mustard, alfalfa, sunflowers, bamboo

food crops:
soybeans, potatoes, cabbage and
greens

修復植物：
印度芥菜、苜蓿、向日葵、竹子
農產品：大豆、馬鈴薯、卷心菜
等

suggested development:
3,000,000 m² research facilities
1,000,000 m² office facilities
100,000 m² education facilities
500,000 m² agriculture facilities
500,000 m² retail spaces

建議發展規模：
400萬平方米的研究機構
200萬平方米的商業辦公
10萬平方米的教育設施
5萬平方米的農業用地
1萬平方米的零售商業

employment types:
land maintenance (unspecialized)
land maintenance (specialized)
agricultural workers (unskilled)
custodians
administrative support
remediation lab technicians
climate-control technicians
researchers
engineers
agri-business technicians
managers
educators

工作崗位類型：
土地維護（非專業人員）
土地維護（專業人員）
農業工人（非高學歷要求）
管理人員
土地修復實驗室技術人員
氣候控制技術人員
研究人員
工程人員



development plan: vertical spine

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中高度污染區：

areas of deep + medium contamination

處理方式：

required remediation:

適當植物修復 + 農作物栽培準備

expanded phytodegradation + agriprep

繼續發展研究機構和商業設施，創造展示空間——會展中心和一個大型食品交易市場為都市農業服務。通過創造一個公共交通中心加強區域與北京以及世界的聯系，該交通中心也會加強與都市農業產業相關商業活動。

key remediation crops:
indian mustard, alfalfa, sorghum, barley, and rye

修復植物：

key agricultural products:

印度芥菜、苜蓿、高粱、大麥和裸麥

soybeans, potatoes, cabbage, greens, fruits.

農產品

suggested development:

大豆、馬鈴薯、卷心菜、蔬菜、水果

1,000,000 m² research facilities

1,000,000 m² office facilities

100,000 m² agriculture facilities

50,000 m² retail spaces

100,000 m² convention space

建議建設規模

100萬平米的研究機構

100萬平米的辦公機構

萬平米的農業社是

75萬平米的零售商業設施

100萬平米的會展設施和2500個居住單元

employment types:

land maintenance (unspecialized)

land maintenance (specialized)

agricultural workers (unskilled)

custodians

administrative support

remediation lab technicians

climate-control technicians

researchers

engineers

agri-business technicians

managers

工作崗位類型

土地維護（非專業人員）

土地維護（專業人員）

農業工人（非高學歷要求）

管理人員

行政人員

土地修復實驗室技術人員

氣候控制技術人員

研究人員

工程人員

農業技術人員

經理

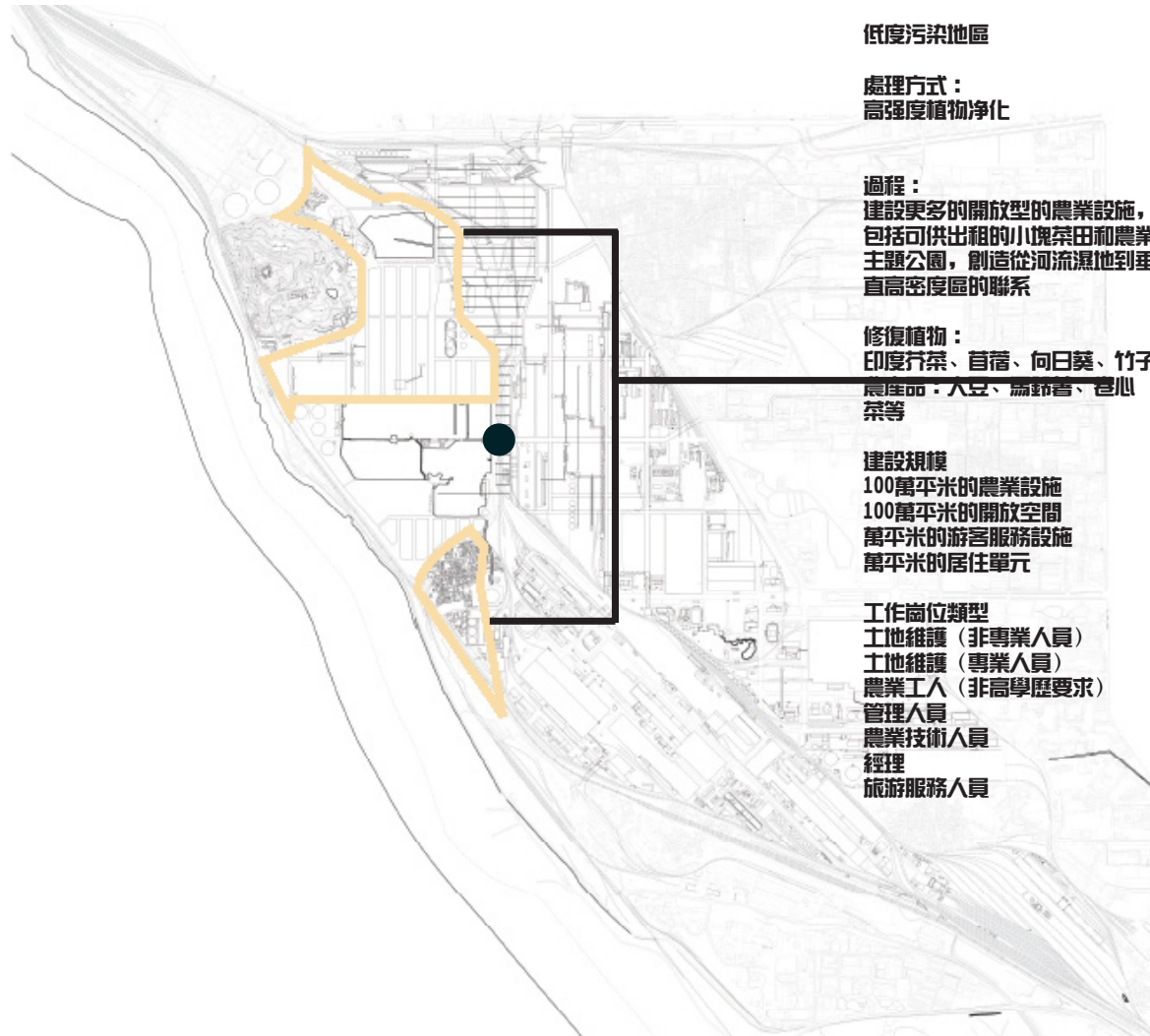


development plan: commercial and civic center

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低度污染地區

areas of low contamination

處理方式：
高强度植物净化

required remediation:
intensive phytodegradation and extrac-
tion

過程：
建設更多的開放型的農業設施，
包括可供出租的小塊菜田和農業
主題公園，創造從河流濕地到垂
直高密度區的聯系

remediation crops:
indian mustard, alfalfa, sunflowers, bam-
boo
food crops: soybeans, potatoes, cabbage
and greens

修復植物：
印度芥菜、苜蓿、向日葵、竹子
農產品：大豆、扁豆、卷心
菜等

development ratio:
20% agriculture facilities
30% recreation/open space
15% tourism facilities
20% residential units
15% hotel rooms

建設規模
100萬平米的農業設施
100萬平米的開放空間
萬平米的游客服務設施
萬平米的居住單元

employment types:
land maintenance (unspecialized)
land maintenance (specialized)
agricultural workers (unskilled)
custodians
agri-business technicians
managers
tourism service
restaurant staff

工作崗位類型
土地維護（非專業人員）
土地維護（專業人員）
農業工人（非高學歷要求）
管理人員
農業技術人員
經理
旅游服務人員



Revitalizing Shougang: social, agricultural, recreational spaces

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高度污染區：

area of high contamination

處理方式：

required remediation:
intensive phytodegradation and extraction

修復植物：

印度芥菜、苜蓿、向日葵、竹子

remediation crops:
indian mustard, alfalfa, sunflower, bamboo

農產品

大豆、馬鈴薯、卷心菜、蔬菜、水果

food crops: soybeans, potatoes, cabbage and greens

建議建設比例

40%的農業用地

20%的開放空間

20%的旅游用地

20%的居住用地

development ratio:
40% agriculture facilities
20% open space
20% tourism facilities
20% residential units

工作崗位類型

土地維護 (非專業人員)

土地維護 (專業人員)

農業工人 (非高學歷要求)

zz職員

行政人員

employment types:
land maintenance (unspecialized)
land maintenance (specialized)
agricultural workers (unskilled)
custodians
food processing staff
managers



Revitalizing Shougang: social, agricultural, recreational spaces

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