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11.307 Beijing Urban Design Studio
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都市農田

以空間垂直化綜合發展模式實現首鋼社會、經濟和空間的復興

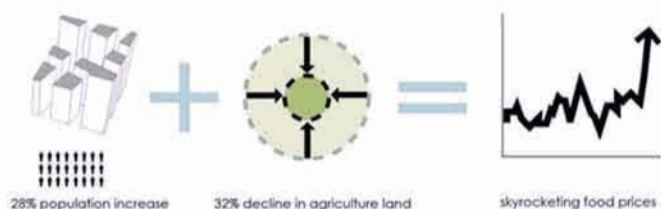
urban agriculture

a vertically-integrated approach to shougang's social, economic, and physical revitalization

背景

無序化擴張
北京巨大的人口已經成為城市發展的障礙。首鋼位于城市增長的邊界地區。

background
explosive growth



beijing's population explosion places an extraordinary burden on the existing urban support system. shougang's location makes it an appropriate urban growth boundary.

環境污染
地段的污染要求進行生態淨化，而目前大規模棕地改造的成功案例和經驗缺

site contamination



expansive site contamination requires extensive remediation; however, little concrete data on the effectiveness of remediation in large brownfields exists.

後工業遺產
首鋼改造是北京進入後工業時代的象徵，保留首鋼的工業遺址是對歷史的尊重。

post-industrial legacy



the closing of the shougang plant represents a transition into a post-industrial landscape. future plans must take into account these monumental social, economic, and physical tectonics by maintaining a connection to shougang's past.

response 對策

research clusters
城市農業和棕地改造的研究中心

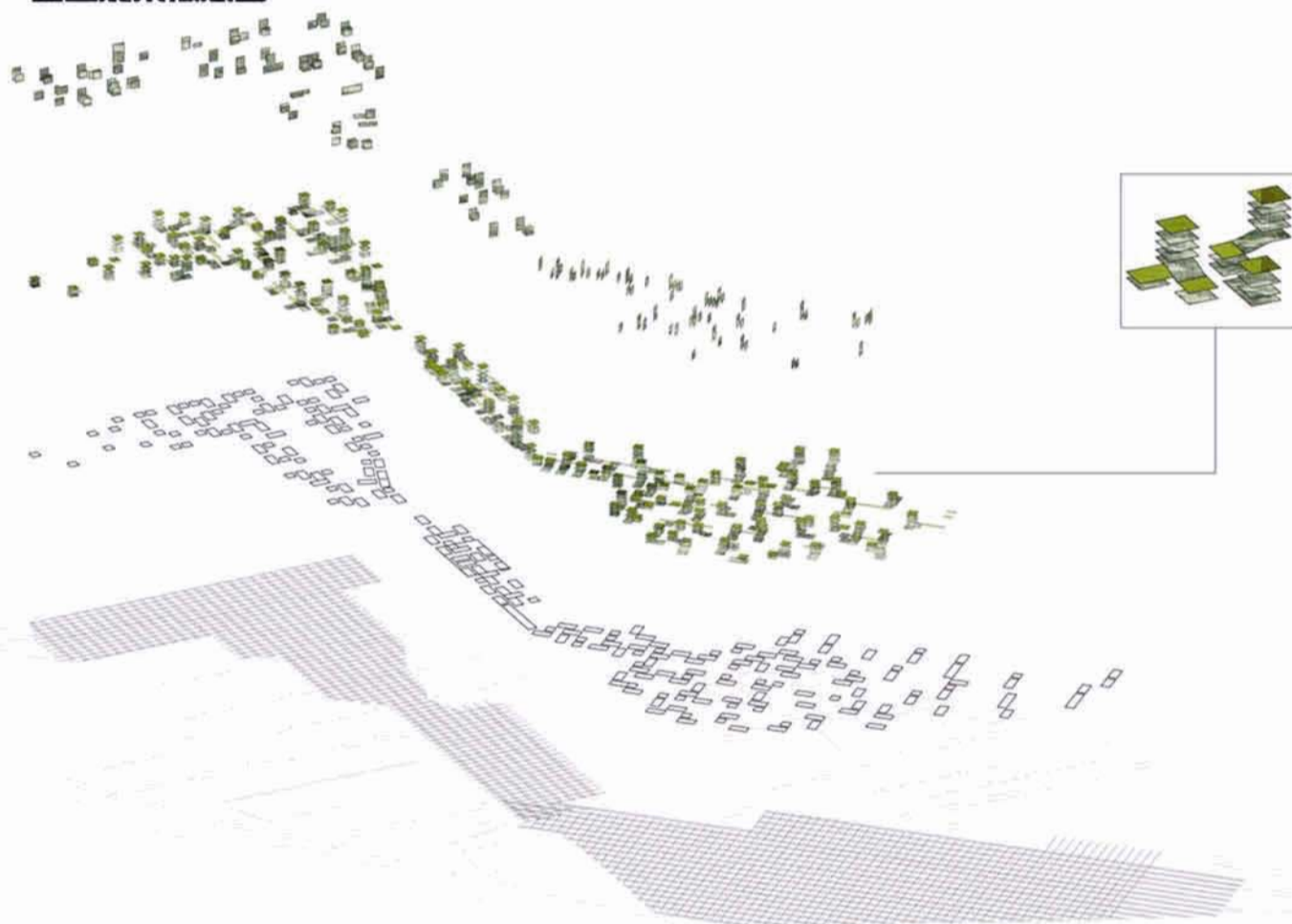


china's national agricultural research system is the largest publicly funded research system in the world. over 60,000 researchers work in 400 research institutes and 70 universities distributed across china.

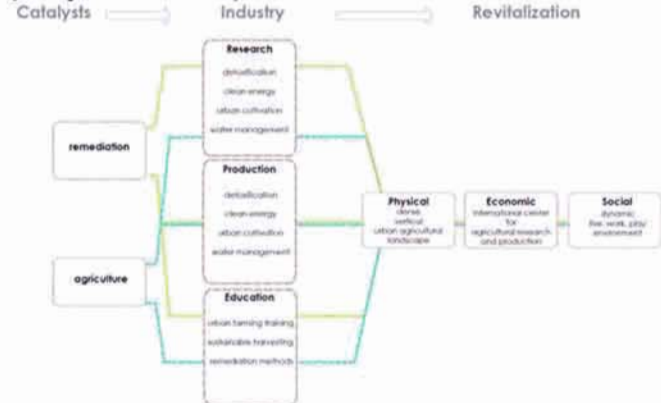
shougang is an incredible opportunity to create a world renowned research center that focuses on remediation and urban agriculture.

concept 概念

vertical agriculture concept plan
垂直農業概念圖



projected impacts



shougang is an opportunity to form a global center for research surrounding brownfield remediation and urban agriculture. rather than view shougang's broad-reaching pollution and industrial infrastructure as a constraint, this industrial heritage can be a catalyst for social, economic, and physical revitalization.

weaving agriculture in a hyperdense urban fabric generates a vertically integrated mixed-use environment where agricultural production and brownfield remediation intertwine with research and commerce surrounding food systems and modern ecology, educational institutions, agricultural tourism, living

units, and multi-modal transit. this proposal responds to the paradoxical land use demands of explosive growth by resolving how to feed, house and employ the urban population.

以棕地改造和城市農業為觸媒，已設立研究中心·城市農業生產和教育為手段，帶動地區的經濟復興，社會復興和空間復興

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11 July 2008 Sandra Frem • Deborah H. Morris • Pamela Ritchot • Colin Zhao • Sara Zeng

development projections:

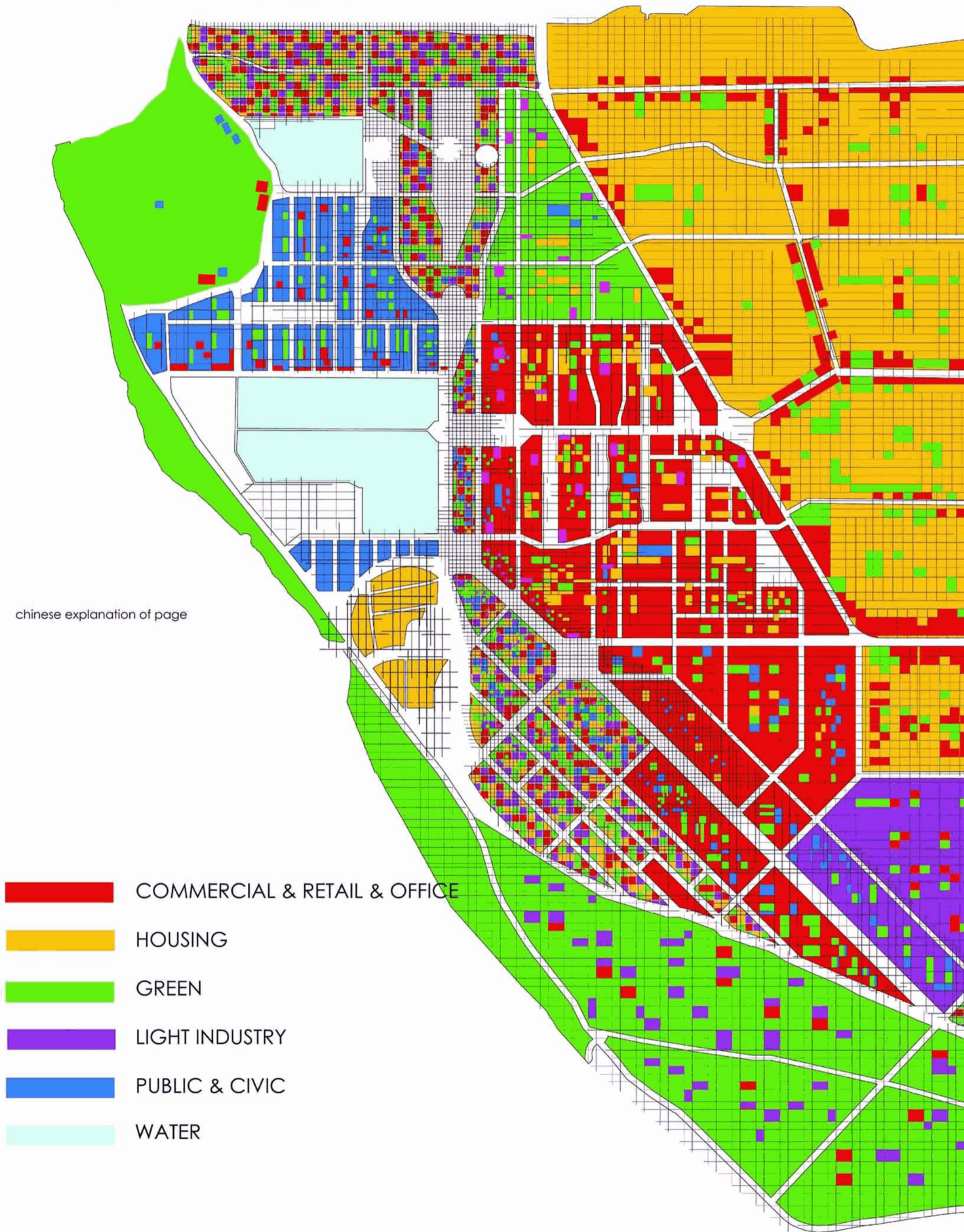
- 40% research facilities
- 25% office facilities
- 5% education facilities
- 6% flat agricultural space
- 10% recreation space
- 3% retail spaces
- 1% convention space
- 10% residential and hotel

employment types:

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



chinese text here



chinese explanation of page

-  COMMERCIAL & RETAIL & OFFICE
-  HOUSING
-  GREEN
-  LIGHT INDUSTRY
-  PUBLIC & CIVIC
-  WATER

development scheme 規劃結構

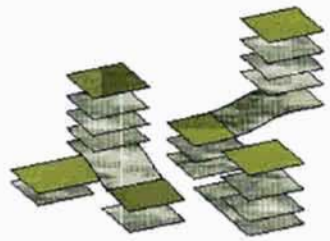
vertical spine 高密度中心區

required remediation:
expanded phytodegradation + extraction

remediation crops:
mustard, alfalfa, sunflowers, bamboo

food crops:
soybeans, potatoes, cabbage and greens

suggested development:
3,000,000 m² research facilities
1,000,000 m² office facilities
100,000 m² education facilities
500,000 m² agriculture facilities
10,000 m² retail spaces



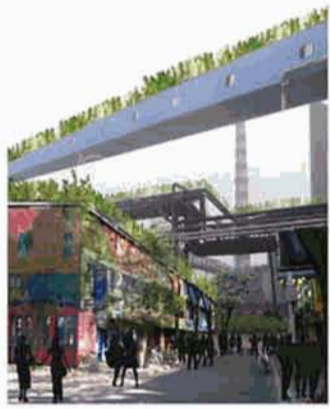
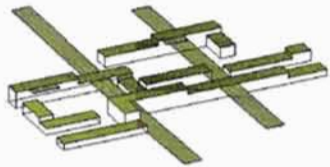
food fair and convention center 食品交易會展區

required remediation:
expanded phytodegradation + extraction

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

key agricultural products:
soybeans, potatoes, cabbage, greens, fruits.

suggested development:
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



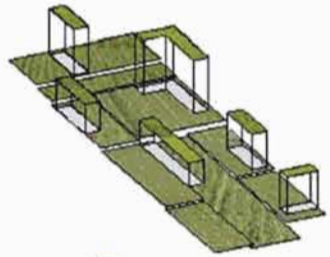
agricultural tourism and recreation 文化娛樂農業活動中心

required remediation:
phytodegradation + extraction

remediation crops:
indian mustard, alfalfa, sunflowers, bamboo

food crops: soybeans, potatoes, cabbage and greens

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



軌道交通

transportation



道路系統

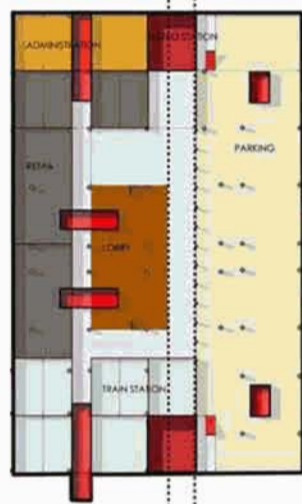
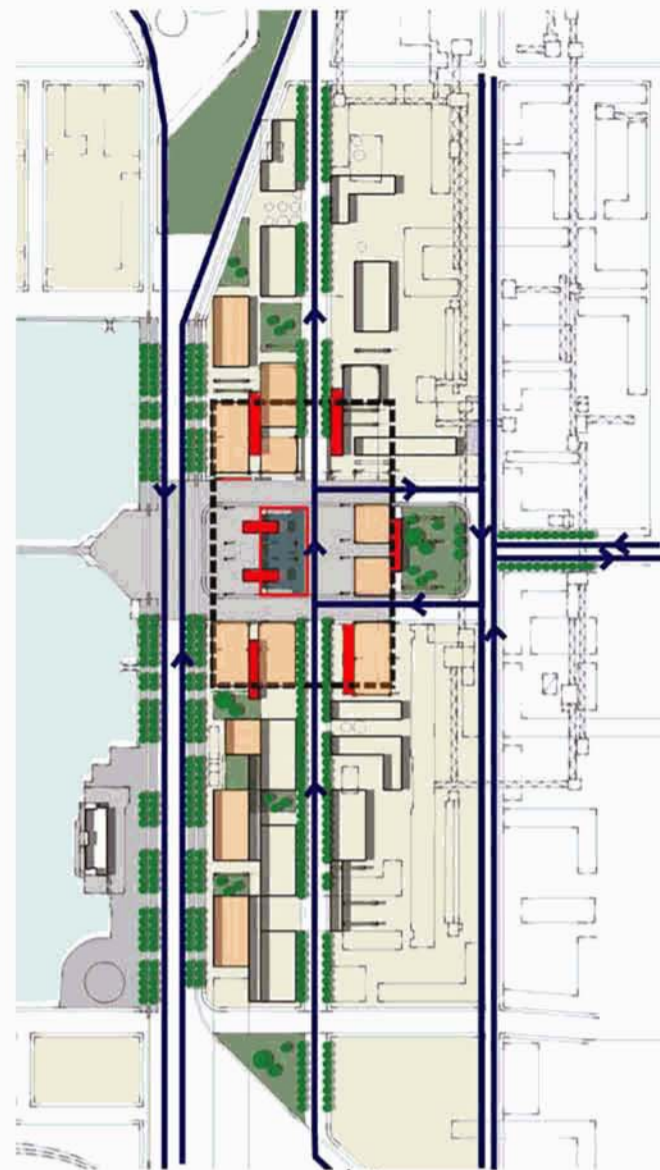
road system



公共開放空間

public spaces



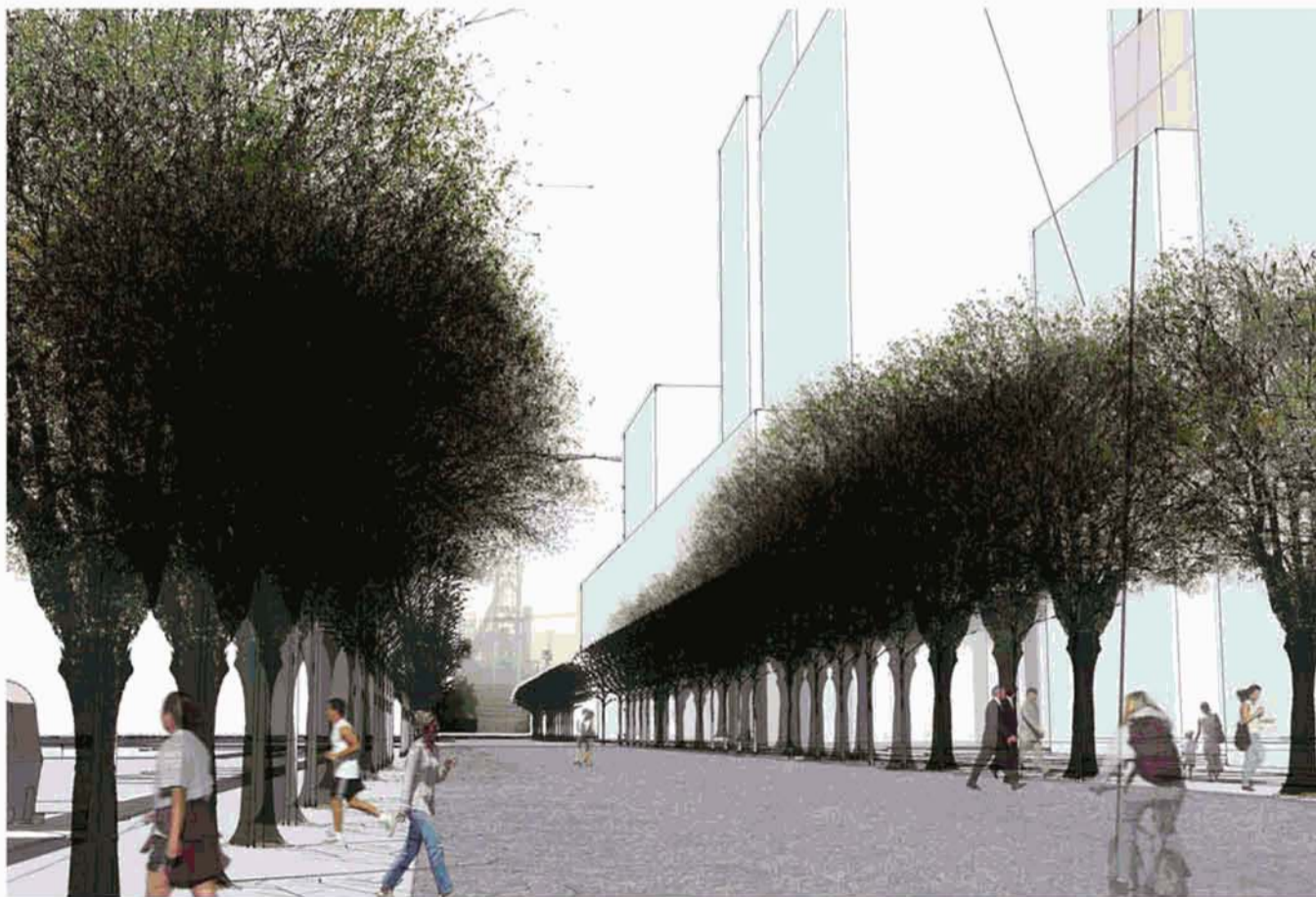


設計說明

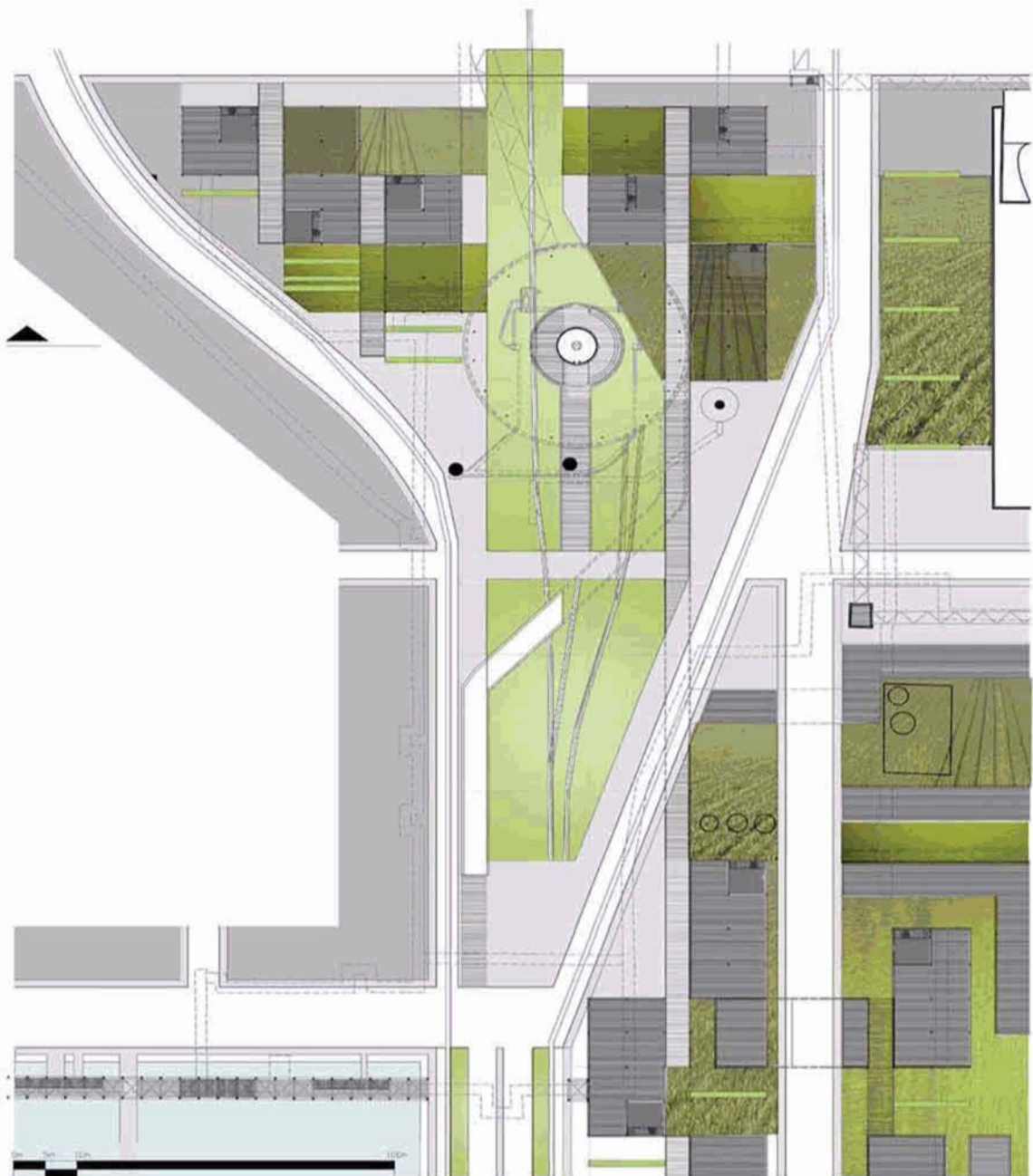
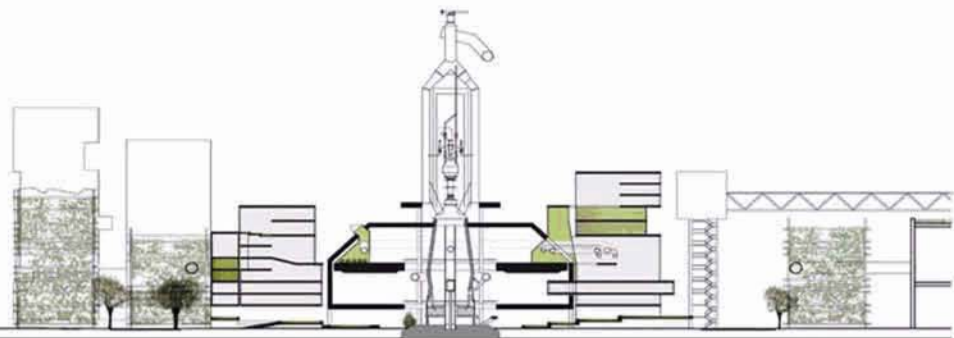
中心車站未來將成為進入新首鋼地區的門戶，它位於高密度啞鈴型中心區的中央，出入口直接面向群明湖。

中心車站既作為過境火車的到達車站，也連接一號綫延長的地鐵，並且作為內部有軌公交車發車站，它將成為地段最重要的交通綜合體。設計中考慮不同流綫交通的分流：地下一—地鐵/火車，地下一層——停車；地上一—行人：出租車。

設計尊重原來的群明湖廣場牌坊軸綫，並加以放大，開辟連結首鋼群明湖地區和東邊居住區的道路，並且周邊布置各種商業辦公設施。



detail: furnace #4 細部設計：四號高爐



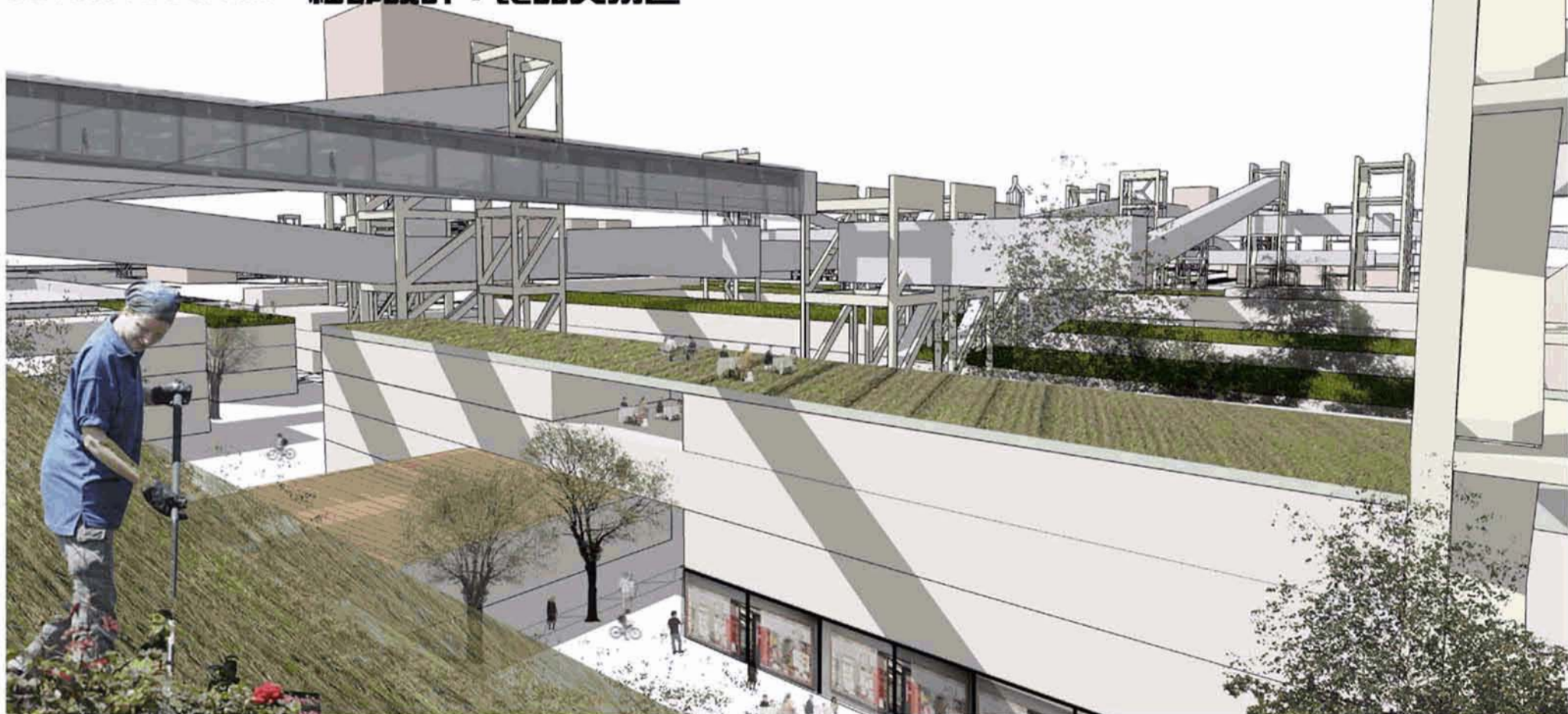
Creating a hyperdense, vertically-productive spine within Shougang, makes it both economically feasible and beneficial to have large plots of land open for natural phyto-remediation. Doing so avoids the high capital costs of soil washing and extraction while creating a valuable research asset: the remediation itself.

Landmark industrial structures are adapted for agricultural or commercial uses, thus reviving the industrial spirit of Shougang while maintaining its legacy.

Because toxicity of the land requires phased development and extensive remediation in the areas of highest contamination, early development should be a research cluster surrounding the issue of remediation. as soon as the land is remediated, it can be transitioned into plots for agricultural research, and, with time, agricultural production. Research, educational, and commercial clusters surrounding urban agriculture and brownfield remediation will bring economic vitality. a transportation hub will draw people to, and moves them through the area. Areas with lower intensity pollution can be more easily adapted for a range of uses, including tourism, residences, and light industrial programs

四號高爐是地段的重要節點。它是首鋼復興概念“城市農業”的展示窗口。未來將改造其成為棕地改造和都市農業的技術展覽和信息交流中心。

detail: food fair 細部設計：食品交易區



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