Big Lakes Site: Post-Industrial Gateway

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Context + Framework

Big Lakes Site
Beijing Urban Structure

- North/South axis is already terminated with the Olympic site in the North and an airport in the South
- Eastern axis meanders after the fifth ring road
- River and mountains form natural finishing point for Eastern boundary – site could become new bookend
Site History and Development

Big Lakes Site
HISTORY TRACE
1919-1937

- 1919 Establishment
- 1919-1928 Government & Merchant cooperated Longyan mine Corporation
- 1923 suspended production with 80-90% accomplishment
- 1928-1937 nationalized by Kuomintang government
- Almost in stagnancy over half of the time and developed slowly

- Area occupied: 2,200 acres (1,466,666m²)
- Railway
HISTORY TRACE
1919-1937

Antique buildings:
• The HEAVEN temple
• BIXIAYUANJUN temple
• Historic well

• The main reservoir (capacity of 60,000,000 gallons)
• Plants & Workshops
• Offices & Laboratories
• Pumps(by the side of Yongding river)

• Few workers dormitory
• The American engineer's villa on Shijing mountain (Exhibition Hall)
HISTORY TRACE
1937-1945

• 1937-1945 took over by Japanese corporation and was under army control
• The Japanese plan and developed the plant for the war use

Imported out-of-date equipments from Japan
• Furnaces 1# & 2#
• Coke ovens
• Electricity equipments

• Built offices, dormitories and bathing house
• Improved the electrical equipment for living
HISTORY TRACE

1945-1949

1945-1949 took over by Kuomintang government

Almost in stagnancy except few maintenance
HISTORY TRACE
1949-1958

- 1949 LIBERATION & FOUNDING OF PRC
- Took over by Chinese government
- Expansion of the area occupied
- Maintenance, Recovery & Transformation of equipments
- 1# Reservoir (the small lake)
- 2# & 3# Reservoir & Recycle Pool used for cooling the furnaces (Qunming Lake)
- Steel Plant
• Oxygen Plant
• Honglou Hotel
• Transformation of the big Reservoir (Qunming lake)
• Pumps for Qunming lake
HISTORY TRACE
1980s

- Electricity Plant & the Cooling Towers
- Cooling towers for the Electricity Power Plant
- Raw Material
- Workers’ Dormitories
• Update Furnaces 1# & 2# on the same sites
• New Furnaces 3# & 4#
• Condensation Towers
• Dross Pools
• Storages
• Extension of the Oxygen Plant

Training School
HISTORY TRACE
2000s

• Extension of the STEEL PLANT

• Developed along the railway
System Architecture

Big Lakes Site
System Architecture

Cooling lake (now defunct)

Two separate processes:
- Steel making
- Power generation
System Architecture: Steel System

- The oxygen plant is located away from the furnace to reduce mass explosions. It can be assumed that O₂ is pumped beneath the lakes and then above ground to the furnaces.
- Processed coal and ore are transported above ground and by rail to the furnace ramp.
- Hot water flows from lake to lake until it is cool.
This power plant also requires raw materials: train lines running between this area and the furnaces suggest that it is also used for the furnaces.

Condensers and cooling towers are a much more effective way of cooling the water used in the power generating process.
Civic Structure

Big Lakes Site
Civic Structure - Axes + Transport

- Site is bounded by its rail lines
- Two main entry points
- Main car access becomes visual link to pavilion on the mountain – this link could be visually strengthened
Civic Structure – built forms

- Raw material production of ore and coal forms hard-line boundaries to the site on the north and east.
- Currently inaccessible, the oxygen plant still has a strong major spine.
- Movement through the site encompasses both lakes.
Big Lakes Site
Open Space
Access, movement & places

Big Lakes Site
Northern Edge Section
Western Edge Section
Built Form and Fabric

Big Lakes Site
Figure Ground Diagram

1. Industrial Elements
2. Isolated buildings
3. Consistent edges
4. Human scale – residential development
5. Towers
**Preservation and Demolition**

- Cooling towers define the landscape. The four towers to the west already have a secondary function of being the place where plants are propagated for the site.
- Edge conditions: the oxygen factory has a strong street edge.
- The residential buildings in the south are in bad condition, but the urban fabric provides a strong relief from the scale of the industrial site and is pleasant to walk through.
HEIGHT

- 0-10 m
- 10-30 m
- 30 m+
- Ground & road
- water
5/50 = 10%
6/50 = 12%
32/50 = 64%
7/50 = 14%
GIANTS

- Built year: 1980s
- Use: cooling tower
- Size: h=80m, r=28m
- landscape
“TRADITION”

- Built year: 1990s
- For celebrating the arrival of Deng Xiaoping
- Use: leisure
- Anachronism & Memories
no idolatry but memory of that age
ORDINARY

EGGS

- Built year: 1970s-1990s
- Use: oxygen plants
PARASITE

- Since 800 years ago
- Shabby now
- Residential fabric
• A natural village

• Survived and isolated in the factory

• Villagers were stealing the steel products to make illegal profit

• Landowners are keeping the houses for more compensation

• Now temporaries are living here

• After the relocation of Shougang...
ROADS FOR CAR
Opportunities and Constraints

Big Lakes Site