Urban Space Regeneration

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URBAN SPACE
REGENERATION

TO CREATE A NEW CIVIC SPACE FOR BEIJING

TRANSFORMING THE CITY FROM A HEAVY INDUSTRIAL CITY IN A GARDEN CITY.
The main idea I pursued in my research is the regeneration of urban space, which helped to create a new civic space for a city. The details of urban space regeneration are designed to improve the quality of life, and it related to the use of urban public space. Based on the research and background study, my thesis explored to improve the urban environment, enhance urban space usage and improve city image in Beijing to regenerate it from a heavy industrial city in a garden city.

Dalian is now a well-known city in China, because of the success in transforming the city from a heavy industrial city in a garden city.
I would like to sincerely thank all the people who helped me. Especially Professors Liz Martin and Giovanni Loreto, thank you for all that you have done.
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1.1 Abstract

Urban regeneration has been accompanying urban development since the earliest human settlement, and was emphasized after the World War Two. Economic growth and fashion of dollars forced the decision makers to realize the importance of urban image, quality of life, and urban environment. This was recognized as prerequisites and catalysts for the economic development of cities. Urban space is the stage upon which the drama of communal life unfolds. The streets, bridges, railway, squares and park space are all forms of urban public space (Carr, Francis, Rivlin, and Stone, 1992).

1.2 Thesis Statement

The main idea I pursued in my research is the regeneration of urban space, which helped to create a new civic space for a city. Details of urban space regeneration are designed to improve the quality of life, and it involved the use of urban public space.

I envision the urban space as the place for urban residents to meet and talk with others, to stay in the natural environment, a multifunctional space in urban areas, which could be the center of political, economic, or cultural activities. Researching how to make the urban space more useful, reasonable and ecological for the city has become a key factor for the development of cities. The squares are fully utilized, are used as transportation foci as well as cultural and entertainment centers of the city, and are appreciated by both local residents and tourists. So based on that research and background study, my thesis explored to improve the urban environment, enhance urban space usage and improve city image in Beijing to regenerate it from a heavy industrial city in a garden city.

Since 1978, China has experienced rapid development because of the advancement of the ‘Open Door’ policy. The industrial sector grew faster than the agricultural sector, and heavy industry grew faster than light industry. This forms a lot of heavy industrial cities, suffers a lot of urban environment and urban space usage problems. Beijing represents one of these cities, it is the capital of China, and it is the political and cultural center that shows the city image.

In my research on regeneration of urban space I chose the city of Dalian as an example of the city named ‘that I used as a guide. Dalian is a coastal city in China, it is an industrial city from a heavy industrial city in a garden city. In the past thirty years, the major concern of Dalian government was to provide local residents with public space to enjoy public life, and to improve the urban environment. The designers built many squares between the road systems. The construction of squares was carefully and systematically planned, and the location of squares was pertinent to the land use pattern of the city. The squares are fully utilized, and they become centers of political, economic, or cultural activities.
1.3. Background

1.3.1 Urban Public Open Space

Based on former studies, Wang (2002) summarized the definition of public space and open space in the context of urban area: the space should be the place for urban residents to meet and talk with others, and for human being to stay in the natural environment. It is also the symbol of urban image, thus being called as the living room or window of the city. It is a multifunctional space in urban area, which could be centre of political, economic, or cultural activities. The sites, bridges, stations, squares, parks and green spaces are all forms of urban public space.

### Table 1-1: Urban Public Open Space

<table>
<thead>
<tr>
<th>Type</th>
<th>Sub-category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>Patrol path</td>
</tr>
<tr>
<td>Manmade</td>
<td>Pathway</td>
</tr>
<tr>
<td>Recreational</td>
<td>Urban Park</td>
</tr>
<tr>
<td>Civic</td>
<td>Public Use</td>
</tr>
<tr>
<td>Residential</td>
<td>Public Service Facility</td>
</tr>
<tr>
<td>Commercial</td>
<td>Public Service Facility</td>
</tr>
<tr>
<td>Cultural</td>
<td>Public Service Facility</td>
</tr>
<tr>
<td>Religious</td>
<td>Public Service Facility</td>
</tr>
<tr>
<td>Historical</td>
<td>Public Service Facility</td>
</tr>
</tbody>
</table>

1.3.2 Public Life in Public Spaces

Public life in public spaces is desirable for people and good for societies (Carr et al., 1992). Public spaces can offer relief from stresses, providing opportunities for relaxation, entertainment and social contact. People can discover new things and learn from others through public life (Carr and Lynch, 1968; Ward, 1978).

### Table 1-3: Relationship between Quality of Environment and Public Life

<table>
<thead>
<tr>
<th>Type</th>
<th>Quality of Physical Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Park</td>
<td>Poor</td>
</tr>
<tr>
<td>Public Service Facility</td>
<td>Good</td>
</tr>
</tbody>
</table>

Urban regeneration has been accompanying urban development since the earliest human settlement, and was emphasized after the World War Two. Decades of experience and billions of dollars forced the decision makers to realize the importance of urban image, quality of life, and urban environment, which were recognized as prerequisites and catalysts for the economic development of cities.
Beijing is the capital of China and one of the most populous cities in the world, with a total population of 21,150,000 as of 2013. The city proper is the 2nd most populous in the world. The metropolis, located in northern China, is governed as a direct-controlled municipality under the national government with 16 urban, suburban, and rural districts. Beijing Municipality is surrounded by Hebei Province with the exception of neighboring Tianjin Municipality to the southeast, together these three divisions form the Jingjinji metropolitan region and the national capital region in China.

Beijing is the second largest Chinese city by urban population after Shanghai and is the nation’s political, cultural and educational center. It is home to the headquarters of most of China’s largest state-owned companies, and is a major hub for the national highway, expressway, railway, and high-speed rail networks. The Beijing Capital International Airport is the second busiest in the world by passenger traffic.

The history of Beijing dates back three millennia. As the last of the Four Great Ancient Capitals of China, Beijing has been the political center of the country for much of the past eight centuries. The city is renowned for its expansive palaces, temples, parks, gardens, tombs, walls and gates, and its art treasures and universities have made it a center of culture and art in China.

Chapter 2
China has undergone rapid urbanisation during the last two decades, following economic and political reforms. Currently there is a nationwide consensus calling for a new type of urbanisation which is people-centred. Transformation of the urban development model is essential for expanding metropolises. As a global city, Beijing is facing major challenges including: excessive population growth; urban function upgrading; limited land for construction; socio-spatial transformation and social segregation; and deteriorating environmental conditions.

Since 1978, China has experienced rapid development because of the advancement of the ‘Open Door’ policy. The industrial sector grew faster than the agricultural sector; and heavy industry grew faster than light industry; while forms a lot of heavy industrial cities; leave a lot of urban environment and urban space usage problems.

Beijing represents one of these cities, and there is a lot of waste space in Beijing, such as the old railway, the bottom of the bridge, unused riverway, etc. Unreasonable space utilization will not only lead to traffic problems, but also lead to environmental problems.

Urban space waste management is a crucial component of our constant interaction with the environment within and around our cities. Managing waste space efficiently and sustainably is a unique challenge for all that depend on development trends, socioeconomic composition, political situation, and a host of other factors.
2.3.2. Beijing Urban District Zone

Beijing municipality
Districts and their classifications

2.3.3. Beijing Transportation (Subway) System Development
2.3.4. Climate in Beijing

Beijing is a typical temperate climate city of China, where the summers are warm to hot and the winters are cool to cold.

The coldest month is January at an average of -9 °C (15 °F), and the hottest month is July at an average of 31 °C (87 °F).

75% of the annual precipitation is concentrated in summer from June to August, with frequent showers in July and August.

The mildest month is January at an average of 6 °C (43 °F), and the hottest month is July at an average of 21 °C (70 °F).
Chapter 3

Site Influences

3.1. Center Zone and Periphery Zone

Figure 3-1 Center Culture Reserve Zone
3.2. Physical Character Studies

- A river pass through, but lack of connection to both side
- A subway station nearby the river
- Most of the surrounding are residential, inclusion of educational and institutional facilities
- Lack of organized public green space nearby for local residents to enjoy public life.

The river cross over the city

The city meets river and green space.

Two river sides: residential (orange) + industrial (blue)
3.3. Elements of the Site

Figure 3-4 Elements of the Site
3.4. Transportation of the Site

Figure 3.4 Transportation of the Site

3.5. Programmatic Framework
Exploring Architectural Firm

Field Operations

Field Operations is a rapidly rising group of landscape architects and urban designers. James Corner is also the chair of Department of Landscape Architecture in University of Pennsylvania. Corner is known for being a key figure in the recent discourse of Landscape Urbanism, following Ian McHarg’s ecological planning school of U Penn. James Corner Field Operations’ research includes inductive studies and design exercises that have drawn great attention from both academia and professional areas. They have been awarded prizes in recent design competitions in North and South America, and Asia. James Corner Field Operations was named one of the world’s most innovative companies by Fast Company (2012) and one of the most influential design firms by Time (2013). Their influential works are categorized as part of the new thoughts in Landscape Urbanism.

Ecological Urbanism

Ecological Urbanism, a new discourse that is not yet fully understood & widely practiced, is an advanced way of urban planning, with the core of realizing the potential of nature for urban environments. It is different from the passive way of protecting environment and nature. It takes “design” as a progressive way to create opportunities of ecology. Facing global urban sprawl, climate change and sustainable strategies, especially the rapid urbanization in China and Asia, you can see deeper contradictions between architecture, development and natural environment. Ecological Urbanism may be more realistic than many others. It would provide a new way of thinking to China’s architecture and urban design professional practices.

Jason Long, OMA

Jason Long joined OMA in 2003 and has been based in OMA’s New York office since 2007. He has long-standing experience with public space planning, from his early involvement in AMO strategic masterplans for Beijing Preservation and Shanghai Planning to the recent winning competition scheme for the Miami Beach Convention Center District.

Hallie Boyce, Olin

A Partner since 2009, Hallie Boyce has seventeen years of experience in the field of landscape architecture and urban design. Her focus is the design of places in the public realm that promote community building and public health through the engagement of urban ecologies and natural systems.
4.1. Case Study 1 — the river enhancement

Qianhai Water City

Qianhai Water City, located on the border (China)’s west coast, is the first part of a strategic master plan that aims to create a ‘Green-Smart’ city. This area consists of 156.00 ha of reclaimed land or a city that is dominated by water which is connected with the 'Water Fingers', which function as innovative water quality infrastructure and provide water for different development districts.

The urban area within each development district contains a range of inter-connected urban neighborhoods. The result is a self-sufficient, ecologically sensitive urban territory with an innovative, diverse building stock, cultural and recreational facilities, and unique interconnected public open spaces.

As shown in Table 4-1, of the 52 squares in the central city of Dalian, 15 (46.9%) are transportation squares; 13 (40.6%) are recreation/tourism squares; 5 (15.6%) are restricted green space; 4 (12.5%) are commemorative squares; 2 (6.3%) are commercial squares; 1 (3.1%) is a municipal square.

The proportional distribution of the major classification of squares in the central city of Dalian is shown in Figure 4-2.
4.3. Case Study 3—the bridge
11th Street Bridge Park

The design team was asked to transform an aged-out freeway bridge into a new multi-use civic space over the Anacostia River. “The 11th Street Bridge project is a special precinct in the structure of the City.” It is a space both a connecting and place, in its purest role it is a hyphen that connects and celebrates the physical and cultural histories of two historic and vibrant Anacostia shoreline communities, while establishing a civic expression of democracy. The 11th Street Bridge project is enormously exciting, not only as a means of building community and improving quality of life, but also as a strategy for promoting health.

The design of the bridge pulls the two ends of the bridge upward to form an X-shape, providing shelter for programs such as a performance space and café, as well as plenty of open space for plazas, lawns and urban agriculture plots. This manipulation of the form also turns the thoroughfare into a destination all of its own above the river.

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http://www.bridgepark.org
4.4. Case Study 4— the garden intervention
Santa Monica’s New “Garden” Park
PALISADES GARDEN WALK + TOWN SQUARE

Native and locally adapted plants work hilltopography for maximum display
Dramatic seasonal changes
Bold and unique forms and shapes showcase extraordinary plants

4.5. Case Study 5— the garden city
“Garden City of the 21st Century” in Hamburg
KCAP & Kunst + Herbst

The design will accommodate a total of 2,200 apartments, 100,000 square meters (1,080,000 square feet) of small industry space and nearly 200,000 square meters (2,150,000 square feet) of diverse public landscapes.
A variety of housing typologies have been placed in the center of the district, with green spaces and landscape extended out from the site in the form of fingers. A small plaza will contain a school and an artificial lake, linked to its surroundings through a boulevard. Housing and commercial functions will transition into alternative uses as the district reaches the rail zone located at its perimeter.
The central lake, an integral part of the design’s “green-blue” network of greenery and waterways, also plays a role in the neighborhood’s overall sustainability, serving as a basin for rainwater and energy management.
Design Program and Process

5.1. Figure Ground and Usage Patterns

Chapter 5
5.2. Program Systems (Concepts)

- New Green Space Buffer Zone
- Green Garden Space
- Connection Between Both Sides
- Pedestrian + Bike Lane System
- Community Public Space

5.3. Concept Model
5.4. Program Site Plan

5.5. Program Elements

- Entrance ①
- Community Center ②
- Small Parking Lot ③
- Shading
- Sculpture Garden ④
- Children's Playground and Basketball/Volleyball Court ⑤
- Community Garden ⑥
- Waterscape ⑦
- Shading
- Skateboard Park ⑧
- Pavilion ⑨
- Landscape Corridor ⑩
- Shading

Library ⑪
Gym ⑫
Supermarket ⑬
Parking ⑭
Subway Station ⑮

Scale: 5m 10m 15m 20m

34 35
Comfortable relaxing zone

Sustainability landscape design

Designing for lighting
A detailed lighting design strategy is required.

Activate the site with water
Activate or calm the feeling of the site with water features and attractive stormwater management.

Art sculpture

Details + material selections

5.6. View Through the Garden

5.7. View Through the Buildings
5. New Green Space Buffer Zone
Contemporary City of Beijing (2013) [http://contemporarycity.org/]

Bibliography