

The Strategic Impact of the Summer Palace on China's "Silicon Valley"

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The Summer Palace

ABSTRACT

The Haidian Garden of Zhongguancun Science and Technology Zone is an area with high intellectual intensity. It is therefore known as China's Silicon Valley. The Summer Palace, a World Heritage Site, sits in the northwest part of it.

250 years ago, the construction of imperial gardens in this area, including the Summer Palace, gave birth to the appearance and prosperity of the town of Haidian. This will also provide various opportunities for the growth of the science and technology. Today the green space, the cultural and ecological environment of the Summer Palace, and its 3-kilometer buffer zone are becoming one important strategic factor for the Haidian Garden to attract talents, improve international competitiveness and realize sustainable development.

How to taking advantage of the favorable resources, to achieve balance between protection of the environment around the Summer Palace and urban development, will be of great importance in the future plans of the science and technology.

Key Words : The summer palace, Zhongguancun, Impact, Environment, Sustainable development

In 1999, to follow the world trend of knowledge economy, the Zhongguancun Area in Beijing, known as China's "Silicon Valley", was given a new historical mission: to build into a new and high-tech industry development model zone, to exert significant influence and drive throughout the nation, and to become a first-rate science and technology park in the world. In the overall development plan of this area, the Summer Palace, a World Heritage Site, is included at its central part. A mere 3 kilometers separate Zhongguancun West Zone and the Summer Palace. Here, ancient and modern civilization have converged.

In this urban area where co-existence is unavoidable, a high-tech zone that represents advanced production power, has vitality and attraction. Since the social, economic and cultural environment that produced the Summer Palace has long since become history, the Palace representing ancient civilization, is all the more fragile and requires careful protection. Therefore, it would be of great strategic significance to make the city planners as well as the general public appreciate the value of the Summer Palace, and at the same time, to understand the irreplaceable role of the Summer Palace in this shared space.

I. IMPERIAL GARDENS SUCH AS THE SUMMER PALACE ALTERED THE HISTORY AND GEOGRAPHICAL FEATURES OF ZHONGGUANCUN AREA, PROVIDING AN OPPORTUNITY FOR NEW AND HIGH-TECH DEVELOPMENT

The Haidian District in which Zhongguancun locates is in the upper reaches of Beijing. The Western Hills, know as the "Magical Right Arm of the Capital City", stretches northward turning east at the Fragrance Hill. They are like a screen standing to the northwest of Haidian. At its heart, Jade Spring Hill and Longevity Hill stand up to enrich the 3D effect at the foreground of Haidian. Here, numerous water resources and tightly knit rivers provided a microclimate that was cool, moist and free of sands. With generations of development, a beautiful natural landscape similar to watery country south of the Yangtze River was created. This natural landscape encompassing a fine ecological environment and natural scenery, rare in north China, coincided with the needs of the Qing Imperial Family to build gardens. The large imperial landscape gardens of "Three Hills and Five Gardens" altered the historical landscape of Haidian as an agricultural area and fostered the emergence of Haidian Town, the core of Zhongguancun area. The entire process lasted over 300 years, which may be divided into 3 important historical periods:

1. Haidian Town Developed from a Primitive Living Area into a Service Center Affiliated to the Imperial Gardens

In 1764, with the completion of Qingyi Yuan, the Garden of Clear Ripples, the "Three Hills and

Five Gardens" imperial garden landscape area was basically completed after 100 years' efforts. "Three Hills and Five Gardens" refer to Yuanming Yuan, Changchun Yuan, Jingyi Yuan at Fragrant Hill, Jingming Yuan at Jade Spring Hill and Qingyi Yuan at Longevity Hill. They differ in size between 65 hectares and 347 hectares. These enormous imperial gardens in these areas were divided by about 20 gardens belonging to noble families and high officials. These various sized gardens promoted the development of the economy and culture in Haidian.

First of all, to supply water to the gardens, the water system in this area was fully developed and utilized. Apart from sorting out streams and rivers in the plain area, the most important step was to enlarge the Jar Hill Lake into the Kunming Lake when Qingyi Yuan was built, multiplying the water depositing volume by several times, making it into a reservoir for the city of Beijing. This lake not only provided sufficient water supply for the imperial gardens in Haidian, but also provided favorable conditions for the opening up of rice fields. Finally, the scenery area of 10,000 acres of rice fields starting at Haidian in the east, Jade Spring Hill in the west, Changchun Bridge in the south and Qinglong Bridge in the north, making Haidian a famous rice production area in western Beijing. This promoted the economic potential for Haidian area, and at the same time, created the cultural tradition and exquisite scenery of merging rice fields into landscape gardens.

Second, to ensure the security of the Imperial Family, the Qing Emperor moved the barracks of the Eight-Banner Armies to the vicinities of the gardens, pushing the population of scarcely populated Haidian area to over 10,000 households. With the development of this area, the core of today's Zhongguancun area, Haidian Town grew and developed rapidly.

The town of Haidian sits on the main road between the Capital City and the “Three Hills and Five Gardens.” It was not only the doorway leading to the Imperial Gardens, but also their service center. A number of yamens were established in the town. For more than 160 years between 1730s and 1890s, Yuanming Yuan and the Summer Palace were the main centers where the Qing rulers handled state affairs. Haidian Town became even more prosperous. The primitive residential area became the living quarters of high officials. A busy shopping street was also formed, with over 100 shops and firms. Overheard Stories of the Imperial Gardens by Zhen Jun had the following description: “At the time, only the best of all goods appeared in this place, whereas the goods sold in the capital city were only of second rate.”

2. The Emergence of the Capital City's Educational Area with Haidian Town as a Center

In 1860, when the “Three Hills and Five Gardens” were burned by the Anglo-French forces, Haidian also lost its prosperity. In 1886, with the reconstruction of the Summer Palace, Haidian experienced a second round of prosperity. After the Qing Dynasty ceased to exist in 1911, the small gardens north of Haidian Town fell into private hands and became dilapidated. However, the pleasant environment and sound infrastructure were still attractive. Not long after, on the ruins of some small gardens, Tshinghua University and Yanking University, the most influential universities in modern Chinese education, were created.

In 1949, after the founding of the People's Republic of China, the new government chose Beijing as its capital city. The plan for the new capital endeavored to protect the Summer Palace

and the remains of other imperial gardens and to fully utilize its history, culture and ecological environment. Considering its existing educational background, it was decided to create the cultural and educational area with Haidian Town as the center. After that, a large group of universities and research institutions was established here. The most significant of all was the establishment and enlargement of research institutions under the Academy of China beginning in 1952. Gradually, the area won its title of “Science City”. Today, this area boasts 73 universities, 232 research institutions and about 370,000 science workers, and a wealth of published resources, with the National Library as a representative, has been formed, producing thousands of high level research fruits that exert an influence all through China.

3. The Creation of Zhongguancun Science and Technology Zone

At the early 1980s, influenced by the new wave of technological revolution of the world, the farsighted intellectuals started to create the Zhongguancun Electronic Street. After two years of investigation and research, the State Council approved in 1988 the establishment of Beijing New Technology Industry Development Experiment Zone in Zhongguancun. Over the past dozen years, the economic indexes in this area have maintained an annual growth rate of over 30%, with nearly 5,000 businesses creating enormous economic benefits. At the turn of the century, the Chinese government again approved the application to build Zhongguancun Science and Technology Zone, proposing to build it into a nationwide science and technology creation model area with nice environment, complete facilities, convenient transportation and flowing information; into a base

for transforming science fruits into production power, an incubator for new and high-tech enterprises; into a base for fostering high quality original talents and a world's first-rate science and technology industrial zone. This is a fresh strategic decision in China bound to have sweeping significance following the opening of Shenzhen Special Economic Zone and the development of Pudong New District. In this sense, the development of Zhongguancun area is not merely to build a development zone, but to build an urban center with high-tech features to push forward China's social and economic development in the 21st century.

II. THE CULTURAL AND ECOLOGICAL ENVIRONMENT MAINTAINED BY THE SUMMER PALACE IS A VITAL RESOURCE TO PROMOTE THE SUSTAINABLE DEVELOPMENT OF HIGH-TECH CIVILIZATION

Hi-tech industry is a kind of "human economy." Among its numerous production factors, human capital (intelligence resources) plays a decisive role. The concentration of a large number of professional experts is one favorable condition to develop hi-tech industry. According to Mr. Roven, an analyst from Stanford University on the American Silicon Valley and the entrepreneurial spirit of other similar places in the world, the Silicon Valley has 8 advantages as the habitat for entrepreneurs. One of them is high quality living environment. Therefore, for Zhongguancun to attract first-rate talents, to raise international competitiveness, and to realize sustainable development, emphasis must be attached to the construction of urban ecological environment. This ecological system is a complex system of nature, society and economy, with man at its center.

The real significance of this urban environment would mean the soundness of ecological environment as well as the integration of culture, science and art, and complete with cultural aesthetic value. Taking this into consideration, Chinese landscape gardens are more appropriate for the ecological standards of a hi-tech zone with a comprehensive requirement over the environment. The Zhongguancun Area commands unique advantage over other science areas-in the world to include in its region World Heritage Site Summer Palace and the remains of the Three Mountains and Five Gardens. The advantages are enumerated as follows:

1. Adjustment to the Ecological Environment

From the view of urban ecological system, greening and afforestation constitutes a major component of urban ecological environment. Generally speaking, the bigger the green area, the greater its protective function, and the higher the quality of the green area, and the greater its role on the maintenance of the city's ecological balance. The Summer Palace situates at the upper reaches of the Zhongguancun Area and covers an area of over 290 hectares. Plus the 3-kilometer green buffer zone designated for its protection, the Summer Palace provides a large green area of over 1,000 hectares. According to rough estimation, this vegetation annually releases 60,000 tons of oxygen, absorbs 86,000 tons of carbon dioxide, evaporates 8.88 million tons of water, which absorbs 217.4 billion joules of heat. This vegetation also plays a beneficial role in staying dust, reducing bacteria and noise, absorbing poisonous gases to cleanse the atmosphere. Especially it is worthy to mention is the fact that the Summer Palace has 2 square kilometers

of water space, playing an obvious role in adjusting the moisture level of the air in Zhongguancun Area. The cool and pleasant wind blowing over from the Summer Palace has become a special blessing for residents in Zhongguancun area.

2. Creation of a Spiritual Homestead for Business Founders

The Summer Palace is the final masterpiece of the 3,000-year Chinese imperial garden construction. It encompasses a variety of scientific and artistic achievements of mankind in the fields of nature and human spheres, displaying vividly the profound Chinese culture. As a World Heritage, the Summer Palace has evolved into a spiritual homestead for the residents.

The service radius of the Summer Palace includes the major parts of Zhongguancun Area. It provides for the developers and researchers, after intensified brainwork, an ideal place to release the pressure, to refresh the mind, to excite inspiration, to acquire knowledge, and to restore mental power. Visitors to the Summer Palace may consider its past, examine its present and ponder upon themselves. People realize that the development of modern civilization depends very much on the nurturing of historical and cultural heritage. In the genuine historical environment of the Summer Palace, people may have a clear understanding of the essence of Chinese traditional culture, have a more overall understanding of the origin, present status and development of the society that we live in, and to understand history, access the reality and look into the future by looking into the national spirit etched in these historical remains.

3. Symbol of Beautiful Environment

For the Zhongguancun Science Area to march into the world, raise its international competitiveness by absorbing talents and investment, publicity on the importance of the Chinese Silicon Valley is far from enough. We ought to help the world understand its long history, culture so that more people are familiar with the exquisite and profound landscape garden environment. When the World Heritage Committee inscribed the Summer Palace on the list of World Heritages, it gave the Palace a very high evaluation: the Summer Palace in Beijing incorporates the works of humankind and nature in a harmonious whole, it epitomizes the philosophy and practice of Chinese garden design, and it is a potent symbol of one of the major world civilizations. The Summer Palace is therefore a monument in the history of Chinese landscape gardens, an embodiment of the harmony between man and nature. Promoting the Summer Palace as a historical landmark in the ecological environment and urban development of Zhongguancun will certainly help establish a fine international image for the Chinese Silicon Valley.

III. THE GARDEN CITY LAYOUT PROTECTED BY THE SUMMER PALACE AND OTHER IMPERIAL GARDENS IS ONE IMPORTANT STRATEGIC FACTOR INFLUENCING THE URBAN DEVELOPMENT OF ZHONGGUANCUN AREA

The construction of the Three Hills and Five Gardens in the Qing Dynasty was carried out under the definite plans. They were symmetrical. They borrowed sights from one another, complemented

one another in their content, and were connected by roads and rivers. Among these Three Hills and Five Gardens, the Summer Palace was at the center, marshalling the entire area with its magnificent air of large hills and water spaces. The central structures of the Tower of the Fragrance of Buddha and the Temple that Dispels the Clouds not only dominated the Summer Palace, but also were the major symbol and borrowed scene in the entire region. In the three gardens of Yuanming Yuan, a number of sights used the Longevity Hill as its backdrop, while the Jingming Yuan at the Jade Spring Hill used the Kunming Lake and the Longevity Hill as a foreground in its view of the Capital City. Even the Jade Isle in the North Sea keeps a good perspective line with the Tower of the Fragrance of Buddha in the Summer Palace. Later, the construction of army barracks and office branches, the increase of private gardens of princes and noble families, as well as the servicing towns, all followed the urban layout of the imperial gardens. They not only kept the integrity of the imperial gardens, but were even incorporated into the landscape. At that time, between Haidian and Fragrant Hill, in a spacious area of 10 kilometers, there was formed a community of landscape gardens belonging to the imperial family, the princes, and the noble families. They were connected one to the other, largely similar to the "rural city" that appeared later in western countries. Therefore, we may not only view Haidian as a famous place of interest for imperial gardens, but also the earliest garden city in the world. In 1860, invasion from the western imperialists destroyed the great majority of the landscape gardens in western Beijing, causing unprecedented damage to this garden city. However, the geographical features of the Three Hills and Five Gardens, the layout of the scenery, the vegetation, the remains of the structures have survived. More

importantly, the reconstruction of the Summer Palace provided Haidian with an important landmark and the controlling factor in its urban planning.

1. The government published The Regulations on a Strict Control of the Construction Projects in the Summer Palace and Yuanming Yuan Area, designating 5 classes of construction control areas. The regulations stipulate that "the content, layout and planning of the constructions must conform to the urban planning; the size, height, material and color must be harmonious with the environment. With new buildings, in Class 2 control areas, the traditional Chinese style must be used, while in Classes 3 and 4 control areas, the buildings ought to have a traditional style." In 1998, to protect World Heritage Site the Summer Palace, the Beijing municipal government furthered enlarged the buffer zone to 3 kilometers. Also, the government started the "10,000-Willow Project" by vacating the residents to build green areas.

2. The construction of the Haidian Garden in the Zhongguancun Science and Technology Zone has employed a "Scattered Groups" layout. Different areas and bases are scattered and relatively independent, avoiding possible destruction of historical and cultural environment by concentrating the Zone in an over-large area. The core of the Zone, the Zhongguancun Western Area, has an outer flank that borders with the outer buffer zone of the Summer Palace, avoiding the overlapping of the center, and providing a better protection of the outer environment of the Summer Palace.

3. The "Garden City" space structure bequeathed by the Three Hills and Five Gardens has profoundly influenced the urban construction of the Zhongguancun

Area. The core of this space is its axis: the palatial areas of Jingyi Yuan, the main peak of the Jade Hill, and the palatial area of the Summer Palace, these three spots form a central axis stretching east and west. It stretches further east to intersect with the middle point of the north and south axis between Yuanming Yuan and Changchun Yuan. This axis system links all three hills and five gardens into an integrated whole. The Summer Palace sits right at the center of this axis system, and is therefore the central controlling point of this area. In the later city plans, the picture of the Summer Palace, with the Western Hills as its background, displaying the man-made sight with natural sights in a highly harmonious whole, has always been the strategic factor in the urban protection plans of this area. Therefore, the urban plans of the Zhongguancun Area has to make more efforts in connecting this space form, protecting the view field, and to achieve reasonable development in time and space.

The development of new and high technology in the 21st century will enhance human civilization and profoundly transform people's concept of life. Protection of historical environment, advocate of natural harmony, a pursuit of good ecological environment, will become the common goal of human development. This would require the planning and construction of the Chinese Silicon Valley in Zhongguancun to fully exercise the significant role of the historical and cultural sights of the Summer Palace and similar places, to improve the urban space environment, to enhance the cultural function of the city, to strengthen the protection and inheritance of historical city and its cultural tradition, to create an unified and harmonious space in which the Chinese Silicon Valley and the Summer Palace can co-exist, bringing about the sustainable development of Zhongguancun Area.

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