

The Return of History

- The Comprehensive Protection Project of the West-region of the West Lake -

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1. Introduction

Hangzhou is a historic & cultural city, and is one of the seven ancient capitals in China. Hangzhou was established as a county in 221 B.C., as a prefecture in A.D. 589, and as the capitals of Wuyue State in the Five Dynasties(907~978) and the Southern Song(1127~1279). Therefore, there are plenty of historical and cultural relics in Hangzhou. Hangzhou is also the famous scenic city in China. The east of Hangzhou faces the Qiantang River. The west of the city is the famous West Lake. The Grand Canal comes through the city. Nowadays, Hangzhou governs five counties and eight districts. The total population of the city is 6,600,000. The city area is 16,596km², including 3,068km² downtown areas. The population of the downtown is about 3,500,000. The GDP is more than \$6,000 per capita.

Hangzhou depends on the West Lake mutually. The West Lake is the center of the West Lake Scenic Area which is one of the first batch of famous national Park in China. The total area of the West Lake Scenic Area is 59.04km², including 6.3km² water area(5.6km² before 2003) and 40km² mountainous area. The West Lake is natural and man-made, historical and modern harmonious masterpiece, composed of many rivers, lakes, brooks, mountains, caves, etc. More than 100 scenic spots distribute around the lake.

As a former part of Qiantang River's Gulf, West Lake originally formed by siltation in Han Dynasty 2,000 year ago. After formation of the land of Hangzhou, the West Lake escaped from the gulf to start into lake(called lagoon geologically). The area of West Lake was about 10km² in Tang Dynasty(A.D.618~907). Since then, West Lake was intermittently dredged and harnessed for 23 times within more than 1,000 years. The achievement of the ancestors kept

West Lake from disappearance, in the meantime, three islands(Three Pools Mirroring the Moon, Mid-Lake Pavilion, and Ruangong Islet) and four causeways(Bai Causeway, Su Causeway, Zhaogong Causeway and Yanggong Causeway) were built in the lake. Many historical relics make the lake more beautiful.

For all that, the water area of West Lake in modern times, is less than that in the Yongzheng Period(7km²)of the Qing Dynasty(A.D.1723~1735). The area of the lake was reduced to 5.6km² in 1949, and the average water depth was only 0.5m. The west region of Yanggong Causeway had become marsh. The hills of the whole West Lake Scenic Area were bare and the lake was silted up.

After the PRC was founded in 1949, protection of the West Lake was regarded as a very important task by both Zhejiang Provincial and Hangzhou Municipal governments. The main measures were as follows: A) The famous scenic spots were entirely recovered, and some constructions in severe danger such as Six Harmony Tower, Linyin Temple, Yuefei's Temple and other cultural relics were renovated.

B) From 1952 to 1958, the West Lake was dredged in the most large-scale degree. Total 7,200,000m³ silts were dredged up to make the water to add from 0.5m to 1.8m. C) The hills and parks around West Lake were afforested and more than 40 million trees were planted during about 10 years. D) The water quality of West Lake was improved by channeling water from Qiantang River and controlling pollution. The continuous protection and construction during a half of century have made West Lake more green and beautiful.

But as the core, the west region of West Lake Scenic Area was not still cured, which became the biggest regret in the West Lake protection and construction engineering. For resolving the problem and improving the water quality, the

comprehensive protection project of the west region of the lake is placed on the agenda.

II. Outline, Principles and Textures

The protection of the west region of the lake was firstly put forward in 1980s when the Master Plan of West Lake Scenic Area was drawn up. Because of constraint of objective condition at that time, however, the advice was not implemented. In 2000, some old experts of Hangzhou Bureau of Garden and Cultural Relics put forward the advice on recovering the historical feature of West Lake again, to make the west region to become a part of the lake. This argument was at a premium by the leaders of Hangzhou Party Committee and Municipal Government. In 2001, the feasibility research project was drawn up by some experts. They thought that recovery of the Yanggong Causeway, Inner Six Bridges and west water body is beneficial to protect the ecological environment of the West Lake and Hangzhou, extend the capability of tourism, and improve the water quality of the West Lake, because the present circumstances of the west region is:

1. Land use is miscellaneous and short of unified layout;
2. Infrastructure is straggling and polluted;
3. Landscape quality is depressed by the abandoned fish ponds, wastelands and industry building etc.
4. The farmer's buildings are tatty and inconsistent with the landscape.

Aimed at above circumstances, the detailed planning and design project were drawn up in 2002.

Following principles were considered:

1. Following history and culture of the West Lake, maintaining trueness of the West Lake, and showing the harmony of nature and humanities;
2. Persisting good traditions of protection of West Lake previously, to regard the protection of ecological environment as the most important thing;
3. Putting people first, to maintain public resources and aborigine's benefits;
4. Appropriately moving some non-aborigine's houses in order to assurance social, ecological and scenic benefits.

In the design project, devious shore line in the west region is specially emphasized to create historical various different water bodies and show more natural and sequester views.

The outer lake, inner lake and western inner lake are connect with each other by the Su Causeway and Yanggong Causeway, to form multilayered scenery, namely: city → outer lake → Su Causeway → inner lake → parks → Yanggong Causeway → inner lake → mountains. In the planting design, many native big trees, shrubs and new ground covers, hydrophytes and helophytes are used, to increase the ratio of green space.

III. The Return of History

The workload of water body is very heavy and comprehensive when recovering the west region. The public has high expectation value to this project, so the quality request is very strict.

The total area of the project is 477.38ha, including 70ha recovering water area. The earth volume is 1,800,000m³. 933 residents are transferred into city. 125 units are moved. The population of the scenic area decreases more than 6000 person. 36 scenic spots are recovered. 277,000m² illegal buildings are demolished. In the meantime, the forestation area is more than 80ha, including 15,000 trees, 186,000 shrubs, 65,000 bamboos, 136,000m² ground covers, 160,000m² lawns, and 1 million hydrophytes and helophytes (belonging to 66 varieties).

A 400,000m³/day water purification station is set up. There is 120 million m³ clean water flow into the West Lake from 6 entrances, and drain into urban rivers from 9 exports in the south, west, north, then afflux the Grand Canal, which improves water quality in the West Lake and urban rivers. The clarity of water body of the West Lake increases from average 55cm to 65cm per year.

Tourism capacity of the West Lake increases after recovering the west region and some scenic spots. The former residents in that region have improve their living condition depending on beautifying the environment, improving infrastructure, and developing tourist services, such as opening a family teahouse, cantina.

Nowadays, the new scenic areas such as Yuhu Gulf, Santai Dreamland, Tortoise Pond, Maojia Port, Flower Nursery, Gold Sand Harbor have already been formed from south to north in the west region of the lake, which makes the scenery network of the West Lake more perfect, and makes the ecological environment more beautiful. Based on these reasons above, this project acquired one of the top 10 constructions of national science and technology prize by the Ministry of Construction of the People's Republic of China.