

一个湖泊的重生 ——大同文瀛湖景观设计

The Rebirth of a Lake — Landscape Design of Wenying Lake in Datong

AECOM / AECOM

翻译 Translated by / 陈立欣 Connie CHEN
校对 Proofread by / 李霞 Xia LI

摘要 ……

2008年，AECOM以实现湖泊的重生为目标，开始了文瀛湖周边地区的景观设计工作。通过一系列注重生态价值的设计手法，一个以生态自然为主轴、历史文化为核心的“城市绿肺”和水岸休闲空间得以重现。大型湖泊景观重现在黄土高原，生态鸟岛回归喧嚣都市。市民们在此享受着大自然、文化和艺术所带来的高品质生活，为文瀛湖的重生写下了最好的注脚。

关键词 ……

文瀛湖；城市绿肺；生态修复；重生

Abstract …

In 2008, AECOM began the landscape design for the area surrounding Wenying Lake with the goal of revitalizing the lake. An "Urban Green Lung" and waterfront recreational space that focused on nature, history, and culture were recreated through a series of eco-focused design approaches. As a result, a large lake landscape has reappeared on the Loess Plateau and an eco-bird island has returned to the tumultuous city. Residents have benefited from the high-quality life brought about by nature, culture, and art, making the best footnote for the rebirth of Wenying Lake.

Key words …

Wenying Lake; Urban Green Lung; Ecological Restoration; Rebirth

收稿时间 / Received Date | 中图分类号 / TU986.2
2013-12-11 | 文献标识码 / B

项目地址：山西省大同市
项目面积：632hm²
项目委托：大同市城乡规划局
景观设计：AECOM
项目负责人：梁钦东
项目总监：朱世人
项目团队：王旭、谢鸿凡、高铭杰、周婷、孙天佑、马克·布莱克威尔、约翰·蒙哥马利、胡志康
设计时间：2008年
施工时间：2010~2012年
建成时间：2012年
所获奖项：2013年英国风景园林协会高度赞扬奖

Location: Datong, Shanxi
Area (size): 632 hm²
Client: Datong Urban and Rural Planning Bureau
Landscape Architecture: AECOM
Project Leader: Qindong Liang
Project Director: Matt Chu
Project Team: Xu Wang, Yifan Xie, Mingjie Gao, Ting Zhou, Stephen Suen, Mark Blackwell, John Montgomery, Jack Wu
Design Period: 2008
Construction Period: 2010 ~ 2012
Completion Time: 2012
Award: Highly Commended Design for a Large Scale Public Development, Landscape Institute Awards, United Kingdom, 2013

公共景观设计滥觞于西方工业革命后的高度城市化。大量的农村人口涌入城市寻求机会，原本的城市规划与建筑容纳了超量的外来人口，但降低了城市的居住品质。为寻求生活质量的改善，大西洋的两岸在19世纪中期开始了一连串新的城市规划，在其中融合了一定比例的绿化空间与公共空间，为城市的成长注入新的活力。直至今日，人们仍享受着过去的公共景观设计为城市所带来的裨益。

改革开放后的中国也步入了高速工业化与城市化的时代，更面临着新与旧的取舍。旧的城市生活空间与传统的建筑被新的城市规划与建筑所取代；今日的公共景观建设也面临新的课题：在高度发展的城市中，如何运用公共景观的手段，以及绿色基础建设的概念，延展绿色网络，重建生态体系，创造更高的生态价值？大同文瀛湖的景观实践，或可为参考。

1. 文瀛湖双层游廊 © AECOM
1. The double decking structure of Wenying Lake © AECOM



1500s

2008

2012

2



- 1 Water Inflow 引水口
- 2 Fore Pond 上游池
- 3 Retention Basin 贮水池
- 4 Sculpture Park 雕塑公园
- 5 Double Decking Structure 双层游廊
- 6 Main Entry Plaza 主入口广场
- 7 Elevated Outlook Platform 眺望台
- 8 Bird Island 鸟岛
- 9 Waterfront Trail 湖滨步道
- 10 Plaza and Esplanade 广场和草坪
- 11 Lagoon 泻湖

3

项目背景

山西省大同市古称平城、云中、西京等，是素有“三代京华，两朝重镇”之称的中国北方历史名城。大同自古为军事重镇和战略重地，是兵家必争之地。朝代的更迭以及游牧与农耕文化的交错并存，在大同留下了丰富的历史遗迹。然而在近年，工业的过度发展与城市化的驱动，使得大同古城与历史古迹遭到破坏。

文瀛湖旧称“文莺湖”，位于大同古城东部6km处，背依白登山。文瀛湖水域面积达3.2hm²，在素来缺水的塞北高原尤显珍贵，自古以来便是大同周边的一大胜景。作为大同的母亲湖，文瀛湖一直是大同市重要的蓄水场地之一。然而，随着工业的推进和城市的快速发展，原本丰富的水资源日益枯竭，湖区的景观品质大打折扣，自然生态系统也遭到了破坏。

契机

21世纪初期的南水北调工程以及一系列的水利工程为文瀛湖的修复带来了契机。大同市周边的水库与蓄水池形成了一个高密度的给水网络，而文瀛湖也在这个网络之中。2008年，大同市开启了修复文瀛湖湖底防渗层的工作，以使地下水与未来的湖水不会相通，从而确保未来从上游引水进来后，湖水不会进一步流失。

大同市政府于2008年全面启动了文瀛湖生态系统修复工程，作为中国北方生态

修复与可持续重建的一个试点项目。2008年底，AECOM受托开始了文瀛湖周边的景观设计工作，力求通过景观手法和生态手段重现文瀛湖历史上的美景，实现一个湖泊的重生。

目标与愿景

受任之初，AECOM就为文瀛湖设定了非常清晰的目标与愿景：

(1) 文瀛湖将成为大同的“城市绿肺”，为这个工业城市带来更高的生态效益。

(2) 文瀛湖的水岸空间将再度成为大同市民的最佳休闲场所，提升市民生活品质。

为实现上述目标和愿景，AECOM在设计上采取了一个简单而明确的举措——将湖岸环境一分为二。西侧是城市面，约占总面积的1/4；南、北、东侧为自然面，约占总面积的3/4。占地632hm²的大环境将以植栽为基底，以道路、广场、铺地等为上层肌理。在靠近城市广场南北纵轴的西面，道路、广场与城市空间纹理紧密结合，人们穿过植栽区后可到达湖边。湖边设有亲水平台、入水台阶与滨水步道等。由城市面而来的游客可以在穿过“城市绿肺”之后很快到达水岸，进行各种亲水活动。

重建以生态为导向

湖的东面以较为安静的活动为主，部分区块甚至限制人的活动，以最大程度地建立飞禽、水禽、小型哺乳类和昆虫的栖息地，恢复当地的生态价值。东侧用地中有一个面积超过10hm²的“鸟岛”。除了定期维护以外，其他时间人类不能上岛，将这个区域完全留作鸟类的栖息之所。鸟岛周边的一系列浅水区与滩地增加了水禽的活动范围。在文瀛湖的景观施工接近尾声时，整个湖区已经吸引了包括天鹅在内的上千只水禽前来栖息与觅食。

根据御东新区的规划设计，文瀛湖周边的道路比其原本的道路标高提高了1-4m不等。其用意是希望人们在开车经

过文瀛湖周边时，能够从各个视角欣赏中国北方少有的大型湖泊景观。同时，设计师将道路与堤岸之间的洼地变成了水体，无形中延伸了在文瀛湖的行走体验。而这些洼地水体也带来了其他好处。首先，由于地形的关系，这些洼地临近文瀛湖的引水渠道，上游来的水在被引入渠道时，也被同时引入洼地中，从而增加了文瀛湖的总蓄水面积与总蓄水量。其次，洼地中的湿地植栽也可以对湖水进行净化。

与城市紧密结合

文瀛湖的西面是城市广场与未来的城市中心。博物馆、美术馆及歌剧院等的设施将带来大量的人潮。我们将文瀛湖最主要的入口设置在此。这是文瀛湖周边少数没有大量植栽的区域，视野开阔，从城市面到湖滨区一览无遗。在主入口广场的南侧，我们设置了一个大眺台，顺着主入口的地形挑出堤岸，凌于水面12m之上。在这里，向东南眺望是天水相接的景象，向西南则可眺望城市的天际线，为游客提供了一种独特的空间体验。

为延伸城市广场文化中心的主题，我们在文瀛湖主入口广场的南侧和北侧各设计了一个雕塑公园。各方知名雕塑家在感

受文瀛湖的场所精神后，创造出与场地相符的雕塑，为文瀛湖带来更深一层的精神飨宴。

后记

在提升生态价值与注重水资源的设计等多重考量下，文瀛湖逐步恢复了往日的色彩，历史上“波澄一镜、滨簇千家、文浪粼粼、鸥波上下”的美景得以再现。如今，一个以生态自然为主轴、历史文化为核心的“城市绿肺”和水岸休闲空间呈现在市民的眼前。大型湖泊景观重现在黄土高原，生态鸟岛回归喧嚣都市。市民们在这个城市享受着大自然、文化和艺术所带来的高品质生活，为文瀛湖的重生写下最好的注脚。LAF

- 2. 文瀛湖在历史上的变迁和面貌 © AECOM
- 3. 文瀛湖景观设计总平面图 © AECOM
- 4. 部分区域仅在原有地形上的空旷处加设木栈道，以保护原生植栽。© AECOM
- 2. The changes of Wenying Lake in the history. © AECOM
- 3. Master plan of Wenying Lake landscape design © AECOM
- 4. In order to protect the native plants, boardwalks are added in the open spaces of the original topography in specific areas. © AECOM



4



5. 原有地形在改善后形成雨水花园以补给地下水，原生树木成为广场平台上的绝佳休憩点。©AECOM
6. 文瀾湖西侧剖面图 ©AECOM
7. 水鸟回归文瀾湖生态圈，远处即为“鸟岛”。©AECOM
8. 原有的硬质驳岸成为适合鸟类栖息的生态场所。©AECOM
5. The original terrain is retransformed into rain garden to supplement groundwater. The native trees offer the best rest place in the plaza. ©AECOM
6. Section of Wenying Lake in the west side ©AECOM
7. Waterfowl return to the Wenying Lake ecosystem, a bird-island appears in the distance. ©AECOM
8. The original hard revetments were transformed into ecology habitats for birds. ©AECOM

Public landscape design originated from the high level of urbanization after Western Industrial Revolution. Large amount of villagers rushed into cities seeking new opportunities. Original urban planning and buildings could accommodate the extra population but lowered the overall quality of urban lifestyles. Aiming to improve urban lifestyles, cities along the Atlantic coast began a new campaign of urban design that incorporated green and public space, bringing a new vitality to city development. Today, residents are still benefiting from this legacy of promoting green public spaces.

Between rapid urbanization and industrialization, China is caught between

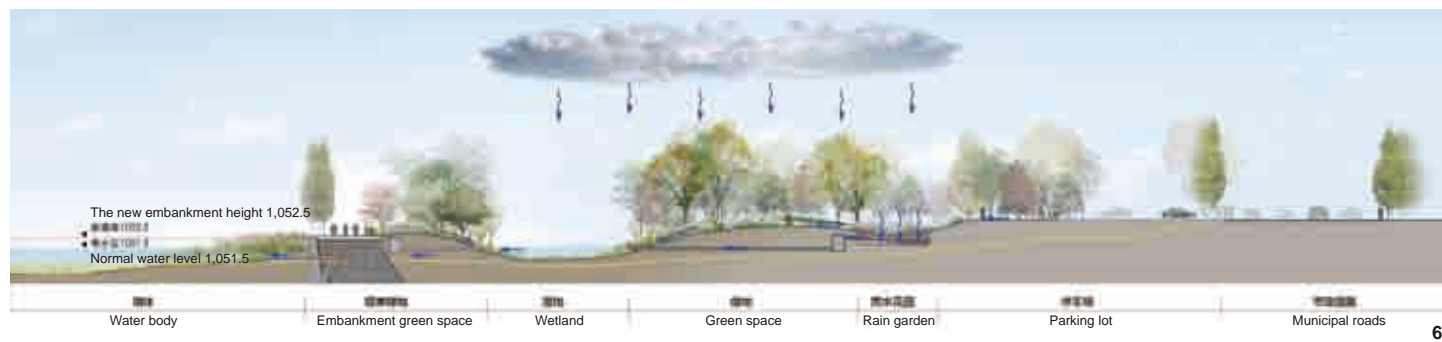
the contradictions of old and new. The old urban spaces and traditional buildings are being replaced with new urban planning and architecture design. Contemporary public landscape design also faces challenges — how to extend green network, rebuild ecosystems and create ecologically rich values by employing public landscapes and the concept of green infrastructure in highly developed cities? The landscape design of Datong Wenying Lake can be used for reference.

Background

Datong in Shanxi province is important to the history of northern China. Known as

Pingcheng, Yunzhong and Xijing, the city was known as “the capital of three dynasties and stronghold for two dynasties”. Datong has been strategically and militarily important since ancient times. The integration and coexistence of nomadic and farming cultures in different dynasties has left the city with rich historic heritage. However, the old city and its historical sites have been degraded in recent years because of over-industrialization and urbanization.

Wenying Lake is located 6 km to the east of the ancient downtown area with Baideng Mountain at its back. The lake covers an area of 3.2 hm². The lake is particularly important in the water-scarce plateau north of the



Great Wall. As the mother lake of the city, Wenying Lake is also an important reservoir for Datong. However, rapid industrialization and urbanization has caused a reduction in the volume of water in the reservoir. As a result, the quality of surrounding landscapes has deteriorated and causing damage to the natural ecosystems.

Opportunity

The South to North Water Diversion Project and a series of massive water projects that began at the beginning of the 21st century have brought opportunities to the lake. Surrounding reservoirs and cisterns formed a dense water supply network that included Wenying Lake. Restoration of the lakebed started in 2008 in order to guarantee a structural disconnect between groundwater and future lake water, to prevent water loss to diversions upstream.

The Datong government launched this ecosystem restoration project as part of a pilot project of eco-restoration and sustainable re-establishment in northern China in 2008. AECOM was entrusted with the landscape design surrounding the lake at the end of

2008, with the goal to reproduce the lake’s original scenery and rebirth via landscape and ecological approaches.

Goals and Vision

AECOM set clear goals for the lake at the very beginning of this effort:

- (1) The lake will be the “Urban Green Lung” of the city and provide more eco-benefits for the industrialized city.
- (2) The waterfront space will be the optimal recreational place for residents and improve the living qualities.

With these goals in mind, AECOM produced a simple design gesture — dividing the lake into two parts. The urban side is on the west of the lake, accounting for one quarter of the whole area. The rest of the site, three quarters of the total area, is devoted to natural landscape. The plantscape constitutes the substrate for the 632 hm² project area with roads, squares and pavement forming the fabric. The roads and squares are closely knit with the urban fabric at the west of the south-north axis near the urban square. The lakefront is accessible by crossing the





9

plantscape area. Visitors from the urban side reach the lake through the “Urban Green Lung”, and encounter water platforms, steps, and pedestrian walks.

Orientation in Ecological Renewal

The eastern side of the lake is devoted to quiet activities with human activities restricted in parts to protect the habitat of the birds, waterfowl, small mammals and insects and restore local ecological value. A “bird-island” of 10 hm², an area designed exclusively for birds with limited human access, is located at the eastern portion of site. The lake has attracted thousands of waterfowl, including swans that began to settle and forage at completion of the landscape construction.



10

The road elevation was increased to between one and four meters from the original Yudong New District. The purpose of this road change was to enable drivers to also view and enjoy the rare lake landscape in northern China. Additionally, the designers turned the bottomland between the road and the embankment into a water body that exaggerated the walking experience of Wenying Lake. These water bodies also brought other benefits. First, the bottomlands created a feeder canal for Wenying Lake because of the topographical linkage, and water from upstream was introduced to the bottomlands along the canal. It increased the total volume of water in the lake. Secondly, the new wetlands help purify the lake water.

Integration with the City

The west side of Wenying Lake is the urban square and future urban center. A museum, gallery, and opera house will attract large visitors. The main entry to the lake is designed here so that voids of plants and allows open views from the city to the lake's shore. An elevated plaza at the south end of the main entry plaza extends beyond the embankment, following the topographical pattern at the main entry. It is 12 m above the water. Looking southeast, the sky and water meet, while to the southwest is the city skyline, providing a unique space experience for the visitors.

Two sculpture parks, one at the south entrance and one at the north entrance, were places to enrich the cultural centers of the urban square. Renowned international sculptors helped create pieces that fit their understanding of the site's spirit, presenting a deeper soul feast at the lake.

Epilogue

Through a comprehensive design that emphasizes ecological value and water



11



12

resources, Wenying Lake has been restored to its former glory. Visitors can experience the glittering mirror-like lake, complete with birds flying above, and flanked by surrounding houses. Now, an “Urban Green Lung” and waterfront recreational space that focuses on nature, history, and culture are available to urban residents. The large lake landscape has reappeared on the Loess Plateau and an eco-bird island has returned to the tumultuous city. Residents can enjoy the high-quality life brought about by nature, culture, and art,

making the best footnote for the rebirth of Wenying Lake. **LAF**

9. 原本阻隔视线的堤岸，变成了让人们行于水中的一道长堤。© AECOM
10. 大眺台挑出堤岸30m，直达离水面12m高的地方，为游客提供了一种独一无二的空间体验。© AECOM
11. 主入口广场的雕塑景观 © AECOM
12. 文瀾湖冬季景观效果 © AECOM
9. Embankment used to cut off sight line becomes a long beach, expanding people's walking experiences. © AECOM
10. An elevated outlook platform extends beyond the embankment 30 m and reaches 12 m above the water. It provides a unique space experience for the visitors. © AECOM
11. Sculptures at the main entry plaza © AECOM
12. Winter view of Wenying Lake © AECOM