



Sponge Synergy: Huaiyang Fuxi Cultural Park in Zhoukou, China

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FEATURES

Urban Design; Resilience; Sponge City; Water Purification; Pocket Garden; Cultural Park; Cultural Resonance

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1 Context and Challenges

Located in Huaiyang District, Zhoukou City, Henan Province, China, the project site boasts a storied past, tracing back to China's first mythical emperor some 6,500 years ago. Fuxi, a pivotal figure in Chinese mythology, is celebrated for contributions spanning the invention of music, hunting, domestication, the Chinese characters, and notably, the Bagua (or "Eight Trigrams"). This symbol set, foundational to Chinese cosmology, encapsulates the dynamic balance of opposing forces, deeply influencing the philosophical thought. The project is in proximity to Fuxi's Tomb, which is a



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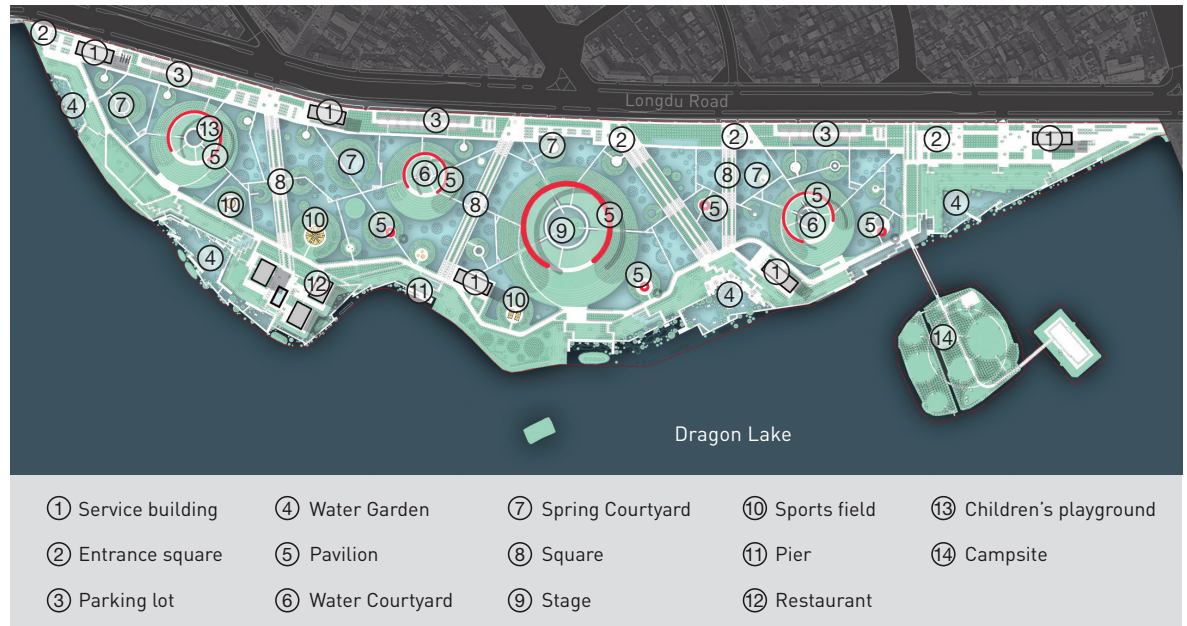
key historical and cultural sites under national-level protection. Of great cultural significance, Fuxi's Tomb attracts millions annually, especially during the Chinese New Year.

Historically buffeted by the Yellow River floods and the vicissitudes of war, Huaiyang's landscape, particularly the Dragon Lake, embodies centuries of adaptive resilience. However, recent urban expansion and informal settlements have compromised this balance, encroaching on the lake's capacity to manage flood risks and diminishing cultural heritage integrity of the area. In response, a transformative vision was set forth in 2021: to reclaim a 43-hectare site from neglect and encroachment, the design envisioned a public park that enhances flood resilience, meets community needs, and celebrates the rich historical tapestry of the area.

2 Design Solutions

To address the multifaceted challenges, the project introduced the following innovative solutions.

1) Creation of a water-resilient sponge landscape. Utilizing on-site cutting-and-filling, 860,000 m³ of dirt and debris were recycled to create a water-resilient landscape of islands, increasing the

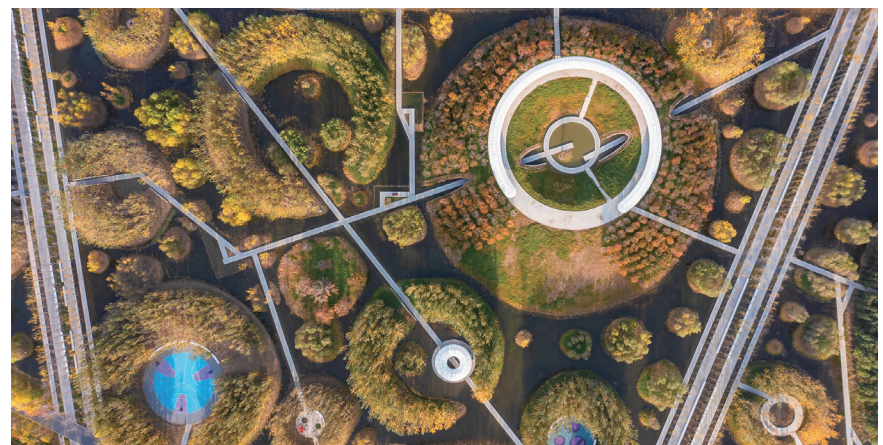


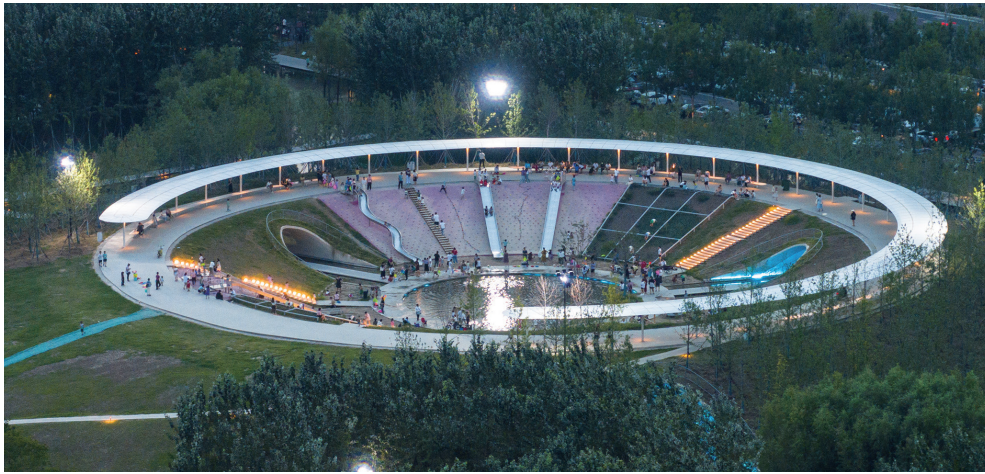
stormwater regulation capacity of this area. This design drew inspiration from ancient celestial constellation diagrams, mirroring the chaotic beauty of the cosmos and honoring Fuxi's contribution to the creation of the Bagua. This innovative landscape, comprising numerous islands adorned with flood-resistant vegetation, is engineered to manage around 1,000,000 m³ of stormwater. This significantly bolsters the flood resilience of the ancient city and the Dragon Lake, transforming them into a model of climate adaptation and environmental sustainability.

2) Innovative pocket gardens as thematic

“craters.” Among the myriad of simple verdant isles, 27 distinct islands have been meticulously crafted into themed craters, each hosting a variety of programs and

1. The Fuxi Cultural Park turns into a picturesque winter wonderland when covered by snow.
2. Transformation of the site: from the barren, environmentally neglected site in 2021 (top) to the vibrant public park in 2023 (bottom).
3. Masterplan of the Fuxi Cultural Park.
4. The park enhances flood resilience with interconnected islands and boardwalks.
5. The park becomes a landscape of islands with cutting-and-filling on the site, echoing celestial constellations and enhancing stormwater regulation.





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activities. Four major craters are designated for unique attractions, including a children's playground, an amphitheater, a basketball court, and a tranquil Water Garden. Additional smaller craters are dedicated to fountains, art installations, and more, enriching the park with an array of exploratory and interactive experiences. Winter transforms the crater-island landscape into picturesque arena for skiing and ice skating.

3) Expansive network of boardwalks. A comprehensive system of boardwalks weaves through the park, connecting the celestial isles. These pathways offer an enchanting journey above water and beneath tree canopies, occasionally threading through craters via tunnels or gates. Water depth by the boardwalks is kept at a safe level per regulations, eliminating the need for handrails.

4) Advanced water purification system. Responding to the challenge of lake and urban runoff pollution, a sophisticated water treatment system has been implemented. This system channels water from the lake and urban areas through a constructed wetland for purification, before reintroducing it into Dragon Lake. The design of the water purification routes is meticulously integrated with the layout of a matrix of islands and connecting

boardwalks. This process is capable of purifying approximately 11,500 tons of water daily, ensuring the sustainability and cleanliness of the aquatic environment. Solar panels on the roof supply energy for the bio-purification process.

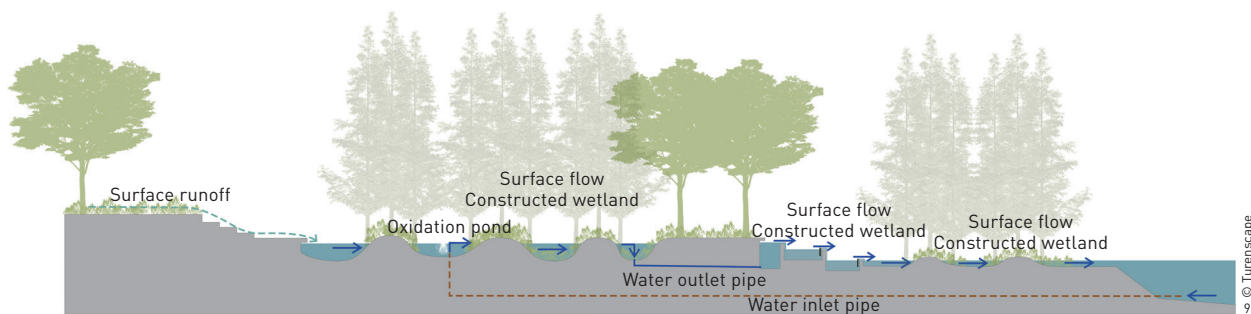
5) Native trees echoing ancient folklore. The selection of plant species for the park takes cues from ancient folk songs, particularly in *The Book of Songs: Chen Feng*, which dates back over two millennia. Poplar (*Populus spp.*) and willow (*Salix spp.*) trees, frequently celebrated in these songs, dominate the landscape and create a living homage to cultural heritage. The planting design not only enhances the aesthetic of the park but also fosters a deep connection with its historical traditions and the natural world.

This elaborated strategy underlines a comprehensive and

6. The crater of children's playground surrounded by flood-adaptive "chaotic matrix" with a stormwater regulation capacity up to 1,000,000 m³.
7. The craters function as various play, sports, and gathering places, integrating interactive fun with the landscape.
8. A network of boardwalks weaves through lush islets, enriching the walking experience in this green oasis.



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9. Section of the purification unit, showcasing the cleaned water outlet to the lake after a terraced constructed wetland.
10. The bio-water purification system is intricately woven into the landscape, enhancing the interaction of humans and nature.
11. Solar panels on the roof supply energy for the bio-water purification process.



thoughtful approach to creating a resilient, engaging, and historically resonant urban park that showcases innovative environmental solutions while celebrating the rich cultural legacy in Huaiyang.

Location: Huaiyang District, Zhoukou City, Henan Province, China
Size: 43 hm²
Client: Zhoukou Huaiyang Housing and Urban Rural Development Bureau
Landscape Architecture: Turenscape
Principal: Kongjian Yu

Design Team: Xiaodan Wu, Jianmin Jia, Yuan Fang, Shuangzhi Ma, Jian Zong, Linlin Yan, Hanjun Zhang, Jie Li, Hui Tong, Lingxue Chen, Li Xu, Jingfei Zhou, Ziyuan Wang, Bingzhuo Liu, Xin Liu, Hailong Kong, Wen Shi, Ang Lu, Lei Wang, Ya Sang, Chunxia Lei

Design Time: 2021 ~ 2022

Completion Time: 2023

Competing interests | The author declares that he has no competing interests.

3 Concluding Reflections

The Fuxi Cultural Park stands as a testament to the human capacity to navigate and harmonize with the forces of nature and adapt to changes. It offers a space where history and innovation converge, inviting exploration and contemplation. This project not only addresses environmental and social needs, but also fosters cultural dialogue, connecting the past, present, and future in a living landscape.



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景观设计： 北京土人城市规划设计股份有限公司

首席设计师： 俞孔坚

设计人员： 吴晓丹、贾健敏、方渊、马双枝、

宗建、晏林林、张翰君、李杰、佟辉、陈凌雪、徐丽、周景飞、王紫媛、刘秉卓、刘鑫、孔海龙、石文、鲁昂、王磊、桑雅、雷春霞

设计时间： 2021年~2022年

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