

## Reclaiming Urban Rivers: Greenways as Living Connections for Communities, Cultures, and Ecosystems

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As cities grapple with climate change, habitat loss, and fragmented communities, greenways emerge as vital infrastructure, offering solutions that blend environmental restoration with social and economic benefits. This presentation explores how greenways can serve as living connections, weaving together natural systems, historical identity, and contemporary urban life. Two transformative projects—Suining South Riverfront Park and Huangyan Waterfront Renewal—illustrate how greenways can redefine waterfronts, reintroduce biodiversity, and enhance public spaces.

Many historical canals in China used to have functions of protecting the city or transporting goods. With the development of other transportation tools such as railways and highways, waterways lost their functions, leading to the degradation of canals and rivers due to clogging mud, trash accumulation, industrialization, pollution, and neglect. However, there is a growing recognition that these waterways can be restored to serve as multi-functional green infrastructure. Greenways—linear parks and trails that follow rivers and other natural corridors—offer an opportunity to reimagine urban landscapes as interconnected systems that provide environmental, social, and economic benefits. Case I, the Huangyan Canal Urban Rejuvenation project designed by ECOLAND, is a recent example of revitalizing historic waterways in Taizhou City, Zhejiang Province, China

Huangyan, an ancient water town, had long suffered from a stagnant, neglected moat. The Huangyan Canal Urban Rejuvenation project revitalized a 3.48-mile historic moat canal into a vibrant greenway system. The initiative transformed a degraded, stagnant waterway into a dynamic corridor that integrates ecological restoration with community-centric design, reflecting a visionary approach to sustainable urban renewal. This design reimaged the historic waterways into a thriving greenway, restoring ecological flows, enhancing public access, and reconnecting communities with their cultural and environmental heritage.

The project reestablished the canal's connectivity with the Yongning River and three additional canals, creating a "heart-shaped" water network that enhances urban hydrology and flood resilience. The design incorporates green infrastructure elements such as natural wetlands, willow-lined banks, and bio-swales to improve water quality, manage stormwater, and support biodiversity. Elevated pedestrian pathways and restored historic bridges enhance accessibility, linking distinct community spaces and fostering social interaction.

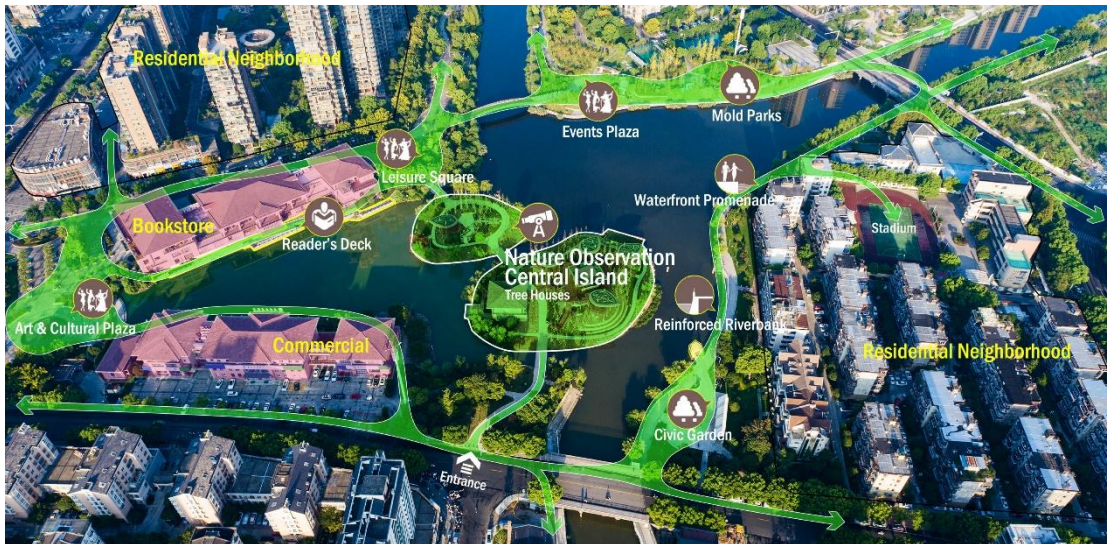


**Figure1: Master Plan of Huangyan Riverfront - Ecological Restoration & Integration**



**Figure2: The integration of restored historic Wudong Bridge & gateway plazas, links new & old districts to neighborhoods making it logistically efficient**





**Figure 3:** Metamorphosis of Concrete Enclosures to Wildlife Natural Observation Islands



**Figure 4:** Blending new waterfront spaces & improved flood control systems, revitalize the local culture .  
The olden days trade hub regains its heritage glory.

Key elements of the Huangyan project included:

**Waterfront Restoration** – The once-blocked moat was converted into a free-flowing waterway, improving water quality and flood resilience.

**Multi-Modal Connectivity** – The greenway integrated pedestrian bridges, bicycle paths, and a river transit system, linking neighborhoods to the waterfront.

**Nature-Based Solutions (NBS)** – Bio-swales, wetlands, and tree canopies were implemented to mitigate urban heat, control stormwater, and restore habitats.

**Heritage Preservation** – Historic bridges and canals were restored while new landscape elements reflected traditional water-town aesthetics.

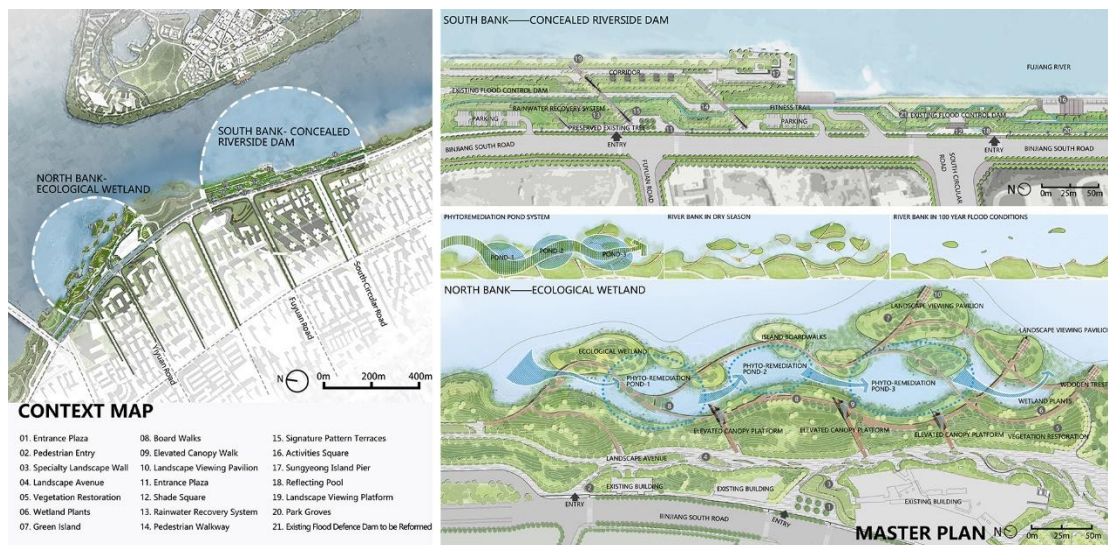
**Public Space Activation** – Abandoned industrial areas were transformed into vibrant plazas,

cultural hubs, and community spaces, boosting local economies.

By preserving cultural heritage and promoting environmental stewardship, the Huangyan Canal Urban Rejuvenation project demonstrates how greenways can serve as living connections that bridge communities, cultures, and ecosystems. The project also highlights the importance of interdisciplinary collaboration in shaping sustainable urban futures. It has garnered international recognition, including multiple awards from the International Federation of Landscape Architects (IFLA) Asia-Pacific Landscape Architecture Awards and the Urban Land Institute Award. By embracing green infrastructure, cultural continuity, and community engagement, Huangyan's waterfront renewal demonstrates how historic water systems can be redefined for contemporary urban life while addressing climate challenges.

Green infrastructure occurs at all scales. Another common situation in cities is the presence of flood control banks along riverfronts. In Suining, China, a 2-mile stretch of the Fujiang River was once a lifeless concrete embankment, built solely for flood control. Suining South Riverfront Park transformed the concrete bulkhead into a vibrant shoreline. This project exemplifies how urban waterfronts can shift from sterile flood-control infrastructure to ecologically and socially vibrant landscapes, setting a precedent for integrating resilience into greenway design.

The challenge was to transform this hard infrastructure into a biodiverse, accessible, and aesthetically engaging urban riverfront. The design team developed the concept of the Floating Greenway, concealing the bulkhead with landscape terraces inspired by Asian cultural motifs. This approach softened the river's edge and allowed for a closer human connection with water.



**Figure 5:** Master plan & System Via an integrated ecological approach, the 2-mile strip of concrete flood-control dam is transformed into a vibrant multi-layered riparian zone providing native habitat protection, aquifer recharge, recreational use, and aesthetic experience, fostering a vibrant urbanite life.





The wider portion of the sculpted wetland stretch was transformed through bio-engineering approaches that demonstrate a vibrant living landscape, alive with water, plants, wildlife, people, and urban structures united.

The upper level of the narrow section of the park atop the bulkhead is thoughtfully programmed with recreational activities, including running track fitness zones, and outlook pavilions.

**Figure 6: Green infrastructure through bio-engineering**



**Figure 7: Phyto-remediation System, a Functional Landscape—Resilient design considerations uses materials that would survive flood even if totally submerged by water.**



**Figure 8:** A New Interconnected Shoreline Landscape for Citizens

Several key strategies defined this transformation of Suining City:

**Resilient Design** – While rigid flood barriers had to remain, the project introduced sloped landscapes that embrace periodic flooding, integrating ecological functions with urban life.

**Ecological Engineering** – A degraded riparian zone was restored with a lagoon system, native vegetation, and wetland habitats, enhancing biodiversity while stabilizing the shoreline.

**Phytoremediation** – A nature-based water filtration system was established through wetland plants, improving water quality and creating a self-sustaining ecosystem.

**Stormwater Management** – The design incorporated bio-swales and retention basins to capture and filter urban runoff, mitigating the effects of flash floods.

**Urban Weaving** – The riverfront was reconnected with the city through pedestrian bridges, canopy walkways, and immersive wetland trails, transforming an inaccessible space into an inviting public destination.

**Cultural Integration** – The design incorporated Suining’s cultural identity, using cloud-inspired terrace patterns and reflective water features that evoke local legends.

After the project was built, Assistant Professor Yiwei Huang and her students from the Landscape Architecture program at Purdue University conducted a CSI study and analysis. The investigation was part of the Landscape Architecture Foundation’s 2022 Case Study Investigation (CSI) program, which matches faculty-student research teams with design practitioners to document the benefits of exemplary high-performing landscape projects. These teams develop methods to quantify environmental, social, and economic benefits, producing Case Study Briefs for LAF’s Landscape Performance Series. Additionally, this project received the 2021 ASLA Honor Award for General Design, (<https://www.asla.org/2021awards/2134.html>) solidifying its status (<https://www.asla.org/2021awards/2134.html>), as an exemplary model of sustainable waterfront transformation.

**Conclusion: Greenways as Urban Resilience Frameworks**

Greenways are more than just linear parks—they are dynamic landscapes that integrate



ecological resilience, cultural heritage, and urban vitality. Both projects illustrate how greenways serve as integrative landscapes, balancing ecological regeneration with social and cultural enrichment. They highlight the potential of designing with nature, rather than against it, to create sustainable, adaptive cities. As urban areas worldwide face increasing climate pressures, these examples underscore how greenways can function as living connections—bridging ecosystems, communities, and cultural narratives while fostering resilient urban futures.

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### Author Biography:

**Ms. Tang** is a principal and co-founder of ECOLAND Planning and Design Corporation in Beijing, China, a multi-disciplinary planning and design firm with extensive expertise and built projects. The firm holds China's Class A license qualification for urban and rural planning, landscape architecture, and architecture, as well as ISO9001 quality management system certification. Ms. Tang has over three decades of experience in urban and environmental landscape planning and design. Since her MLA academic journey at the University of Massachusetts Amherst in the U.S., her professional career quickly ascended. She took on significant roles, including Vice President and Representative for the Asia-Pacific Region at EDSA of Florida from 2001 to 2005, and Principal Planner at the Hollywood City Planning Department in Florida, where she was responsible for the Design Review Board and Historic Preservation Board, the update and revision of the City's Landscape Design Manual, and the A1A Beautification Landscape Project for the City of Hollywood, Florida.

She has led various large-scale projects in community planning, urban design, cultural tourism, and municipal development, with particular expertise in providing innovative solutions for complex land development projects. Ms. Tang continues to influence and inspire through her work, ensuring that each of her projects not only meets and exceeds the expectations of clients from both the private and public sectors but also addresses urban ecological challenges in a cost-effective manner. She has been instrumental in pushing the boundaries of landscape architecture

in China, integrating international standards while addressing local environmental and cultural contexts. As a key contributor, her team's notable projects include the award-winning Suining South Riverside Urban Greenway in Sichuan, the Luxelakes Eco-City in Chengdu, the Shougang Capital Steel Complex Landscape Design, the Water System Design for Universal Beijing Resort, and Heiqiao Park in Beijing.

Many of her team's projects have received prestigious international honors for their ecologically sound and culturally sensitive designs, including the ASLA General Design Award, ULI (Urban Land Institute) Asia Pacific Awards for Excellence, LI (Landscape Institute) Dame Sylvia Crowe Award, BALI (British Association of Landscape Industries) International Award, IFLA (International Federation of Landscape Architects) Outstanding Project Award, WAF (World Architecture Festival) The Rural Landscape of the Year Award, and 1st Prize from the Chinese Society of Landscape Architecture.