

**Project Title:****Urban Renewal of Huangyan Waterfront - A Perfect Amalgamation of Multi-disciplinaries****Project statement:**

The Riverwalk project, a sustainable vision achieves a greenway system that is coherent, circular waterfront connections for communities. An initiative to reclaim and revitalize, a degraded historic stagnant moat canal and waterfront to a new ecology of flowing water. Water quality and water edge improved by treatment, included green infrastructure elements to address perils of climate change. Canals, embankment walls and river's environment are transformed into healthy greenway system preserving heritage.

The ultimate vision was to embrace the historic riverfront to set the new pace for the modern urban composition, today that vision has been realized. Recent improvements in river water quality and the increased intensity of public recreational use signal growing life along the river, allowing residents and visitors to have appropriate access to the proposed open spaces, thoughtful connections and innovative amenities.

The project design intricately transforms blocked moat, riverwalks in the town of Huangyan into recreational and economical vibrant city destination, achieving profound promenades with historical glory, technically complex, creative public infrastructure. An identifiable and unique river's edge experience, one that would allow visitors to experience the diversity associated with the Huangyan River, while being interwoven within the greater open space system.

**Project Narrative:**

The redesigning of Huangyan Waterfront was conceived as a strategic initiative to improve the civic life and pedestrian environment of Huangyan. The 5.6km of innovative corridors, new waterfront trails, a car-free environment links distinct community spaces at the river's edge. The old moat/canal that signifies the prosperity of 7th century, has been revived and blended into urban landscape.

The urgency to revitalize the long-neglected waterfront was clear. The site not only needed to be a safe and accessible hub for many daily transit users, but its location meant that it also had the potential to be reinvented as a vibrant and vital civic space, the true heart of the city.

18 revived bridges along with the historic Wudong Bridge, improves connectivity of city traffic. Disaster resilient moat/canal, enriched environment, aerial pedestrian blends into a verdant, dynamic and sustainable

landscape. Ecological greenway system of project area 254,071 sq.m, creates an advanced experience between the confluence and downtown.

The vision for the revitalized plaza, now fittingly rebranded as Wudong East Square, emerged at the confluence of these needs and ideals: a celebration of the civic enterprise, life, movement, and evolution of the city as a welcoming place for all.

### **Clear Vision - A Community Engagement and Multi-Disciplinary Effort**

Important aspects of the project revolve around the emphasis on elements such as the protection of natural and heritage features, the integration and enhancement of green spaces, access to transit, the presence of an urban core with amenities located centrally, and overall connectivity.

Via strategic engagement between multi disciplinaries and local policy makers, sustainable and culturally integrated waterfront was achieved. A community outreach program ensured inclusion of the needs and desires of the locals. The design strategy, addressed the challenges faced by urban areas in the face of climate change. By applying approaches of sustainable design and bio-engineering techniques, the design and technical teams worked together. Various river-based resilient and sustainable topologies, promote environmental protection and social equity. The program also includes community space, mold parks, ferry pavilions, wetland and wildlife islands, tree houses, willow banks, trails, bikeways, waterfront pathway and cleaner canal.

### **Regeneration Systems - Linking the Forgotten Historic Water System and Environment**

Regeneration of the old historic environment to a new, contemporary, economically thriving environment through this project. The moat is integrated with Yongning River and three canals (the East, West and South) to 5.6 km long "heart-shaped" pattern, city surrounds the moat, waterways form a net, bridges form cluster layout, linking nodes all over the city, resembling a river bay and island city in an elegant landscape. The unclogged moat, canal is transformed to a lotic system that helps defend against floods. The water is now allowed to flow naturally, storm water to be absorbed, and wildlife to return to the area.

An accessible walkway and new waterfront edge creates continuous access to the streets and sets the scene for future development in this critical space at the confluence.

### **Elevated Logistics and Infrastructure - Connecting Water and Communities**



The design employed a myriad of tactical solutions to mitigate problematic infrastructure, poor urban connectivity, and a high-maintenance, under-performing landscape. Together, these solutions formed a unified strategy to accomplish the project's overarching objective.

The project went beyond its landscape architect's scope of work, engineering a unique aerial pedestrian experience, resolving the traffic issue. Water transit system, open spaces, willow banks, nodal intracity connects, walkways and 18 scattered bridges are part of the new infrastructure with accessibility to people with disabilities.

Tangerine and Shanghe bridges are combination of beauty, function and safety; serves as a huge tribute to the region's industrial history. Tangerine bridges links two rivers and three banks and provides easy access for pedestrians, while also serving as an important juncture on the Huangyan Waterfront. Spanning a length of 358 meters and varying in width from 5.5 to 8 meters, its shape reminiscent of a tangerine gave it its name. It has become a symbol of the bustling tangerine business in Huangyan and a sign of the area's prosperity and progress in its prime.

The Shanghe bridges, measuring 280 meters in length, is an ideal combination of function, safety and beauty. This aerial pedestrian bridge, traversing both Century Avenue and the Dongpu River, offers a unique vantage point of the river below and boasts varying widths of 4-14 meters, thus providing an attractive viewing platform and addressing pedestrian traffic flow. Linking the old city-Dongpu, burgeoning neighborhoods and the Yongning River greenway, this bridge is an integral part of the transportation network. The quadrilateral elements of the bridge deck, which display a gradual change in width, form a three-dimensional space on the pedestrian bridge and bestowing a modern yet simplistic look. Illuminated at night, the bridge's romantic atmosphere is further amplified.

Streets and alleys, shops, boats along canals, the sound of oars and flicker of lanterns form perfect water town experience.

### **Symbiosis – A Riverside Life**

As a new connected path system, the Huangyan Waterfront design provides both continuity and variety for a park visitor. The distinct programs and forms of each typological space allow for diverse experiences on the river ranging from dining opportunities to expansive public event programming to new amenities for human-powered craft. At the same time, design materials, details, and repeated forms provide visual cohesion along the entire length of the project.

The waterfronts, illuminated garden, plazas, local mold industrial heritage parks, open spaces that were not previously accessible to public now accommodate personal experience enhancement and boosting the local economy. Transformations of an old abandoned factory to commercial plazas with multi-viewing platforms, concrete office island to nature observation center in middle islands adds to the public space. As much as the overlook, visitors are drawn to stroll along a closer connection to nature, the river, and the shifting views staged with the angular trail layout.

The enhanced riverside landscape provides natural elements, creating layers of ecologically sensitive, diverse and leisure, identifiable and unique river's edge experience.

### **Nature-Based Solutions (NBS)**

NBS was applied for sustainable management of ecosystem challenges like thermal comfort, effect of urban heat, stormwater runoff. Revived natural wetlands, willow banks, green canopy, bio-wales, river garden trellises and hydrophilic embankment creates biomes that enhance bio-diverse flora and fauna.

Transformation from a disarrayed to de-cluttered clean riverbank, creating wildlife island biomes, along rejuvenated river margins and repaired banks. The original waterfront waterway was dilapidated and cluttered with vegetation. Breaking the inherent boundary and creating a new moat shoreline landscape, in order to improve the ecological environment and promote biodiversity, create a green island in the water, extending the landscape to the river. Migratory birds have a new point of interest and landing zone as do the residents of Huangyan City.

### **Conclusion**

The transformative Huangyan project has achieved, a perfect balance of community harmony, environmental sustainability and stability, economic progress of the ring-shaped waterfront into the home for residents with profound cultural and historical value.

Urban Renewal of Huangyan Waterfront not only serves as a model for sustainability but it has demonstrated the potential for the collaborative approach that landscape architects, architects, and engineers must employ for designing tomorrow's resilient urban waterfronts so as to protect their communities and to connect them to each other and their natural world.

# Urban Renewal of Huangyan Waterfront - A Perfect Amalgamation of Multi-disciplinaries

**Location:** Huangyan County, Taizhou City, Zhejiang Province, China

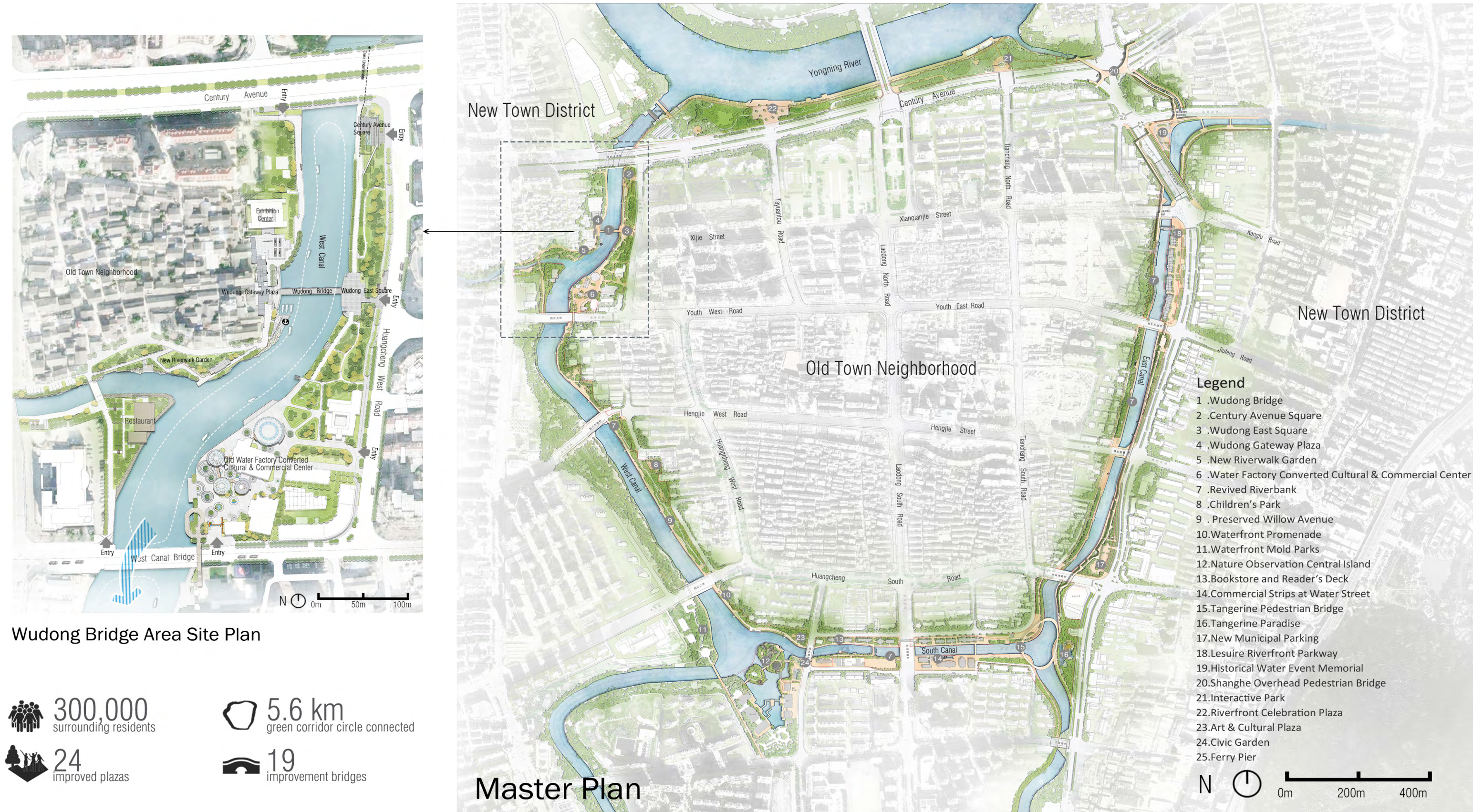
**Project Site:** 254,071 sq.m

**Year of Completion:** 2022





# Master Plan of Huangyan Riverfront



The degraded historic moat of 5.6 km is rejuvenated ,transformed into continued, sustainable ideal modern urban & riverside destination. The Huangyan Riverfront has area of 254,071 sq.m. Project connects the moat, now a flowing canal and green spaces in multiple city areas.



# The Urgency to Revitalize the Existing Site



The degraded historic moat of 5.6 km is rejuvenated ,transformed into continued, sustainable ideal modern urban & riverside destination. The urgency to revitalize the long-neglected waterfront was clear. The site not only needed to be a safe and accessible hub for many daily transit users, but its location meant that it also had the potential to be reinvented



# Closer to Nature – A People Connect to Nature through Ecological Restoration & Integration



A greenway system was constructed along moat river, integrating landscape, traditional culture and local elements. Multi-disciplinary effort used in unclogging moat integrated with nature to defend against flood, vitalizing the waterfront & flowing.



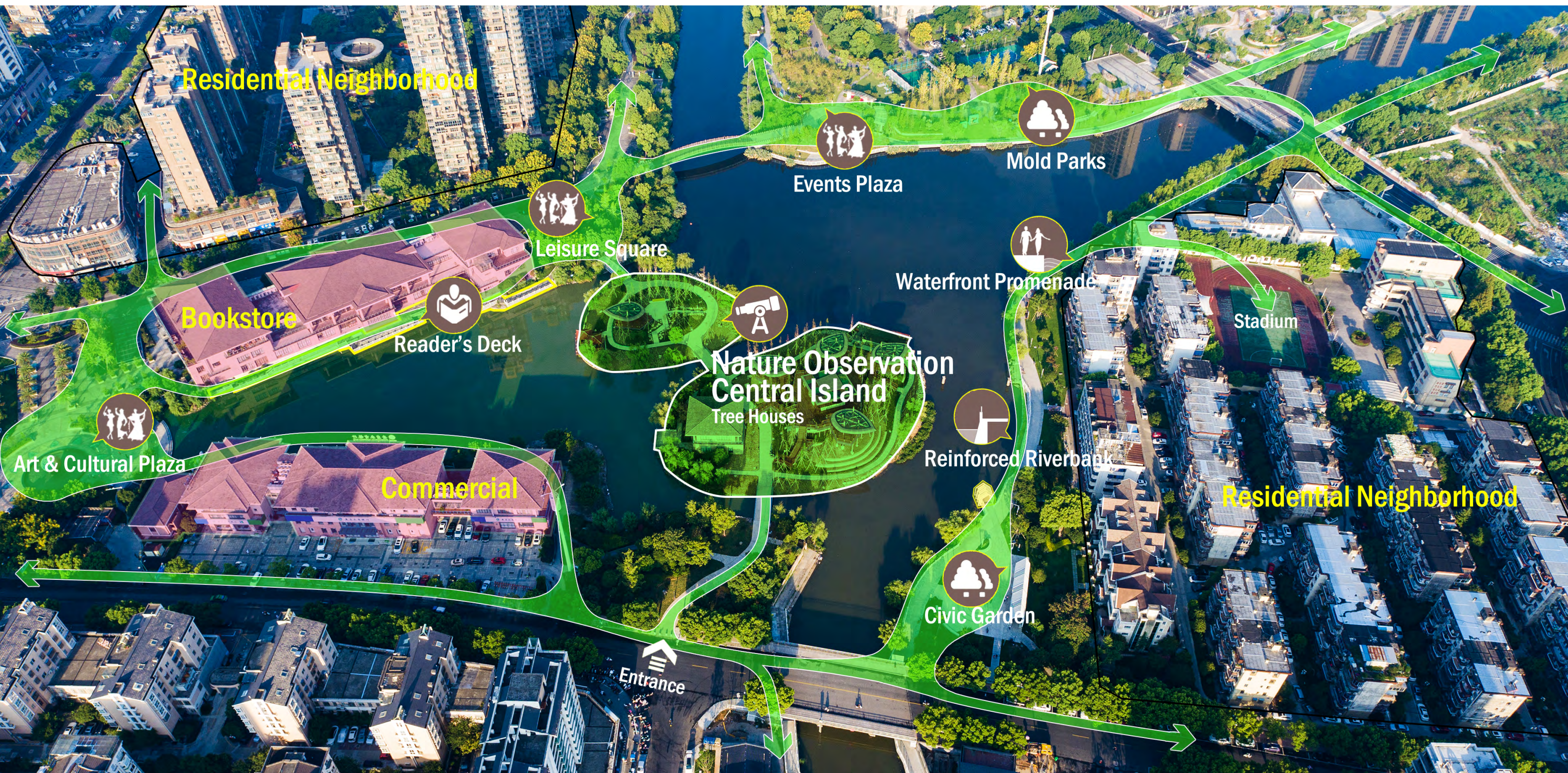
# Coherent Moat Waterway – Transformation of Stagnant Water to Lotic System



Waterways revived that bring vibrant sense to the community. Connecting the water system and continuation of the ancient city's pulse that depends on the water. Optimize the waterfront and provide more viewing and leisure spaces for residents along the shore to enjoy the nature.



# Metamorphosis of Concrete Enclosures to Wildlife Natural Observation Islands



Connection between city and moat reestablished, creating vibrant waterfront public Spaces. The existing middle island - potential wetlands, once office , presently is treehouse open to the public. Wetlands are replenished, transformed to ecological esplanade & wildlife biomes with full public access.



# Transcendence of the Old Town to New Community



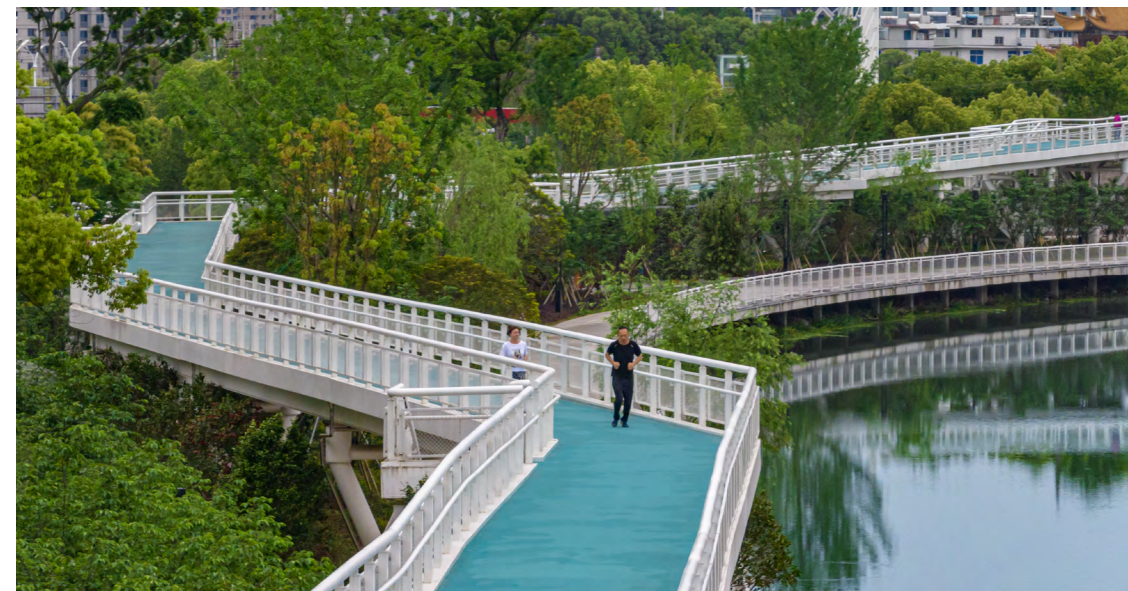
The integration of restored historic Wudong Bridge & gateway plazas, links new & old districts , making it logistically efficient and safe activity areas. The eastern end of the bridge is renovated, western end is expanded into public square, serving as gateway to districts.



# Innovative and Notable Shanghe Pedestrian Bridge- Connecting Everything



This bridge with varying widths of 4-14 meters, offers unique vantage point of the river below providing an attractive viewing platform.



Synergy of landscape architecture & engineering created an aerial bridge, resolving traffic issues with unique, safe & pleasant pedestrian experience.



# Resilience Strategy and Biodiversity Enhancement



After



Before



Before

Transformation from dilapidated, disarrayed to de-cluttered clean shoreline, creating wildlife island biomes, along rejuvenated river margins and repaired banks. A green island was created by extending the landscape into river. New moat shoreline created, to improve the ecological environment and promote biodiversity.



# Elevated Accessible Ramp Allowing Organized Rainwater Flow Under



New ramps were built linking the street level sidewalk to waterfront embankment. Many connections are added, so that the residents of the new city or old town both have ADA access for sightseeing. Rain runoff can flow under raised channel.



# Iconic Wudong Bridge – A Cultural Celebration



Local culture revitalized . The olden days trade hub regains its heritage glory. Huangyan locals and visitors converge to share the vitality of the city here. A unique moat waterfront experience, reminicing the city's history and designed to last into the future.





# A Modern Connection with A Historic Interpretation



Dilapidated structures revived by reuse of rough-hewn salvaged stones for paving and safe railing. Huangyan Ancient Town regains a new life and continues its memory in the urban renewal. By creating new leisure and entertainment space that is both refreshing and familiar.



# An Unique Experience - An Enduring Nostalgic Destination



The enhanced natural river side life makes personal connection to the community. The serene and healthier lifestyle that comes with it, engages citizens in both active and passive Waterways experience. Social activities like tai chi , boxing, leisure are popular.



# Abandoned Old Water Factory Transformed to Multi-utility Cultural and Creative Park



After



Before

Repurposed Art & culture center at Old Water Factory serves as refreshing riverside life with view decks and trail connection. Improved accessibility, hydrophilic steps and rooftop viewing platforms for future restraint seating. The abandoned Factory's unique features lend to adaptive reuse.



# Abandoned Old Water Factory Transformed to Multi-utility Cultural and Creative Park



Preserving the urban industrial memory gives new vitality to the old water plant facilities in the new development period.

Based on the old water factory, the preserved cylinder and supporting facilities are used to transform and design, and a landscape corridor and bar platform with ornamental value are created as a new gathering place for the city.





# New Riverfront Social Area – A Socio-equity Platform



The transformed corridors assures pleasant & safe experience, through the establishment of a multiple transportation system and the construction of multiple life scenes, the design meets the needs of residents of all ages, to provide activity venues, bringing everyone together.



# Stabilization of Water Banks with Means of Ecological Consideration



River garden trellises and hydrophilic embankment district form public natural ensembles of transformed, ecologically revived and stable waterfront. Landscape stones inscribed with famous ancient poems and elements such as bricks , stones from the ancient city of Huangyan are integrated into the paving.



# Native Trees Rediscovered



Original willow trees preserved and versatile willow bank is integrated into the modern paving making a prominent cultural venue indulging residents.



This was done with modern design techniques, the green memory of the water bank is retained with the mature canopy.



# Connecting People Back to Nature



Inspired by the historic mold manufactory of Huangyan's past, the new open space of Heritage Mold park is perfectly attuned to its waterfront site on the grounds mold sculpture gardens as outdoor museum and—an impeccably crafted gem of simplicity and beauty. Interactive lighting illuminates the “Water Street” at night.





# Making Huangyan's Newest Island



Huangyan waterfront has become the most popular ring-shaped waterfront open space in sprawling urban area, also as core cultural venue to promote pride, sense of belonging and happiness for Huangyan residents. Huangyan locals and visitors converge to share a unique experience.





# New Pavilion

## - De-cluttered Clean Waterfront Shoreline



Unaffected by floods and built at street level, Wudong North Square incorporates traditional, cultural and architectural elements from the Song Dynasty. The linear stone on ground is ingeniously combined, and the overhanging platform provides perfect viewing spot of waterfront embankment.



# Contemporary Urban Plaza Adopt the Traditional Elements



Chinese garden design element and borrowed landscape through windows displaying the culture and connotation of the ancient city in the waterfront and leisure spaces along the river, reflecting the perfect integration of the ancient city culture and the lives of the citizens.





# Huangyan Locals and Visitors Converge to Share a Unique Experience



Breaking the inherent boundary and creating a new moat shoreline landscape, creating a green island in the water, extending the landscape to the river. The transformative Huangyan project has achieved, a perfect balance of community harmony, environmental sustainability and stability, economic progress of the ring-shaped waterfront into the home for residents with profound cultural and historical value.





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