IFLA AAPME Awards 2024

Award Categories - Unbuilt Category - Analysis and Planning

Project Title

Shanghai Wusong River - Wenzaobang Waterway Area Overall Spatial Design Shanghai, China

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Project Name: Shanghai Wusong River - Wenzaobang Waterway Area Overall Spatial Design

Shanghai, China

Project Statement

The Shanghai Wusong River - Wenzaobang Waterway Area Spatial Design is a comprehensive plan covering a 47km stretch along the Wusong River in north Shanghai, China. It aims to integrate human development with natural regeneration through three main strategies: 'Ecology raised by river', 'Connectivity raised by river', and 'Places raised by river'. Transforming Wusong River into a vibrant blue spine will drive the rejuvenation of northern Shanghai.

Inspired by the adage "a boy raised by a river," symbolizing harmony between humans and their environment, the plan emphasizes the river's role as a lifeline and cultural influencer. Ecological considerations form the foundation of decision-making, fostering diverse habitats for both humans and wildlife.

The plan operates on three levels: System, Places, and Actions. Systematically, it advocates for ecological, dynamic, and place-making strategies along the river. Place-making revolves around water as the central element, guiding development logic for six clusters across the 47km river, from eco-friendly to urban regeneration. Operationally, it calls for a 'Collaborative Navigator' to facilitate cross-disciplinary collaboration and timely development along the Blueway through a Raising-City-Plan and Action Toolbox.

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Project Narrative

The project vision Wusong River as a potential link between the freshwater wetland habitat in the Taihu Lake area and the saltwater tidal wetland habitat at the mouth of the Yangtze River. We recognized the potential for new habitats in the hinterland of the riverbank, nurtured by water. By a new proposed urban to waterfront strategies in different sections, we see waterway itself plus hinterland as strategic habitat corridor for various small animals. We aim to rejuvenate the riverbank in the upper section and optimize ecological regeneration; diversifying the port shoreline in the middle section to seamlessly integrate habitats into the city. Additionally, relocating the Wendong Sluice Gate to the river mouth will eliminate water level differences and enhance ecological embankments.

Ecological System - Water as Spine for Ecology

To enhance the Wusong River's role in the green space system, we expand our scope to its entire watershed. Originating from Taihu Lake and Shaoshan, traversing Suzhou, and merging with the Huangpu River before reaching the Yangtze estuary, it spans diverse ecological zones. From freshwater wetlands to brackish ones, the river serves as a crucial connector between habitats, fostering biodiversity. This comprehensive approach acknowledges its pivotal role in the broader ecosystem.

Acknowledging the Wusong River's limited ecological impact alone, we understand its crucial

role as a connector between inland river and lake wetlands, midstream patches, and the tidal wetlands at the Yangtze River's mouth. By harnessing hydrodynamic forces, we aim to integrate these ecosystems into a cohesive network, navigating evolving social and environmental challenges for resilience and sustainability.

Water as Leverage

Through comprehensive analysis of species and current environmental conditions, we have discerned the abundant material and energy flows within the Wusong River and its tributaries. Leveraging these resources, we posit that the river system has the capacity to extend its influence beyond its banks. By redistributing sediment and enhancing water quality, it can effectively reshape nearby farmland and low-energy green spaces, seamlessly integrating and transforming them into habitats conducive to the survival of various species. This approach not only revitalizes existing ecosystems but also fosters biodiversity and ecological resilience within the surrounding landscape.

Enrich the Local Ecological Potential

Through comprehensive species studies and analysis of existing conditions, we've identified the Wusong River and its tributaries as rich sources of material and energy flow. These resources have the potential to positively impact surrounding farmland and low-energy green spaces, transforming them into habitats conducive to the survival of diverse species. We've pinpointed six critical eco-sensitive zones along the Wusong River watershed, researching characteristic species for each area. To guide landscape transformation, we've spatialized indices such as foraging, nesting, and migration behaviors of these species, providing a framework for design interventions in each zone.

Water as Connection

Through meticulous examination and assessment of the existing riverfront shorelines, we observe a prevalent pattern of hardened and fragmented edges. Simultaneously, upon integrating the topographical features of surrounding tributaries, we note a lack of diversity and a predominance of engineered structures along the riverfront. This mono-typism and

excessive engineering hinder the riverfront from realizing its full potential as a vital biological corridor—a conduit not only for human activity but also for the movement and migration of various species.

Dynamic System - Water as new driving force

New Driving Forces of North-Shanghai

By transforming the single channel into a dynamic Super Blue channel, merging fast outer waterways with slow inner networks, we envision a modern urban water city. This innovative fusion of water and land mobility creates a vibrant flow paradigm in North Shanghai.

Waterway as New Mobility Mode

Establishing a regional water-land conversion hub and integrating a comprehensive transportation system ensures rapid energy flow. Leveraging the Blueway enhances transportation services, while a human-centered network within the Super Water block elevates northern Shanghai's value.

Water-Oriented Development Mode

Guided by the evolution of Wusong River, we propel North Shanghai's next era. Upgrading the single waterway into a robust network: Super Water Block, integrating harbors into urban fabric, and transforming gray infrastructure into vibrant water blocks enriches North Shanghai's dynamic habitat.

Place-making System - City Region Raised by a River

Analysis along the whole 47km Zone- Current North of Shanghai read as Puzzles

Through meticulous hand-drawn analysis, we've gained a deep understanding of the current blue and green landscape. This insight, overlaid with regional and municipal green space plans, serves as the foundation for our assessment of fragmented green spaces and the integration of diverse functional areas. Urban zones are classified into agricultural, ecological, commercial, industrial, tourism, recreational, academic, and transit-oriented development (TOD) areas, facilitating strategic planning and cohesive development.

Water as Attraction to Synergies 6 Characteristic Clusters

By harnessing the synergy of hinterland green spaces intersecting with the waterfront, we conceptualize node projects with six distinct regional characteristics. These projects serve as catalysts, igniting vitality and enhancing the quality of surrounding areas. As nodes come to life, they gradually shape segments defined by unique features and compelling narratives.

Place-making from Waterfront into Hinterland

From the node projects, a dynamic water ring is pulled out and extended towards the hinterland. Based on the current water network system in the hinterland, more and more abundant waterfront public spaces and activity venues are given to the city, as well as creating activity areas suitable for urban leisure, activity and leisure, and work communication, and increasing the attractiveness of urban public spaces.

Pilot Areas

With two pilot areas, the implementation stage is expecting be finish together with local planning authorities. Even in times where economic difficulties, when considerations and investment beyond human needs are challenging, it is essential to plan for a new balance between human and planetary interests to avoid more extremes. Shanghai Wusong River - Wenzaobang Waterway Area Overall Spatial Design is a tool to deliver on this responsibility.

Pilot Area 1: The Three Rivers Blue Chain - An eco-led infrastructure, leads people back to the waterfront in terms of ecology, production and life-style

Presently, the waterfront is dominated by factories juxtaposed with golf villas. Our proposal advocates for a transformative approach, bridging the ecological corridor and fostering

collaborative synergy among industry, academia, and exhibition sectors. Central to this vision is ecological synergy, emphasizing the integration of the estuary's green space system to create a dynamic ecological interaction zone. Additionally, urban-rural synergy is prioritized through the interconnection of industries across the three riverbanks. Strengthening waterfront accessibility links is imperative, necessitating the establishment of diverse transportation networks to enhance connectivity and accessibility.

Pilot Area 2: A Super Watertown - Using the Anting Port Area and the Canal Town as demonstration examples of modern water towns

In the prevailing landscape, the Wusong River coastline is largely defined by enclosed industrial zones. Our proposal seeks to redefine this environment by establishing a robust ecological foundation, seamlessly weaving habitats into urban landscapes. This transformative initiative not only encourages agricultural innovation but also spearheads the development of novel industrial districts. The creation of habitats is meticulously orchestrated through a blend of landscape substrates and strategic planting, fostering biodiversity and ecological resilience. Four distinct areas are earmarked for natural restoration efforts, fostering a harmonious coexistence between nature and humanity at the heart of our urban fabric.

Overall Birdview



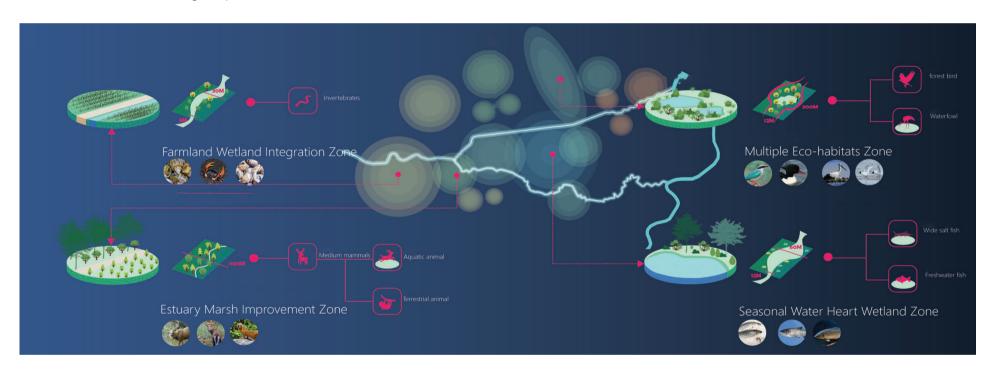


Strategy01 Ecological System - Water as Spine for Ecology

ES1 Empower Wusong River as eco-leverage of the region.



ES2 Enrich the local ecological potential

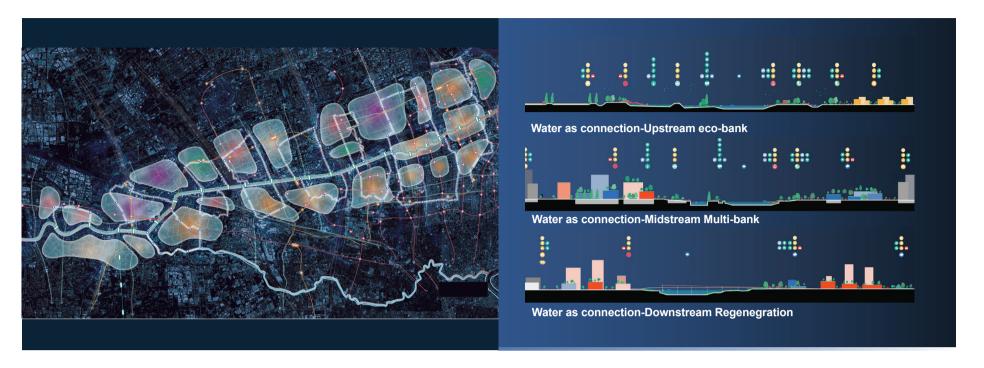


ES3 Water as connector of ecological corridor

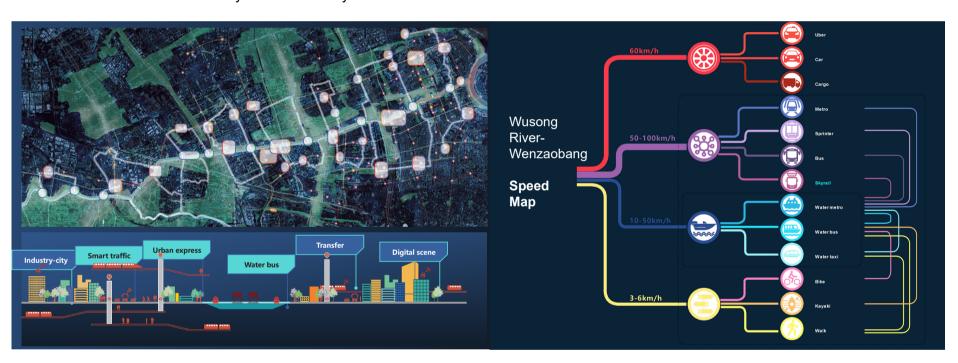


Strategy02 Dynamic System - Water as new driving force

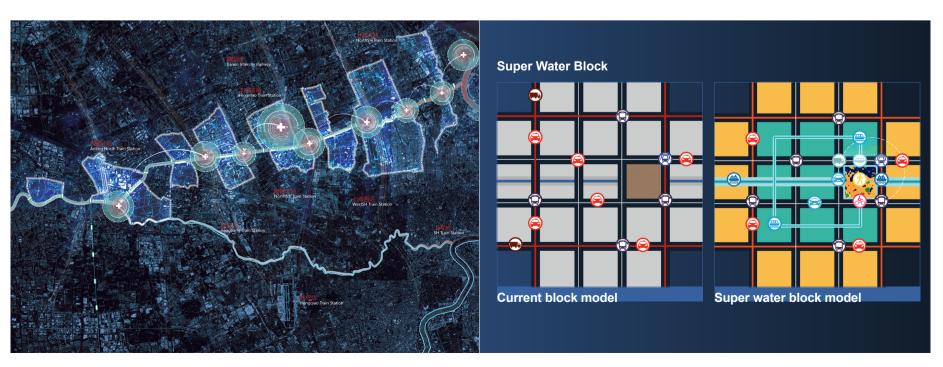
DS1 Wusongriver as new driving force for Northern Shanghai



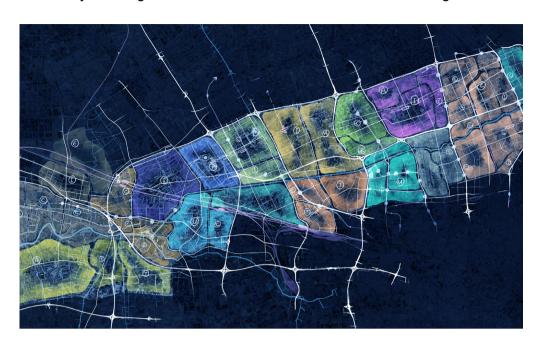
DS2 Blue Channel Plan - Waterway as New Mobility Mode

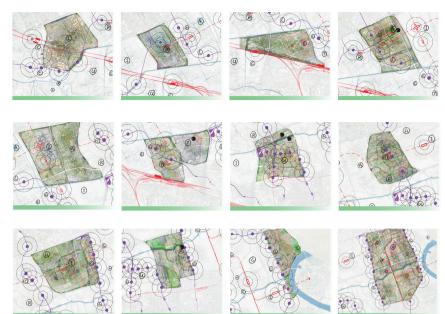


DS3 Water-Oriented Development Mode



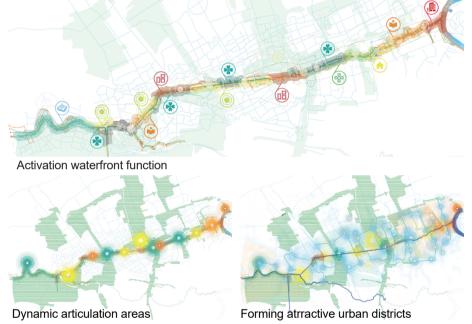
PS1 Analysis along the whole 47km Zone- Current North of Shanghai read as Puzzles





PS2 Water as Attraction to Synergize 6 Characteristic Clusters





PS3 Place-making from Waterfront into Hinterland

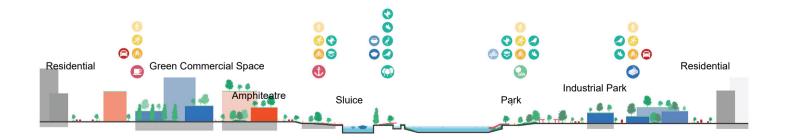


Zone 1 Rooting Area



Zone 2 Three River Blue Chain





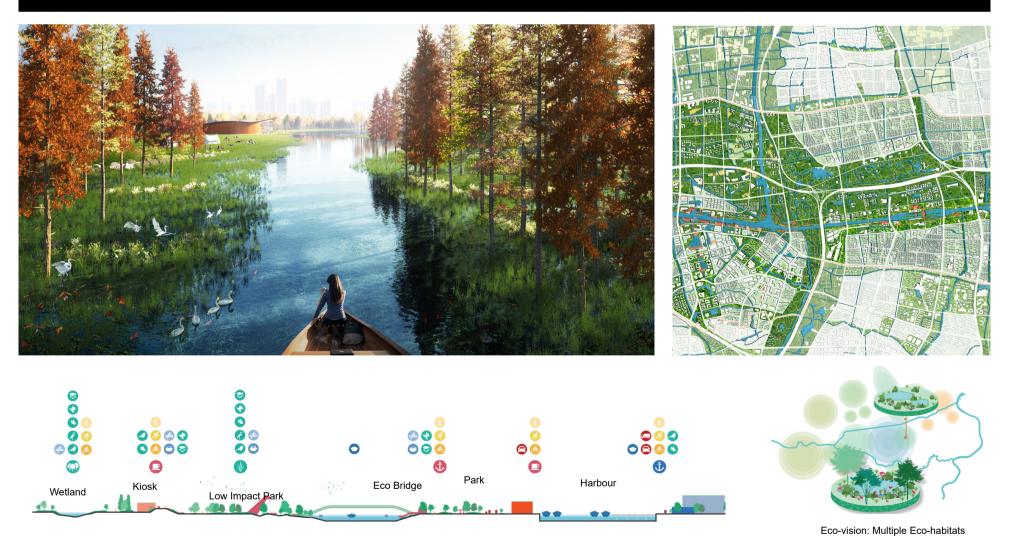


Eco-vision: Farmland Wetland Integration

Zone 3 Super Watertown



Zone 4 North SH Green Heart



Zone 5 Regeneration Pilot Area



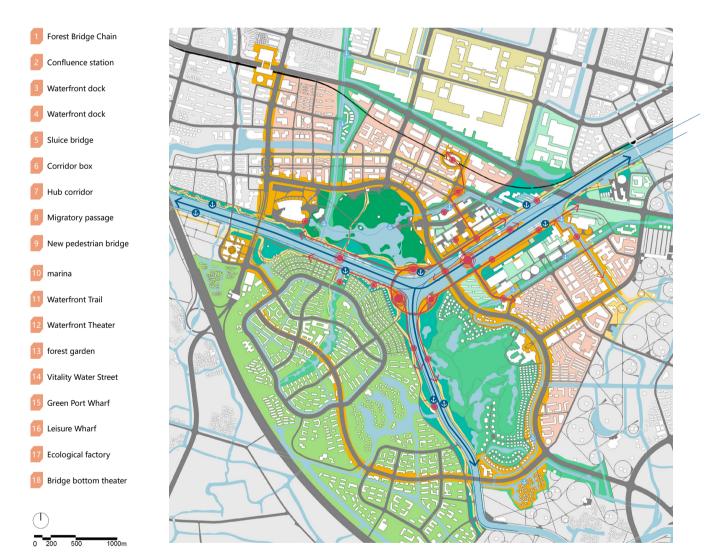
Zone 6 Innovation Brainport



Pilot Area 1 : The Three Rivers Blue Chain

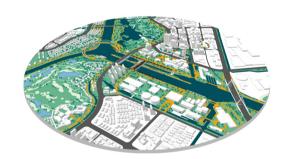


An eco-led infrastructure, leads people back to the waterfront in terms of ecology, production and life-style.





Current: Factories at waterfront with golf villas



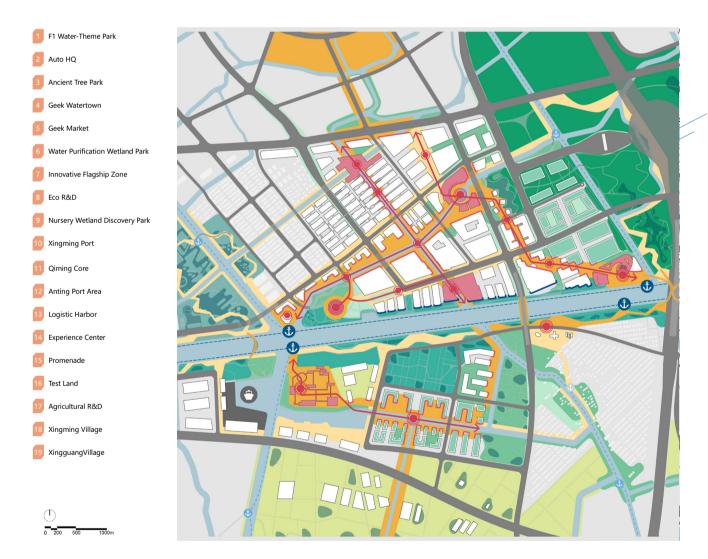
Proposal:
Bridge-up the ecological corridor and collaborative synergy between industry, academia, and exhibition







Using the Anting Port Area and the Canal Town as demonstration examples of modern water towns.





Current: The coastline of the Wusongjiang River is predominantly composed of enclosed industrial areas.



Proposal:
Estabilish an ecological foundation, integrating habitats into the city, and fostering agricultural innovation together with new innovative industry district.



