OLD CANAL
NEW WATER ARCHITECTURE

Rethinking water heritage tourism in rural environment

by Jie Qian

Bachelor of Arts in Architectural Studies
The University of Hong Kong 2010

Submitted to the Department of Architecture
in partial fulfilment of the requirements for the
degree of Master of Architecture at
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ABSTRACT

In the context of growing cultural tourism, water heritage becomes a unique topic for its inherently multi-scale cultural, social and environmental aspects; and its potential to become a "living heritage" by incorporating local participation in a comprehensive development. This is nowhere clearer than in China, where rapid development in urban and rural area and large scale state sponsored water infrastructure project creates the tension between heritage conservation, local economy and environment protection. Currently, there're very few examples how architecture and landscape design can address this tension and potential.

The thesis develops a twofold argument for an inter-disciplinary water problem:

From the hydro-social and geo-political perspective, the thesis continues to investigate the question raised by Karl August Wittfogel and his successors: how can a centralized state use water infrastructure as an apparatus for coordination and political control and how the folk develop their own social norm and cultural custom in adaption to the state project? From the architectural and cultural-geographic perspective, it embraces the indeterminacy and duality of water metaphorically and materially, following Charles Moore's trajectory.

The thesis seeks to establish a mutual benefit relationship between the state and the folk by integrating cultural tourism in a water infrastructural development; And to develop a new water architecture which express the essence of temporality in materiality and stimulate the "living heritage" through community engagement.

THESIS SUPERVISOR
James Jr. Wescoat
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Professor of Urban Studies and Planning

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And Lastly to My Parents:
Thank you for your support and understanding throughout my 8 years of studies aboard. As stated in the old Chinese saying: "*When drinking water, one should think of its origin.*"

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The Introduction
Water, Culture and the Grand Canal

"The supreme good is like water, which nourishes all things without trying to. It's content with the low places that people disdain. Thus it is like Tao."
-Lao tzu

Water is not only a vital element in natural phenomenon and resource management. It's also an important source of symbolism in philosophical discourse and motifs in cultural study. China has a rich legacy of both water engineering heritage and water cultural heritage. As stated by Sarah Allan, "(The Chinese) approach was a holistic one: by studying the principles of nature, one could understand the forces that governs the human society." [1] This cultural tradition, reinterpreted by contemporary Chinese architects and planners such as Kongjian Yu, could evolve into new design principles, which promote sustainability and cultural continuity in public projects. Currently, cultural tourism (or eco-tourism) becomes the main field of those experiments. In the context of cultural tourism, infrastructure projects in heritage sites are placed under heavy restrictions. New interventions often create tension between heritage conservation, local economy and environment protection. As a UNESCO World Heritage site, the Grand Canal of China is affected by the largest national water infrastructural project: South-to-North Water Diversion Project. It's critical for the modernized heroic engineering project to negotiate with the old canal's legacy in socio-hydrology, local culture identity and scenic landscape.

Along the Grand Canal, Wuqiao County is a typical example of North China rural settlements. It has disassociated with the canal in their cultural tradition and economic dependence due to environmental change and urbanization process in the last decades. This situation led to further deterioration of water resource, poor maintenance of heritage properties and unauthentic local cultural development. The success of world heritage nomination and the construction of water diversion project offer an opportunity to rethink the relationship between local cultural revitalization and state sponsored water management system.

This thesis starts with studies in three aspects: the study of water architecture and water system; the study of preservation and cultural tourism and the study of rural development in Cangzhou region. Some knowledge from those studies is contextual while some forms the basis of the design strategies.

THE IMAGE OF WATER AND WATER ARCHITECTURE

Herbert Dreiseitl points out that the public awareness of water has a split between a superficial embellishment in architecture and a resource in management system accessible and comprehensible only by specialists.[2] Historically, this split is mostly represented by the difference between "water infrastructural projects" (canals, irrigation ditches, dams, etc.)and "water architecture"(gardens, parks, etc.). The design of the former is driven by practical demand and emphasizes efficiency, while the latter focus on spiritual and symbolic aspect of the material and the richness of metaphors "almost reaches a point of paradox"[3]. Recently, new design of water art and landscape is re-linking the aesthetic design back to the urban system such as storm water drainage networks and bio-

Canal in Traditional Suzhou Town, the Grand Canal of China, Suzhou

Dry waterway of the Grand Canal of China, Cangzhou Section, Wuqiao

filtration pound. However, how to create designs that can adapt to existing architecture or infrastructural projects remains to be an important question. Another question is how to design a comprehensive water system for a large scale like metropolitan region or watershed. Moreover, what's the role of architecture in these questions?

The common image of water infrastructure in China is a heroic representation of industrial power and modernity. The initial idea of long distance water diversion system was formed in the 1950s as a gigantic project featuring "human transformation of the nature". However, this engineering project eliminates its sensuous image as an element in nature and social life. In the case of South-to-North Water Diversion Project, the impact of national water diversion project on natural environment, agricultural and industrial production has been researched since 1980s. And the debate on the project never ceased until the $80 billion construction started in 2003.[4]

Water architecture has a long tradition in Chinese garden design. The most famous publication on gardening is "Yuan Ye" by Ji Cheng, a scholar and garden designer who lived in Ming Dynasty (15th-16th c. AD). It reflects the elite aesthetics that manipulate water to achieve a denaturalized "beautiful" form. Kongjian Yu, one of the most important contemporary Chinese landscape architect, describes that as a deformed design attitude which "rejects nature's inherent goals of health, survival and productivity."[5] This appreciation of beauty in productivity and its cultural root in agricultural landscape is the key to respond to the cultural revival in rural area and to create a landscape not for the elite but for the common people.

PRESERVING A LIVING HERITAGE

My thesis situates within the discourse of heritage conservation and heritage economy. To be more

specific, the challenge to preserve the Grand Canal as a living heritage must deal with the relationship between heritage site conservation, tourism and large-scale infrastructure works. It'll address the key concepts of heritage values, authenticity in the discourse.

Comparing my thesis project to the UNESCO campaign to salvage the Temples of Nubia, this international action started in 1960 as a response to the building of Aswan High Dam in Egypt, which would flood the entire Nubia valley and the heritage sites in it. This campaign reflects the conflict of interests in economic development and heritage conservation. The temples and sculptures were relocated to identical sites nearby or reconstructed in museums in order to escape the destructive consequence brought by the dam.[6] Similar scenarios appeared globally and the stories were presented as humanitarian interventions against political power. Does conservation always conflict with economic development in heritage site? Or is it right to make the ethical choice between temples and corps without considering the livelihood of local households? To answer those questions, different values of heritage objects or monuments have to be defined.

Alois Regil identified historical value, age value, art value and use value of a monument.[7] The priority of those values will dictate whether and how a monument should be preserved. In the Nubia case, the monuments have high historical and art value but little use value. It's appropriate to relocate them to places with controlled condition, such as museums. However, in my case, the Great Canal still has important use value as water source. The water diversion project can enhance the use value greatly by supply additional fresh water to the canal. The balance between historical value and use value in this case can open scenarios that focus on different development methods.

Any method of development is governed by the idea of authenticity. This topic is the key in conservation discourse since the debate between conservation and restoration in 18th century. Unlike the temples in

Reservior for South to North Water Transfer Project under construction

A main street in Lianzhen Town, Cangzhou County

Nubia which has original designs and sites, the canal itself is a result of connecting old waterways, extending, dredging and revising routes. Historically, the function has been changed as well due to water level change. Dry waterways have been used as farm fields and reservoirs. Should all traces of those adaptive uses being preserved as evidences of authentic events related to the canal site? If those are considered authentic, following questions will be: what kind of new architecture and programs can be added to the canal without "destroying the authenticity of local cultural products and human relations"[8].

Currently, most solutions involve cultural tourism. But the economic dependence on tourism and over consumption of local resources also becomes a major concern. In China, the domestic tourism market has received 3.26 billion passengers in 2013.[9] The impact of cultural tourism results in a method of local cultural promotion that not offering real space for cultural revival but makes it "ripe for commodification and colonization by broader powers of capital".[10] This method is more popular in culturally authentic but economically impoverished inland region. However, mimicry of historical styles and overambitious tourism development often overpower the original heritage site with bad architectural design. The reinvention of culturally sensitive Chinese architecture remains as a challenging task for the success of regional cultural tourism.

THE FRAGILE CULTURE IN RURAL SETTLEMENTS

In his article "Chinese Provincial Identities", Tim Oakes declares that local officials usually offer "residual" features of folk culture as a comparative advantage in attracting commercial opportunities. This reflects an effort against the marginalization of dominant culture during the urbanization process.[11] His observation can be used to understand the current issue in Wuqiao County, Cangzhou.

Historically, Cangzhou region had unique cultural links with the Grand Canal. Cangzhou has a long tradition of martial arts practice and it was famous for providing security companies for merchant groups travelling on the Grand Canal. Today martial art survives in the form of acrobatic arts. Wuqiao County in Cangzhou region is the center of acrobatic art in China. As early as 13th century, the street performers from Wuqiao followed the merchants and workers to trade nodes along the Grand Canal. The emergence of settlements along the canal and the frequent flow of trade provided places and customers for street performers. As mentioned in folk rhyme, it was very common for farmers in Wuqiao to perform acrobatics as a side occupation after the harvest. [12]

Since the 19th century, the decline of commerce on the Grand Canal has affected the activeness of acrobatics culture in Wuqiao County. But street performance was still popular among local villagers until the rapid urbanization in 1980s. As the young generation became migrate workers in large cities while the old remain in villages, the traditional teaching method between older and younger family members was hard to maintain. This local culture started to lose its root in local communities. For those who tried to continue this "farmer-performer" tradition, the living cost in cities and other means of entertainment made their income much less if not negligible. On the other hand, government-owned circuses start to perform outside the county, some even go aboard. The commodification of this cultural tradition leaves very little benefit to those original owners.

An evidence of that process is "Wuqiao Acrobatic World" theme park, a landmark built in the county in 1993. It's a successful cultural business by Wuqiao government and a Hong Kong based travel-service company. But the park is not free to public access and has little contribution to cultural life in local villages.

Individuals in the villages care very little about this type of cultural tourism. Meanwhile, the local acrobatic culture in villages is disappearing as farmers are attracted by the working opportunities in the county. Without ability to generate profit and separated from the tourism development, public space and cultural events in rural villages are underdeveloped and it becomes a social problem.

The dissociation between commoditized cultural development and public space for local cultural events is threatening the fragile culture in rural settlements. By revitalizing the canal, my thesis aims to provide public cultural space in rural area and facilities for an acrobatic education. It offers better opportunities for villagers to participate in cultural tourism.

Notes:

1. xii, Allan, Sarah. The way of water and sprouts of virtue. Suny Press, 1997.
2. P9, Dreiseitl, Herbert, and Dieter Grau, eds. New waterscapes: Planning, building and designing with water. Walter de Gruyter, 2009.
3. P16, Moore, Charles Willard, and Jane Lidz. Water and architecture. Harry N. Abrams, 1994.
4. Chapter6, Biswas, Asit K. Long-distance water transfer: a Chinese case study and international experiences. Tycooly International Publishing Ltd, 1983.
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9. Data Source: China National Tourism Administration
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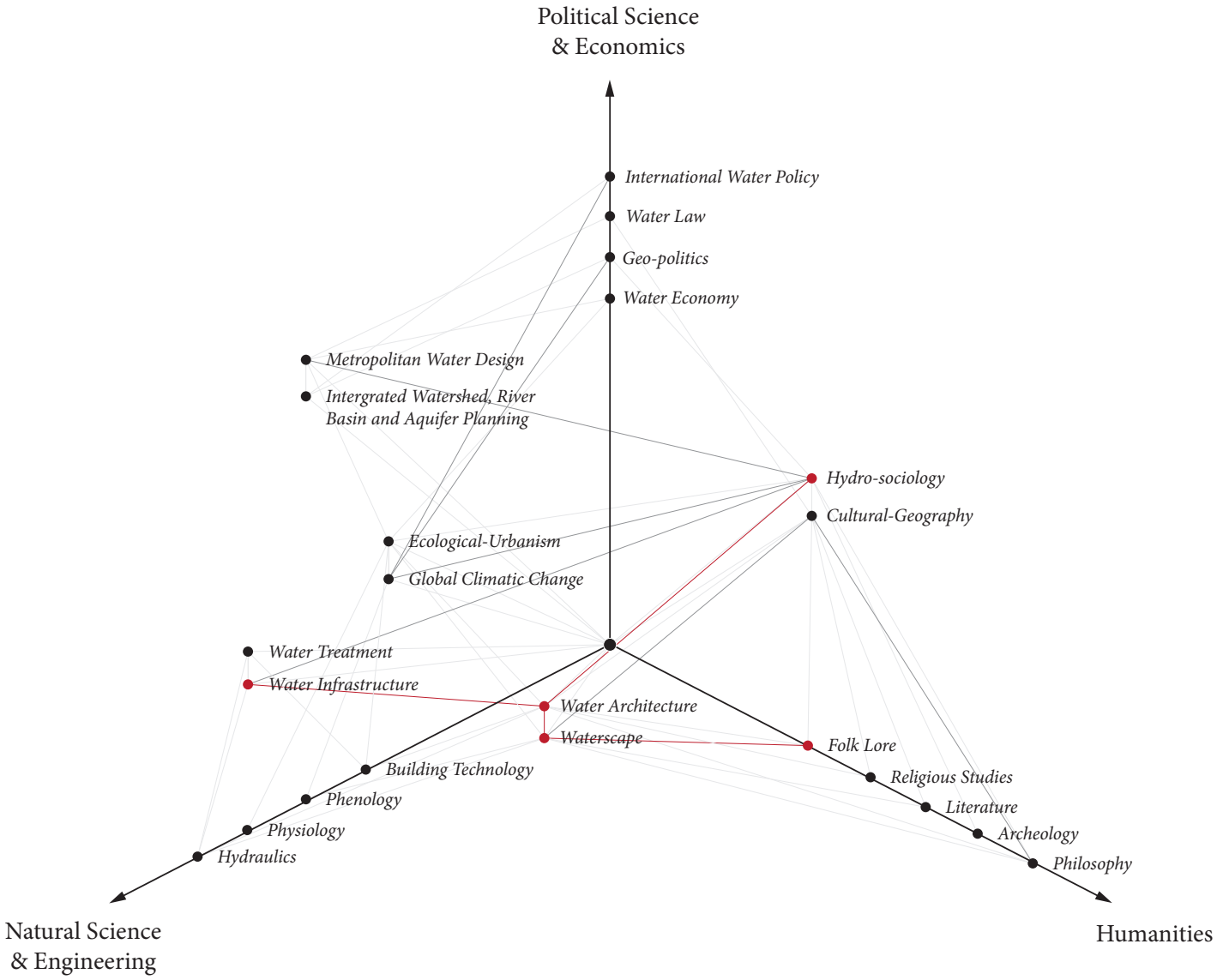
11. P674-676, Oakes
12. Shuangyin Yang, Enhe Liu. Wuqiao Acrobatic culture in the context of Grand Canal Heritage Nomination, Institute of Cultural Heritage Conservation of Wuqiao (从京杭大运河申遗谈吴桥杂技文化，杨双印 刘恩合，河北省吴桥县文物保护管理所)



Towards a Multi-Scale Approach

-Map of Topics in Water Research Field

The The Disciplinary Lineage
Water and Heritage

Currently, the investigations of water design and management develop in various separated disciplines. In this chapter, I'm going to locate my research topic within the disciplinary knowledge and developing my thesis argument through historical surveys.

In the Map of Topics in Water Research Field, the three main axes indicate three main branches of research: Natural Science & Engineering, Political Science & Economics and Humanities. The topics and terminology in the diagrams are covered in MIT Course 4.625 "Water in Planning, Policy and Design: A Multi-scale Approach" by Prof. James Wescoat. This is not meant as a complete list but a device to explain the setup of the thesis. The scientific and engineering research about water include subjects like hydrology, physiology and building technology in water-treatment and plumbing. The knowledge of water cycle and water treatment are the basis for sustainable water planning and architectural design. The political and economic research about water management deals with water rights, water law and related policies. Water policies are implied in and enforced by water system designs, which respond to geological condition, social norms and political structure. The most interesting yet less emphasized is the humanities research in water design, which includes philosophy, literature, religious study and folklore.

The space between three main axes is for inter-disciplinary researches and types of project that requires inter-disciplinary approach. The scientific-political field includes large scale water system design and research such as metropolitan water system design and research of global warming. South to North Water Transfer Project (SNWTP) falls into the water infrastructure category in this field. Although the decision of its construction is still being criticized, the thesis will accept the fact that it has changed the water distribution and the landscape along its course forever. It cannot be reversed or simply ignored. Any new design has to address the gigantic diversion channel on the flat terrain and how people and architecture adapt to this kind of megastructure requires another perspective from the cultural-political field.

Hydro-sociology became well known since Karl August Wittfogel's famous book "Oriental Despotism – a comprehensive study of total power" in 1957. Following Marx, Wittfogel concerned about the relationship between water management, power and centralized authority in Asian agrarian society. He asserted "Of all tasks imposed by the natural environment, it was the task imposed by a precarious water situation that stimulated man to develop hydraulic methods of social control" He's position is criticized as deterministic historically and geographically. But the question of how a centralized state use water infrastructure as an apparatus for coordination and political control is still present. And a related question is how the folk develop their own social norm and cultural custom in adaption to the state project? This thesis is not going to elaborate on the first question but it will try to find a design solution for the second one.

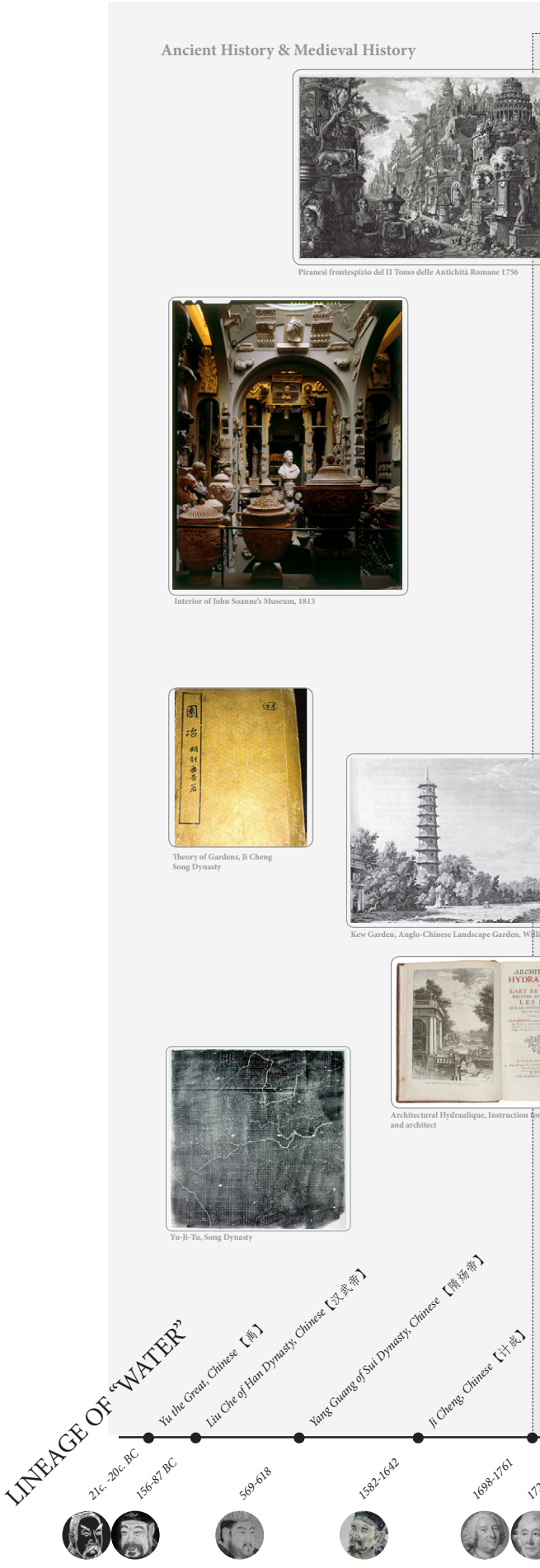
Current water architecture and waterscape design are located in the cultural-scientific field. It's not only a result of the "art-science" tradition of architectural design since Vitruvis but also a result of the dual-role of water: both a natural resource and a material in creative process. In the same year of Wittfogel's book, Charles Willard Moore finished his dissertation "Water and Architecture" in Princeton University. It investigates

water as the medium, the content and the form. Firstly as a medium, the inter-connections between water, climate, man and his work are elaborated. Secondly as a formal element in architectural composition, Moore explains how the materiality and different states of water are used to create different sensations in architectural and landscape design. Thirdly as the content, the rich symbolism of water and its use as an expression of man's relation to nature in different cultural contexts are elaborated. Finally he proposed his own design principles and realized them in a project. It's a comprehensive study of water in architecture in his time but both the technological development and cultural research have advanced rapidly in the last century. Contemporary designers such as Herbert Dreiseitl and Kongjian Yu advocate an inter-disciplinary approach in waterscape design for sustainability and diversity. Following their direction, the thesis will provide an experiment in the context of China's cultural tourism.

THE WATER-HERITAGE GRID

Since the thesis focuses on the design of water architecture in a historical site, there're two lineages involved in the research: the water lineage and the heritage lineage. Another dimension in this "water heritage grid" is the difference between Chinese and Western approaches. The exchange of ideas and their influence on each side exist in some period (such as the Anglo-Chinese garden in England) but each side developed independently until the 20th century. It's noticed that the characters and materials from Chinese side and Western side are not even in specific time period, which makes direct comparison more difficult. For the purpose of the thesis, I'm not going to make a general comparison of Chinese and Western approaches in water/heritage lineage. The difference will be mentioned when it appears in specific characters and concepts.

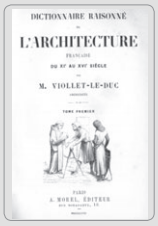
The main tendency in heritage lineage is changing from the recognition of a static, ideal, physical existence of monument or heritage site to an adaptive, informal, living heritage property. The main tendency in water lineage is changing from the separation of water engineering projects and water in architecture/ landscape design, both in ideology and practice, to an integrated water system design.



18th-19th c. Enlightment / Rise of Nation-State/ Collection of Antique Objects/ Museumology

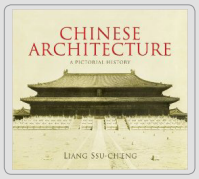
Late 19th- Early 20th c. Conservation&Restoration /Art Nouveau/ Modernism

Daguerreotypes of The Grand Canal. The Casa d'Oro Under Restoration, John Ruskin

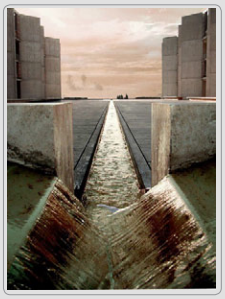


Dictionary of French Architecture from 11th to 16th Century

The Modern Cult of Monument



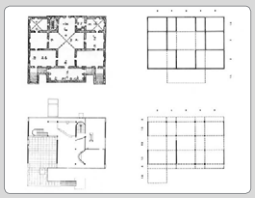
Early Study of Chinese Architecture with modern methodology



Salk Institute, Louis Kahn

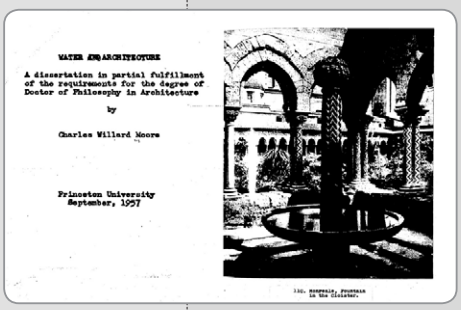
Post-Modernism/Critical Regionalism/ Contextualism

Fondazione Querini Stampalia, Carlo Scarpa

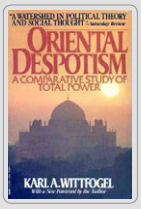


Mathematics of Ideal Villa and Numbers

Complexity and Contradiction in Architecture



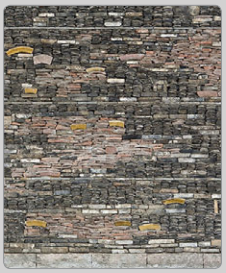
Charles Moore's Dissertation: Water and Architecture



Study of Water Infrastructure and social strucutre in rural China

Contemporary Architecture/ Landscape

Therme Vals, Peter Zumthor



Xiangshan Campus, Wangshu

1720-1778 *Giovanni Battista Piranesi, Italian*

1753-1837 *Sir John Soane, British*

1814-1879 *Eugène Viollet-le-Duc, French*

1819-1900 *John Ruskin, British*

1858-1905 *Alois Riegl, Austrain*

1867-1959 *Frank Lloyd Wright, American*

1901-1972 *Liang Sicheng , Chinese* 【梁思成】

1901-1974 *Louis Kahn, American*

1902-1988 *Luis Barragán, Mexican*

1906-1978 *Carlo Scarpa, Italian*

1906-2005 *Philip Johnson, American*

1919-2000 *Bruno Zevi, Italian*

1920-1999 *Colin Rowe, British*

1925- *Robert Venturi, American*

1931-1997 *Aldo Rossi, Italian*

1933- *Álvaro Siza Vieira, Portuguese*

1934-1994 *Manfredo Tafuri, Italian*

1943- *Peter Zumthor, Swiss*

1963- *Wang Shu, Chinese* 【王澍】

Bernard Forest de Belidor, French 1698-1761

Sir William Chambers, British 1723-1796

Karl August Wittfogel, German 1896-1988

Tong Jun, Chinese 【童寯】 1900-1983

Fei Xiaotong, Chinese 【费孝通】 1910-2005

Feng Jizhong, Chinese 【冯纪忠】 1915-2009

Ieoh Ming Pei, Chinese American 【贝聿铭】 1917-

Chen Congzhou, Chinese 【陈从周】 1918-2000

Charles Moore, American 1925-1993

Michel Conan, American

Herbert Dreiseitl, German 1955-

Maya Lin, American 1959-

Yu Kongjian, Chinese 【俞孔坚】 1963-

Stanislaus Fung, Chinese 【冯仕达】

???

SELECTED CHARACTERS

Five characters are selected for further analysis.

Two from water lineage:
Charles Moore [American] and Kongjian Yu [Chinese]

Two from heritage lineage:
Carlo Scarpa [Italian] and Shu Wang [Chinese]

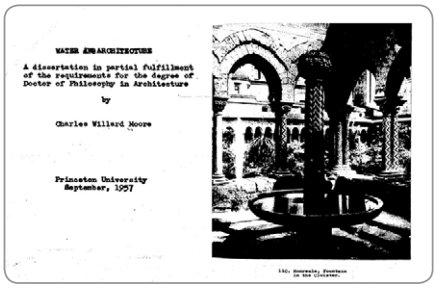
One from ancient literature:
Yu the Great [Chinese]

Different from the four contemporary characters, Yu the Great is a legendary figure in Chinese mythology as well as a historical ruler renowned for his achievement in flood control. In the legend of Yu the Great, a primitive model of the relationship between human and nature was formed, which later become part of the early Chinese water culture.

In the legend, the central plain of China frequently suffered from flood during the reign of King Yao. Gun, Yu's father, was in charge of the flood control. He spent years building dams and levees along rivers but his efforts turned to be ineffective. As the situation turned worse, Gun was executed by King Yao. Yu continued his father's work and made a careful study of the river system. Instead of stopping the water flow using dams, Yu relied on constructing new canals, dredging riverbeds and releasing flood to lower fields. During the thirteen years of the project, Yu spent all his time working on construction sites. He's so devoted to the work that he passed by his home three times without even paying a visit to his family. The project finally succeeded and earned Yu the tile "Great" in Chinese history.

The legend of Yu the Great illustrates the importance of water governance in an agrarian society. The intense labor and high cost of his flood control project was tolerated since it's built for survival. This contrasts with the canal projects by later emperors, which were usually resisted by the peasants and even caused rebellions. The tension between the state and folk in water infrastructural project continues to be a social problem.

Charles Moore, American


WATER AND ARCHITECTURE

A dissertation in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Architecture

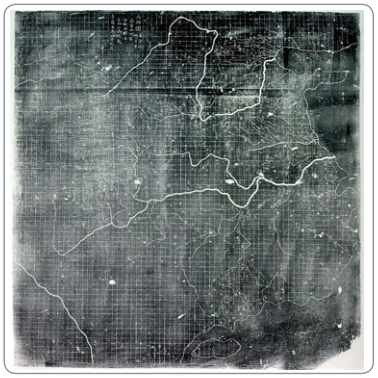
by

Charles Willard Moore

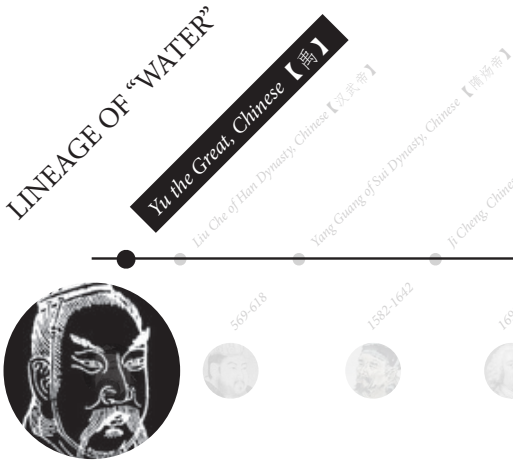
Princeton University
September, 1957

Dissertation: Water and Architecture, 1957

Yu the Great, Chinese 【禹】



Yu-Ji-Tu, Song Dynasty



1720-1778 Giovanni Battista Piranesi, Italian

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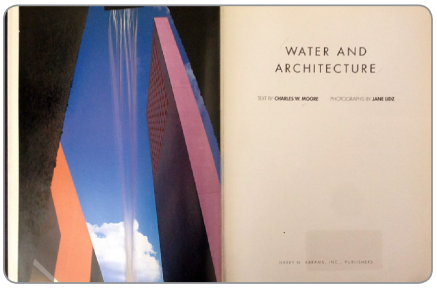


the Book Water and Architecture, 1994

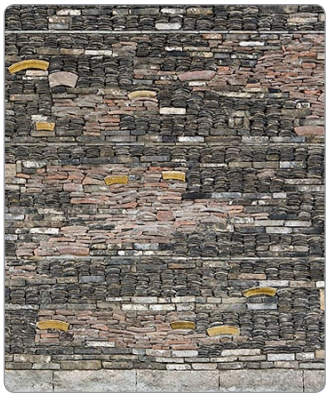
Carlo Scarpa, Italian

Fondazione Querini Stampalia

Yu Kongjian, Chinese【俞孔坚】

Red Ribbon Park by Yu Kongjian

Wang Shu, Chinese【王澍】



Xiangshan Campus

Bernard Forest de Belidor, French

Sir William Chambers, British

Karl August Wittfogel, German

Tong Jun, Chinese【童寯】

Fei Xiaotong, Chinese【费孝通】

Feng Jizhong, Chinese【冯纪忠】

Chen Congzhou, Chinese【陈从周】

Charles Moore, American

Herbert Dreiseitl, German

Maya Lin, American

Yu Kongjian, Chinese【俞孔坚】

???

1723-1796

1896-1988

1900-1983

1910-2005

1915-2009

1955-

Piazza d'Italia

Piazza d'italia, New Orleans, 1978

WATER AND ARCHITECTUR

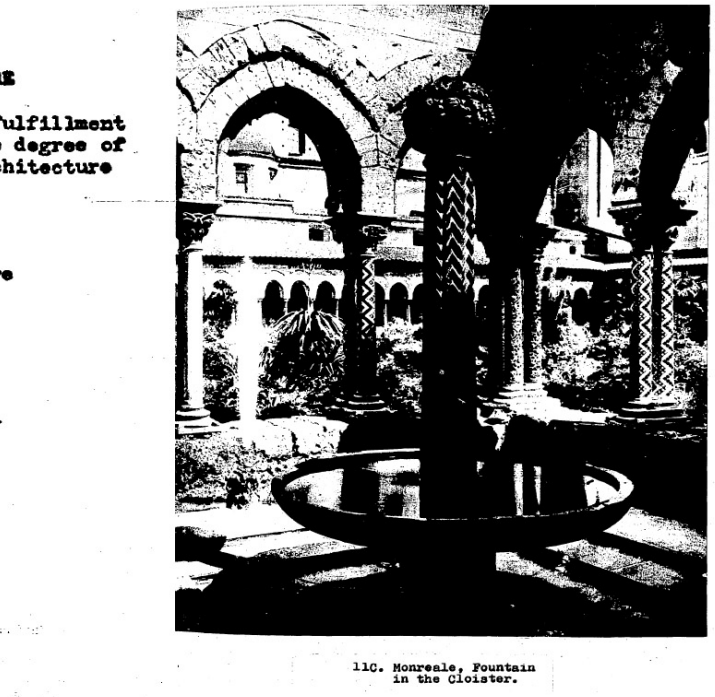
A dissertation in partial f
of the requirements for the
Doctor of Philosophy in Arc

by

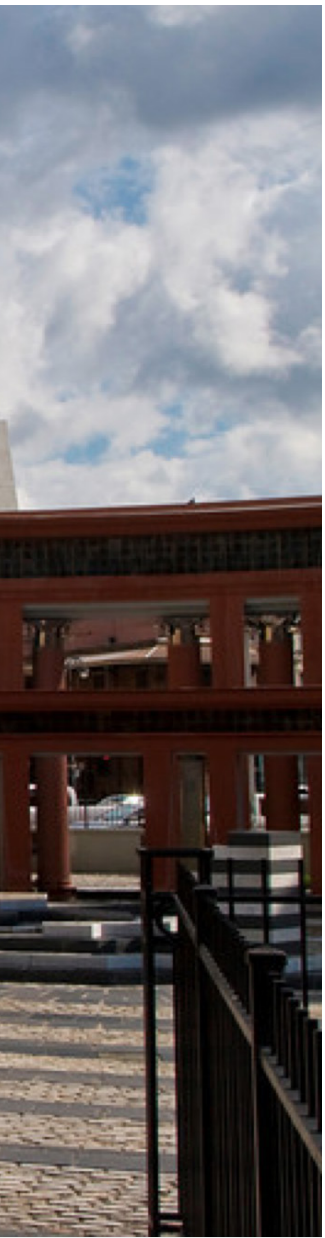
Charles Willard Moor

Princeton University
September, 1957

Piazza d'italia, New Orleans, 1978



llC. Monreale, Fountain in the Cloister.



Charles Willard Moore (1925-1993)

As an important figure in post modernism, Moore's significance in the water heritage line should be assessed in both his writings and his design works. In the formulation of design principles, he mentioned that a liquid shouldn't be contained with a rational geometry but following the "continuity" of its movement. There's also an early introduction of the sense of a water cycle, which he called "mental learning" through close contact. Besides the form, Moore expressed the concern about the alienated sense of time in urban life. He suggested that water should suggest an expression of its own time, which is a "natural time beyond our own".

In Piazza d'Italia, Moore tried to establish a public space for the heritage of Italian community in New Orleans. The post-modern design language is witty and inclusive. Various formal elements, materials and colors are juxtaposed in this place but the role of waters is compromised. The use of a map of Italy as the figure of waterscape is clearly symbolic rather than following the movement of water. The concentric composition of the piazza also suggests a static monumental setup, not a dynamic geometry exists in time. Although multiplicity of meaning is brilliantly achieved (for those who can comprehend) by recomposing Italian elements and prototypes of space, this space fails to negotiate intimately with its users and urban context. It requires an intimate touch beyond the intellectual reflection. Similar problems can be observed in Robert Venturi's work: contrast and irony in form and symbol interrupt the contemplation of time through materiality.

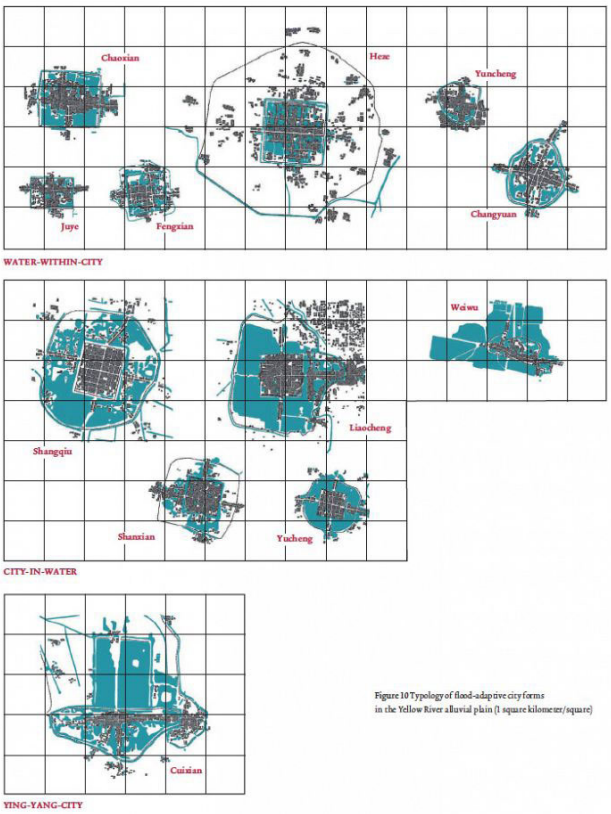
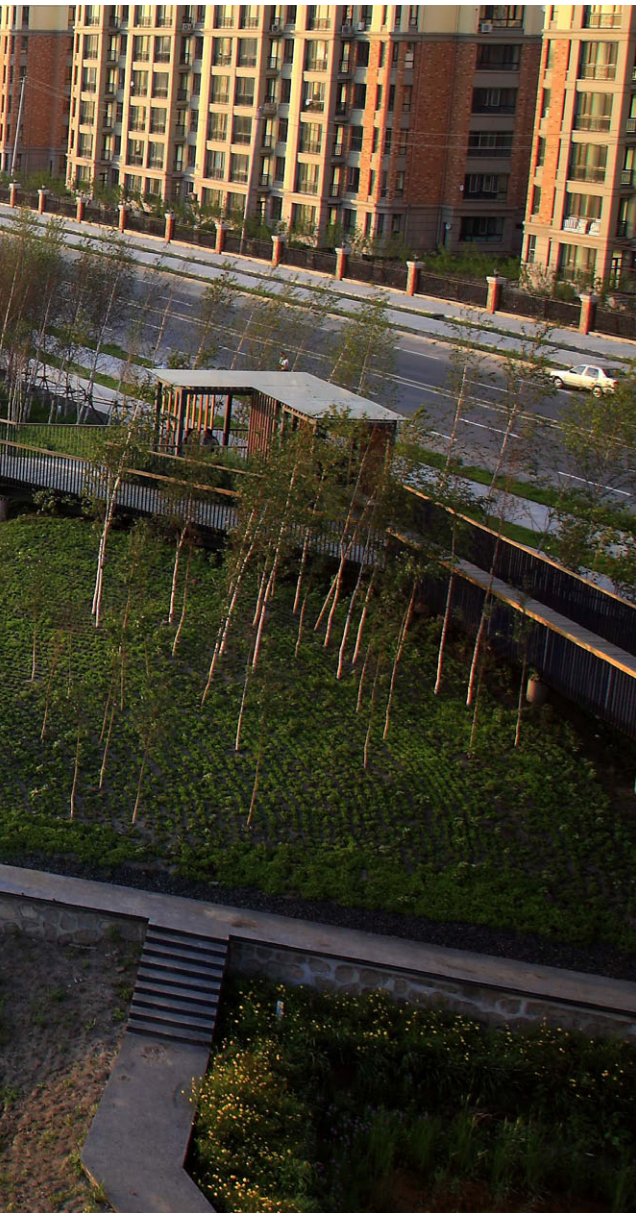


Figure 10 Typology of flood-adaptive city forms in the Yellow River alluvial plain (1 square kilometer/square)

Strom Water Park in Harbin, Heilongjiang, 2010

Red Ribbon Park, Qinhuangdao, Heibei, 2007



***Kongjian Yu** (1963 - current)*

Kongjian Yu has an ambition to reestablish a balanced relationship between human and nature, which are expressed in his design in various scales. Among many of his ideas, the "Big Foot" aesthetics directly challenges the design principles of traditional Chinese landscape garden. In his rhetoric, the productive landscape (Big Foot) such as agricultural fields is more "beautiful" than the "useless" decorative landscape in Chinese gardens (Small Foot). This argument is partially valid that a productive landscape addresses not only aesthetic but also social and ecological demand. But culture never has a practical use. Like water, it's a medium not a means. As commented by William S. Saunders, "there's nobility in the farmer's struggle for survival. But to label other kinds of culture merely ornamental is to lapse into puritanical moralism." In fact, the landscapes in Yu's works are carefully designed and beautiful.

Another important contribution of Kongjian Yu is his experiments in multi-scale interdisciplinary design. In his landscape design, water and landscape are integrated into the process of urban development. For instance, the Houtan Park in Shanghai directs polluted river water into the park and the water are cleaned by plants and by filtration devices. Comparing to the entire flowrate, the amount of treated water is limited. But it provides an instructive model that design of water system is essential for a sustainable future. Yu's also involved in top down environmental policy research such as the national ecological security pattern plan of China in 2008. In order to address the growing social and environmental problem in China, both bottom up and top down approaches are needed and water systems at different levels should be co-designed for them to work effectively.

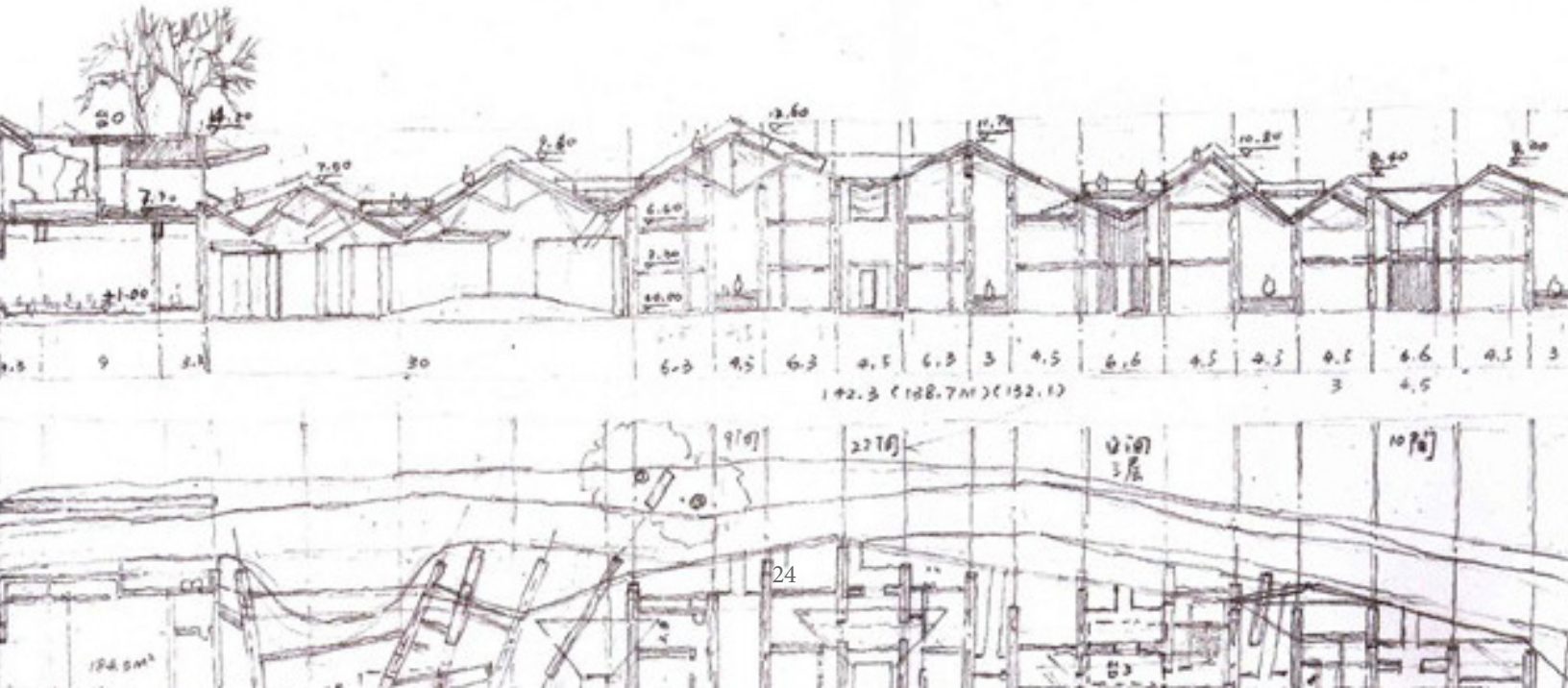
Querini Stampalia Foundation, Venice, 1949

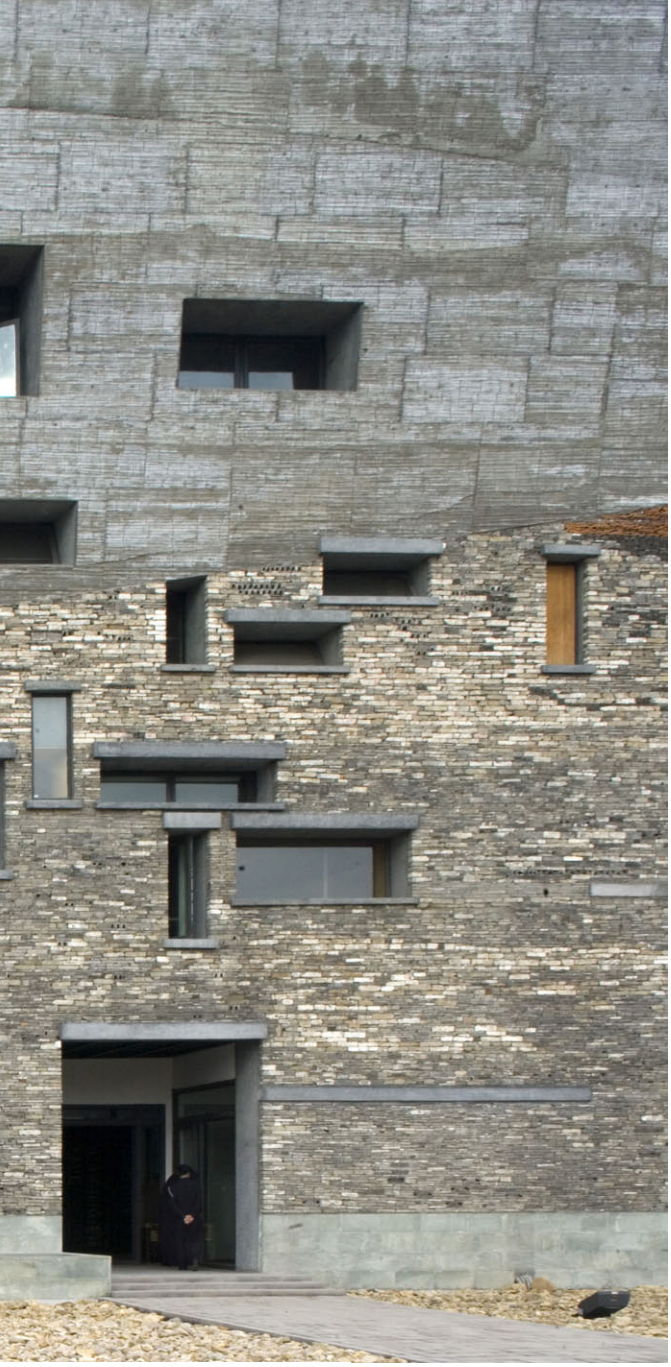
Carlo Scarpa (1906-1978)

In Carlo Scarpa's work, the accumulated meanings in history and the transcendental quality of water are well combined in an architectural language of stratification. Most of Scarpa's architecture locates in North Italy, especially in Venice. The urban context of Venice, like other historical cities, is composed of various historical layers. Adaptive process of rebuilding, using reclaimed materials, preserving and expanding old buildings are very common in Venice. The richness of textures and patterns in Venice impressed architects like John Ruskin and Carlo Scarpa. The stratification in Scarpa's works is expressed in plan, façade, pavement, detailing and his unique hand drawings. He masters the articulation between planar components in structure, the expression of spatial depth through incremental shifting of contours, the composition of different materials on architectural surface, and most impressively the use of water as a material in architecture.

Water is used as a medium of aging for Scarpa. It can be framed still as a mirror of the changing environment around. It can also leave visible traces upon the surface, resulting in a subtle gradient from the moist exterior to the interior. When connected with the canal in Venice, the color and level of water change, reflecting the change of seasons and weather. Water also transforms materials around it, adding rust to steel gates and moss to stone steps. The poetics of age and water intertwine in Scarpa's architecture. The ambience within it resembles Louis Kahn's work in terms of their deep solemn. But different from Kahn's permanent monolithic forms, Scarpa's works address the ephemeral aspect of time by overlapping and adapting to historical layers.

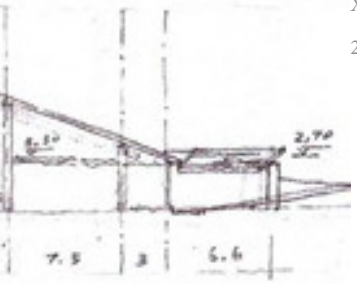
Ningbo Museum, Ningbo, 2008

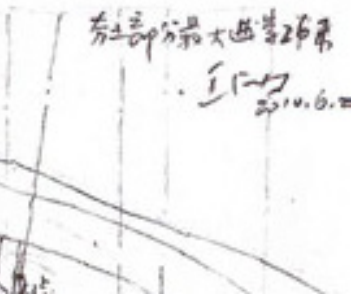




Xiangshan Campus, Hanghzou

2002-2004





Shu Wang (1963 - current)

Announced by the jury of Pritzker Architectural Prize, Shu Wang's work evoke the past without making direct references to history. As a native architect who never received foreign education, he claims that his architectural language comes from Chinese vernacular architecture and traditional Chinese paintings. The significance of Wang's architecture is not only in the field of cultural continuity but also his concern about redefining Chinese cultural identity in the rapid urbanization. His perspective is always from the grassroots, trying to find a place for their memory. One unique gesture in Wang's Ningbo Museum is the use of debris, such as bricks and tiles from demolished village housing, in the exterior façade of this fortress like building. This material is associated with the memory of common people, aggregated anonymously, forming a monumental public building. The metaphor of collective memory is also echoed by the program of the folk art museum sponsored by government. Through material and form, Wang's building records the story of the state and folk in this dynamic time.

The indirect reference to history in Wang's building is achieved by a combination of formal abstraction and material resemblance. In his Xiangshan Campus, Wang uses continuous pitched roof and enclosed courtyard for large public space. The scale change and abstraction of architectural motif are comparable to the "artificial mountains" in Chinese gardens, which form the analogy of natural mountains in an artificial context. The space are definitely modern, but can be related back to the past.


Water Lore
Wuqiao Arcobatic culture
Water Heritage
Grand Canal Waterway
New Water Architecture
Water Infrastructure
SNWTP Channel
Water Community
Wuqiao, Lianzhen

The Argument
New Water Architecture

The thesis develops a twofold argument for an inter-disciplinary water problem:
From the hydro-social and geo-political perspective, the thesis continues to investigate the question raised by Karl August Wittfogel and his successors: how can a centralized state use water infrastructure as an apparatus for coordination and political control and how the folk develop their own social norm and cultural custom in adaption to the state project? From the architectural and cultural-geographic perspective, it embraces the indeterminacy and duality of water metaphorically and materially, following Charles Moore's trajectory.

For the state-folk relationship in water infrastructure development, the SNWTP will be accepted as an underestimated resource that may generate cultural and environment benefits for the local communities. Instead of treating the water transfer project as a target of polemical speculation, it should be treated as an opportunity for adaptive and cooperative methods of development. As the symbol of tolerance and productivity, new water architecture for this old canal should bring reconciliation between farmers and local government through integration of cultural tourism and agriculture. The design of comprehensive water architecture also requires coordination in master planning, site planning and programming. It cannot be achieved solely from a top down or a bottom up approach, but from a series of act of calibration and tradeoffs.

For the use of water in architectural design, the new architecture should perform a key role in the water cycle and local public life. By actively introducing water into program and architectural space, the new water architecture should mend the split between productive and aesthetic roles of water in design. In the case of the Grand Canal in Wuqiao, it seeks to reestablish the relationship between local acrobatic cultural and activities along the historical canal. The architectural interventions spread along the water course will act as focal points on the cultural tour as well as local recreational space for villages around. In terms of materiality of water, the temporal effect, movement and ability of transforming other materials will be elaborated in a series of moments, which suggest the sense of "age" in a contemporary architectural language.

As a result, the thesis seeks to establish a mutual benefit relationship between the state and the folk by integrating cultural tourism in a water infrastructural development; And to develop a new water architecture which express the essence of temporality in materiality and stimulate the "living heritage" through community engagement.


National Level
the Grand Canal and SNWTP
Regional Level
Canal Corridor of Cangzhou
County Level
Wuqiao County
Rammed Earth Critical Levee at Huajiakou
Site Level
Circulation and Water System
Architectural Level
New Water Architecture
Human Level
Acrobatic Performance

The Methodology
Multi-scale Approach

The thesis is structured into a series of researches and designs in different territorial scales, ranging from site selection in national level to interactive performance in individual level. The multi-scale approach is crucial in the research of water and environmental governance. In social science, scale is not a "fixed, pre-given, or hierarchical" concept. It forms the basic framework where power dynamics and process of governance happen between different levels. However, unlike the decision in politics and public realms, design and planning process frequently encounter the problem of "scale gap". A "scale gap" can be a result of different design principles in each levels (practical vs. formal logic in planning and design) or incapability in resolving conflict demands from different parties(local residents vs tourists in cultural tourism). The thesis tries to develop a comprehensive project from analyzing the cross-level relationships and tensions. It starts with the larger scale and proceeds into smaller scales. However, it is not a linear process but a recursive one. Systematic decisions in larger scale are revisited and adjusted by programmatic needs and site limitations. For instance, the intended flowrate in historical waterway is estimated in national project requirements. It's later modified due to the estimation of water level rise in key site sections.

The researches and designs in the thesis include:

National level: Research of the Grand Canal heritage system; Research of the SNWTP East Route Project in terms of its social-ecological impact; Relationship of the two systems and site selection

Regional level: Research of Cangzhou region between Wuqiao and Lianzhen County; Research of existing problems in built environment and economy

County level: Research of heritage property and local acrobatic culture; Masterplan proposal for integrating cultural tourism into historical water way

Site level: Research of water diversion system; Proposal of water system and site planning

Architectural level: Proposal of new water architecture and landscape design

Qingkou Complex of the Grand Canal, Jiangsu

The National Scale Analysis
Encounter of Two Canals

The Grand Canal forms a vast inland waterway system in the north-eastern and central eastern plains of China, passing through eight of the country's present-day provinces. It runs from the capital Beijing in the north to Zhejiang Province in the south.

Constructed in sections from the 5th century BC onwards, it was conceived as a unified means of communication for the Empire for the first time in the 7th century AD (Sui Dynasty). This led to a series of gigantic worksites, creating the world's largest and most extensive civil engineering project ensemble prior to the Industrial Revolution. Completed and maintained by successive dynasties, it formed the backbone of the Empire's inland communications system. Its management was made possible over a long period by means of the Caoyun system, the imperial monopoly for the transport of grain and strategic raw materials, and for the taxation and control of traffic.

The system enabled the supply of rice to feed the population, the unified administration of the territory, and the transport of troops. The Grand Canal reached a new peak in the 13th century (Yuan Dynasty), providing a unified inland navigation network consisting of more than 2,000 km of artificial waterways, linking five of the most important river basins in China, including the Yellow River and the Yangtze. Still a major means of internal communication today, it has played an important role in ensuring the economic prosperity and stability of China over the ages.

-World Heritage List Description

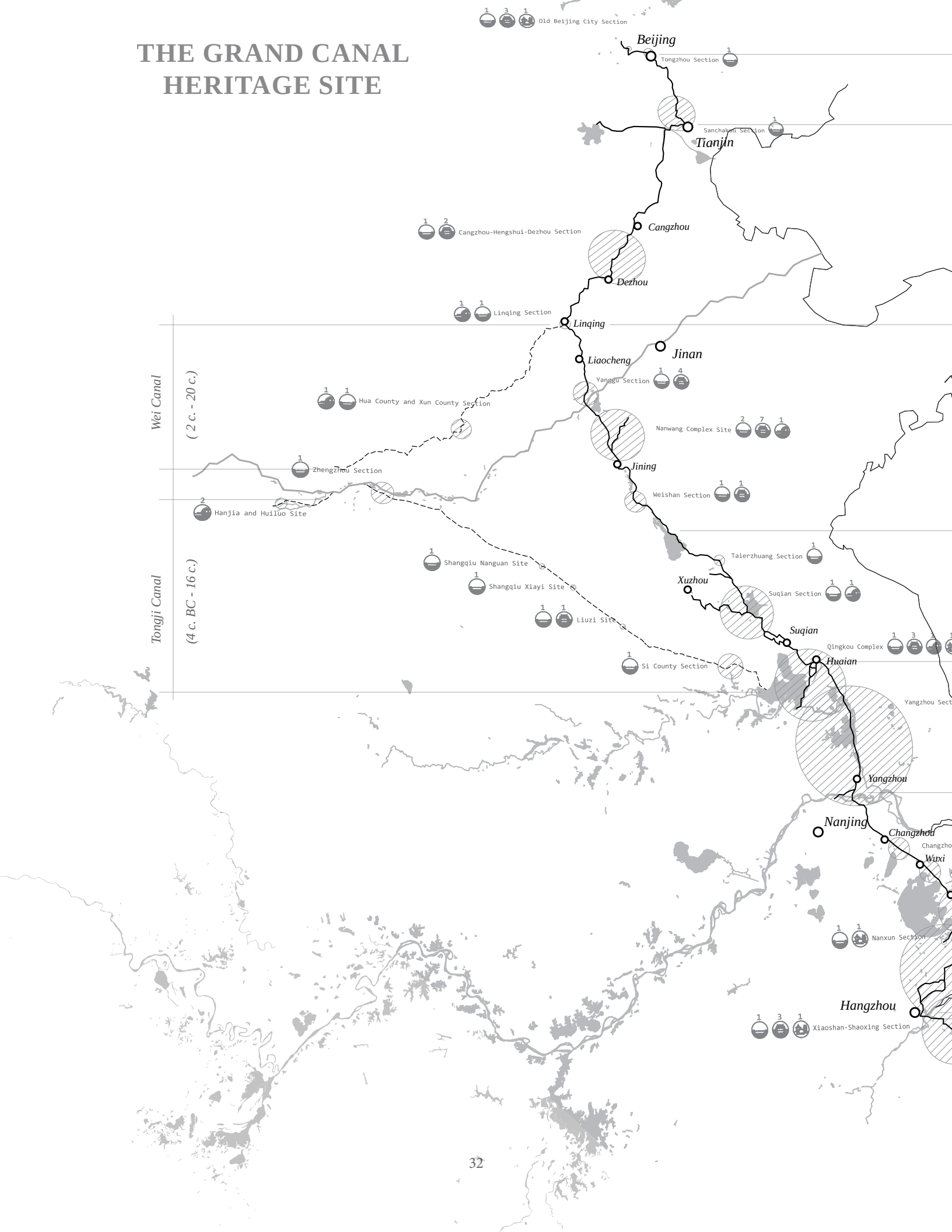
The South to North Water Transfer Project includes three water transfer projects, i.e. Western Route Project (WRP) and Middle Route Project (MRP) and Eastern Route Project (ERP) will divert water from upper, middle, and lower reaches of Changjiang River respectively, to meet the developing requirements of Northwest and North China.

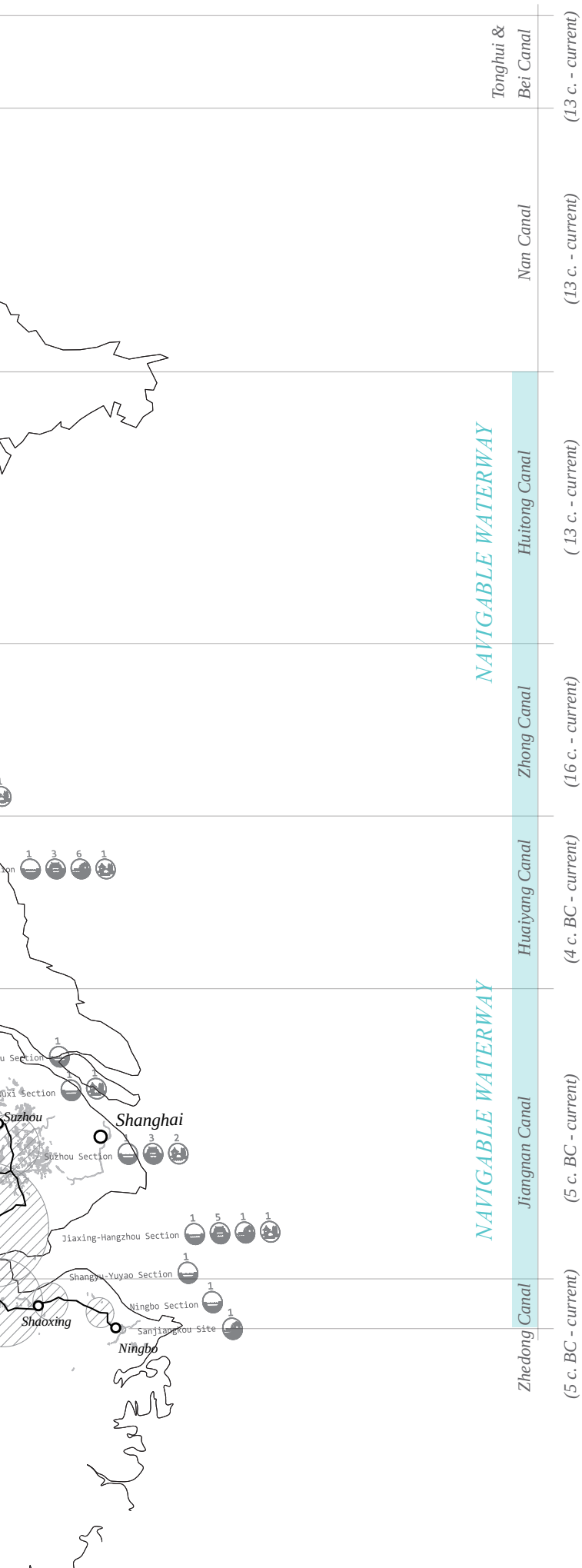
The Eastern Route Project diverts water from the lower reach of Changjiang north to supply water for the eastern Huang-Huai-Hai Plain with the termination in Tianjin City by raising water in stages through Beijing-Hangzhou Grand Canal. The ERP completed will basically solve the problems in shortage of water resources in Tianjin Municipality, Heilonggang and Yundong regions in Hebei Province, north and southwest and part of Jiaodong Peninsula of Shandong Province, and make the supplying water for Tianjin available, consequently prompting economic development of Bohai Sea area and eastern Hulang-Huai-Hai Plain, and improving the environment deteriorated from the shortage of water.

ERP will ensure the annual navigation from Jining to xuzhou on Beijing-Hangzhou Grand Canal, and make two commodity grain bases in Western Shandong and Northern Jiangsu strong and developed.

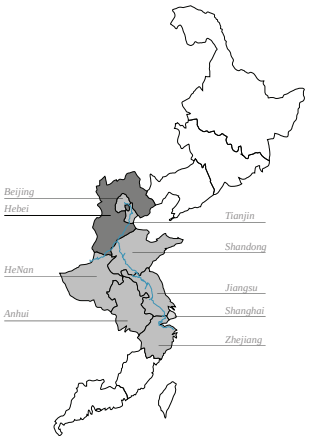
-Office of the South to North Water Transfer Project Commision

THE GRAND CANAL HERITAGE SITE

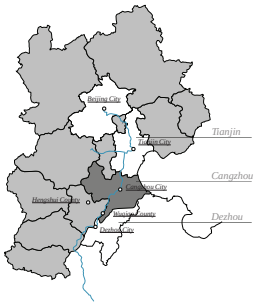




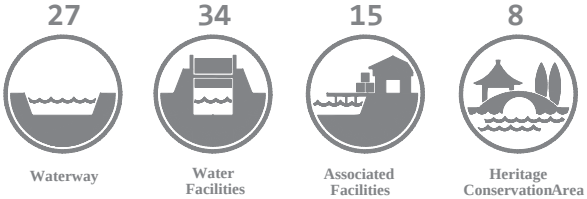
NATIONAL MAP OF SITE



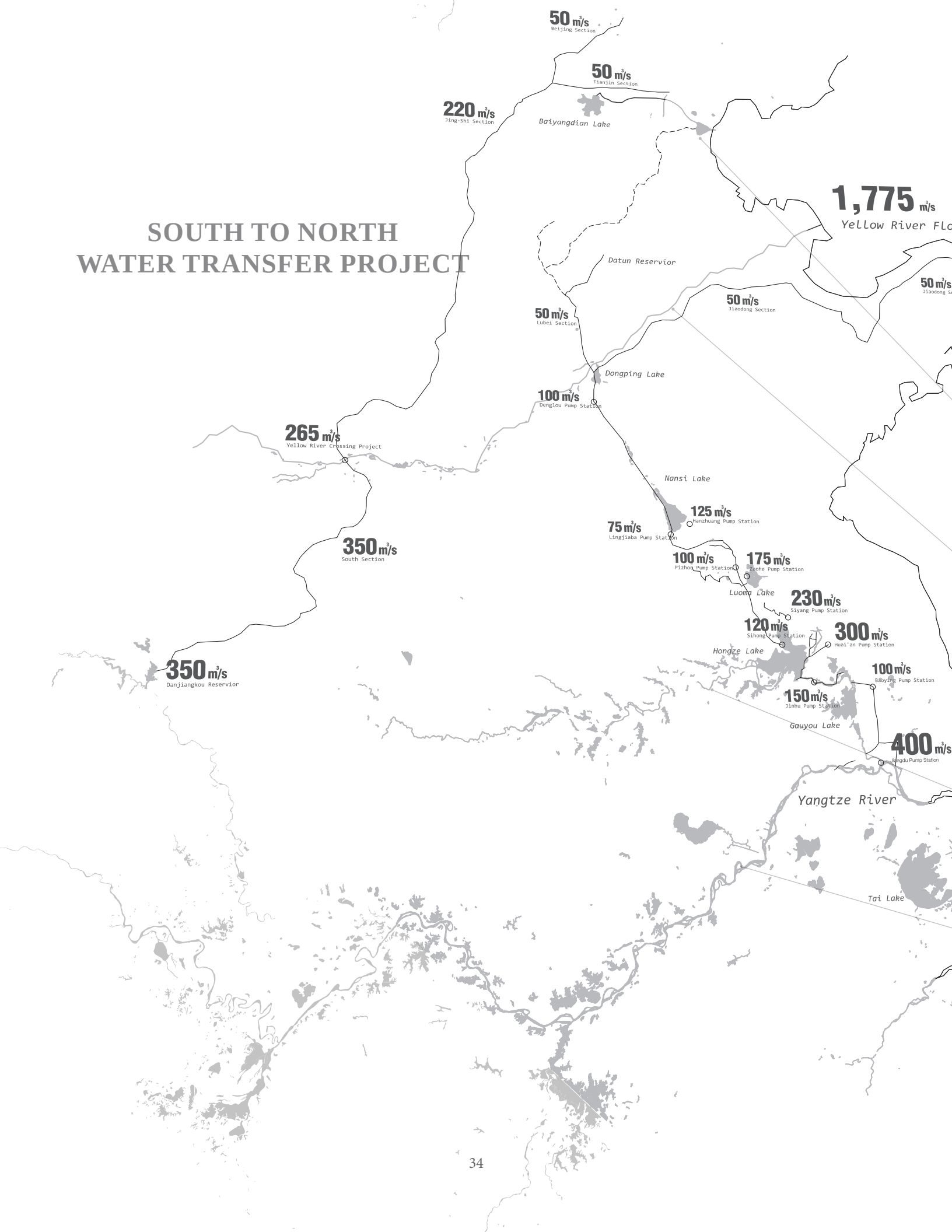
REGIONAL MAP OF SITE



PROVINCIAL MAP OF SITE



SOUTH TO NORTH WATER TRANSFER PROJECT



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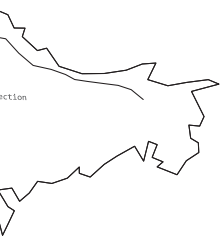
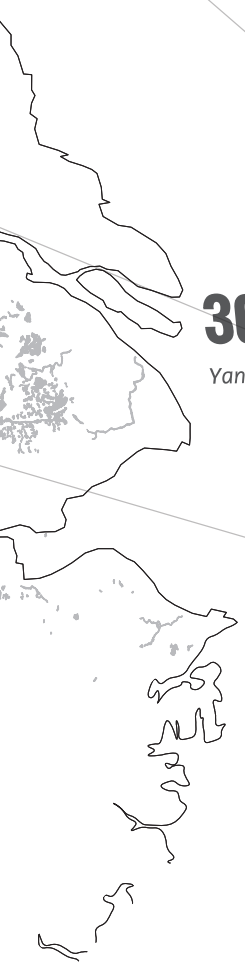
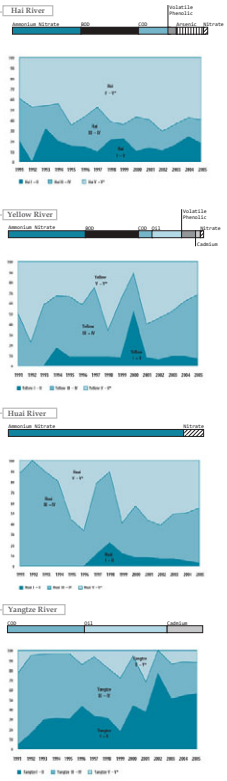




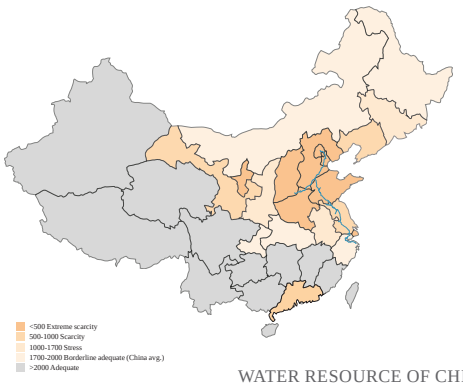
30,000 m³/s

Yangtze River Flowrate



WATER QUALITY IN WATERSHED

Environmental Quality Standard [GB3838-2002]



WATER RESOURCE OF CHINA

WATERSHED MAP OF CHINA

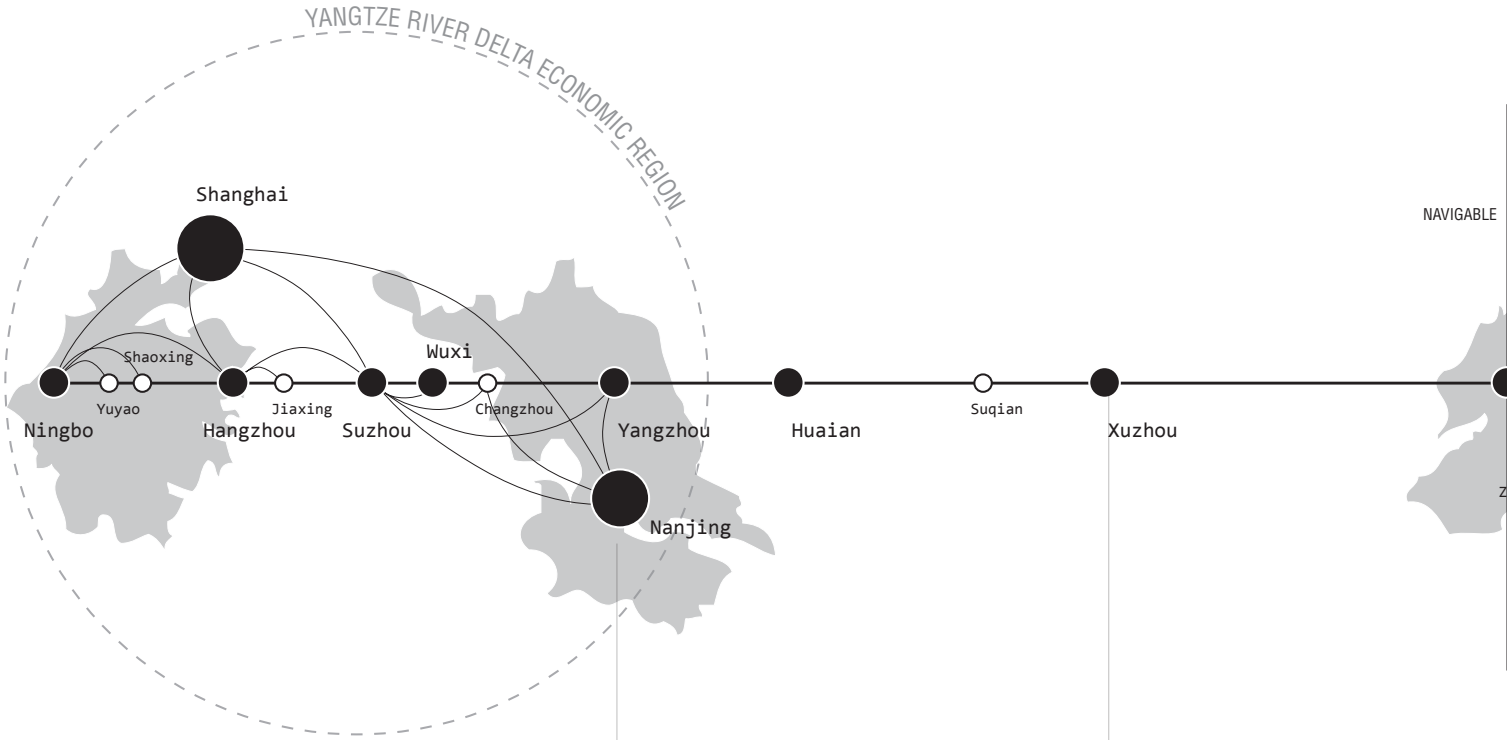
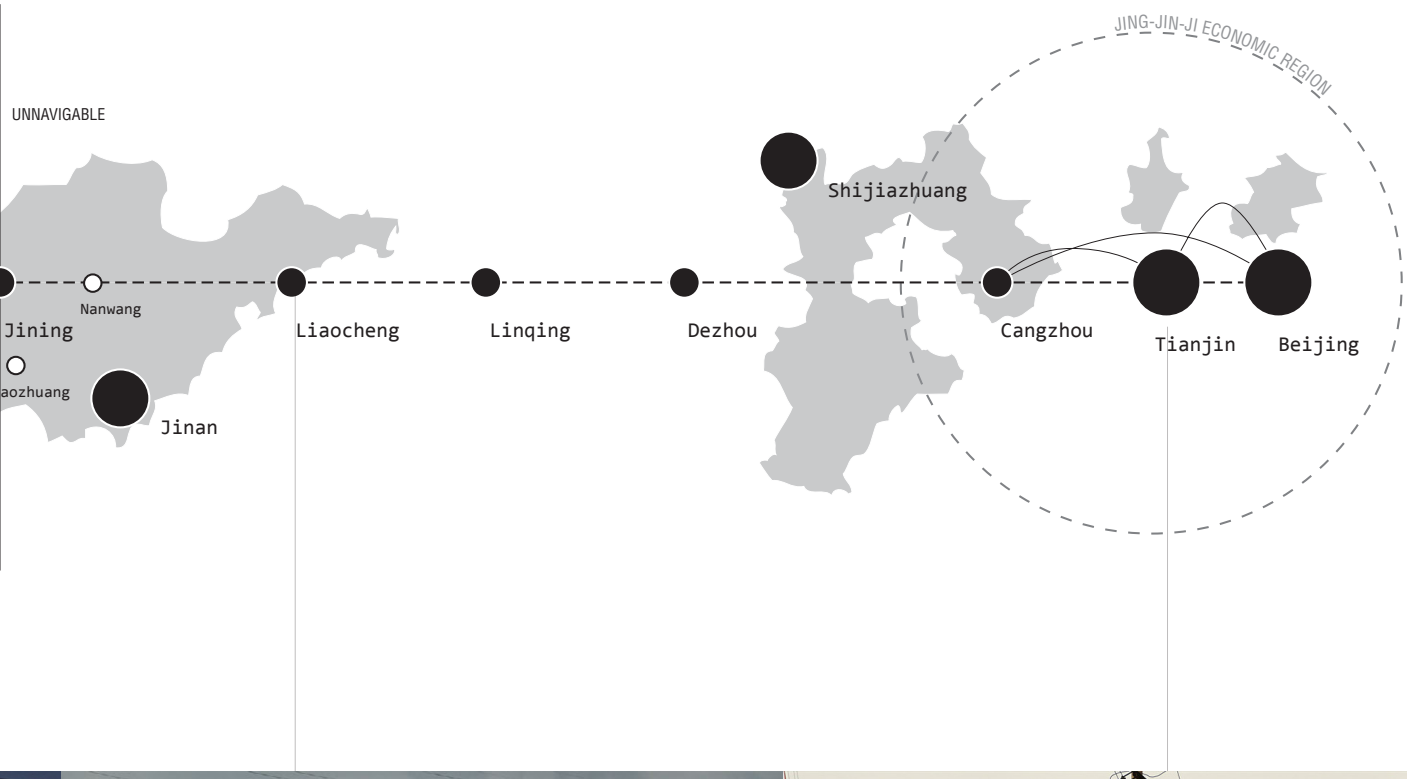
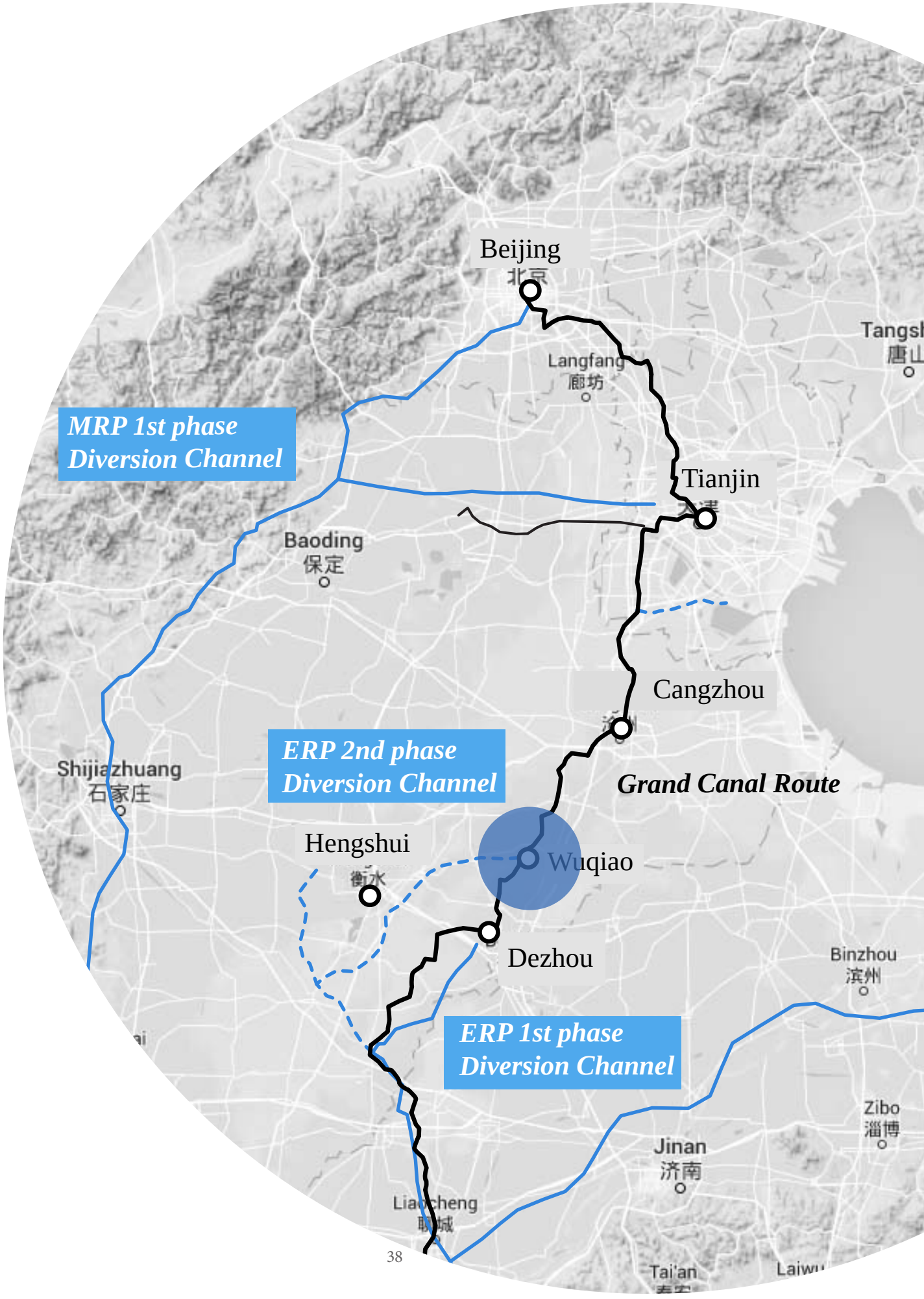

YANGTZE RIVER DELTA ECONOMIC REGION
Shanghai
Shaoxing
Yuyao
Ningbo
Hangzhou
Jiaxing
Suzhou
Wuxi
Changzhou
Yangzhou
Nanjing
Huaian
Suqian
Xuzhou
NAVIGABLE

Diagram of cities and regional economy along the canal



Since the construction of the Grand Canal in Yuan Dynasty, it has been the crucial route of water transport in East China plains. Cities along the canal has benefited from the grain trade from south to north. Water from the canal is also used as source of irrigation and domestic use. However, due to natural disasters and lack of maintenance in last century, the northern section of the Grand Canal is not navigable any more. The southern section suffers from heavy domestic pollution and over use of water from industries. Photo journalists recorded the contrast between rapid urbanization and the deterioration of the canal as an organic part of the city. On the relatively less polluted section, the canal becomes an attraction for real estate developers who take advantage of the "river view" in high-end residential development. The Grand Canal is losing its association with public life and local culture.


Beijing
北京
Langfang
廊坊
Tangsh
唐山
MRP 1st phase
Diversion Channel
Tianjin
Baoding
保定
Cangzhou
ERP 2nd phase
Diversion Channel
Grand Canal Route
Shijiazhuang
石家庄
Hengshui
衡水
Wuqiao
Dezhou
Binzhou
滨州
ERP 1st phase
Diversion Channel
Zibo
淄博
Jinan
济南
Liaocheng
聊城
Tai'an
Laiwu

Site Selection

The East Route Project (ERP) of SNWTP has the biggest impact on the Grand Canal. It starts from the dense-populated economic center of Yangtze River estuary, runs across several major rivers in East China Plain and provide water to the economic center in North China Plain. The water is extracted at Yangtze River near Yangzhou and transferred through existing waterways to reduce the construction cost for new canal. However, the middle section of this route has a higher altitude (65m) than the two ends. Thirteen levels of pump stations are set to pump water uphill until it can flow northward under gravity. This energy intensive process raises the price of transferred water as it reaches further north. Construction of new municipal water supply network and related facilities also add to the price and makes it uneconomical for agricultural and household use in some cities.

Due to the reason mentioned above, the first phase of ERP stops at Dezhou City. The second phase of ERP originally plans to use the dry historical waterway of the Grand Canal from Wuqiao County up to Tianjin City. The conflict between modern water infrastructure and heritage preservation is not resolved in that plan. The thesis will choose Cangzhou section of the Grand Canal (from Wuqiao to Lianzhen) for further investigation.

The Regional Scale Analysis
Cangzhou and Acrobatic Culture

Cangzhou Section belongs to Nan Canal, which runs between Linqing and Tianjin. Due to the seasonal precipitation difference, there's a great difference in water flow between abundant and shortage period. To solve the problems caused by great difference in water flow, coves were made to regulate the slope of the water surface of the waterways and slow down the flow for shipping. In this way, the hydraulic characteristics of the waterways were regulated without building any lock. With many curves, water erosion in the curved sections frequently causes the collapse of the levees. Xiejia Dam of Lian Town and Rammed Earth Critical Levee at Huajiakou are the only two rammed earth dams on the Nan Canal, the typical representatives of the Grand Canal's riverbank flood protection facilities. The two dams are all rammed constructions with lime soil and glutinous rice paste in layers, rubble cushion under the rammed earth, and the base is the cedar wood pile in the original earth.

Built in the 19th century (last period of Qing Dynasty), Xiejia Dam of Lianzhen was located on the east bank of the Southern Canal near to the junction of the Fouth Street and Fifth Street in Lianzhen Town. The dam was 218 meters long and over 3.2 meters high. In 2002, the dam was discovered in the investigation of the Grand Canal organized by the Cultural Relics Institute of Hebei Province. The existing dam has good stability, although part of it has weathered.

Rammed Earth Critical Levee at Huajiakou was built in the south of Huajiakou Village, in the first year of the Republic of China (1912). The dam is 250 meters long, and part of it has weathered. Though it suffered several great floods, most parts of the main structure still remain. Currently it's used as a flood discharge. The flood control capacity of this waterway has been enhanced through dredging, widening, straightening and embankment reinforcement.

Historically, Cangzhou region had unique cultural links with the Grand Canal. Cangzhou has a long tradition of martial arts practice and it was famous for providing security companies for merchant groups travelling on the Grand Canal. Today martial art still survives in the form of acrobatic arts. Wuqiao County in Cangzhou region is the center of acrobatic art in China. As early as 13th century, the street performers from Wuqiao followed the merchants and workers to trade nodes along the Grand Canal. The emergence of settlements along the canal and the frequent flow of trade provided places and customers for street performers. As mentioned in folk rhyme, it was very common for farmers in Wuqiao to perform acrobatics as a side occupation after the harvest.

Aerial Photograph of Grand Canal Cangzhou Section

Visited in Auguest 23rd -27th, Location of visited places

The 33 kilometre canal corridor starts from Wuqiao in the south and ends at Lianzhen in the north. Those two are the large counties in this region. A railway and a state road (G101) run between them. About 30 small villages scatter alongside the meandering canal on the flat plain. Agriculture is still dominant in the rural economy but fewer remain to work in the field for the scant income. Life in the counties is better with public amenity and local markets. Wuqiao has an acrobatic park for its cultural tourism and Lianzhen has a local market for agricultural product and machinery. However, both counties and villages have their own problems which are treated separately. By studying the problem in current built environment, the thesis aims to use the historical canal to form a regional system. The system will extend active programs from the two towns to the rural area in order to revitalize the villages. Three scenarios are selected: the acrobatic theme park in Wuqiao Town, the Huajiakou Village with one heritage site and Lianzhen Town with the second heritage site. Other cities/towns along the Grand Canal of China are studied as references.

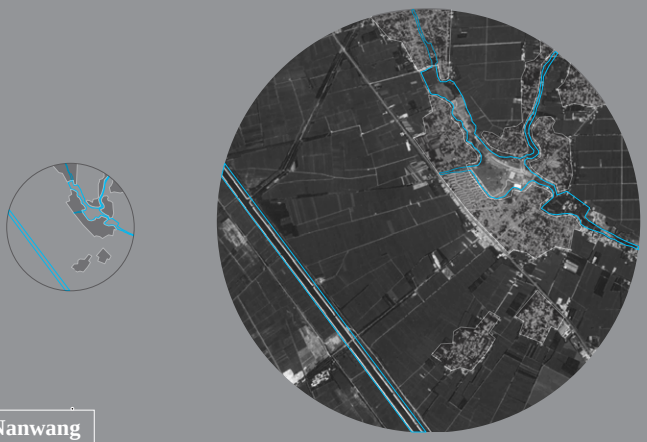
CITIES ALONG THE GRAND CANAL

Yangzhou

It is one of the sections with the longest service time, witnessing the changes of river and lake systems along the Canal and the change of shipping via lake at the beginning of the Canal and gradually separating from natural water system later.


Caojiayuan
Anling Nanjie
Anling
to JingXian
Sujiachang
Xiao
Dongbao
SCENE 2 - A VILLAGE
Disitun
Huajiakou
HERITAGE SITE
to JingXian
Yuquanzhuang
SCENE 1 - A THEME PARK
Songjiayuan
Diba Beipai
Diqi Beipai
Sangyuan Nanjie
Wuqiao
Jingzhuang
to Dezhou

CITIES ALONG THE GRAND CANAL

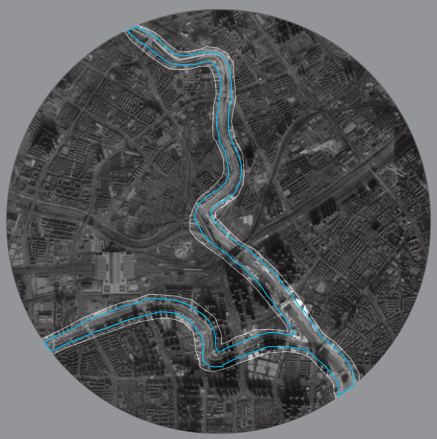


Nanwang

It is a large scale water conservancy complex built to solve the difficulties for the canal to cross the water ridge, as one of the nodes with best scientific and technological value on the Grand Canal

Cangzhou

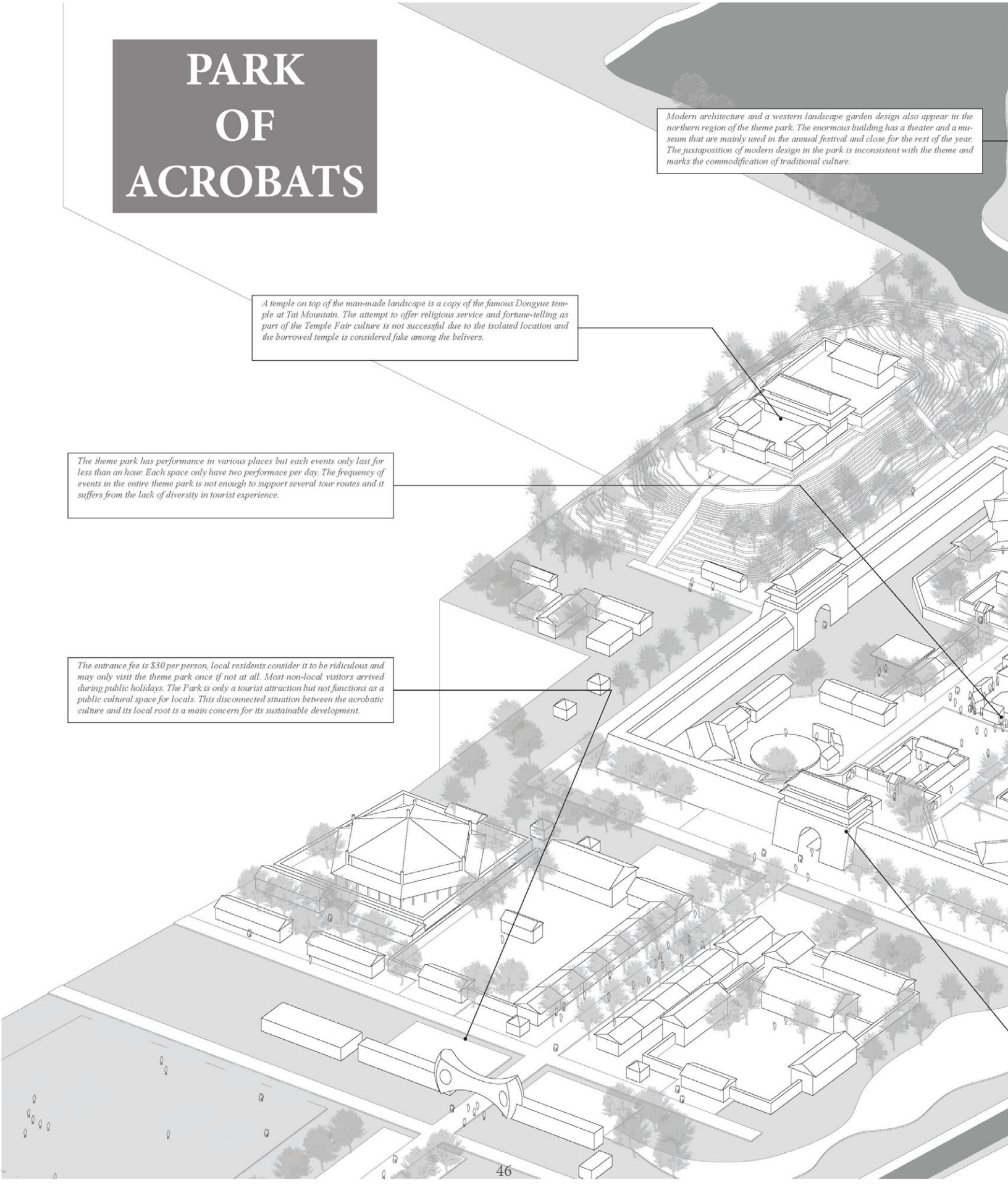
Cangzhou section belongs to Nan Canal in Heibei Province. This section runs between two small cities: Wuqiao and Lianzhen. As a techique of controling water flowrate, the canal meanders through the agricultrual lands and sacttered villages on the plain.



Tianjin

One of the typical sections of city canal in the north, at the connection of Nan Canal and Bei Canal, and a node witness the marine and Caoyun transit. Tianjin is also the final destination on the proposed South to North Water Diversion Project East Route.

PARK OF ACROBATS

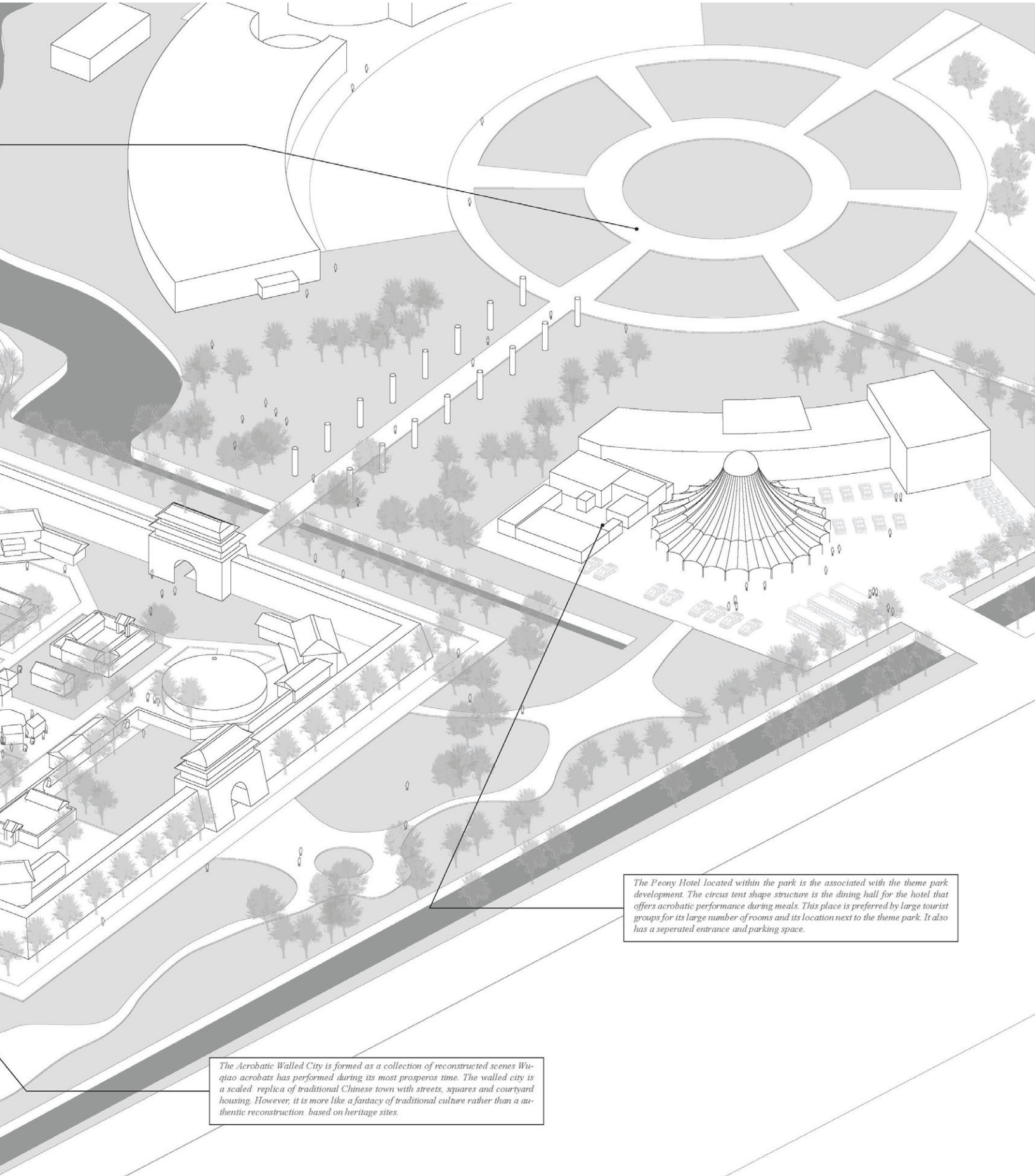


Modern architecture and a western landscape garden design also appear in the northern region of the theme park. The enormous building has a theater and a museum that are mainly used in the annual festival and close for the rest of the year. The juxtaposition of modern design in the park is inconsistent with the theme and marks the commodification of traditional culture.

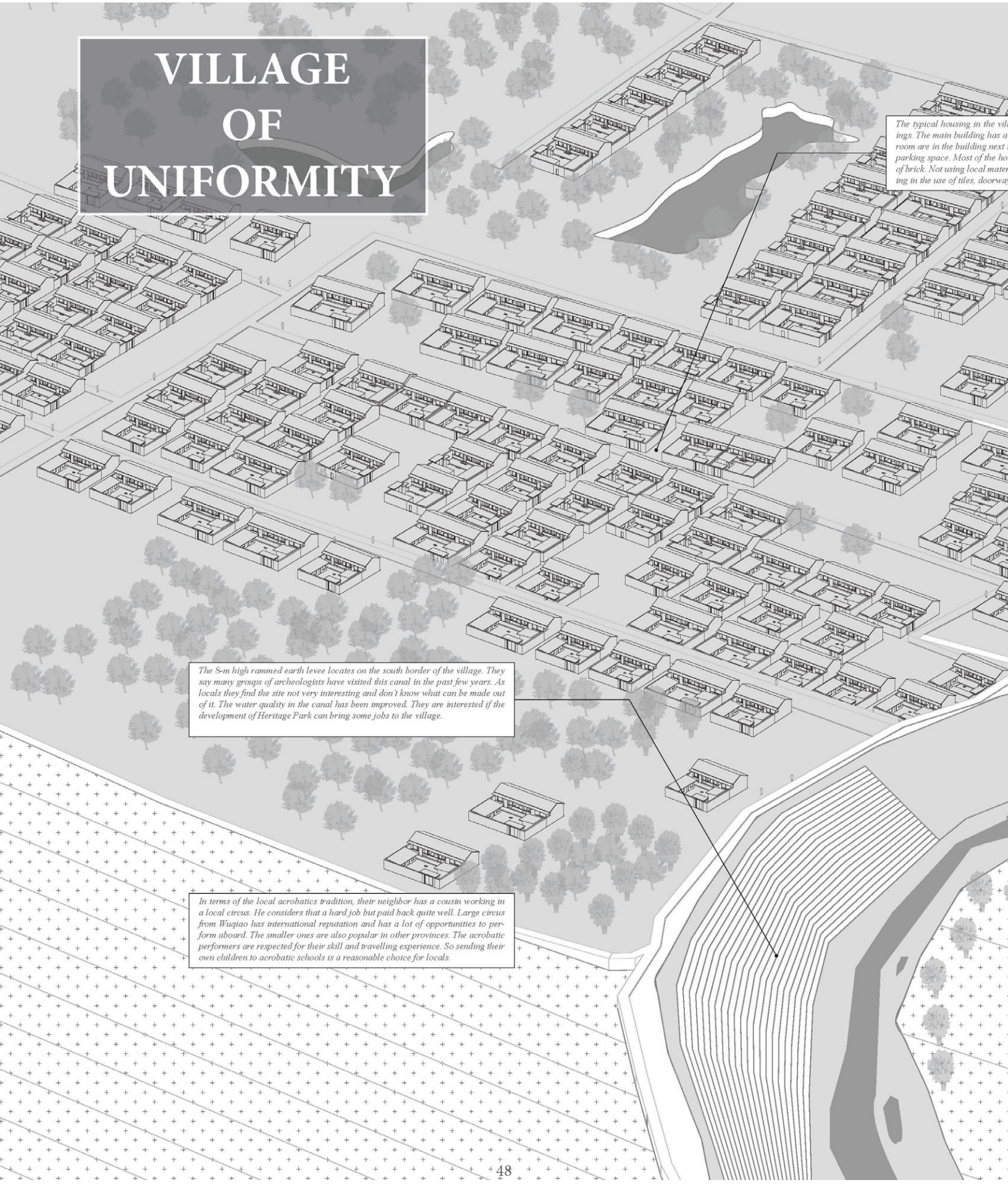
A temple on top of the man-made landscape is a copy of the famous Dongyue temple at Tai Mountain. The attempt to offer religious service and fortune-telling as part of the Temple Fair culture is not successful due to the isolated location and the borrowed temple is considered fake among the belivers.

The theme park has performance in various places but each events only last for less than an hour. Each space only have two performace per day. The frequency of events in the entire theme park is not enough to support several tour routes and it suffers from the lack of diversity in tourist experience.

The entrance fee is $30 per person, local residents consider it to be ridiculous and may only visit the theme park once if not at all. Most non-local visitors arrived during public holidays. The Park is only a tourist attraction but not functions as a public cultural space for locals. This disconnected situation between the acrobatic culture and its local root is a main concern for its sustainable development.


The Peony Hotel located within the park is the associated with the theme park development. The circus tent shape structure is the dining hall for the hotel that offers acrobatic performance during meals. This place is preferred by large tourist groups for its large number of rooms and its location next to the theme park. It also has a seperated entrance and parking space.
The Acrobatic Walled City is formed as a collection of reconstructed scenes Wuqiao acrobats has performed during its most prosperos time. The walled city is a scaled replica of traditional Chinese town with streets, squares and courtyard housing. However, it is more like a fantacy of traditional culture rather than a authentic reconstruction based on heritage sites.

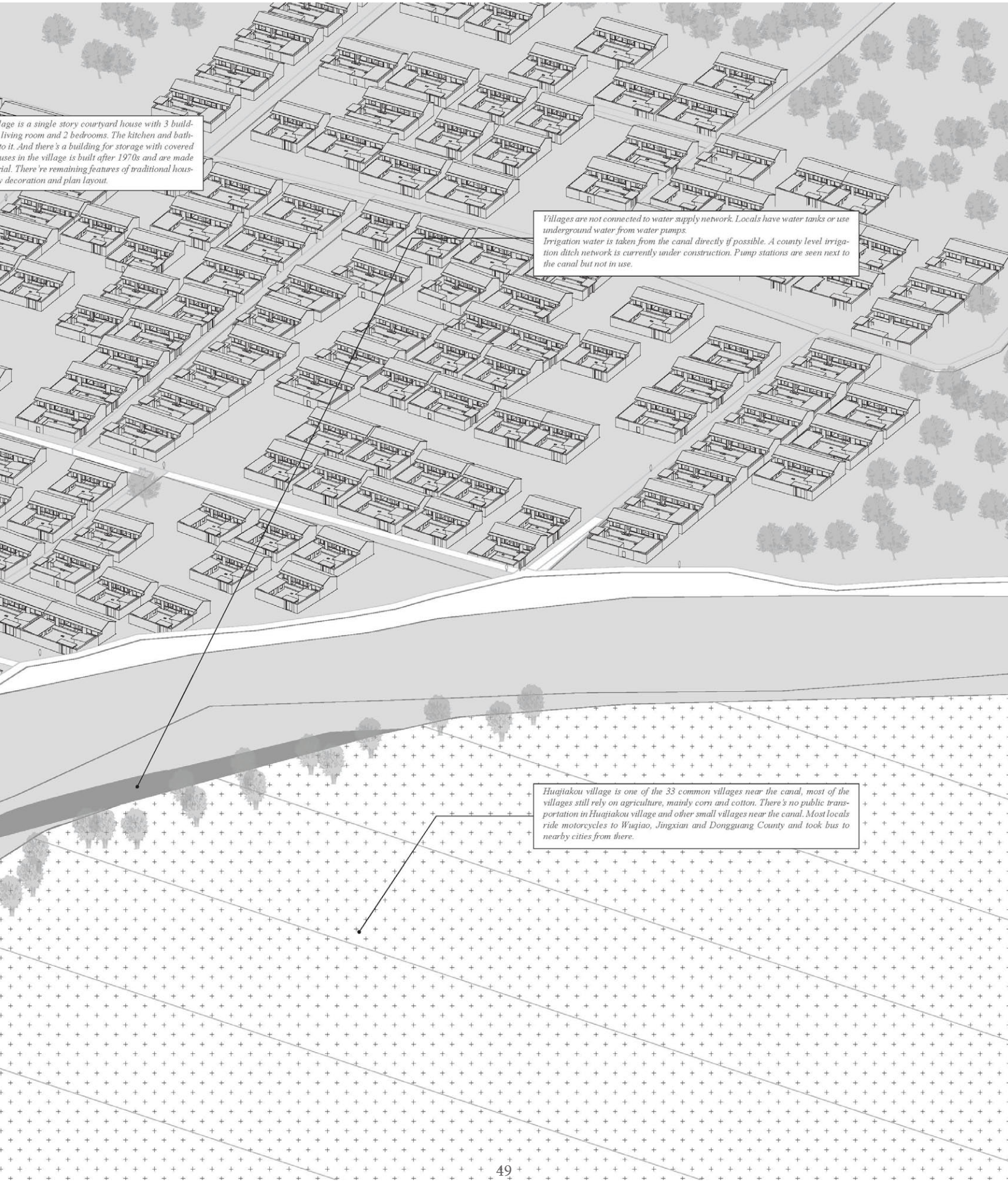
VILLAGE OF UNIFORMITY



The typical housing in the vil
ings. The main building has a
room are in the building next
parking space. Most of the ho
of brick. Not using local mater
ing in the use of tiles, doorwa

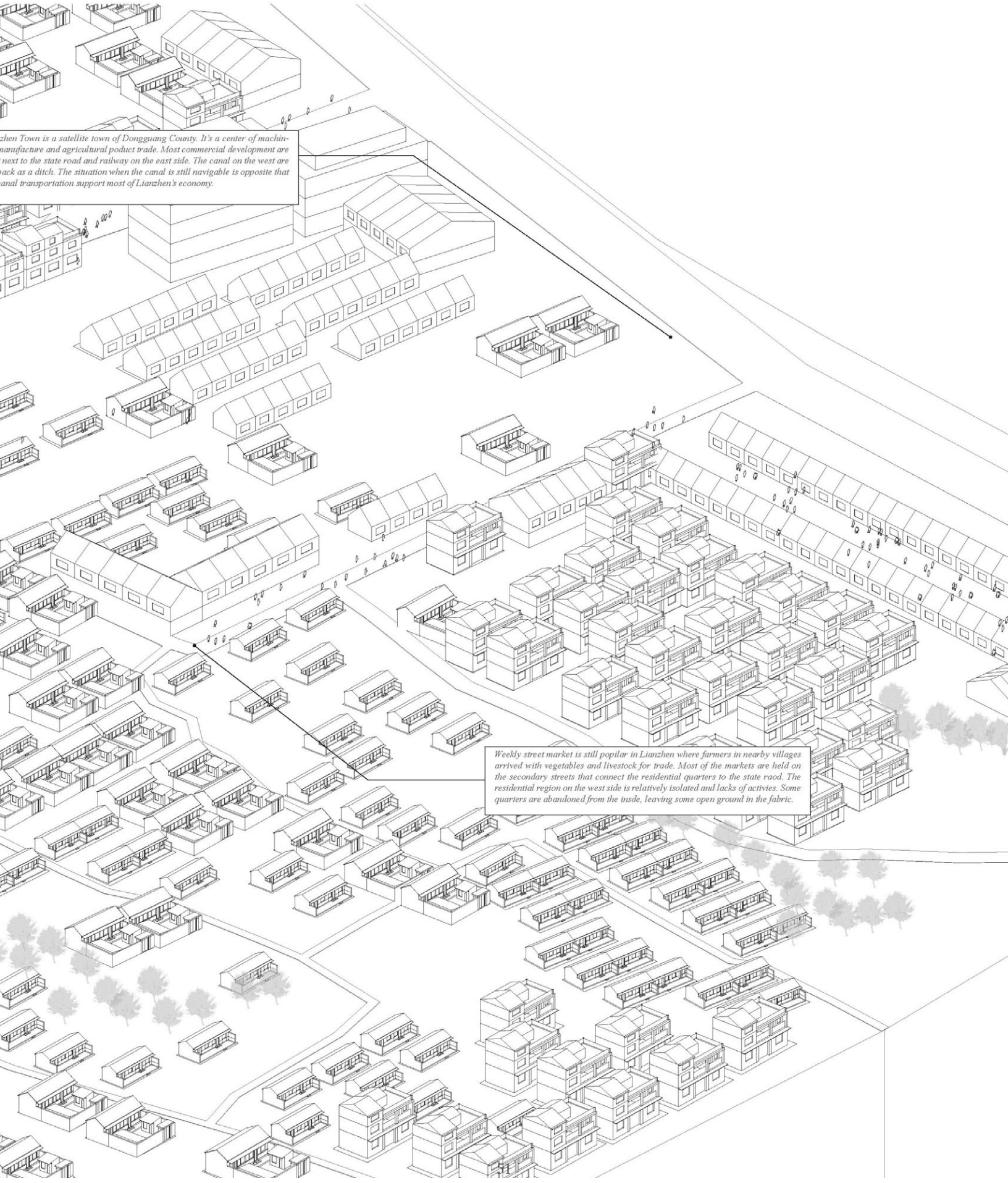
The 8-m high rammed earth levee locates on the south border of the village. They say many groups of archeologists have visited this canal in the past few years. As locals they find the site not very interesting and don't know what can be made out of it. The water quality in the canal has been improved. They are interested if the development of Heritage Park can bring some jobs to the village.

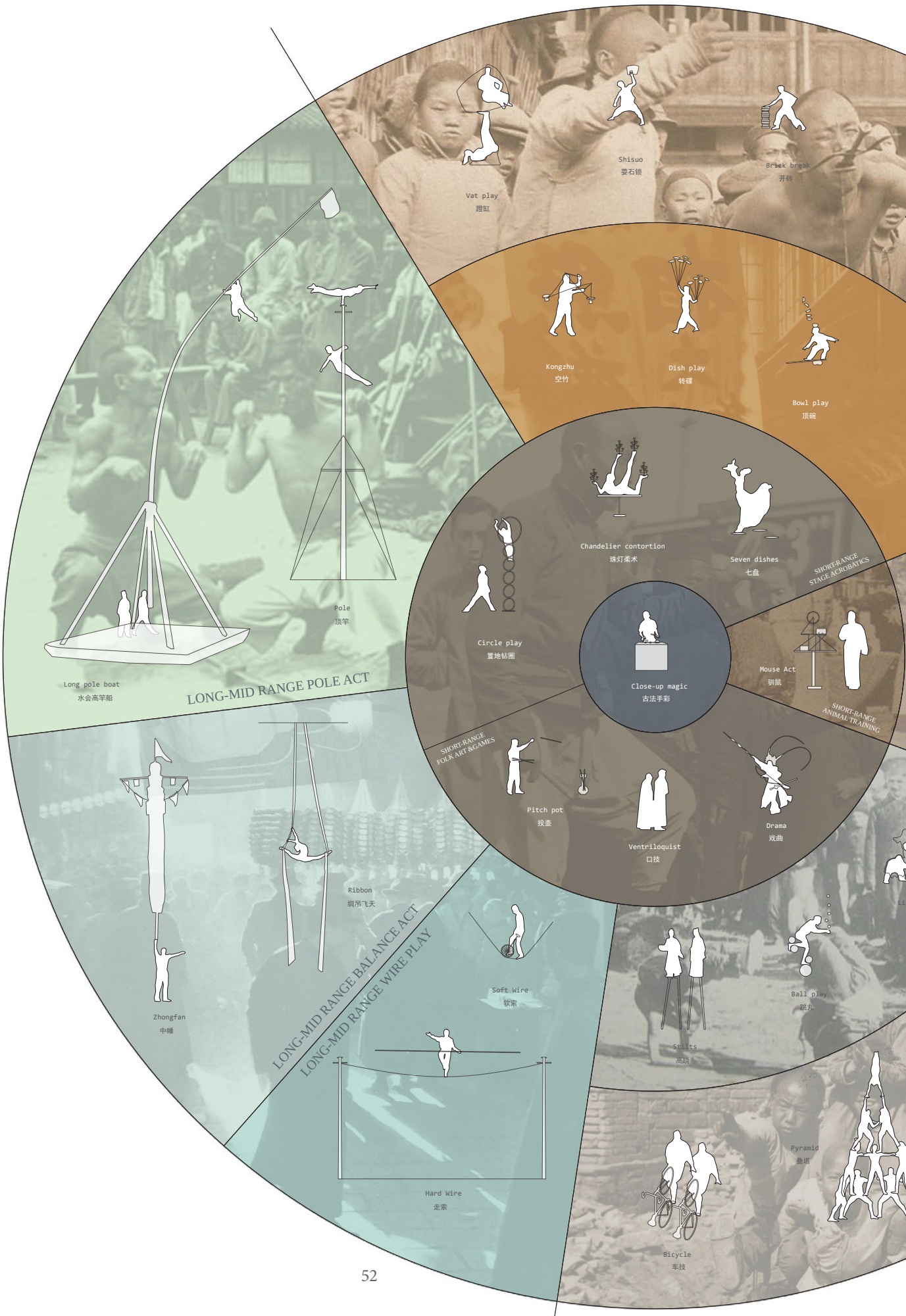
In terms of the local acrobatics tradition, their neighbor has a cousin working in a local circus. He considers that a hard job but paid back quite well. Large circus from Wuqiao has international reputation and has a lot of opportunities to perform aboard. The smaller ones are also popular in other provinces. The acrobatic performers are respected for their skill and travelling experience. So sending their own children to acrobatic schools is a reasonable choice for locals.

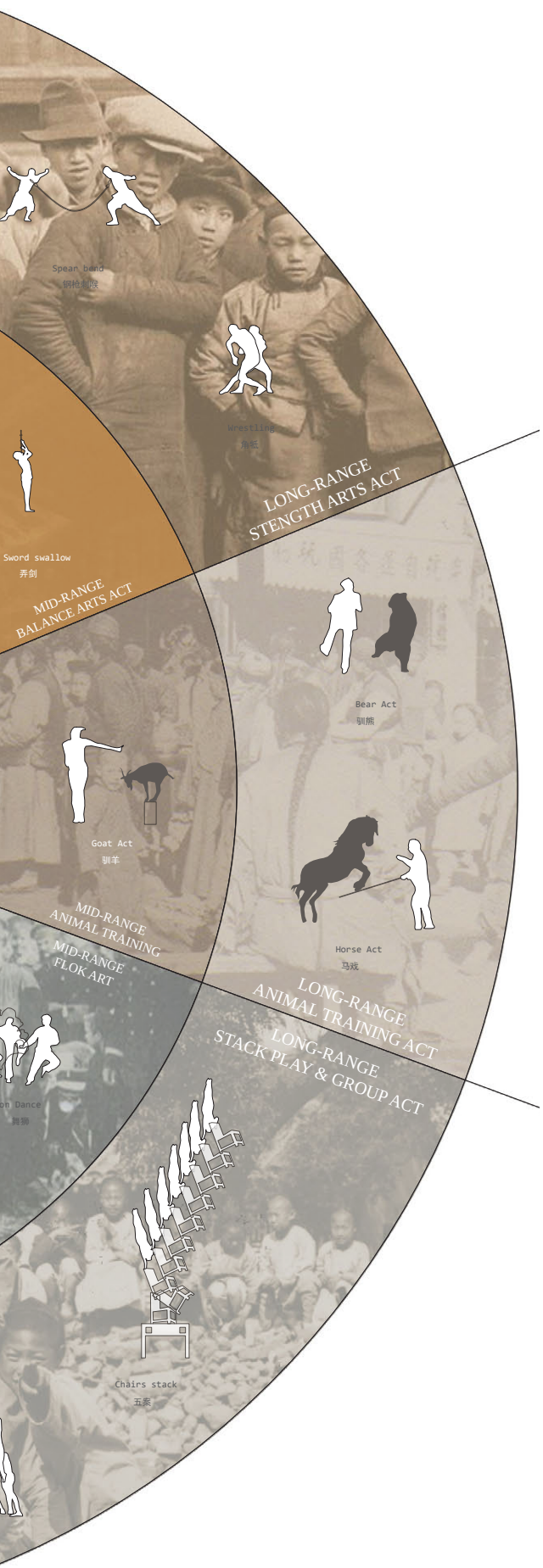

lage is a single story courtyard house with 3 build-
living room and 2 bedrooms. The kitchen and bath-
to it. And there's a building for storage with covered
uses in the village is built after 1970s and are made
rial. There're remaining features of traditional hous-
decoration and plan layout.
Villages are not connected to water supply network. Locals have water tanks or use underground water from water pumps.
Irrigation water is taken from the canal directly if possible. A county level irrigation ditch network is currently under construction. Pump stations are seen next to the canal but not in use.
Huajiakou village is one of the 33 common villages near the canal, most of the villages still rely on agriculture, mainly corn and cotton. There's no public transportation in Huajiakou village and other small villages near the canal. Most locals ride motorcycles to Wuqiao, Jingxian and Dongguang County and took bus to nearby cities from there.

TOWN OF SEPERATION

The canal site between the town and two nearby villages suffers from domestic waste and lack of attention. Vacant houses along the canal are observed and available for potential adaptive re-use. Public transportation, road connectivity and water infrastructure in this town are better than nearby villages, offering oppotunities for larger scale develpments.


zhen Town is a satellite town of Dongguang County. It's a center of machin-
manufacture and agricultural poduct trade. Most commercial development are
next to the state road and railway on the east side. The canal on the west are
ack as a ditch. The situation when the canal is still navigable is opposite that
anal transportation support most of Lianzhen's economy.
Weekly street market is still popilar in Lianzhen where farmers in nearby villages arrived with vegetables and livestock for trade. Most of the markets are held on the secondary streets that connect the residential quarters to the state raod. The residential region on the west side is relatively isolated and lacks of activies. Some quarters are abandoned from the insde, leaving some open ground in the fabric.


Vat play
蹬缸
Shisuo
耍石锁
Brick break
开砖
Kongzhu
空竹
Dish play
转碟
Bowl play
顶碗
Chandelier contortion
珠灯柔术
Seven dishes
七盘
SHORT-RANGE STAGE ACROBATICS
Circle play
置地钻圈
Close-up magic
古法手彩
Mouse Act
驯鼠
SHORT-RANGE ANIMAL TRAINING
SHORT-RANGE FOLK ART &GAMES
Pitch pot
投壶
Ventriloquist
口技
Drama
戏曲
Pole
顶竿
Long pole boat
水会高竿船
LONG-MID RANGE POLE ACT
Ribbon
绸吊飞天
Zhongfan
中幡
LONG-MID RANGE BALANCE ACT
Soft Wire
软索
LONG-MID RANGE WIRE PLAY
Hard Wire
走索
Ball play
蹦丸
Stilts
高跷
Pyramid
叠塔
Bicycle
车技

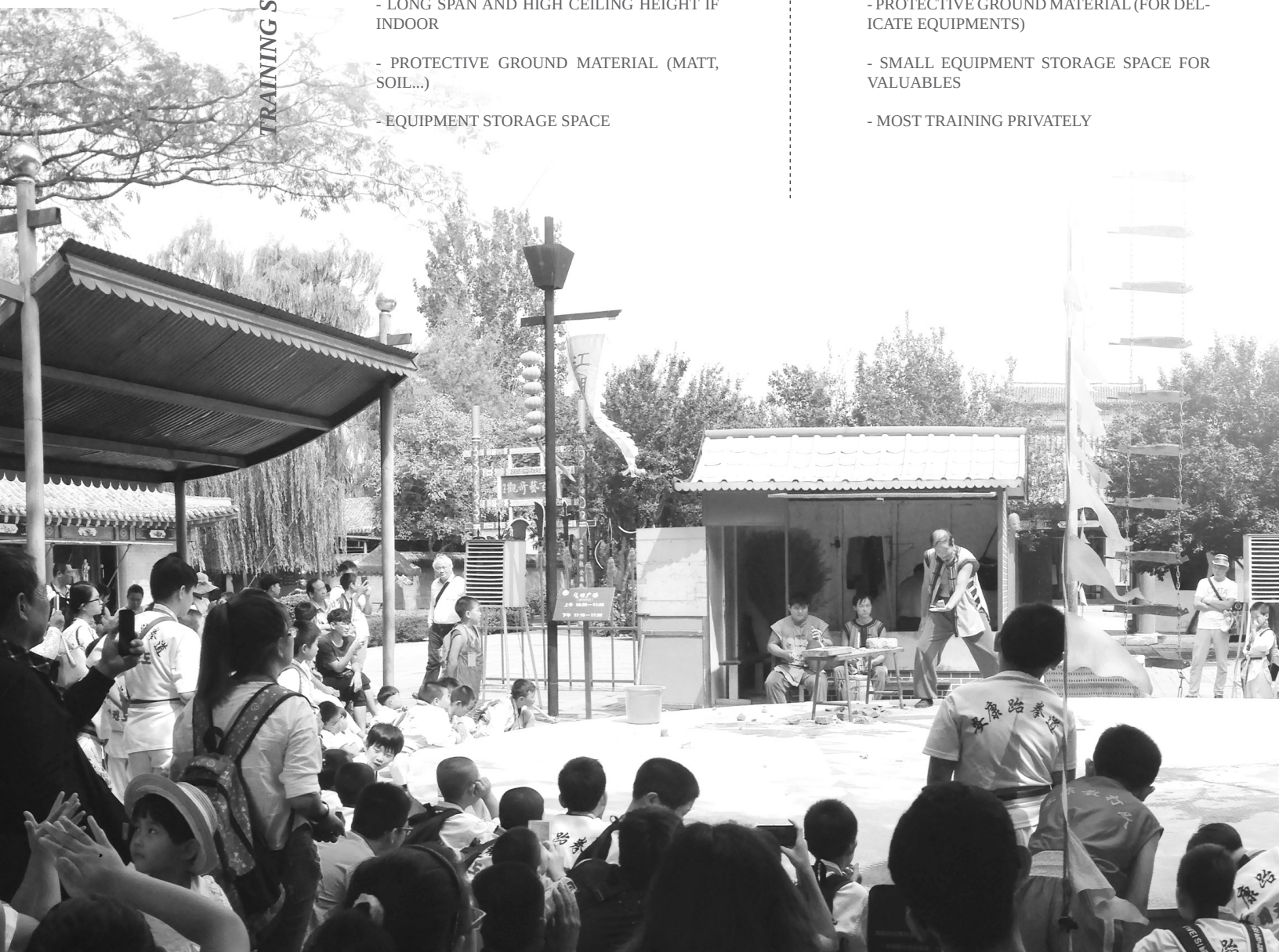


Baixi: "Hundred Trick Art"

Wuqiao is the centre of traditional acrobatic art in China. The early performers were farmers who practiced martial-arts. They occasionally performed at local ceremonies and rituals for extra money. Since the Grand Canal became a busy trade route, acrobatic performers travelled with merchants to large cities along the canal (Tianjin, Nanjing, etc.). They travelled in small groups formed by family members and travelled with light equipment. Compared with western circus which travelled with large caravans and animals, Wuqiao acrobatic performance was much versatile in spatial requirements and logistics. In the 20th century, some of the acrobatic performers went aboard and brought new techniques (bicycle act, for instance) into traditional acts.

In the analysis, the acts are organized by their types and spatial requirement between performer and audience. From the perimeter to the centre of the ring diagram, the required viewing distance or performance space is getting smaller. Besides the distance, each type of acts have specific programmatic requirement for performance space and training space. The information for that is listed as a chart on the following page. This programmatic analysis of acrobatic acts will lead to proposals to integrate water, canal site and acrobatic performance.

	TYPE - I	TYPE - II
	AERIAL	**ACROBATIC**
PERFORMANCE SPACE	- LONG RANGE TO MID RANGE VIEWING DISTANCE - BUFFER ZONE FOR AUDIENCE - STREET OR STAGE PERFORMANCE - STRUCTURE FRAME OR EQUIPMENTS - PERFORMER NEEDS TO REST BETWEEN PERFORMANCES - USED AS CLIMATIC SHOW OF A TRADITIONAL FAIR	- LONG RANGE TO MID RANGE VIEWING DISTANCE - BUFFER ZONE FOR AUDIENCE - MOSTLY STREET PERFORMANCE - SOME PERFORMER NEEDS TO REST BETWEEN PERFORMANCES IN STRENGTH PLAY - HIGH DIVERSITY - LOUD TO ATTRACT AUDIENCE
TRAINING SPACE	- LARGE TRAINING AREA - LONG SPAN AND HIGH CEILING HEIGHT IF INDOOR - PROTECTIVE GROUND MATERIAL (MATT, SOIL...) - EQUIPMENT STORAGE SPACE	- MID-SIZE ROOM WITH MIRROR WALL - PROTECTIVE GROUND MATERIAL (FOR DELICATE EQUIPMENTS) - SMALL EQUIPMENT STORAGE SPACE FOR VALUABLES - MOST TRAINING PRIVATELY



TYPE - III

ANIMAL

PERFORMANCE SPACE

- LONG RANGE TO SHORT RANGE VIEWING DISTANCE
- BUFFER ZONE FOR AUDIENCE IF LARGE ANIMALS ARE USED.
- STREET OR STAGE PERFORMANCE
- CAGES AND VARIOUS EQUIPMENTS
- PERFORMER AND ANIMAL NEED TO REST BETWEEN PERFORMANCES
- NEED A SEPERATED PERFORMACE SPACE

TRAINING SPACE

- LARGE TRAINING AREA AND STABLES
- USE SAME PERFORMANCE SPACE FOR TRAINING
- SAFETY DISTANCE BETWEEN ANIMAL TRAINING AND OTHER SPACES
- EQUIPMENT STORAGE SPACE
- TRAINING PRIVATELY

TYPE - IV

FOLK ART

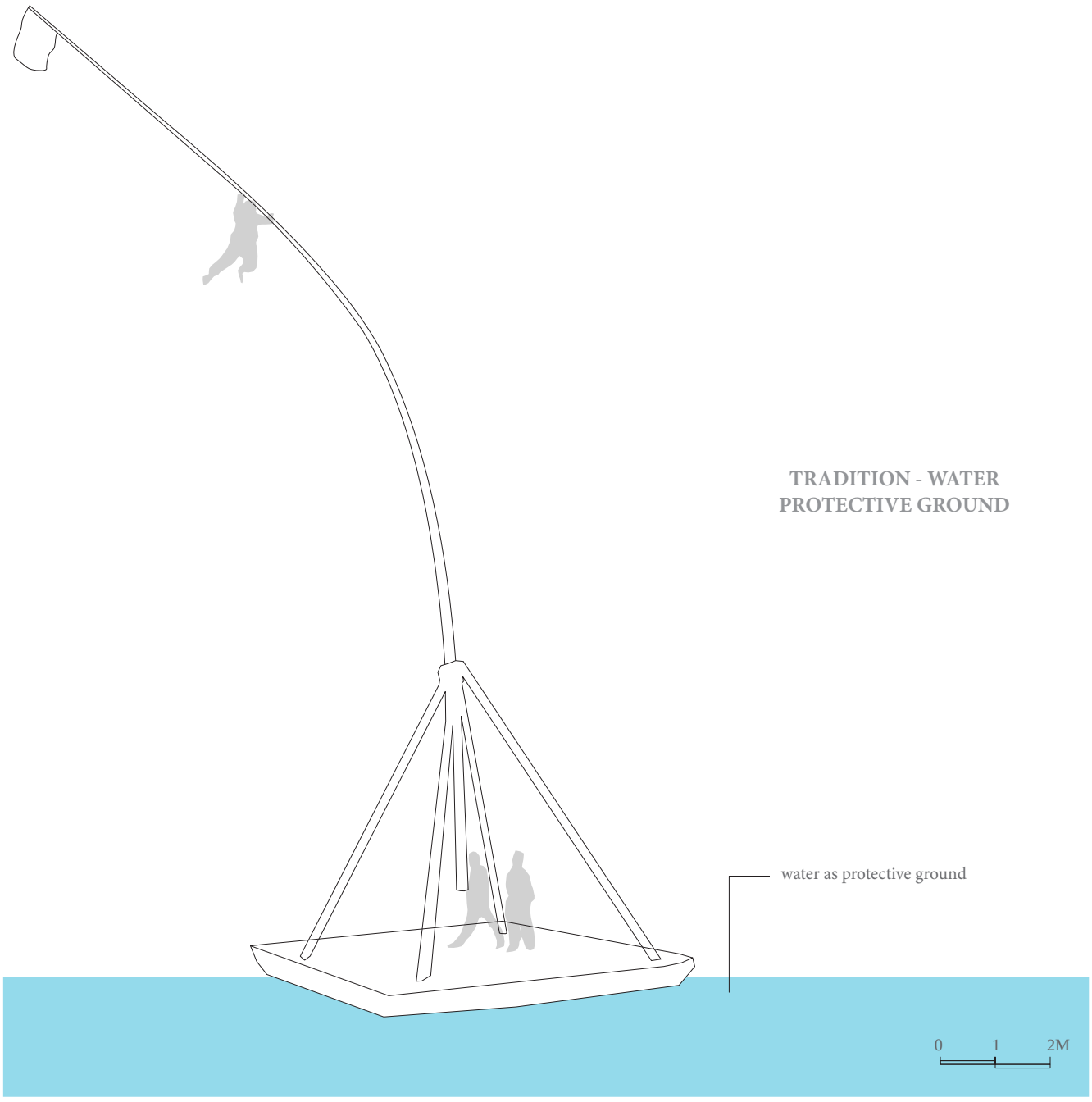
PERFORMANCE SPACE

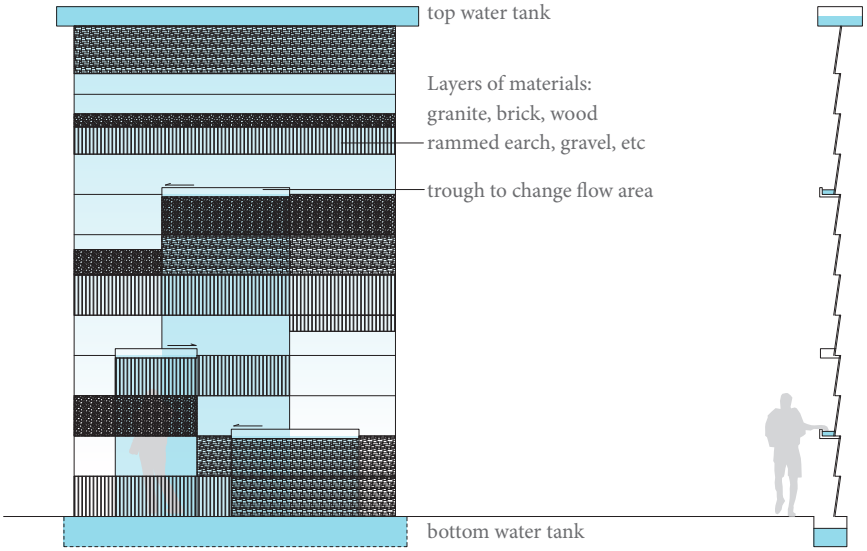
- MOSTLT MID RANGE TO SHORT RANGE VIEWING DISTANCE
- VIEWERS CAN PARTICIPATE AND VIEW FROM ANY ANGLE
- STREET OR STAGE PERFORMANCE.
- CAN PERFORM MORE FREQUENTLY AND ALLOW MORE IMPROVIZATION
- HIGH DIVERSITY

TRAINING SPACE

- FLEXIBLE TRAINING SPACE
- TRAINING PRIVATELY

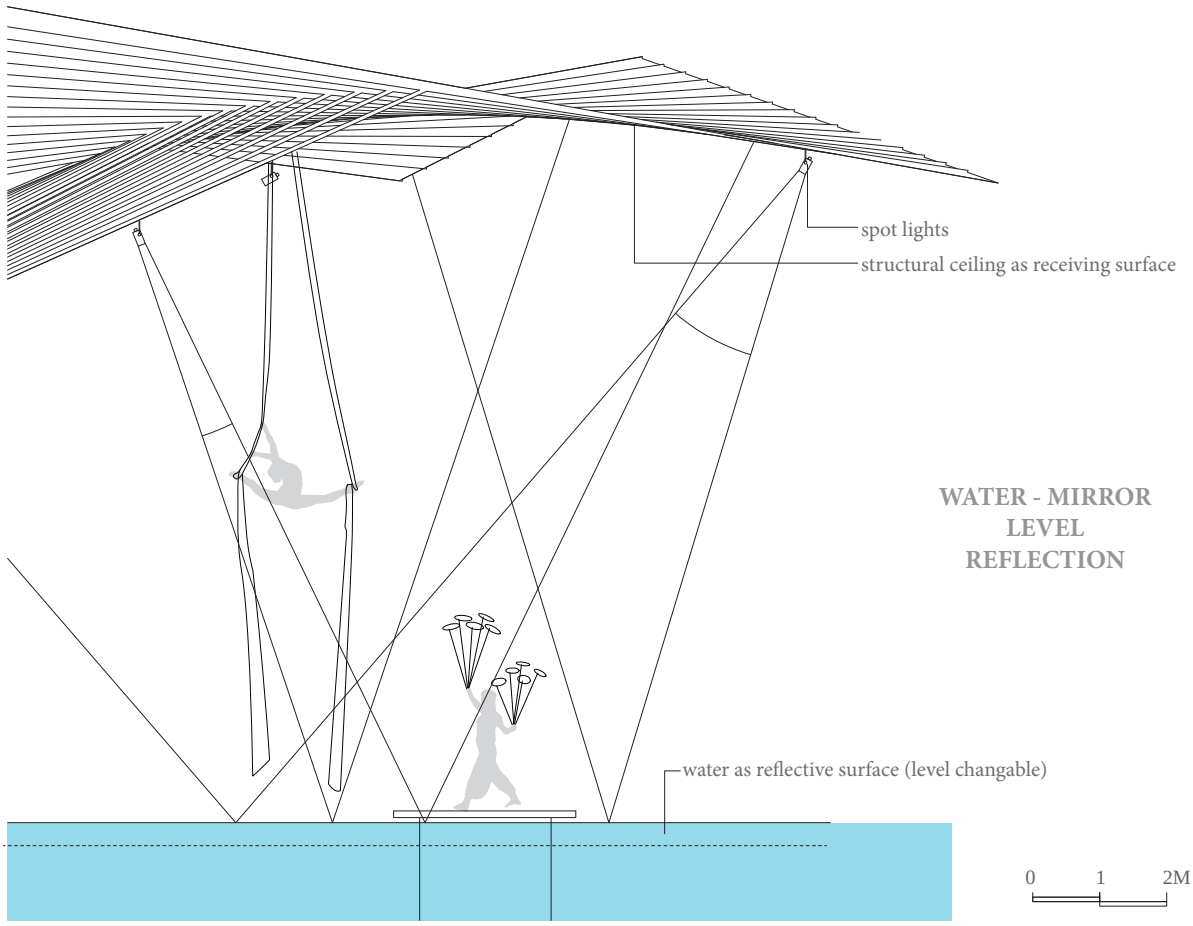
Integration of Water and Acrobatics





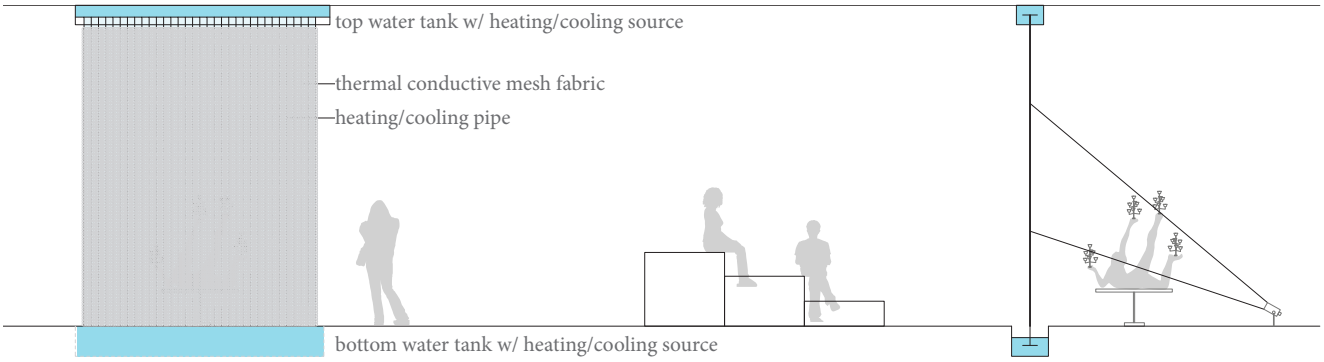
WATER - PAGE
LAYER
AGING

0 1 2M



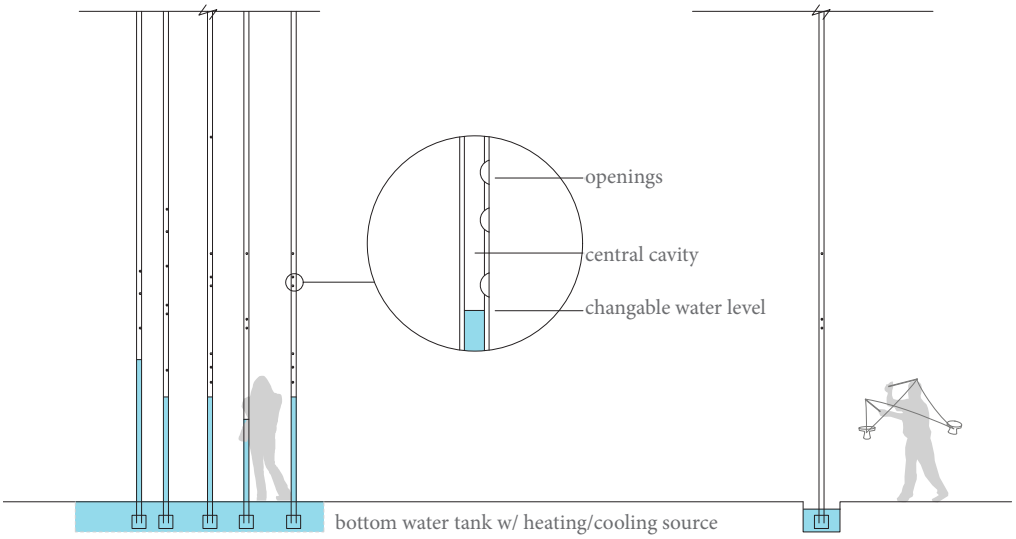
WATER - MIRROR
LEVEL
REFLECTION

0 1 2M



WATER - VEIL
STATE CHANGE
TRASPARENCY

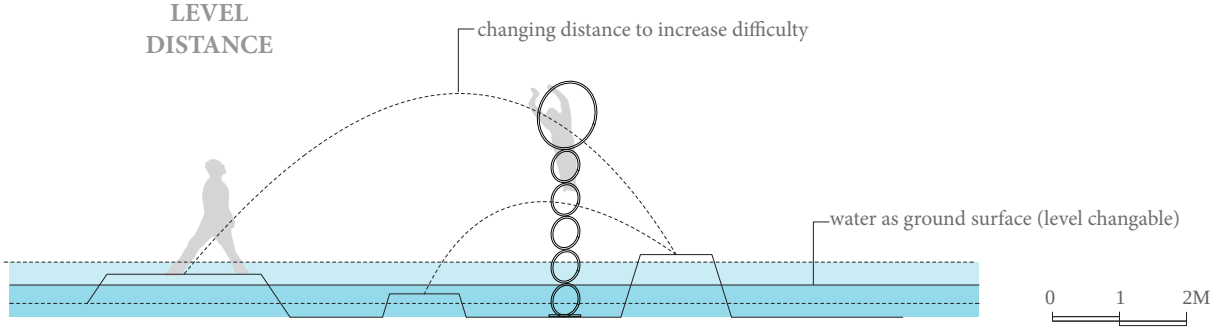
0 1 2M



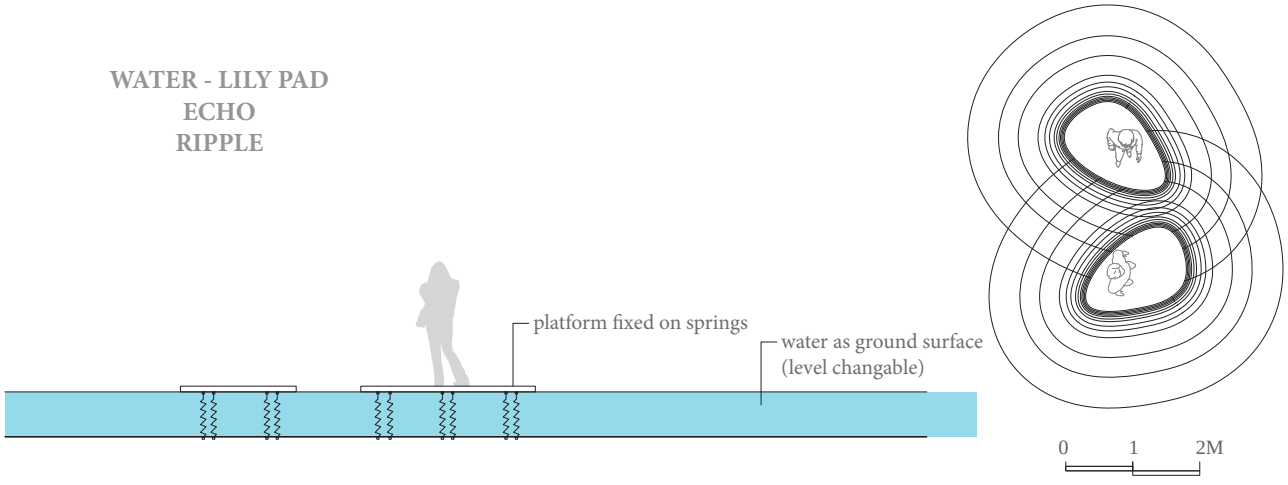
WATER - FULTE
SOUND
WIND

0 1 2M

WATER - STEP
LEVEL
DISTANCE



WATER - LILY PAD
ECHO
RIPPLE



The Masterplan Proposal
A Canal Corridor as A Heritage Park

The loose sequence of acrobatic acts in a large ceremony and their flexible spatial requirements enables an alternative arrangement of programs in masterplan level.

Currently, the acrobatic theme park concentrates all performance in a closed area on the outskirt of Wuqiao County. This mode is convenient for access control and management but it also has problems in terms of land-use efficiency and performance. Observation from the site visit shows that one specific act is only performed twice per day in the same place. For most of the time, the performance space is empty and the visitors arrived at the wrong time have nothing to see. Another problem is the distraction from adjacent performance, some acts have performers singing or producing loud sounds, which are originally used to attract audience in street performance. When arranged closely in a park, this side effect becomes a serious trouble. From the design perspective, the concentrated park produced an inconsistent collection of architecture which is unauthentic for the heritage property. Many performances lack the architectural context to offer a better reconstruction of the effect in old times.

On the other hand, the villages along the historical canal benefit very little from the cultural industry. The Grand Canal has dried for decades before the World Heritage nomination. After the success of nomination, there're only two pedestrian paths and several steles marking the location of heritage sites. The tourists visiting acrobatic world never extend their trip to the Grand Canal. The lack of public transportation between the county and villages also decreases the accessibility of the canal heritage sites. The lack of public service, poor accessibility and deteriorated water resource lead to the slow declination of villages in this area.

The proposal aims to divert new water from SNWTP into the historical canal and develop the canal corridor as a heritage park between Wuqiao and Lianzhen. According to their performative and training requirements, various acrobatic performances will be arranged into new architecture interventions in existing villages and be shared by local villagers as their communal space. The proposal also provides different means of circulation between key nodes on the culture tour, connecting them into a public transportation system.

Green Walk Area

Local amenities;
Fishing; Bird observing;
Bicycling; Jogging;
Fruit Picking; Camping

Youth Program related to Eco-farming
Other Educational Use

Wetland water treatment

Acrobatic Trail Area

Tourist sites;
Canal heritage sites;
Acrobatic performance space
Acrobatic training space

Street markets; Restaurant;
Traditional craft workshop;
Other Shops

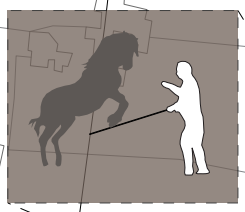
Major Town

Core village/district

B *Shuttle Bus Station*

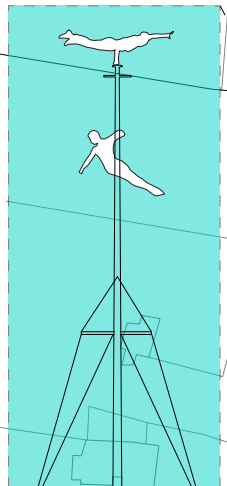
Ferry/ Boat

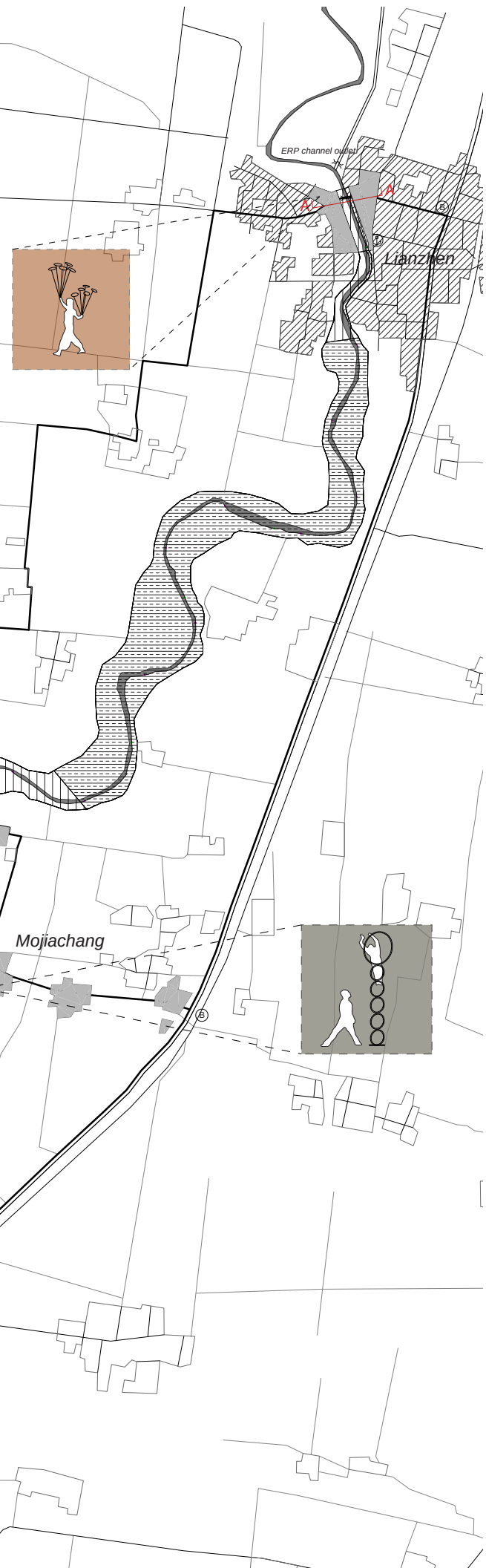
0 *1km* *2km* *3km*



Shiwulikou

Anling water-treatment station (re-use)



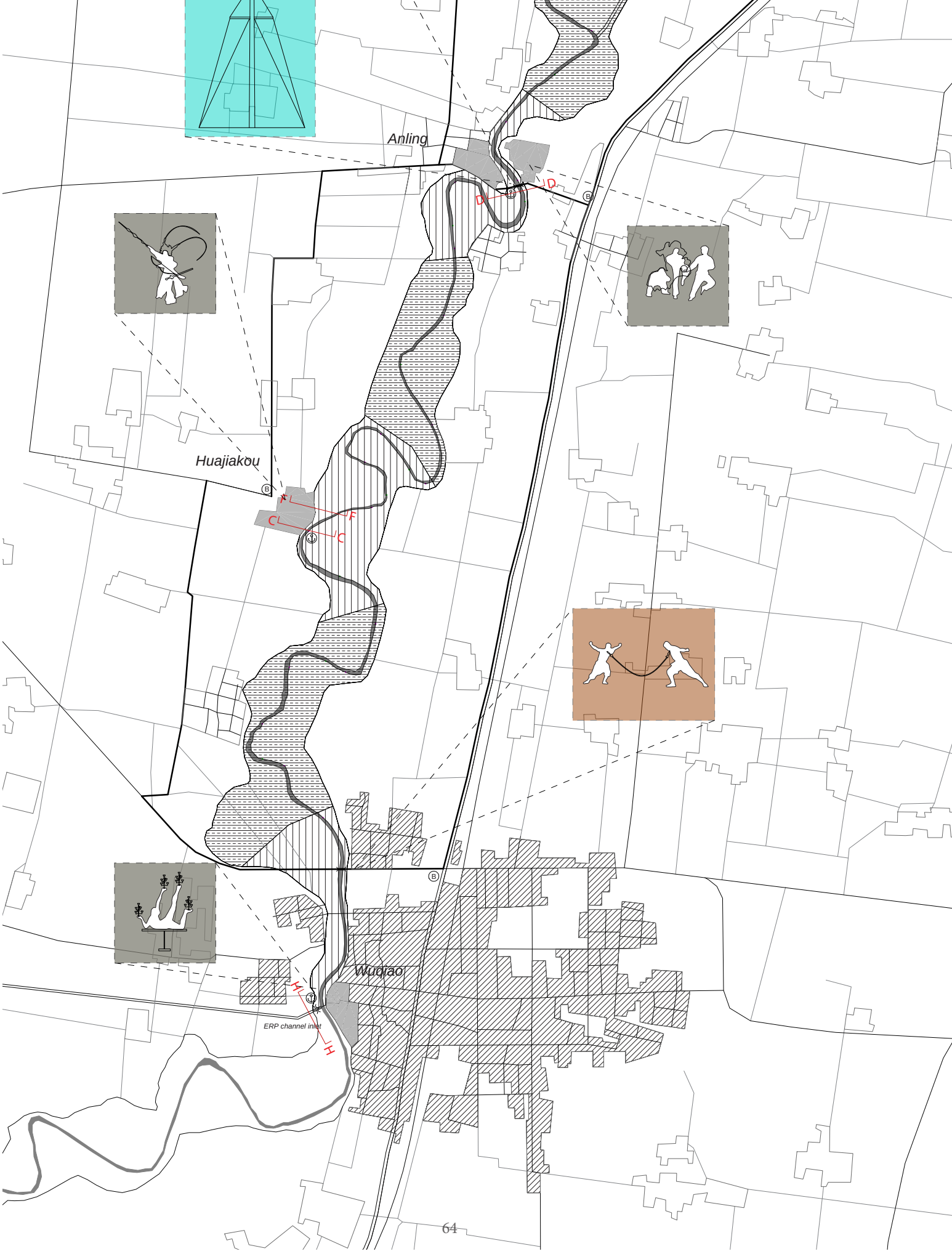


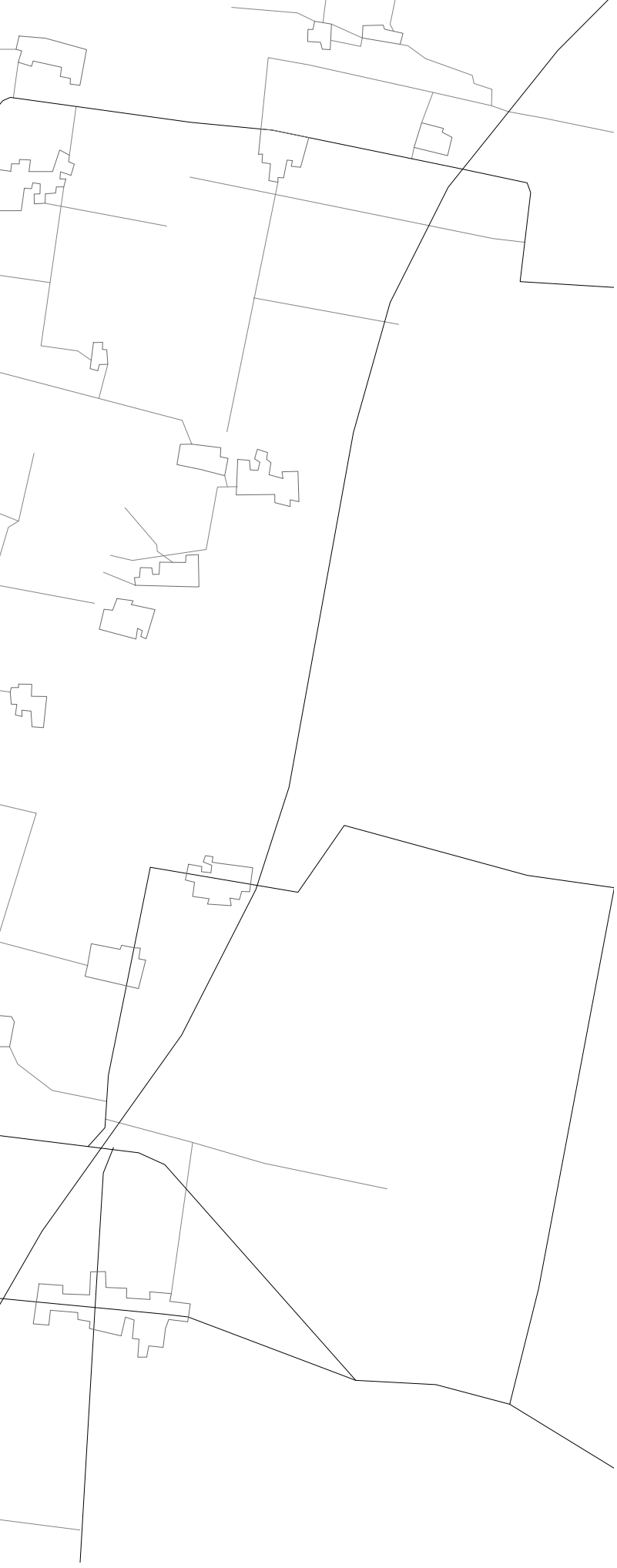
The heritage park provides two types of tourism: “Acrobatic Trail” and “Green Walk”. The “Acrobatic Trial” areas focus on cultural tourism, including programs like canal heritage sites, acrobatic performance/training space, street markets, restaurants and traditional craft workshop. These areas are located adjacent to existing settlements and state road. The “Green Walk” areas focus on eco-tourism, including programs like fishing, bird observing, bicycling, jogging, camping and other farming-related educational use. These areas are currently used for agricultural fields and small grooves between villages. They can be bought back from villagers for public use. The existing boundary of heritage property marked by two pedestrian paths will be maintained.

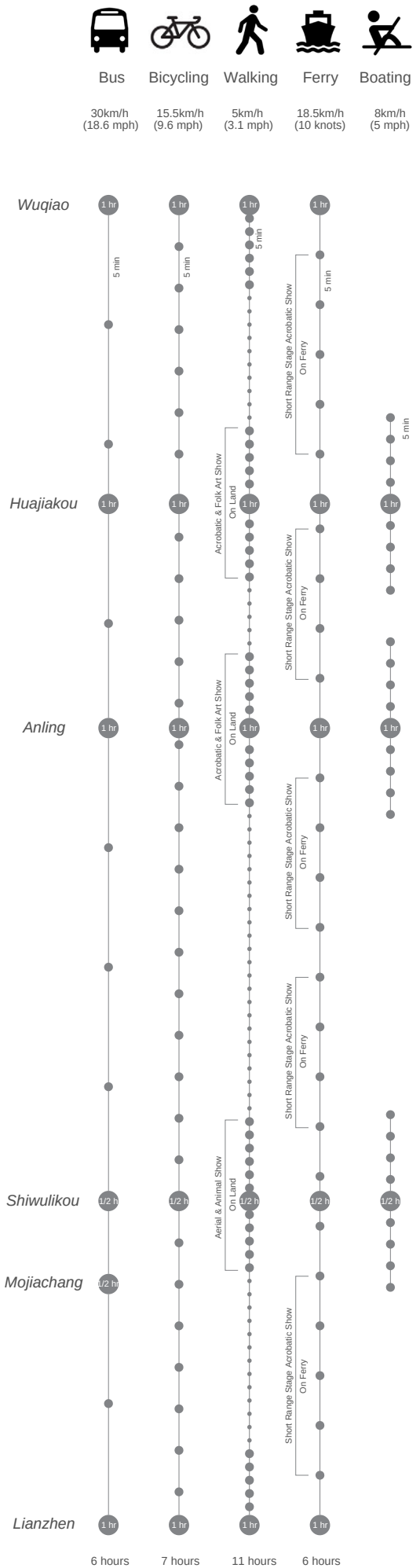
Public transportation network includes five different means of circulation: ferry, boating, bus, bicycle and pedestrian (see diagram on page 65). Tourist for acrobatic culture will mainly take ferry from Wuqiao. The ferry stops every 30 minutes, which allows the tourists to watch a 20 minute long act on ferry and then go on land to see acts in the village. This arrangement offers an alternating sequence of performance on ferry and on land, which reduces the waiting time for tourists in the current park. Boating area and pedestrian walks are arranged next to villages where most tourist attractions and commercial programs locate. About 10 minute walk out of core village/district, the visitors will enter a different ambience consists of vast agricultural field, patches of grooves and wild-lives. The balance of culture and nature will be re-established in rural environment.

Along the historical canal, space of acrobatic performance will adapt to existing structure, water level, topography and water infrastructure (see sectional diagrams on page 66-73). For instance, bridges can be used for high pole acts or provide shelter for stages below, depending on their structure types and water level. Traditionally, docks and surrounding space are the most popular place for street performance. Performing acrobatic acts in these places helps with preserving the authentic context of heritage.

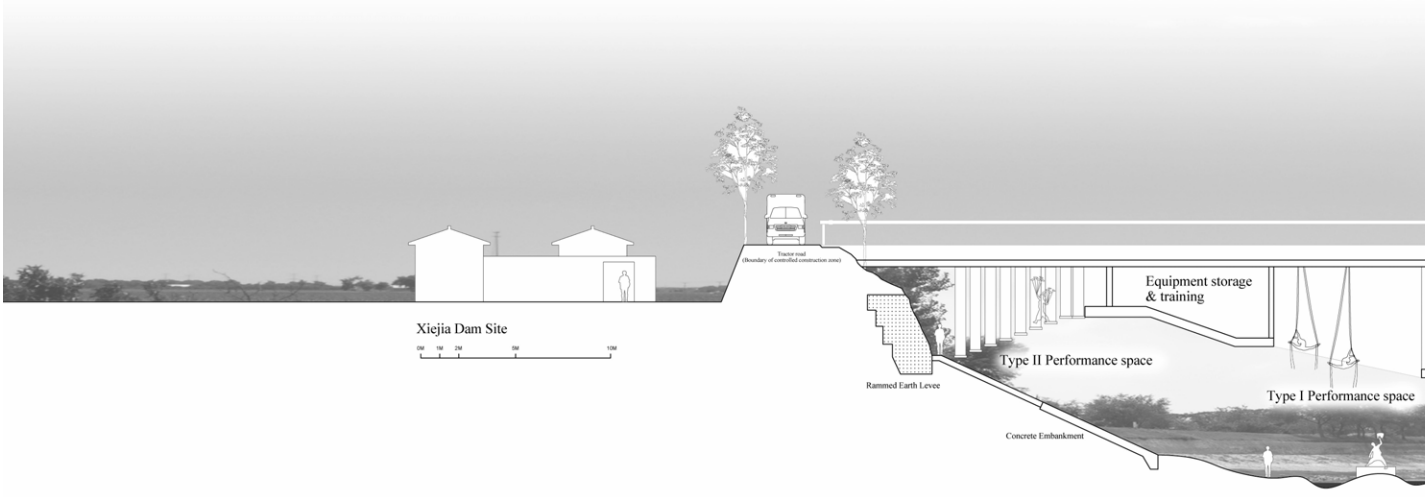
Among the sectional scenarios, Section D with floating stage and dock are chosen as a typical scene for further design development. This scenario has the most common topology – flat fields sloping down to water level – and a typical relationship between village, canal and agricultural fields. Intervention in this context will address how new water architecture can revitalise the local acrobatic community by elaborate the performative and productive role of water.


Anling
Huajiakou
Wuqiao
ERP channel inlet
D
D
C
C
F
F
H
H

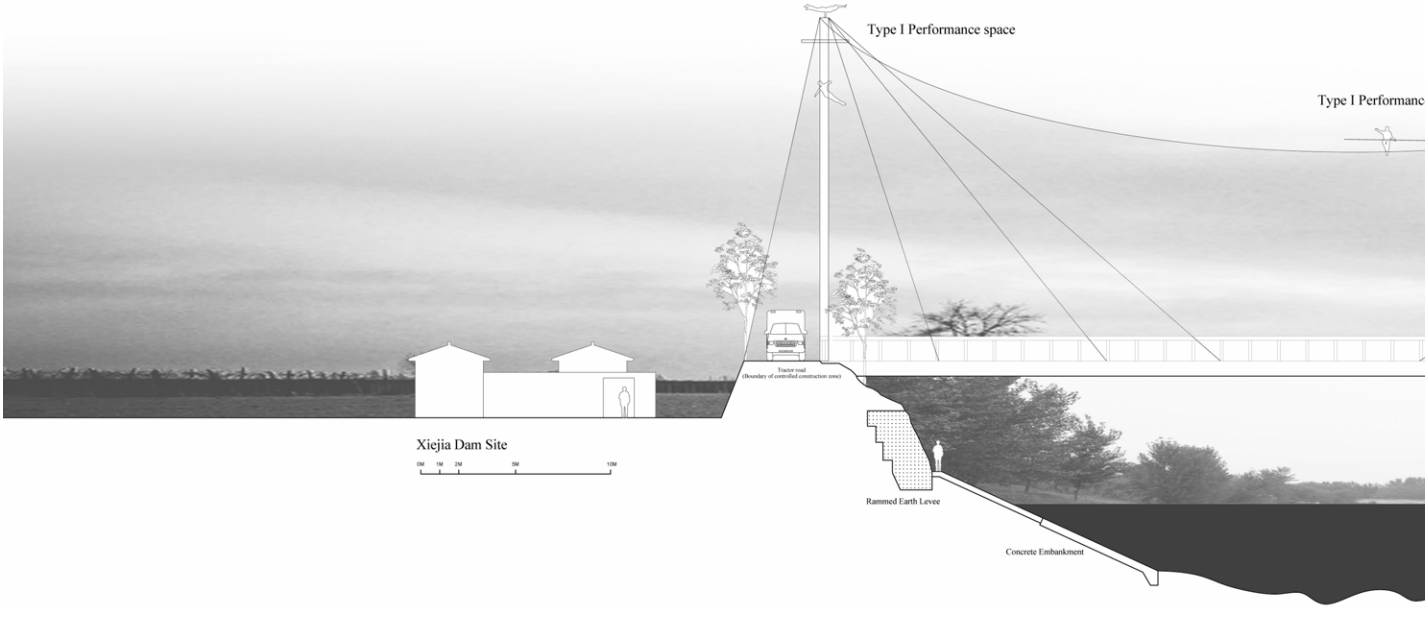



Bus
Bicycling
Walking
Ferry
Boating
30km/h (18.6 mph)
15.5km/h (9.6 mph)
5km/h (3.1 mph)
18.5km/h (10 knots)
8km/h (5 mph)
Wuqiao
Huajiakou
Anling
Shiwulikou
Mojiachang
Lianzhen
1 hr
1/2 hr
5 min
Acrobatic & Folk Art Show On Land
Aerial & Animal Show On Land
Short Range Stage Acrobatic Show On Ferry
6 hours
7 hours
11 hours
6 hours

BRIDGE -LOW WATER LEVEL



BRIDGE -HIGH WATER LEVEL

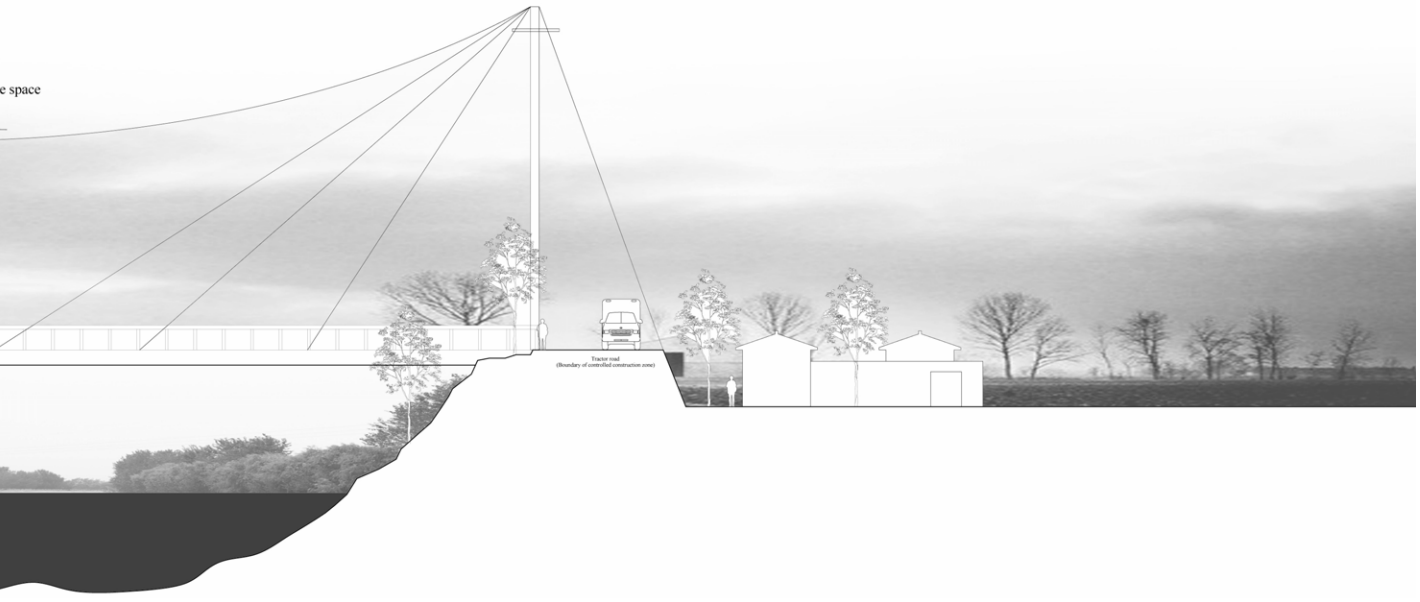


SECTION A

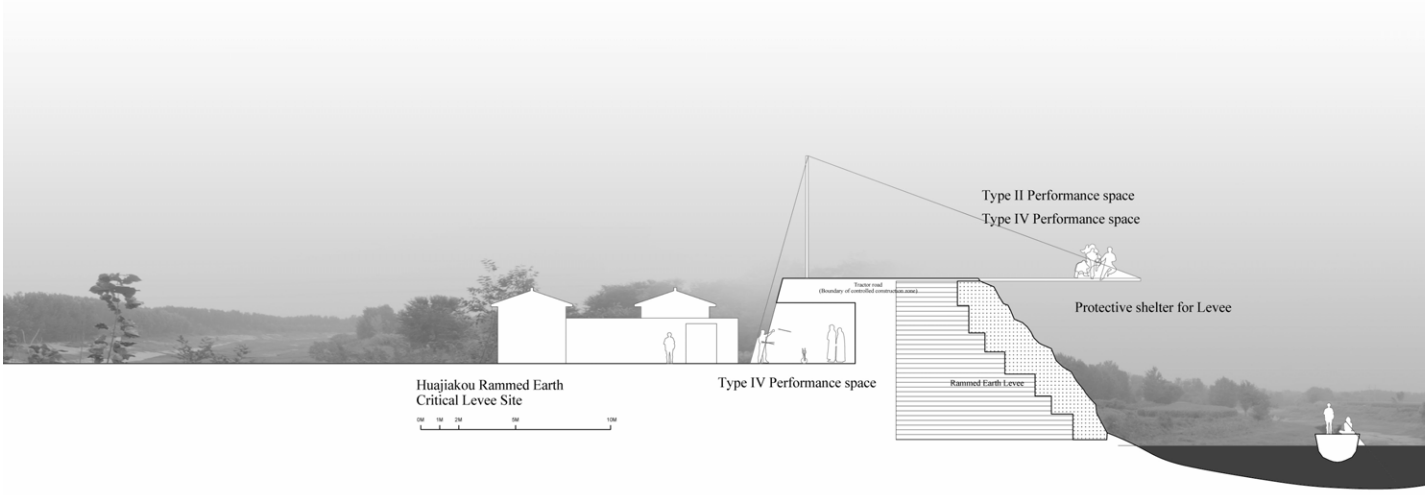
RIBBON PLAY /MID RANGE BALANCE PLAY

SECTION B

POLE PLAY / HARD WIRE PLAY



DECK & LEVEE



FLOATING STAGE & DOCK I

SECTION C

LONG RANGE BALANCE PLAY/ GROUP ACT/ FOLK ART

SECTION D

LONG RANGE POLE PLAY/MID RANGE ACROBATIC PLAY

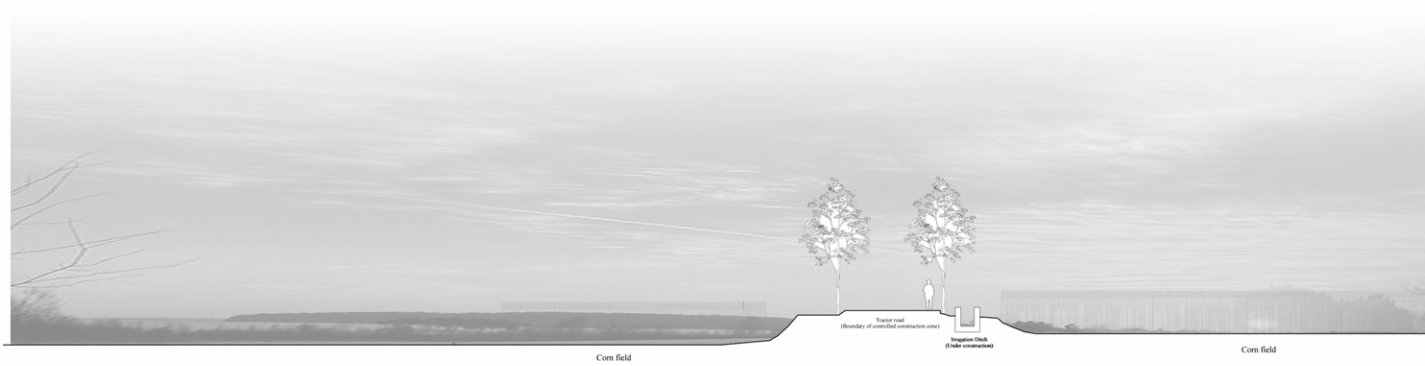
VILLAGE

Huajiakou Village

0M 1M 2M 5M 10M

Type IV Performance space

FIELD

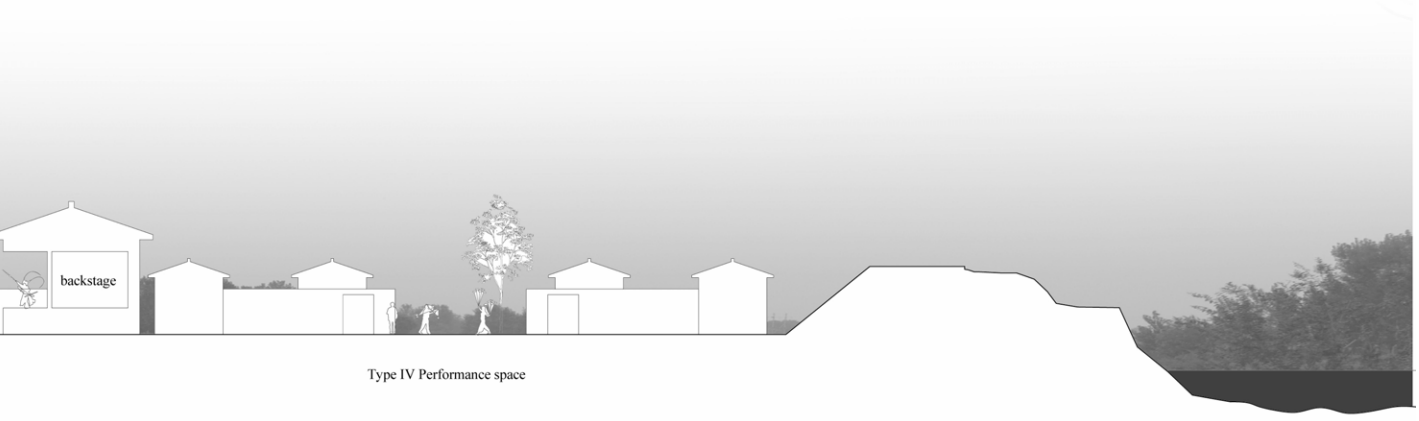


Canal Waterway Site II

0M 1M 2M 5M 10M

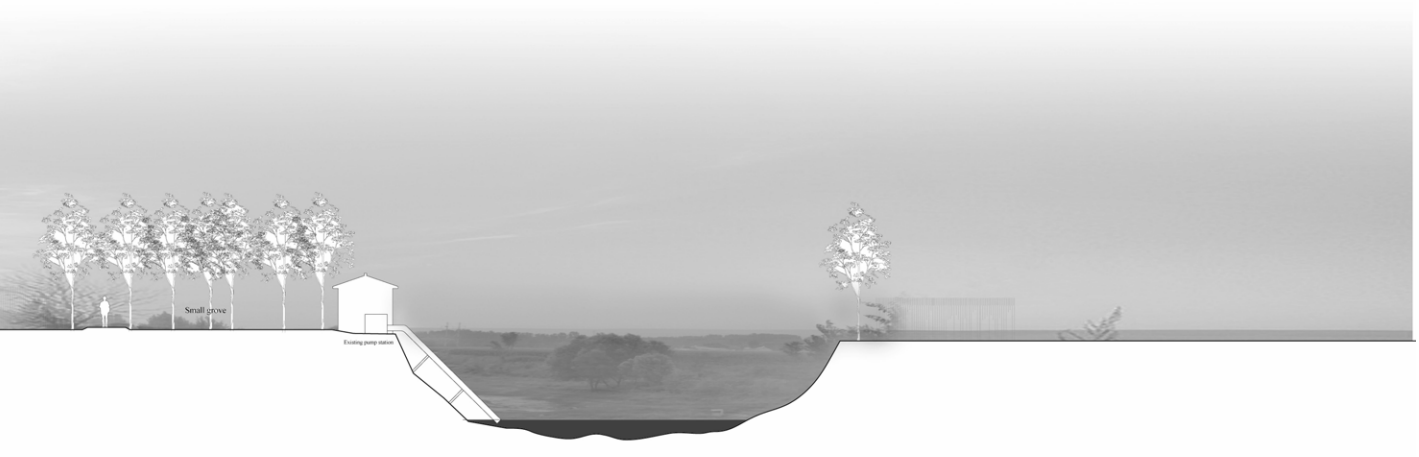
SECTION F

SHORT RANGE ACROBATIC PLAY / FOLK ART

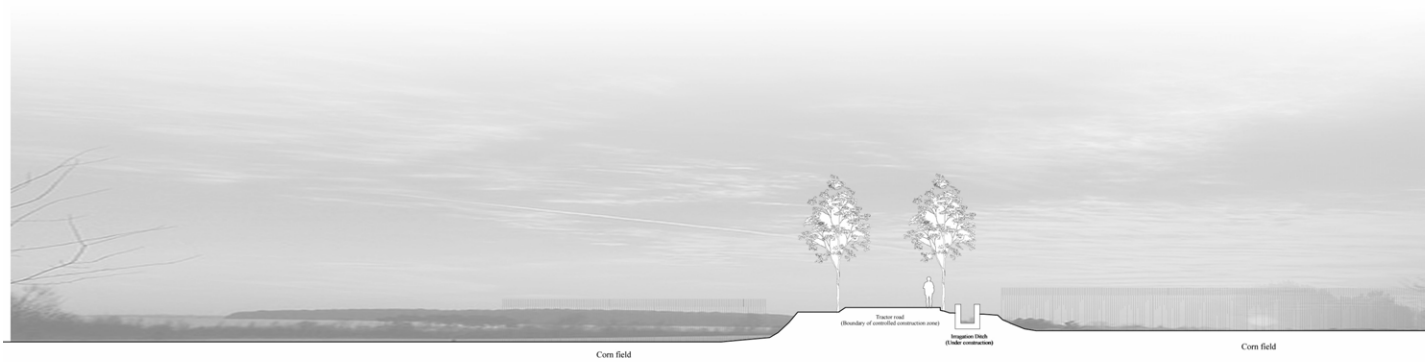


SECTION G

CAMPING/ FISHING/ FRUIT PICKING/ FARMERS MARKET



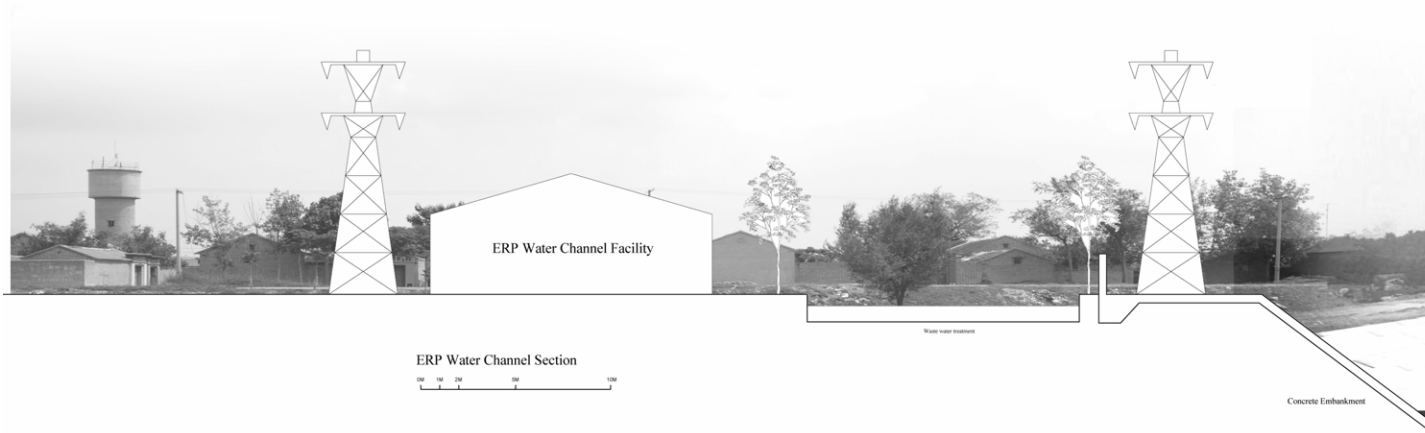
FIELD



Canal Waterway Site II

0M 1M 2M 5M 10M

ERP WATER CHANNEL

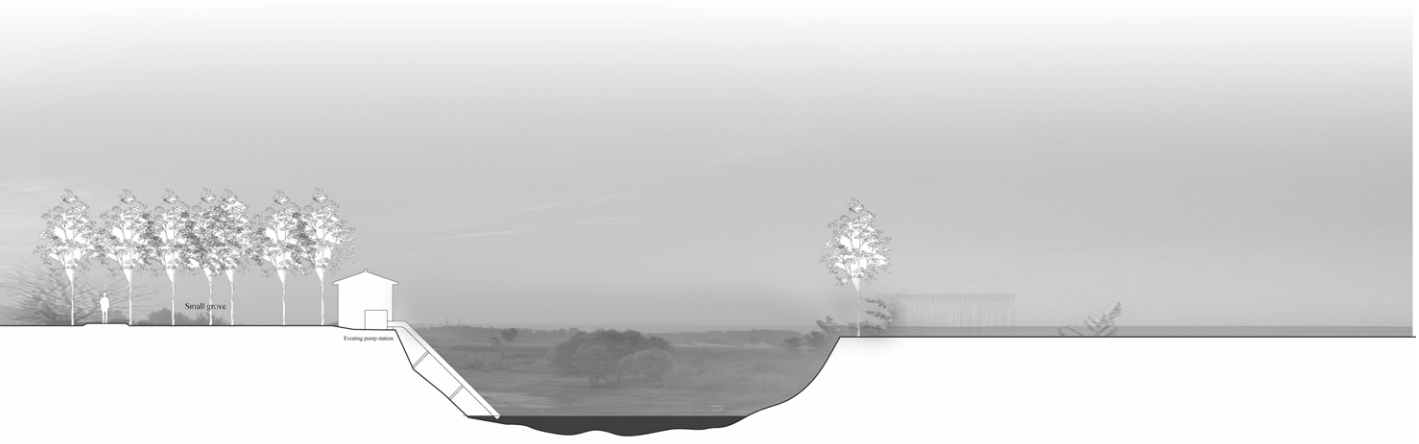


ERP Water Channel Section

0M 1M 2M 5M 10M

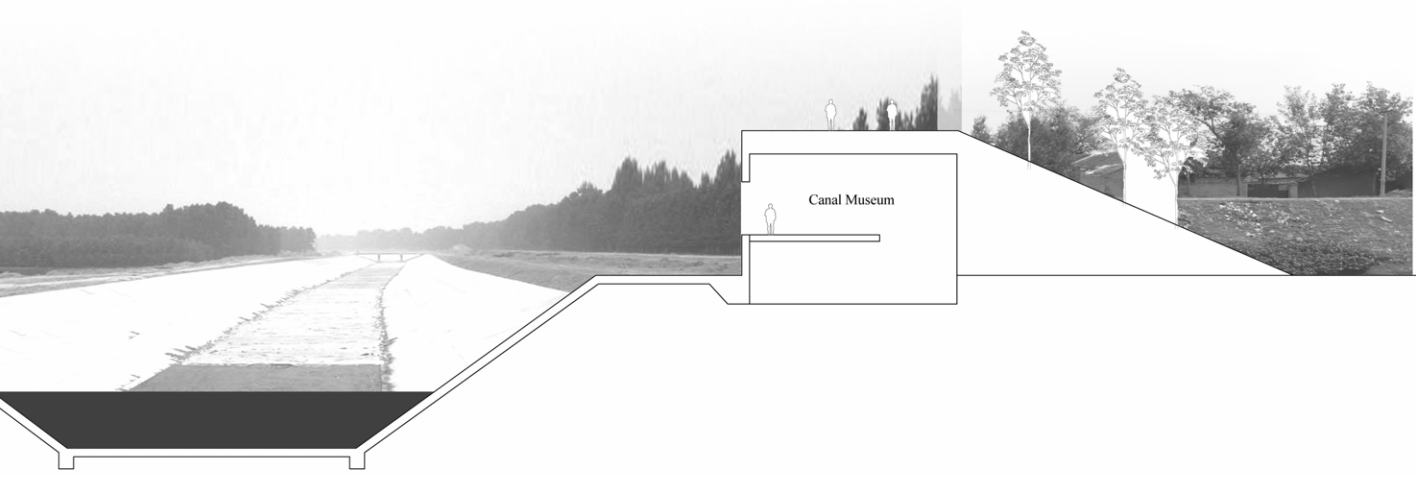
SECTION G

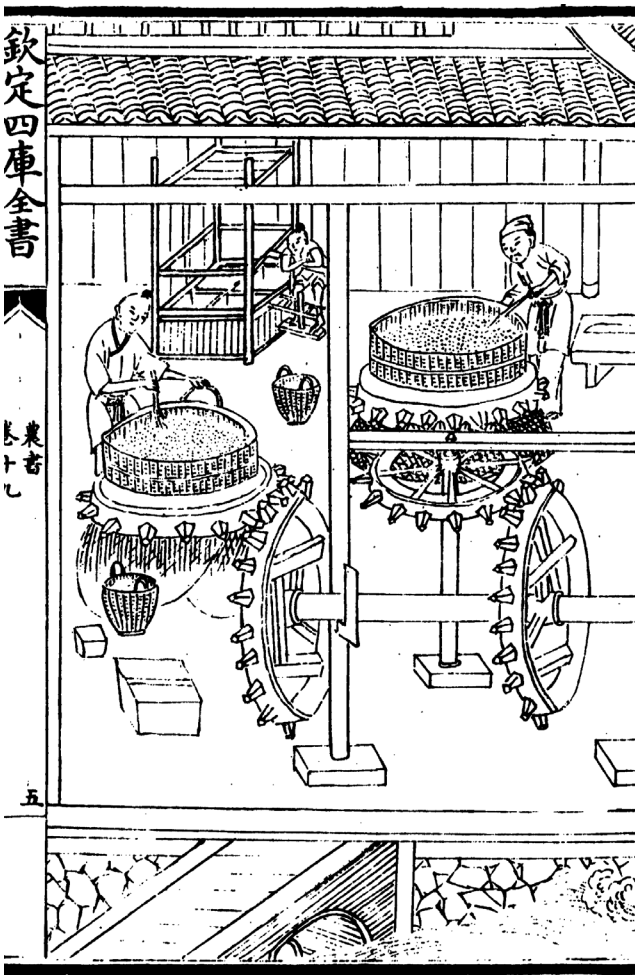
CAMPING/ FISHING/ FRUIT PICKING/ FARMERS MARKET

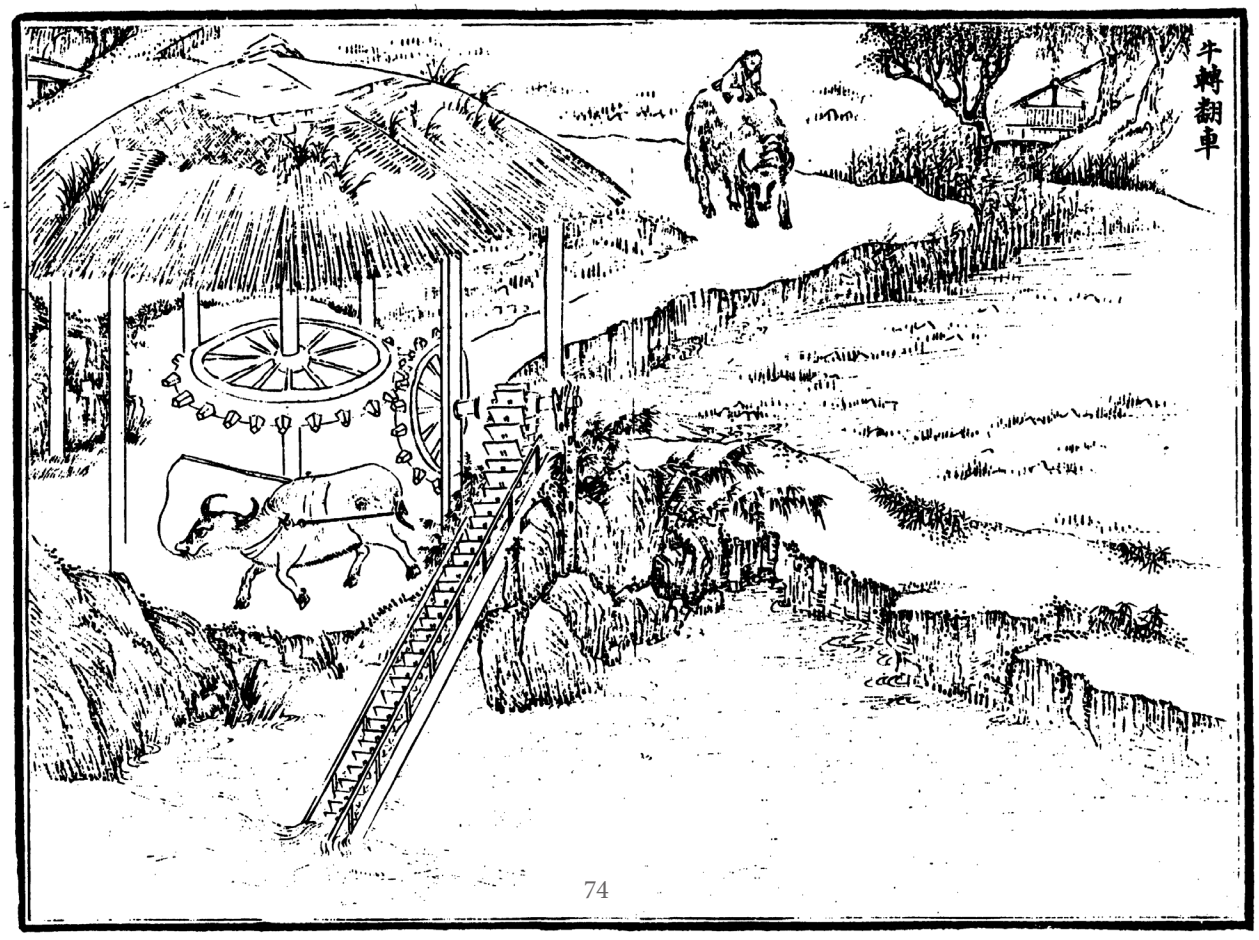


SECTION H

CANAL MUSEUM/ WATER TREATMENT



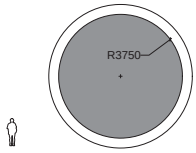

欽定四庫全書
農書
卷十九
五


牛轉翻車

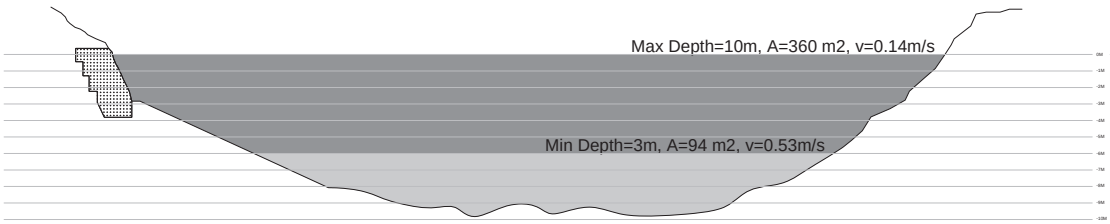
The Site Proposal
An Integrated Water System

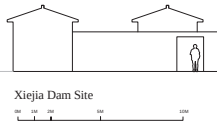
The integrated water system proposes the water architecture as the core for connected water cycles in rural area. Compared with the flowrate in SNWTP diversion tunnel or channel, the allowable flowrate in historical canal cannot meet the full demand without erosion on embankments. A plausible solution is to divert part of the new water into historical canal in order to reduce the impact while maintaining the navigable water level. In the diagram of integrated water system (see page 78-79), water from diversion channel is firstly directed into irrigation ditches in agricultural fields. Then the surface flow goes into the historical canal through flood gates and can pumping stations. The historical canal is not used heavily for water transportation but as a constructed wetland for seasonal cultural tourism. The prototype of new water architecture is located next to the canal. It serves as a "water core" for rain harvesting and water treatment in a small region. At the same time, it uses water as a performative architectural material to create the ambience of indeterminacy and aging, which helps with the theme of cultural heritage.

The site is adjacent to a core village – Anling village. It's proposed to be a transfer station between bus and ferry. The visitors arrived from the state road can travel through the existing village with commercial programs to the outskirt of the corn fields where the new building can be seen far away. Vehicular access and parking area will be provided on the northern side of the site, next to the county road. Pedestrian access is the primary concern in this site, new network of pathways guides the visitors to the linear landscape along the canal. The intervention is kept in minimum to maintain the existing context in rural environment. The objective of the water architecture in the whole proposal is serving as catalysts or control points that adapts to the rural context and improves public service in villages.

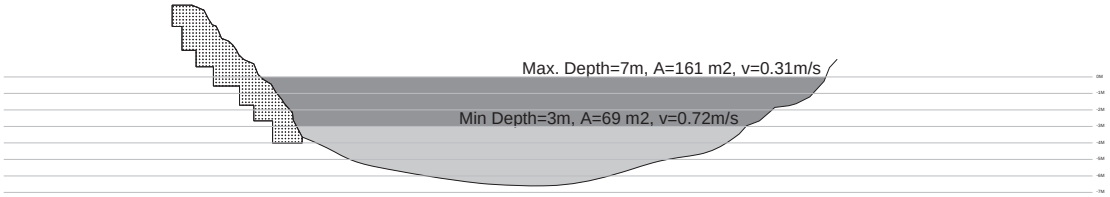


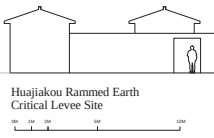
ERP Yellow River Turnnel
A=44 m2, v=1.14m/s



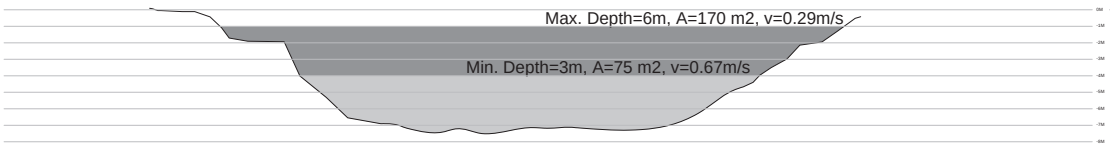


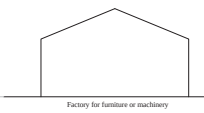
Xiejia Dam Site





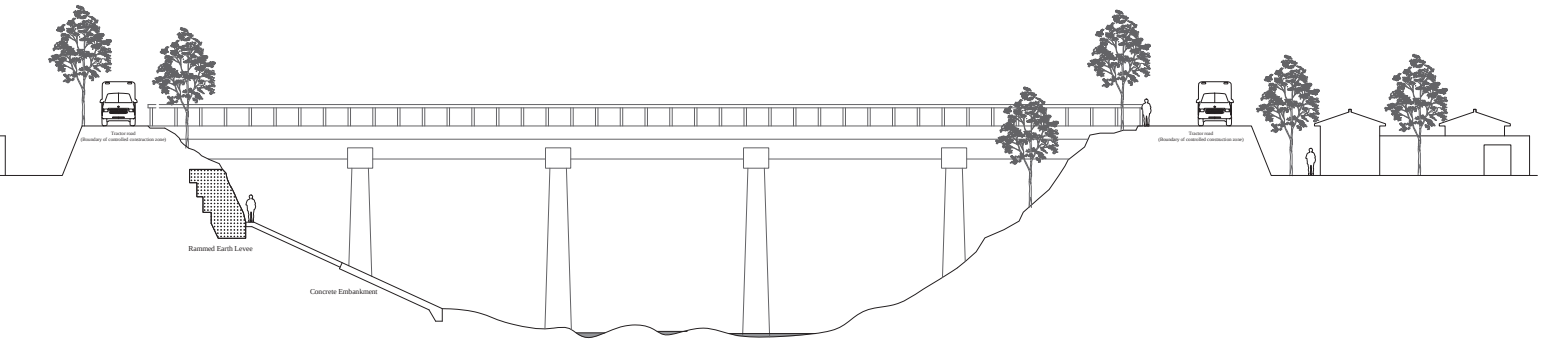
Huajiakou Rammed Earth
Critical Levee Site

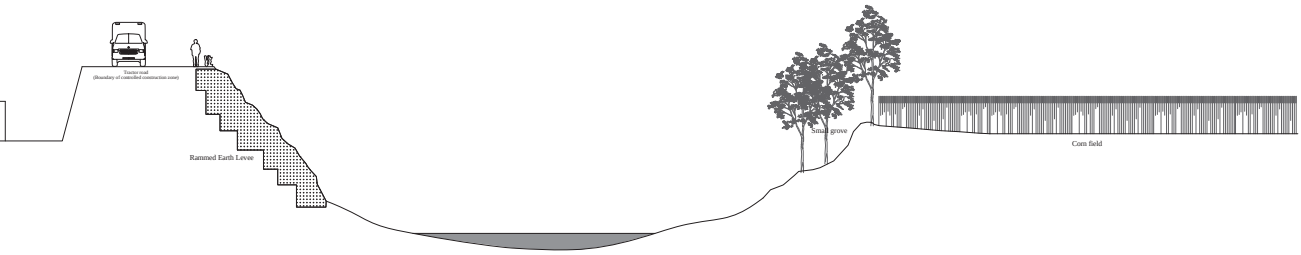


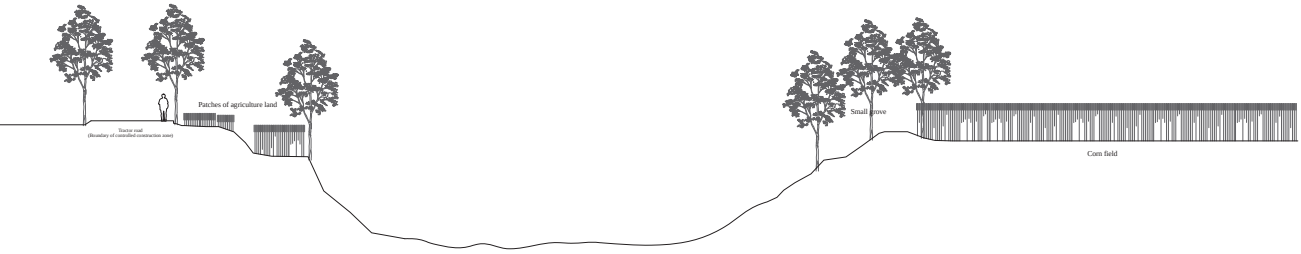


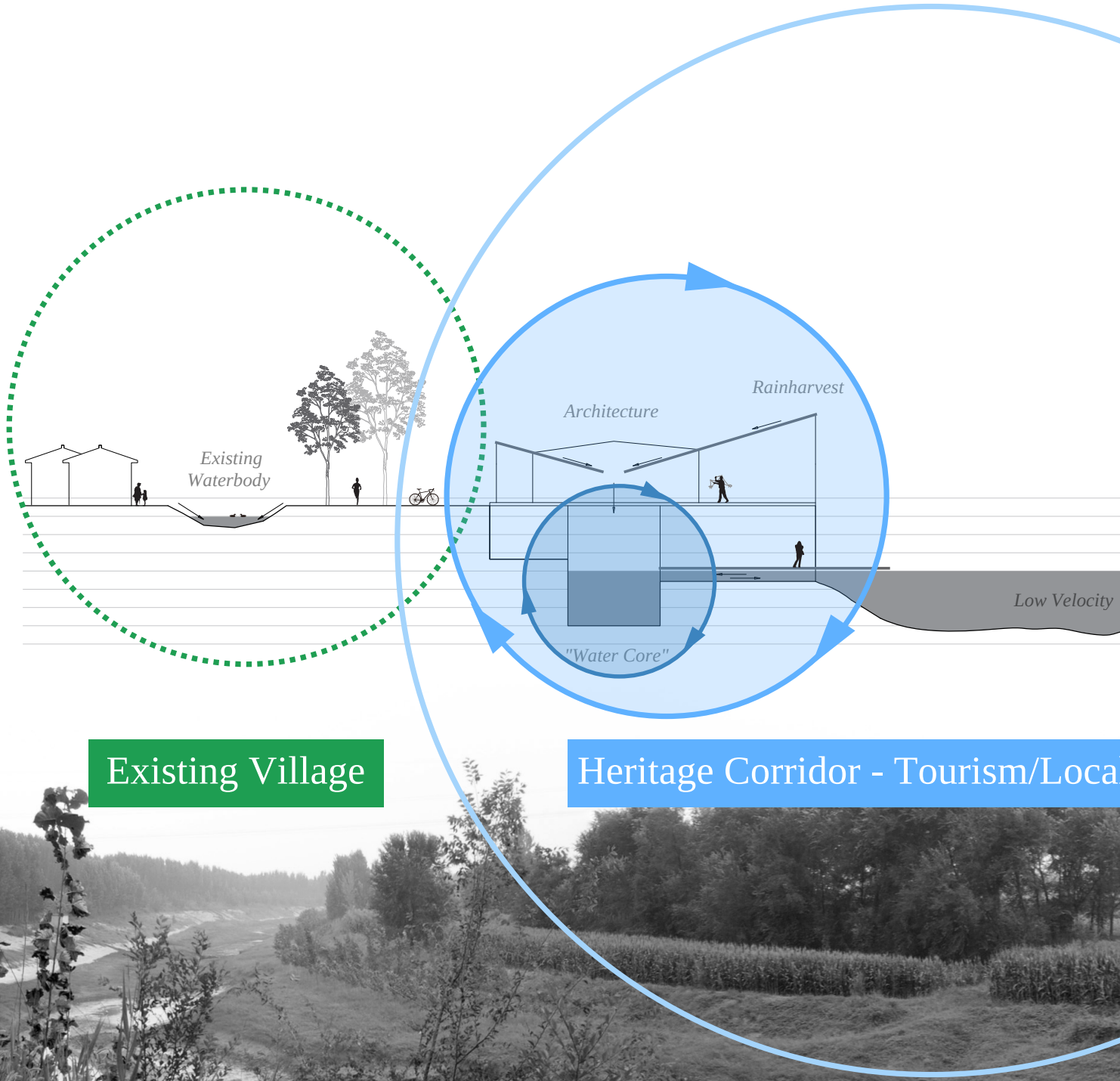
Canal Waterway Site I

ERP Ground Diversion Channel
Avg. Depth=3m, A=58 m2, v=0.86m/s





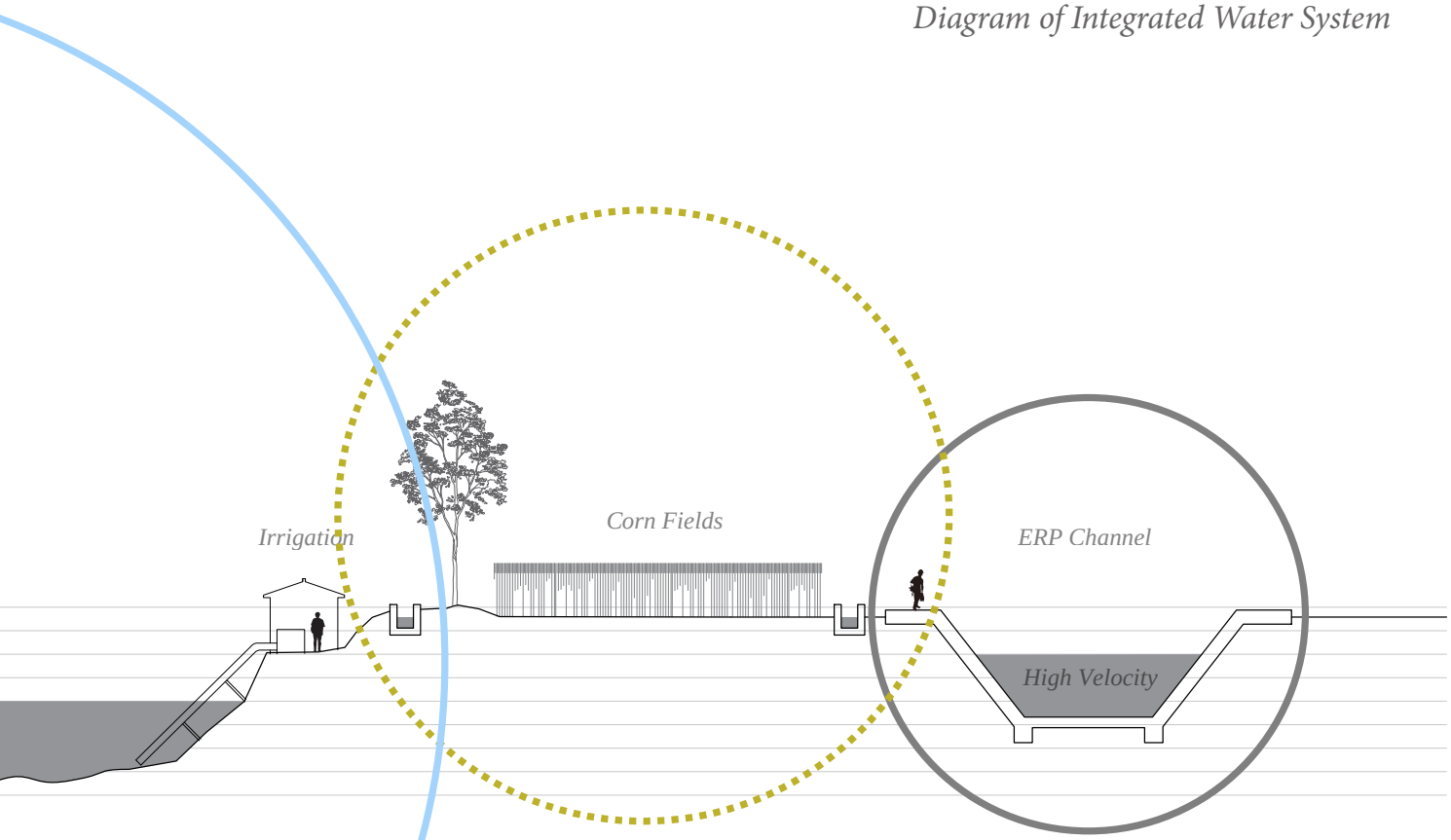




Existing Village

Heritage Corridor - Tourism/Loca

Diagram of Integrated Water System

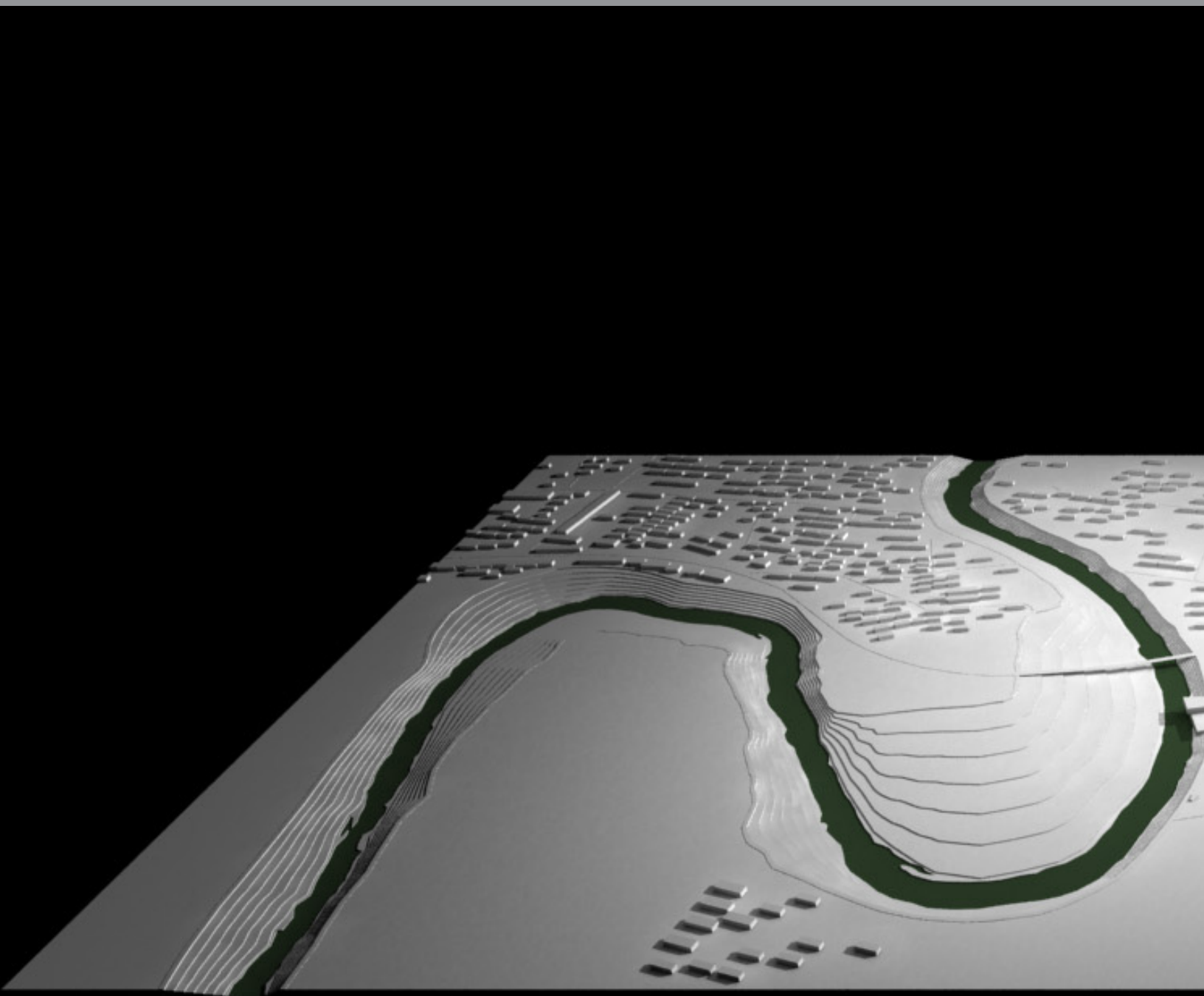


l Amenities

Agriculture

Infrastructure

Plan of Anling Site



RETHINKING WATER HERITAGE TOURISM
IN RURAL ENVIRONMENT

JIE QIAN M.ARCH THESIS 2016

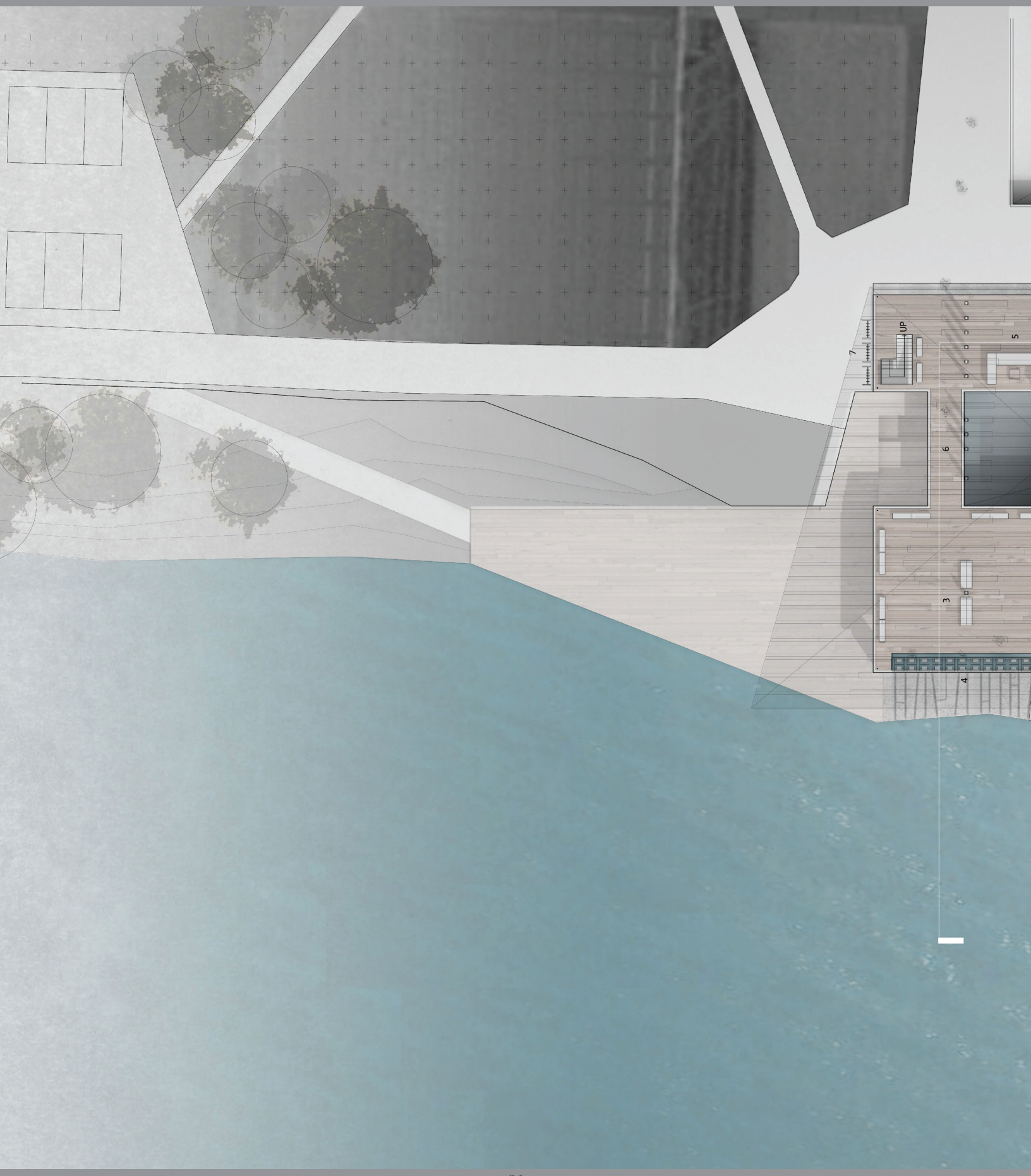
The Architectural Proposal
Water "+"

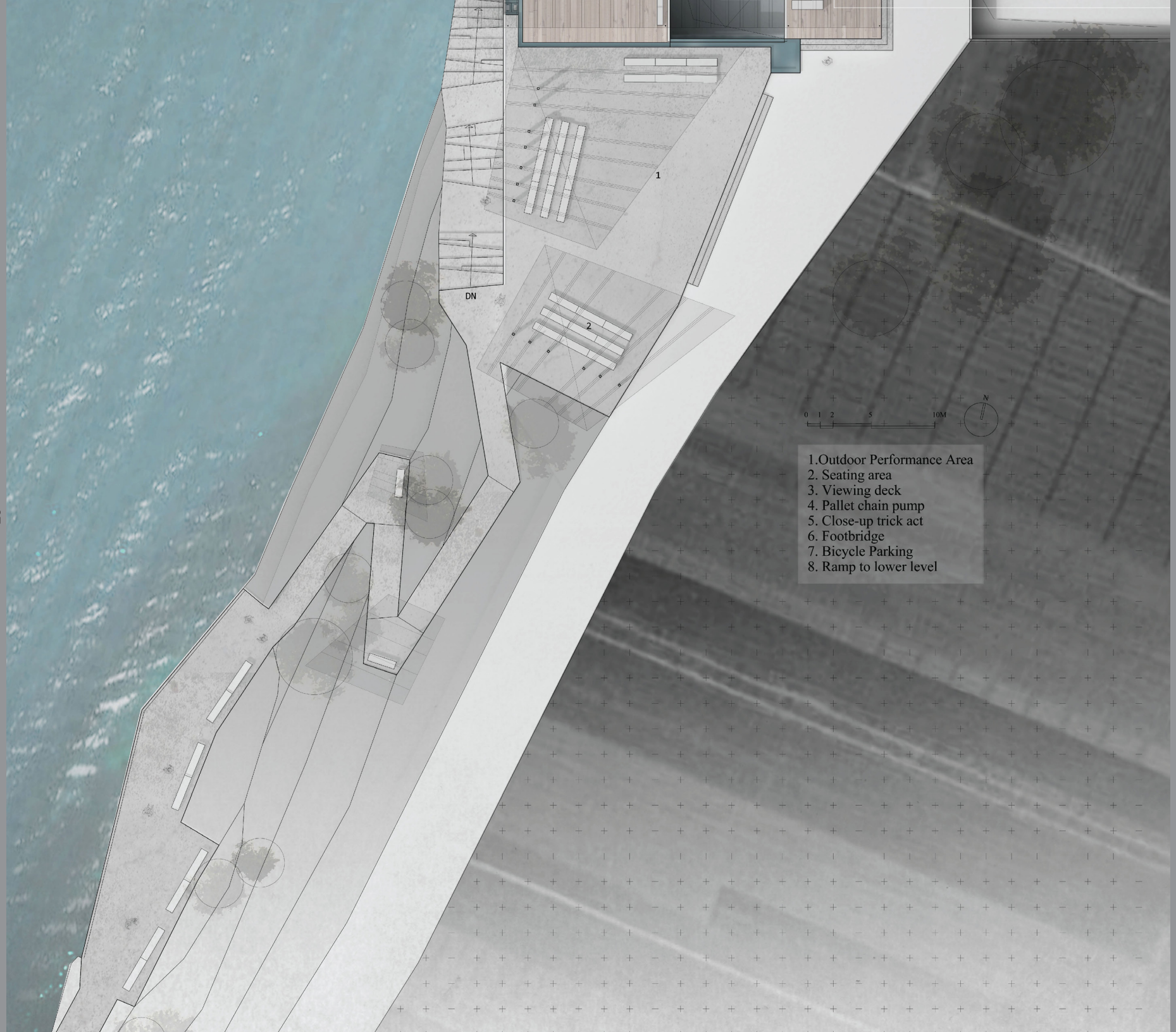
The building has two floors, the upper level has a covered performative area, a viewing deck and an outdoor stage; the lower level have an atrium with stage area, and dressing room/office, a boat storage and a floating deck. This building is shared by tourists and local residents as a communal center and a performative space for acrobats.

Arriving at the upper level, the performative spaces are defined by a series of wood pavilions. The roofs are curved and cantilevered to form enclosure for mid-range acrobatic performance. The tiled geometry also collects rain water to the atrium, forming an artificial waterfall in the center of the building. From the viewing deck, the visitor can play with the pallet chain pump, which refers to the traditional irrigation technique, or watch the long-range acts performed on platforms on the canal.

A long ramp leads to the lower level where the visitor can get close to water and watch indoor performance. The visitor can rest in the entrance lobby, watch close-range act in the atrium and experience the sound, movement and traces of water all around the architecture space.

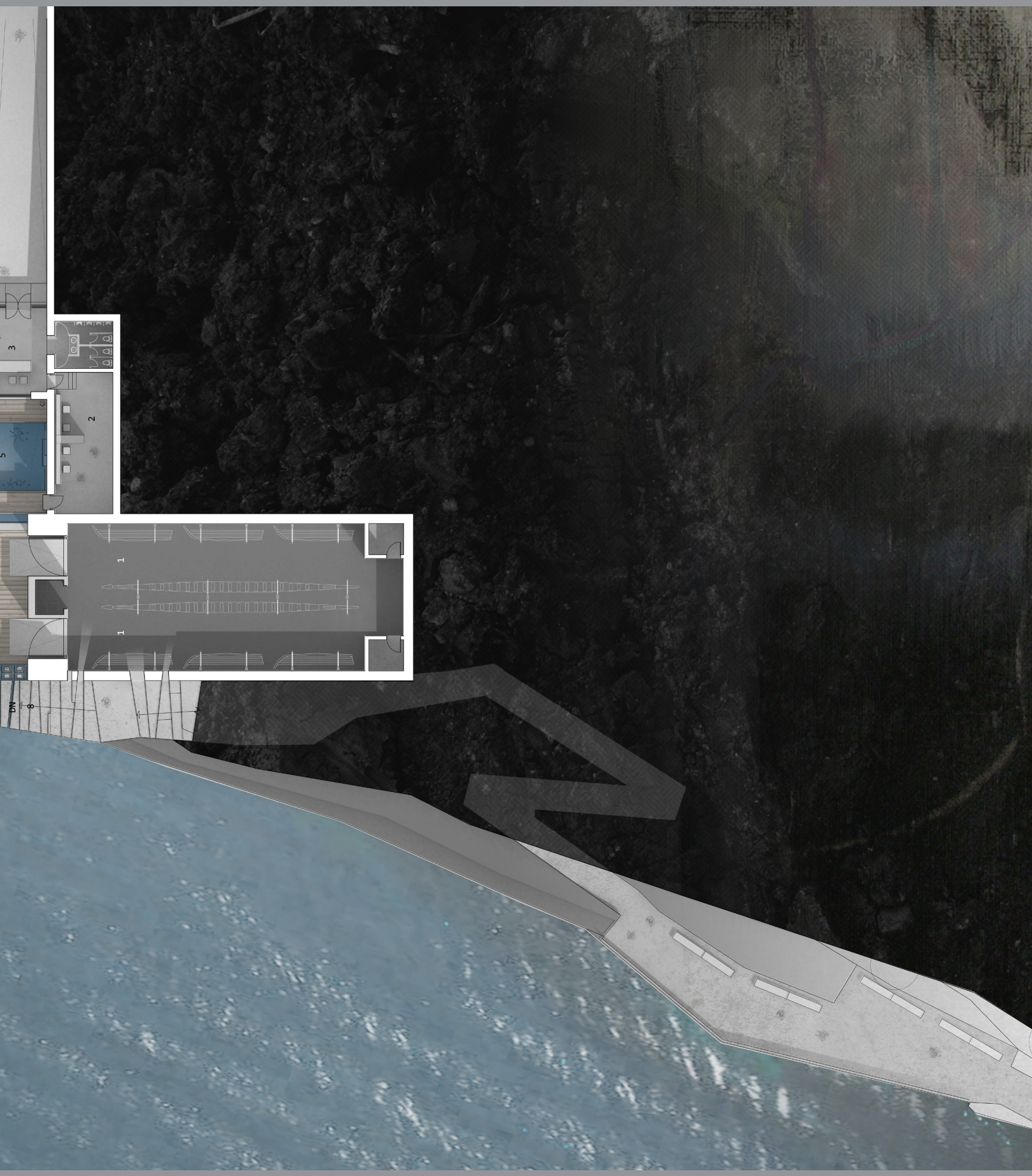
The water moves in the building as a dynamic cycle in different weathers. The pool in the atrium is connected with the historical canal. If water level falls in the canal, the building can still work independently by rain-harvesting. Visitors can manually drive the water lifting device and participate in the process. It's not meant as the solution to the water scarcity problem in this area, but as an example to how it can be done sustainably. By experiencing the aesthetic and productive use of water, the water architecture seeks to advocate a harmonious relationship between human and nature.


UP
7
6
5
4
3

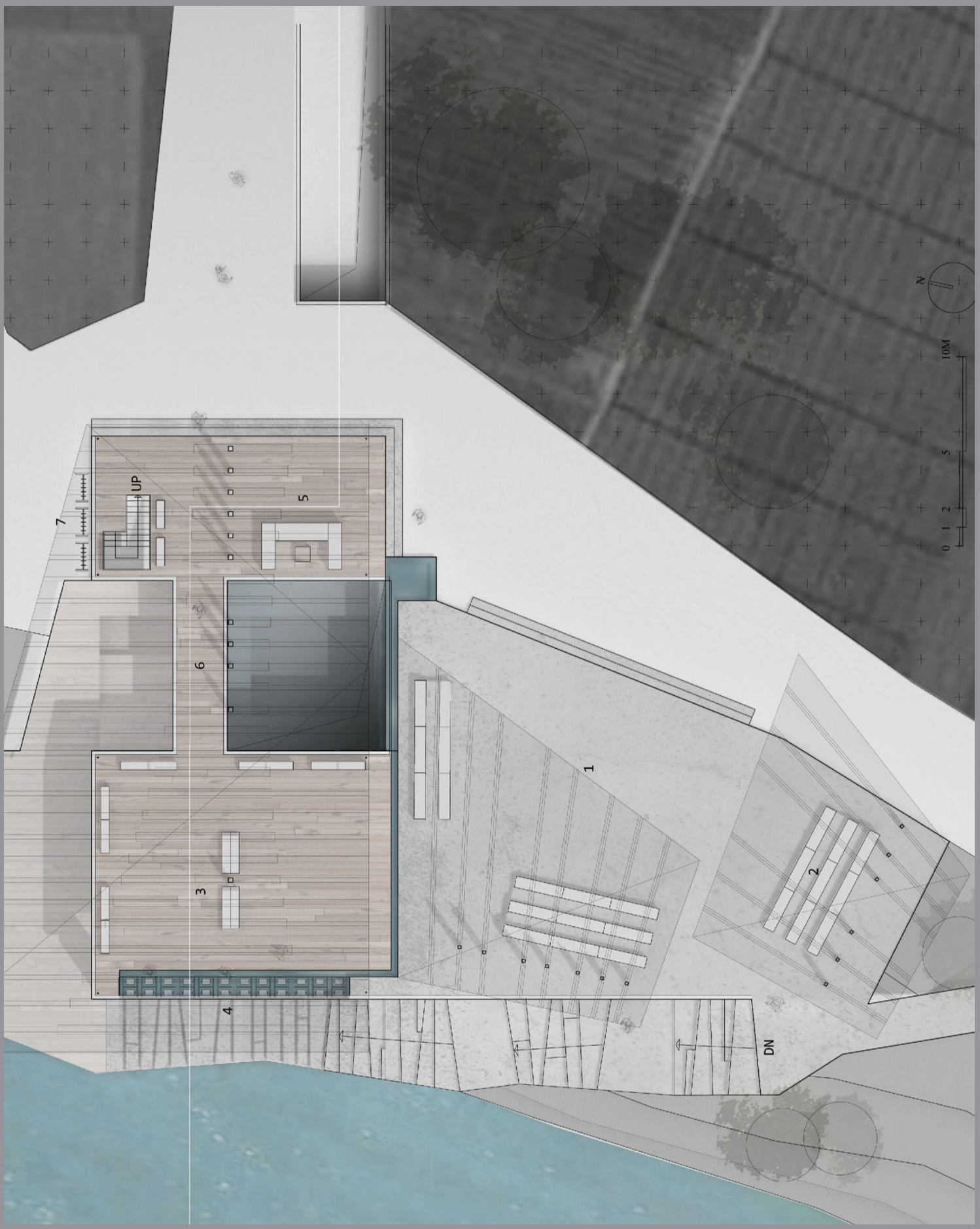


Upper level Plan

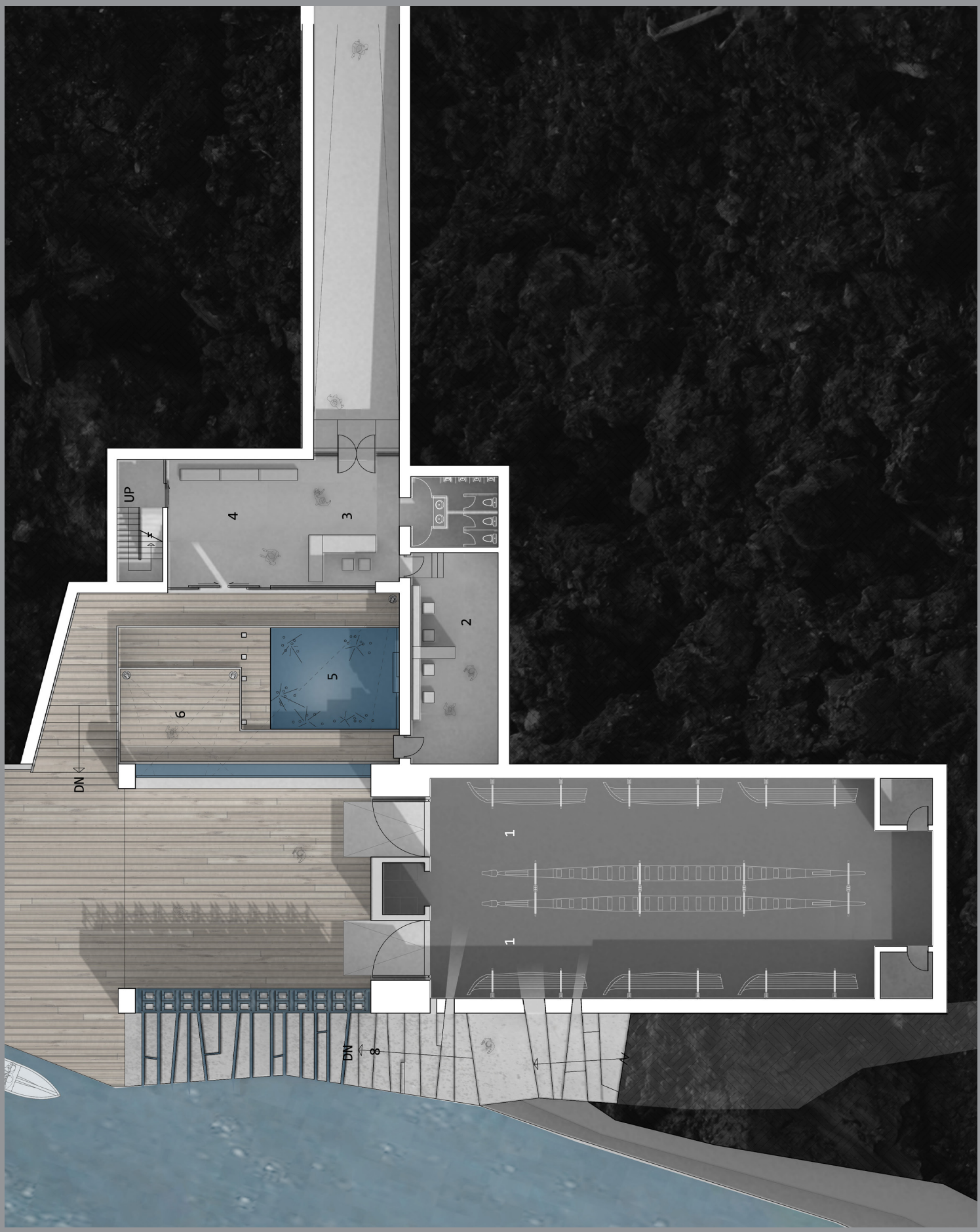

0 1 2 5 10M
N
1. Boat Storage
2. Performer's room
3. Reception area
4. Waiting area
5. Pool
6. Stage
7. Floating Pier
8. Staircase to upper level
7
DN
UP
6
4



Lower level Plan

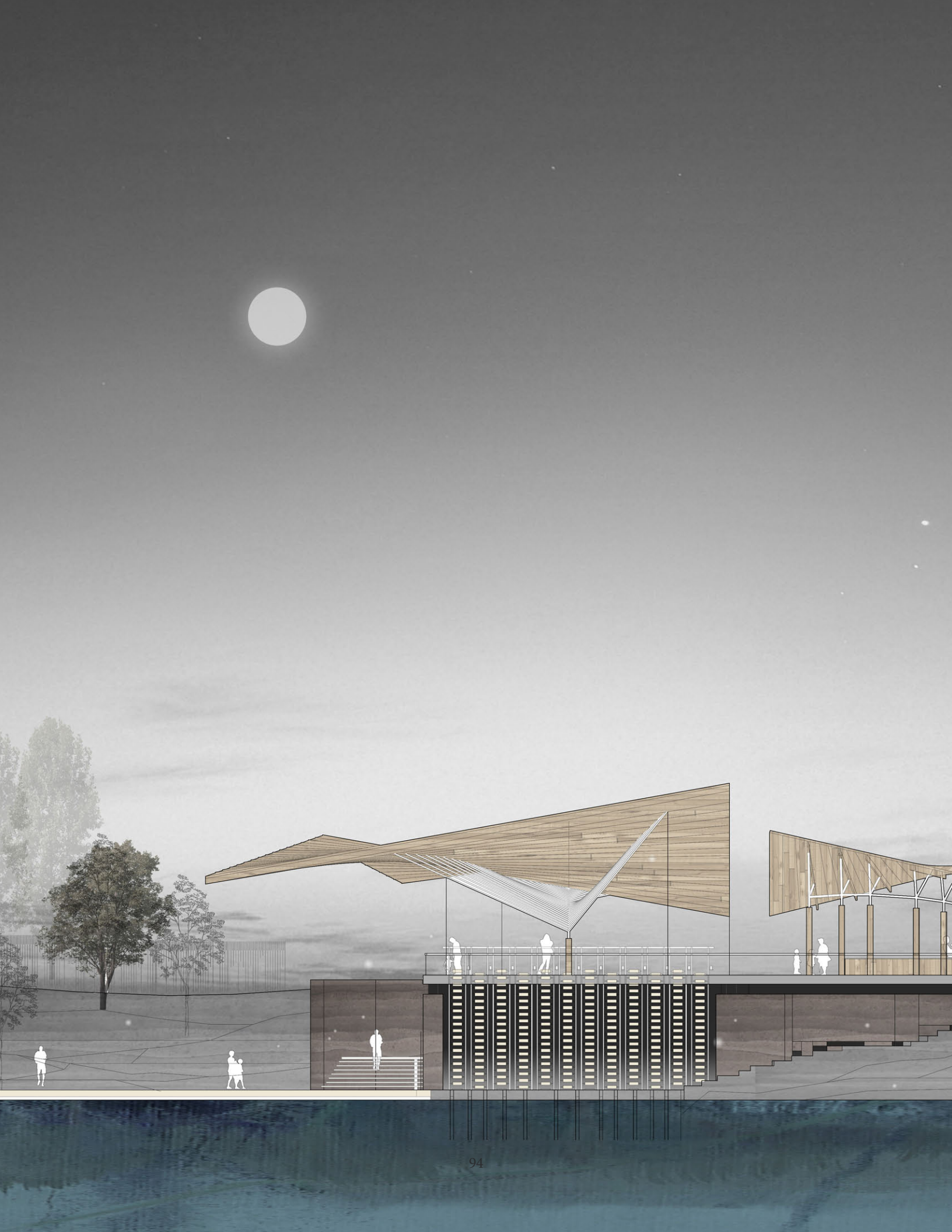


Upper level Architectural Plan

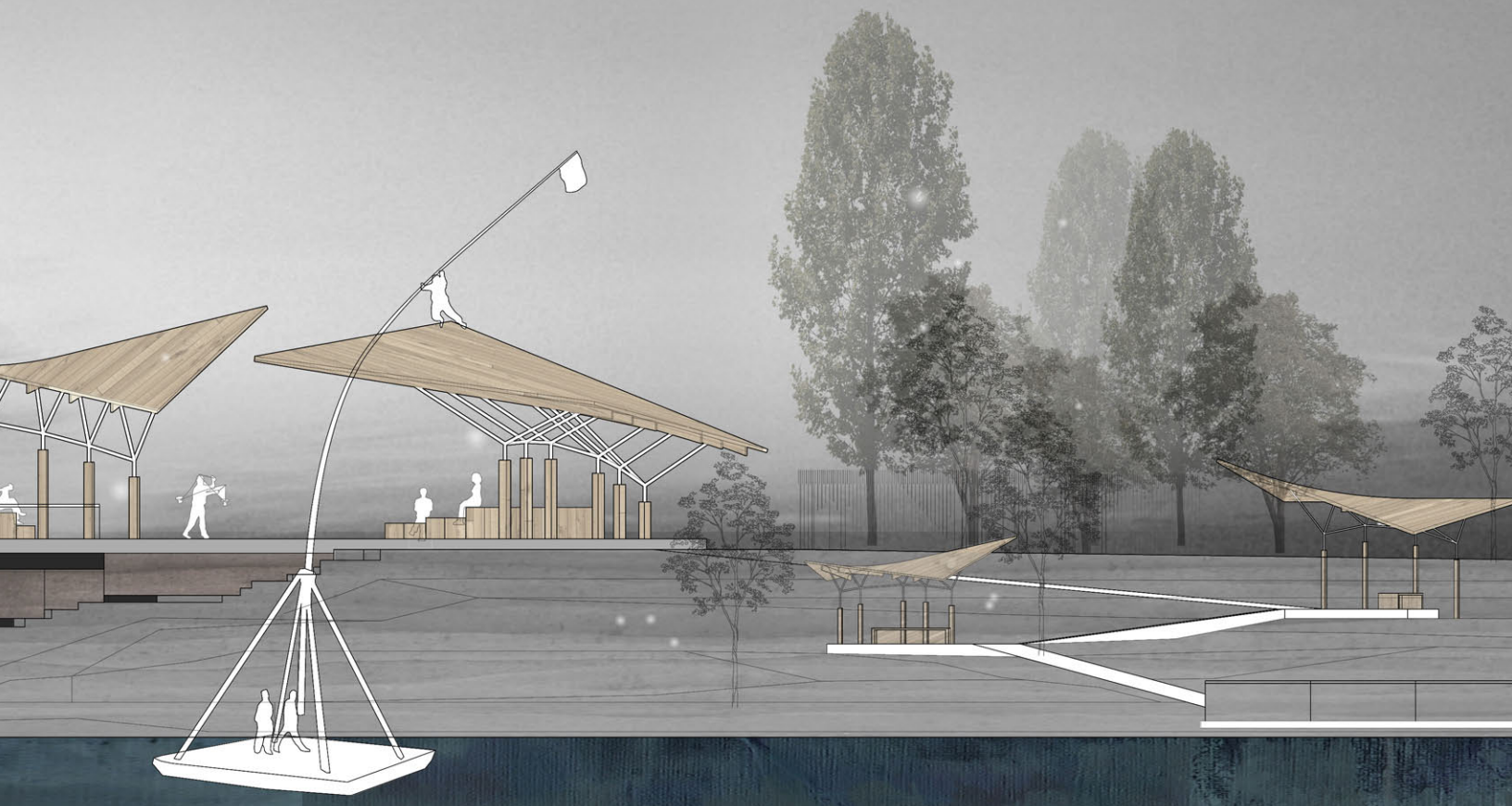


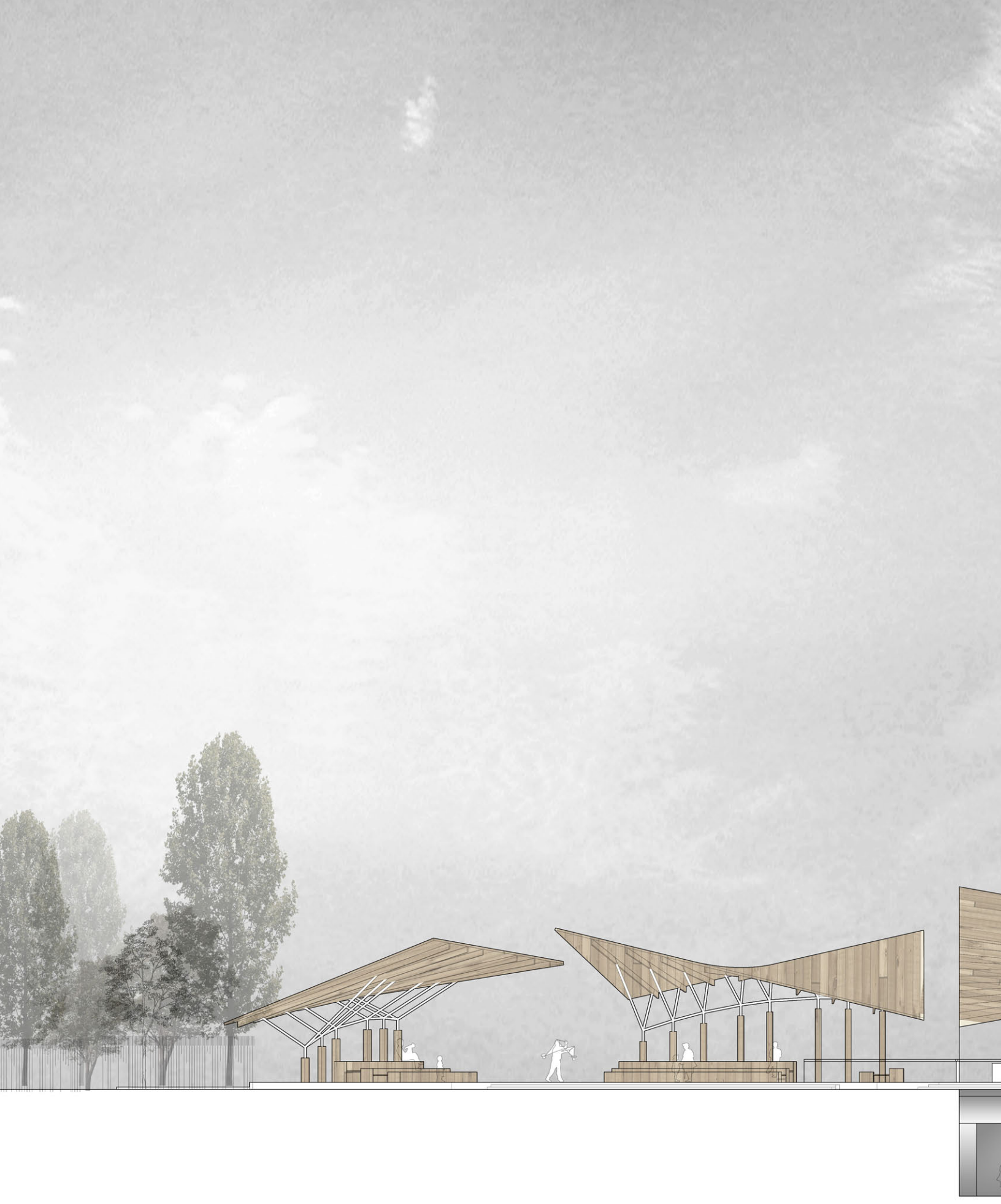
Upper level Architectural Plan

Transverse Section - [驟雨初歇]

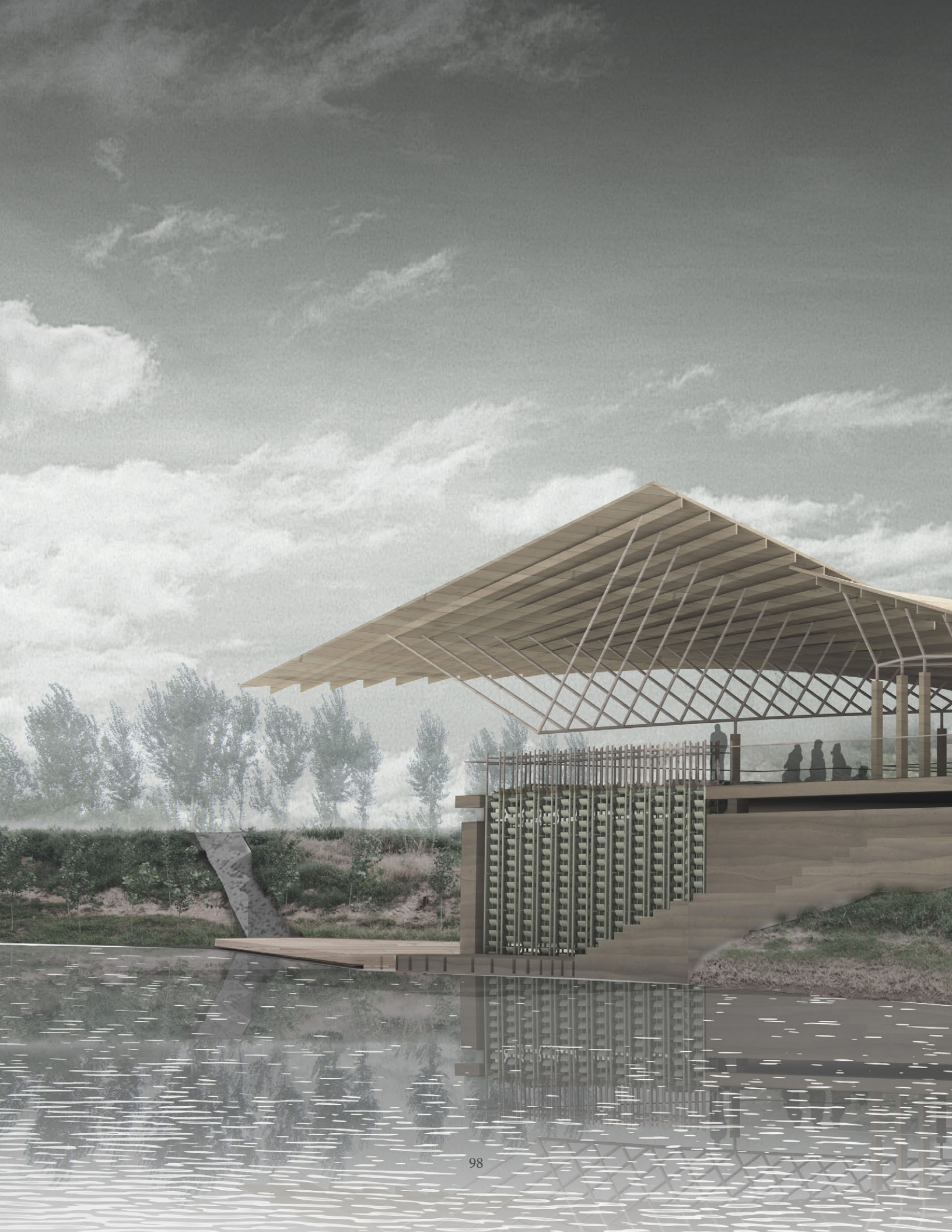


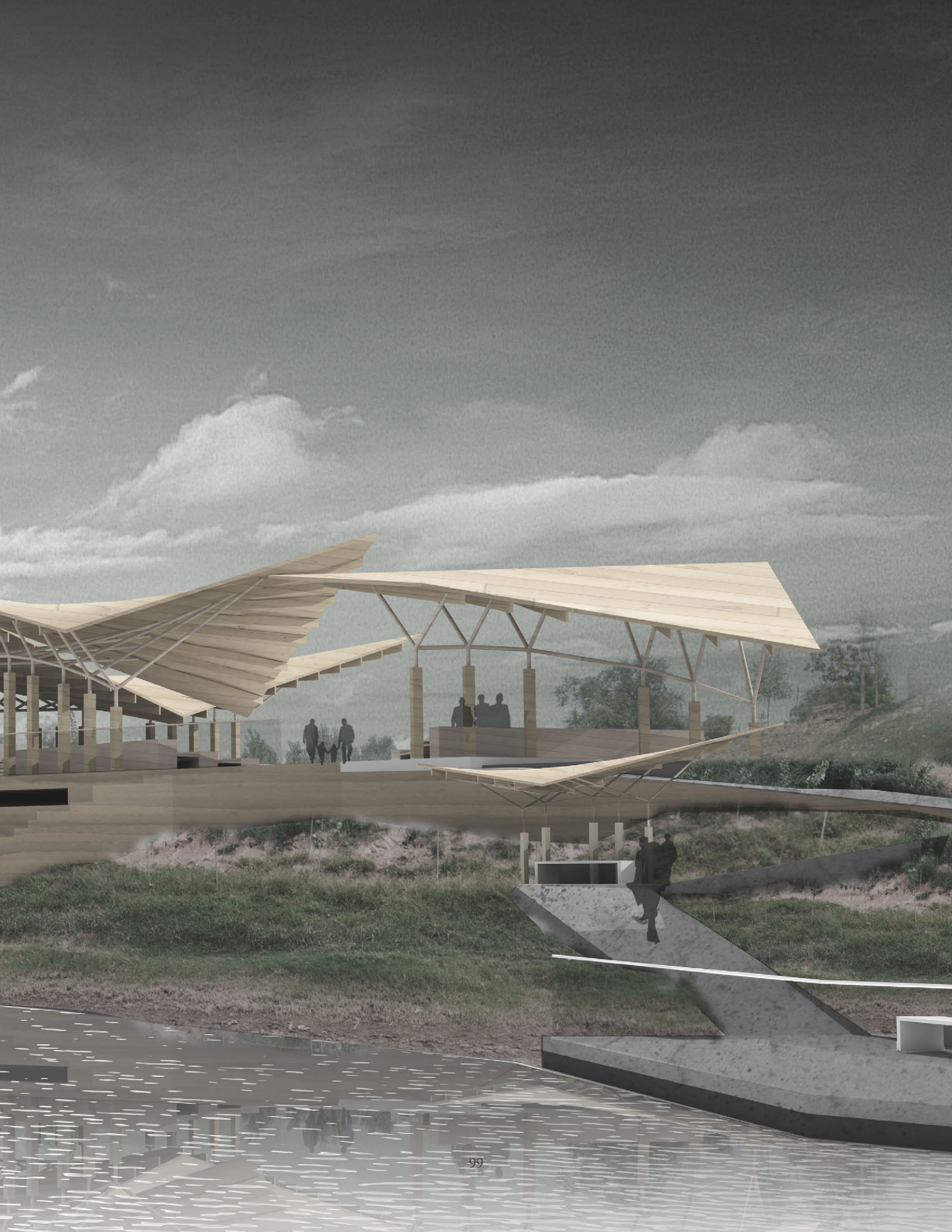
Waterfront Elevation - [皓月千里]

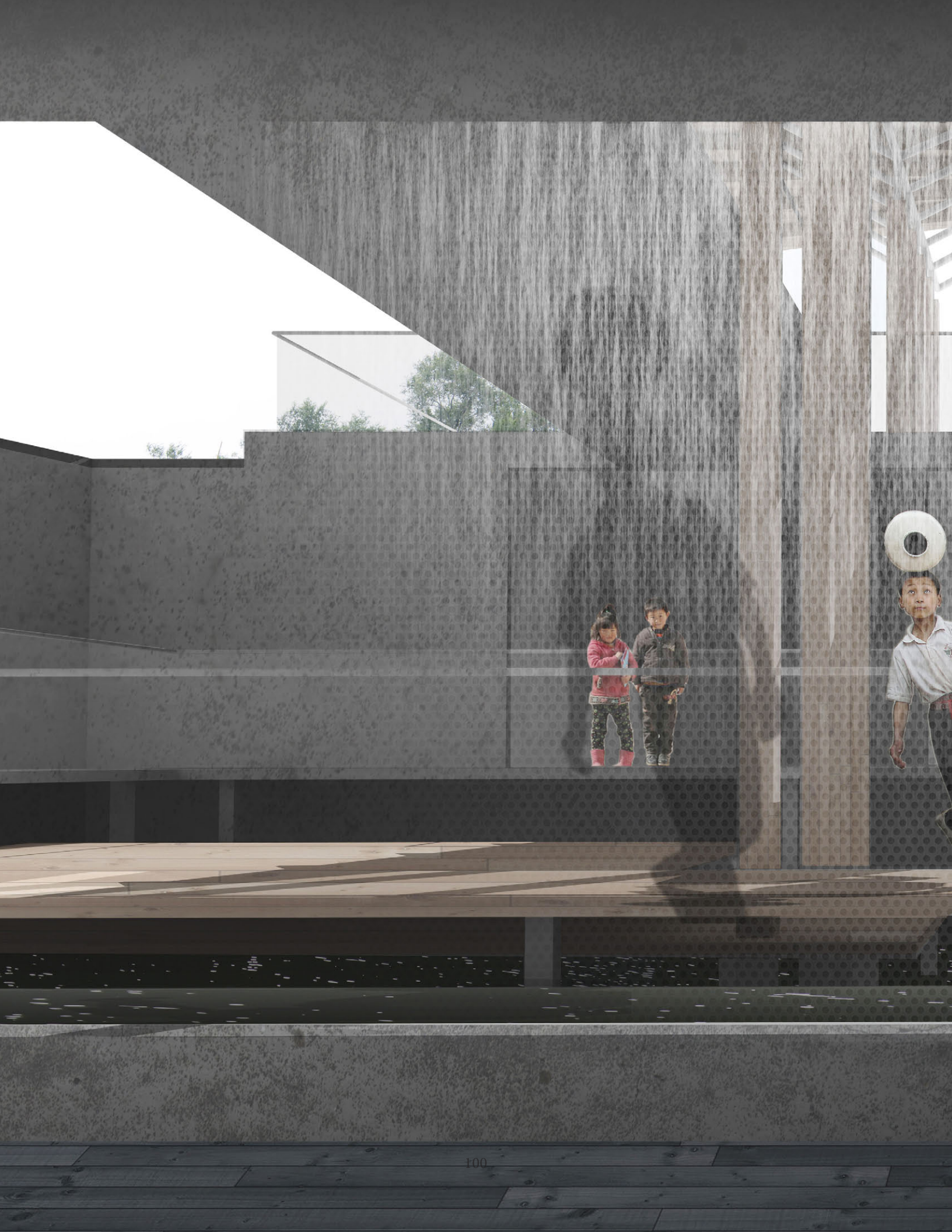


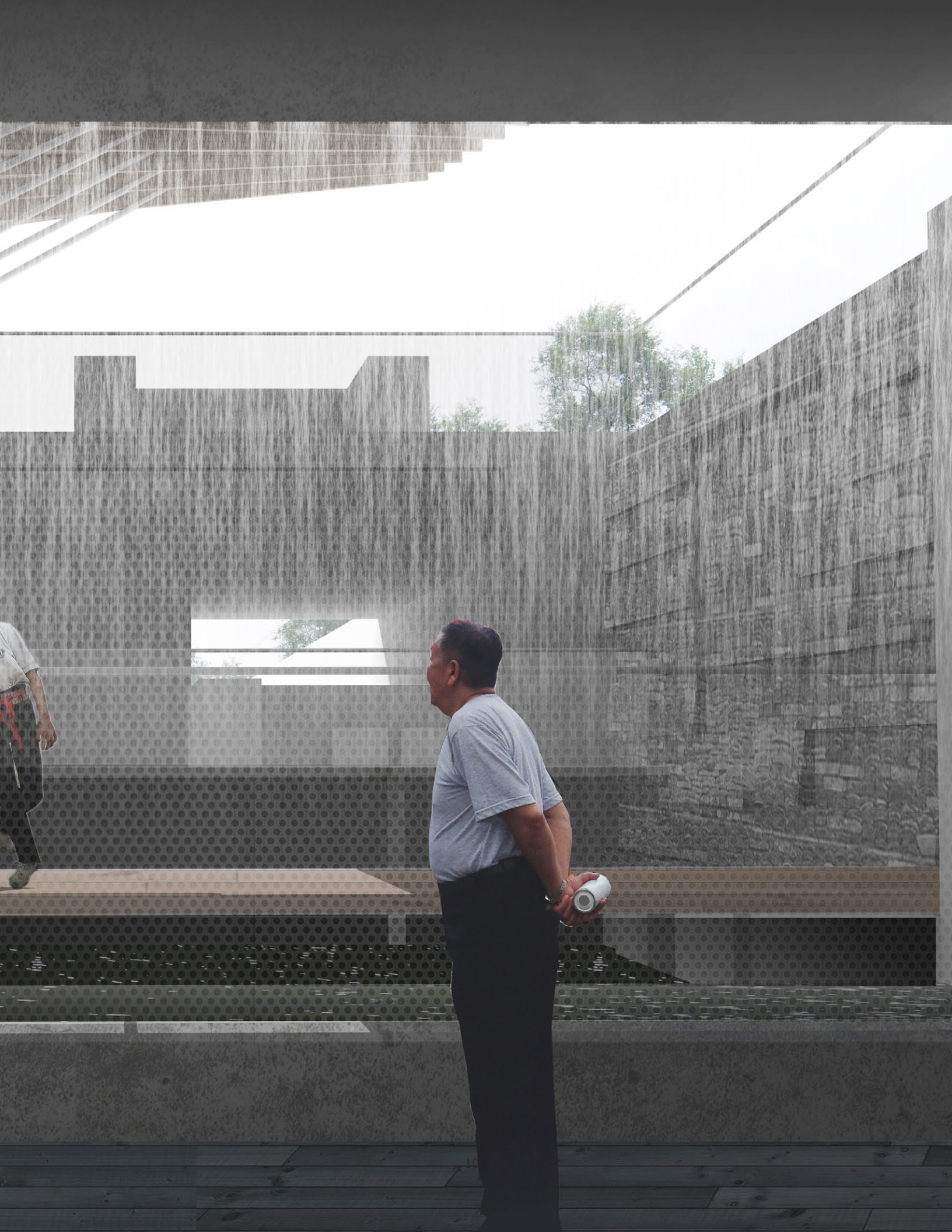


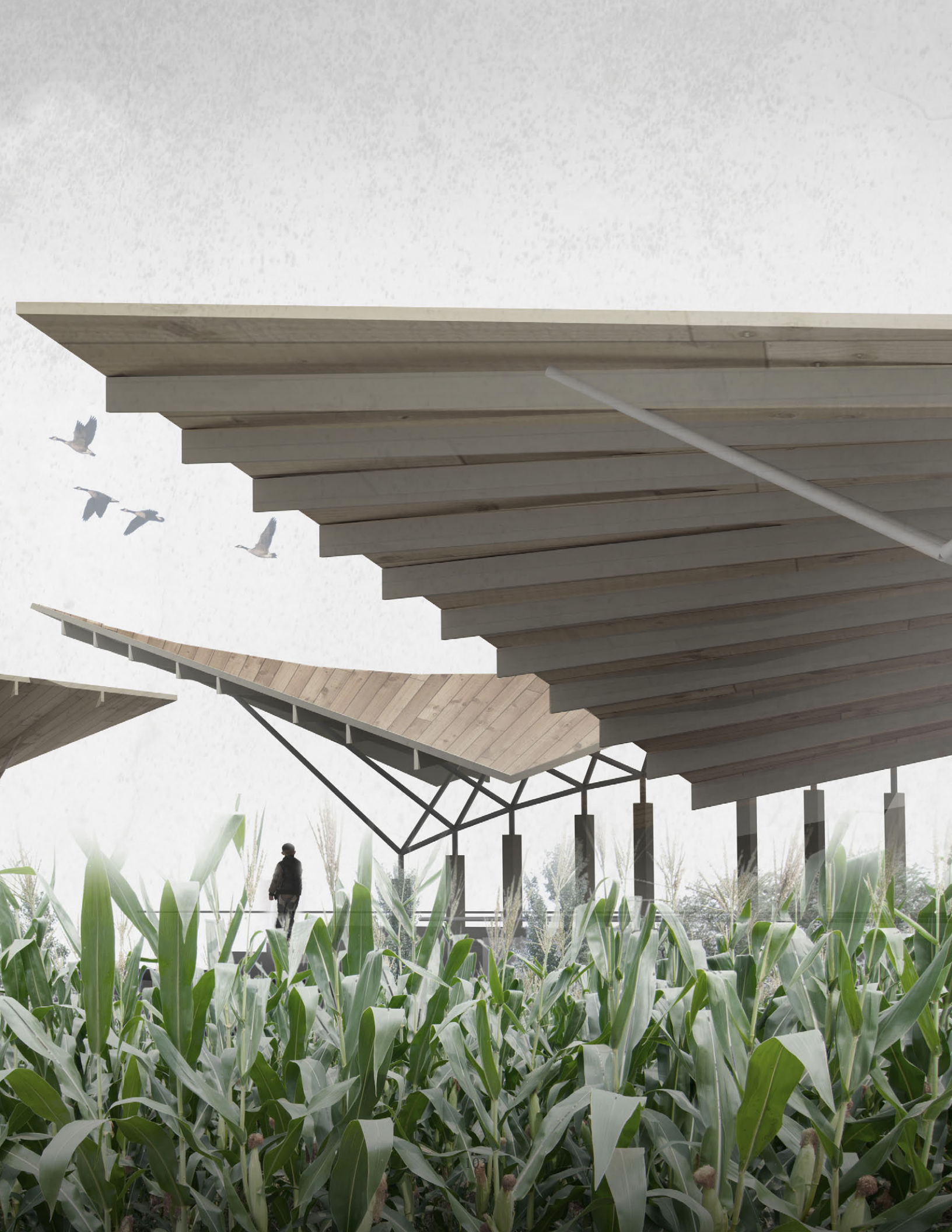
Entry Elevation - [长烟一空]












RECYCLING
VILLAGE OF UNIFORMITY


TYPE - I
TYPE - II
ACROBATIC
TYPE - III
ANIMAL
TYPE - IV
FOLK ART
INTEGRATION OF MUSIC AND ACROBATICS

The Conclusion
Water Heritage Tourism in Rural Environment

As conclusion, this project can be evaluated in four aspects:

Firstly, the methodology of multi-scale design is critical to generate a comprehensive water design solution. The thesis starts with study in large scales and proceeds in small scales. It's not a linear process of top down design but a recursive process of decision making and trade off. The scale-based programing and model of governance are critical in balancing the design decisions about aesthetic and practical demand.

Secondly, the relation of state and folk in large water infrastructure project can be design as mutually benefit rather than conflict. The local amenities and cultural heritage benefit from reintroducing water in a dried historical canal. The villages also benefit from the development of public transportation system and commercial activities brought by cultural tourism. This adaptive solution helps to deal with intense scarcity of water resources and public space in rural environment.

Thirdly, the culture comparison of east and west water architecture is important for developing this water architecture design. A contemporary architecture design in historical context cannot be a replica of the past. The experience of cultural heritage is enhanced by integration of water and acrobatic performance.

Finally, the "rational" approach of water management and the "cultural" approach of water architecture can be integrated for a comprehensive and meaningful design. The new water architecture is created as a catalyst for sustainable development of cultural tourism as well as eco-tourism.

The Appendix
1. Interview memos

08/17/2015

Interviewed person:

Xue Song Xi

Assistant Professor of China Agriculture University

PhD of Urban Planning and Landscape Architecture of Peking University

Author of "The Grand Canal Heritage Corridor set up"

J- Jie

X- Xuesong

(After introduction of thesis topc and my interest)

X :

There are two typical sections of grand canal water engineering heritage. One is Nanwang complex, the other is QingKou complex. (refer to the book Qingkou Complex on the Grand Canal – Comprehensive Research of its Engineering Heritages)

When people started the nomination of world heritage site for the Grand Canal, there's a question of what to preserve and how to preserve. Because those people from architecture and archeology backgrounds don't fully understand the canal. It's not a simple architectural or archeological question. It's a water engineering heritage. So experts from Peking University, Chinese Academy of Cultural Heritage, China Institute of Water Resource and Hydropower Research are involved in this project. … (a brief introduction of the scholars he knows)

It's accurate to understand the Grand Canal heritage in many layers of information, such as water engineering project, architecture, villages and landscape. It's more systematic in my Phd thesis paper. (The Definition of the Grand Canal Heritage Corridor Based on the Generic Method Perspective, Kongjian Yu, Xuesong Xi Graduate School of Landscape Architecture, Peking University)

The diversity of heritages in Grand Canal is crucial to make it a typical sample of Chinese water engineering heritage. A new intervention in this site must be related to the traditional method in order to make it meaningful. If the only move is to introduce new water into an old water infrastructure, what else can you make of it? I don't' know how much have you looked in depth into Cangzhou section, but I'm afraid that Cangzhou section is not the most typical section if compared with Nanwang and Qingkou. When I visited the Cangzhou section, the old canal waterway there is very impressive but that's the only thing left. Even if the South to North Water Transfer project can use the old waterway and introduce new water, it's not enough.

J:

I'm curious if the Water Transfer Project used the old waterway, how would that influence the heritage site?

X:

Not too much if it's just using that route.

J:

From my previous research, the southern part of Grand Canal which has water and is navigable, so the amount of water transferred is not that important. But the northern part is already dry, the situation after introduction of new water may be different. And the two heritage properties in that section are a Rammed earth levee and a Dam. Those will surely be affected by the new water infrastructure project.

Another reason why I chose Cangzhou section is the current ecological problem there. I also want to use the new water to deal with the water scarcity and water pollution problem in Cangzhou.

X:

You are right that the main heritage properties in that area are the waterway itself and rammed earth levees. My concern is the lack of diversity might affect you thesis. Besides the cultural, ecological and economic influence, if we look back to the fundamentals, the Grand Canal is a water engineering heritage

and it's always trying to solve problems along its way. The points where difficult water engineering problems are solved are the most typical and greatest examples on the Grand Canal.

… (talking about Qingkou Complex and the historical changes due to three river intersection and Yellow River flooding. Nanwang Complex and its geographical importance as the highest point on the canal. those two are typical because they creatively solved engineering problems)

(Xuesong then introduced his research method and documentations about Qingkou Complex and Shandong section, including historical maps, photos and drawings. He used old maps of heritage canal and compared with site survey. refer to his student research Discovering the Grand Canal Heritage in the Changing Landscape, ASLA Award 2010)

J:

How do you think architecture can help to convey heritage information at this large scale? Especially when the canal runs for miles and visitors can't perceive the whole image from above.

X:

In Shandong section, there're several architectural heritages on the Grand Canal. Actually, they can be divided into three types: functionally related, historically related and spatially related. The heritage properties that locate physically close to the canal but were built before the canal are spatially related. The historically related heritages are those built because of the water commerce or transportation on the Grand Canal. The core type of heritage is the functionally related type, including levee, dam, bridge, etc. (waterway, water facilities and water associated facilities). They become a water infrastructure system. It's important for you to clarify the cultural and engineering value of an architectural heritage.

J:

In that sense what can new architecture, including renovated and restored historical architecture, do to continue this cultural and functional relationship between the canal and architecture? In the Grand Canal heritage parks and museums that you have seen, what can be learned and what can be improved?

X:

Museums are vessels. They are places where cultural information is condensed. It's not the whole image of the Grand Canal. It's difficult to make a museum for a heritage that has such long historical period and vast territory. When I visited US in 2010, I went to visit Erie Canal and wrote a paper about it. (refer to chapter 2.2 Preservation and Sustainable Use of Heritage Canal – a case study of Erie Canal, the Grand Canal Heritage Corridor set up)

I spent two weeks alone the Erie Canal and feel its heritage preservation closely related to local culture and life in related neighborhood. The canal museums I visited in China focus too much on the grandeurs of the canal and miss lots of subtle information. Unlike Forbidden Palace, whose grandeurs can be directed perceived by the axis, space and architectural details, the Grand Canal is a grand system composed of many common things. That impresses me most. Those museums fail to explain how common things contribute to the value of a grand thing.

Another thing I think valuable is the preservation of settlements along the canal. Many villages are totally removed for heritage parks. As I said in a Grand Canal research conference, those villages have been there since Ming or Qing Dynasty. The relationship between those villages and the canal is a symbiosis. I think to demolish villages for museums are totally wrong. I think the Erie Canal is successful not only because of the well preserved bridges and levees but also through detail design in exhibition through multimedia and physical models.

J:

For example in Qingkou Complex, are there still villages along the Grand Canal? How are the daily lives of villagers related to the activities on the canal?

(Xuesong showed the book)

X:

… this new irrigation channel completely cut through the historical canal. If those are not changed it'll also be part of the World Heritage.

…

All villages must locate close to the levee on the high ground. Otherwise if the levee is destroyed by flood they will be submerged. A lot of water god or water goddess temples were destroyed in this region.

J:

Are those agricultural area or industrial area?

X:

Mostly agricultural.

…

J:

I've seen some integration of water landscape in urban environment such as New York City and Boston. What about the water landscape in rural area in China. There should be a different in type of users, frequency of visiting and program. What's your observation of this difference? Is there any precedent you recommend?

X:

I don't have experience on rural canal park but I'm working on a heritage park project in suburban area. An obvious difference is that we can't build perimeter walls for it. It'll be a difficult management problem. And I'm also against the relocation of villages. If those people are not living there on their own land, the heritage site would already be plundered by outsiders. In our project we are trying to reform the agricultural production in that area by introducing different plants. Before that, many villagers don't work in the field anymore because there's little profit. We're introducing some plant that have landscape design and shallow roots which will not destroy the underground heritage.

Another dilemma is to attract tourists in this a large rural region while preventing them destroy this heritage site. The method we currently use is based on accurate archeological excavation. We control the distance between tourists and heritage sites. Meanwhile, we allow local villagers to work in their field as their ancestors have already done in centuries. And we slowly advance the agricultural reformation.

J:

I find it very interesting that in landscape design, agricultural production can be incorporated into the design project. But in architectural design the "ecological" approach always feel trivial or artificial. I currently feel it difficult to see architecture perform significantly in a vast rural area.

X:

It's not a problem that can be solved just by architecture. It involves cooperation of multiple disciplines such as archeology, geography and ecology. If you just did something architecturally beside the Grand Canal but not related to the research of Grand Canal in other disciplines, it's superficial.

If you start from architectural perspective, it has to be multiple museums. From water engineering perspective, how do you transfer water from the South to North Water Transfer Project to the Grand Canal waterway? What's the significance of this move? Can the local development or heritage preservation benefit from this move? It's a difficult and comprehensive problem indeed.

J:

As I'm doing an architectural thesis, what's your advice on integrating water, architecture and rural landscape?

X:

I haven't seen any good example in China yet.

… One problem in China is everything has to be a quick success. Many projects have to be done in a limited time with a limited budget. In western countries, a project may take decades from research to final design. You need to understand the problem before you make design decisions.

… For example, how to revitalize a village next the Grand Canal is not an architectural problem but a realistic problem. That's also why it's interesting.

[END]

[the interview is about 1 hour long]

Interview: 08/24/2015

A common family in Huajiakou village

Family members:
Grandmother,
Husband and wife (30-40 years old)
One boy (3 years old) and one girl (7 years old)

Housing condition:
A single story courtyard house with 3 buildings. The main building has a living room and 2 bedrooms. The kitchen and bathroom are in the building next to it. And there's a building for storage with covered parking space.
Most of the houses in the village is built after 1970s and are made of brick. Not using local material. There're remaining features of traditional housing in the use of tiles, doorway decoration and plan layout.

Occupation:
The husband works in Tianjin as a factory worker. He lives in Tianjin for the most of the year and only comes home in holidays. He's home at the time I visit only because the factory he works for is temporarily shut down during. This is required by the government of Hebei province in order to control air pollution when some important events are held in Beijing.
The wife runs a small business in Wuqiao County. She travels between the village and Wuqiao County everyday on motorcycle. The grandmother stays at home taking care of two kids.
Their occupation is typical in Huajiakou village. Some mid-aged male still work in the fields but most young man works outside in Wuqiao County, Jinxian Conty or larger cities in Heibei province.
In terms of the local acrobatics tradition, their neighbor has a cousin working in a local circus. He considers that a hard job but paid back quite well. Large circus from Wuqiao has international reputation and has a lot of opportunities to perform aboard. The smaller ones are also popular in other provinces. The acrobatic performers are respected for their skill and travelling experience. So sending their own children to acrobatic schools is a reasonable choice for locals.
Transportation:
There's no public transportation in Huajiakou village and other small villages near the canal. Most locals ride motorcycles to Wuqiao, Jingxian and Dongguang County and took bus to nearby cities from there.
There a few private taxi drivers in the village and take jobs by phone calls.

Education:
There's a kindergarten in Huajiakou village but no primary schools or middle school. The students have to make daily trips to nearby Counties, usually picked up by parents.

Water Use:
Villages are not connected to water supply network. Locals have water tanks or use underground water from water pumps.
Irrigation water is taken from the canal directly if possible. A county level irrigation ditch network is currently under construction. Pump stations are seen next to the canal but not in use.

Influence of tourism:
No tourist visits the village. Most tourists only stay one night in Wuqiao County in order to see Wuqiao Acrobatic World.
Their neighbor said the village has a 2 million RMB plan for built a "new temple" in order to attract tourists. But this project is not confirmed and is non authentic.
They say many groups of archeologists have visited this canal in the past few years. As locals they find the site not very interesting and don't know what can be made out of it. The water quality in the canal has been improved. They are interested if the development of Heritage Park can bring some jobs to the village.

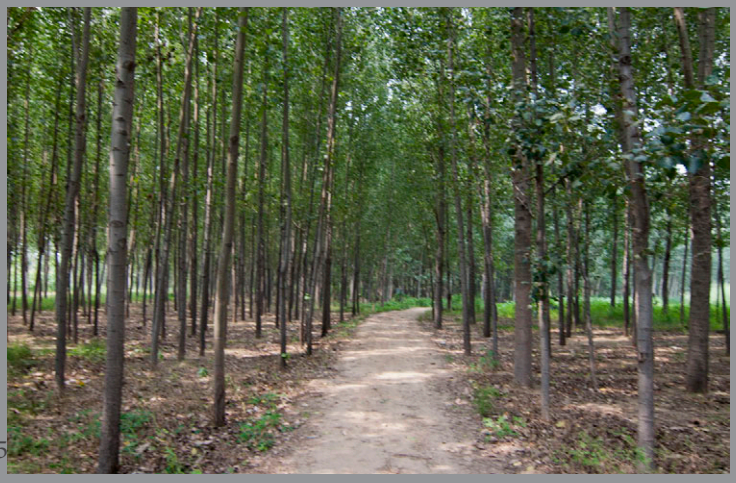
The Appendix
2. Site Photos


THE GRAND CANAL OF CHINA 中国大运河






















新七天


网络世界
Roby
早点 快餐 家


吴桥杂技大世界
WUQIAO ACROBATICS WORLD









王半仙


乡里合外千易人共江湖


吴桥杂技大世界旅游景区
Wuqiao circus world scenic
杂技小院
（演出时间）
上午 9:25—9:55
下午 16:05—16:35


降
抛绣球招婿


吴桥杂技大世界导游图
Tourist map of Wuqiao Acrobatics Big World scenic area


洗车


振强木业


吴桥文化馆

The Appendix
3. Presentation Boards

Presented on Dec 17th 2015 10:00-10:45

Guest Critics:

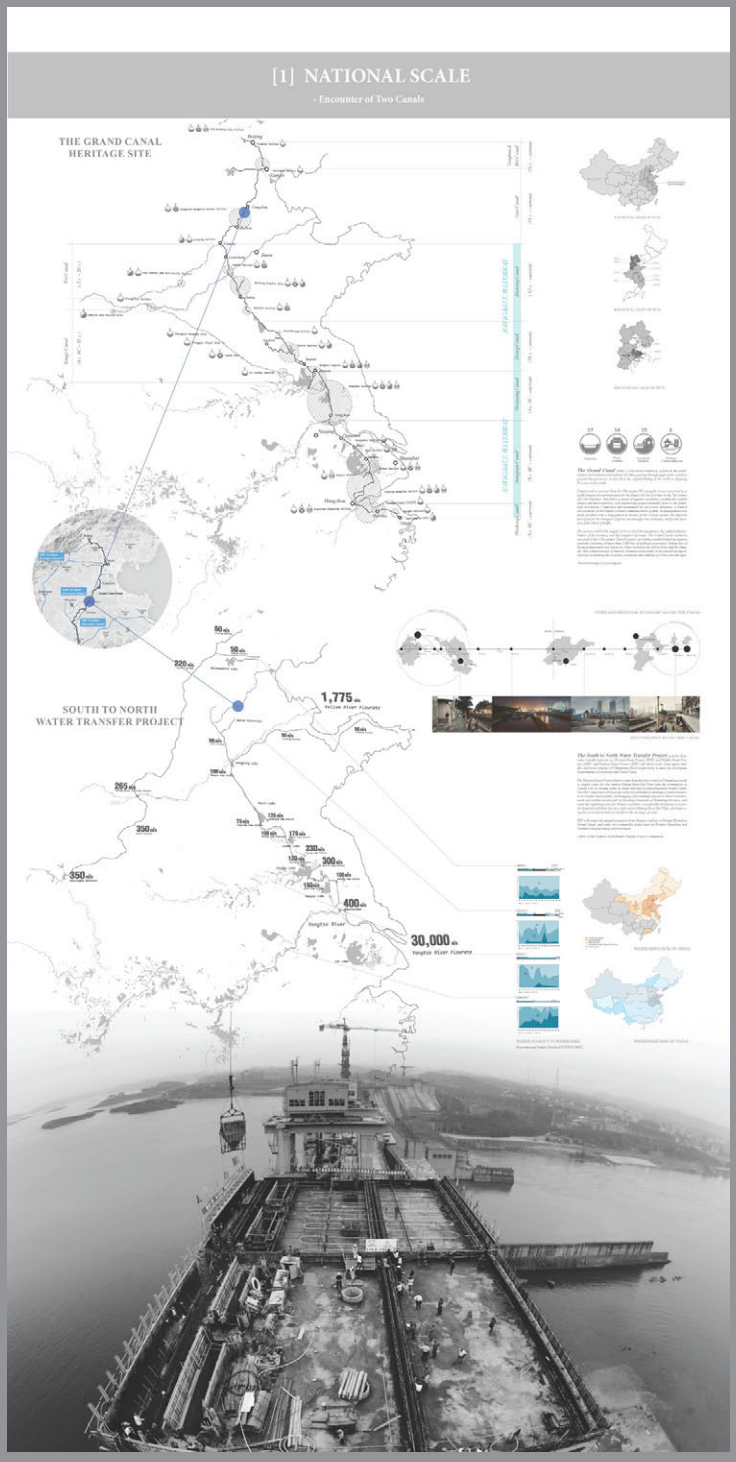
Timothy Hyde, Fadi Masoud, Kiel Moe,
Andrew Scott, Lola Sheppard

10 Presentation Boards
6 Rendering Panels
1 Site Model
1 Sectional Model

Digital Presentation:

Thesis Final Review
https://prezi.com/gbzjklevb0nm/thesis-final-review/

Thesis Final Review part2
https://prezi.com/3umgceukmoyv/thesis-final-part2/

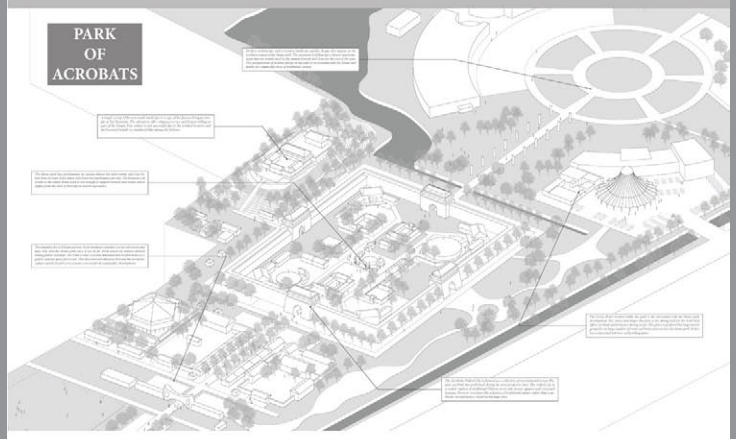


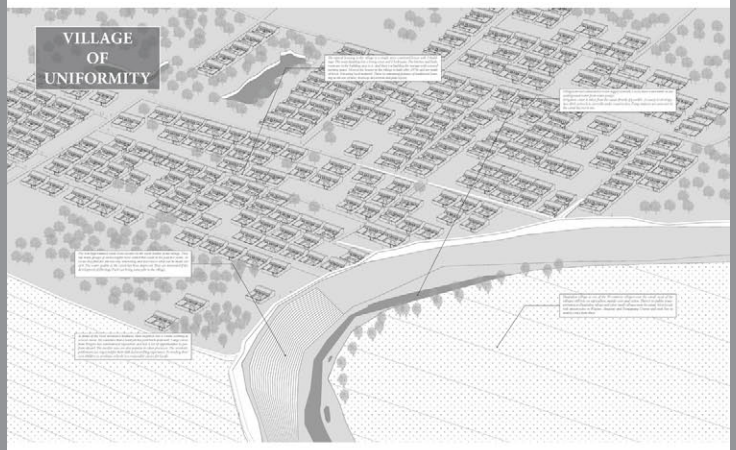
[2] REGIONAL SCALE

- Rural Settlement Development and Cultural Commodification

[2] COUNTY SCALE

- Rural Settlement Development and Cultural Commodification





[3] BAIXI - HUNDRED-TRICK ARTS

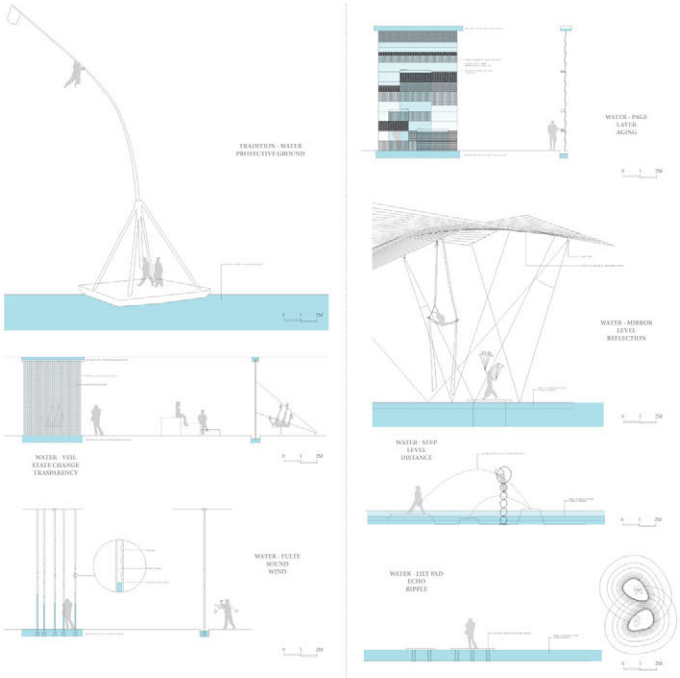
- Acrobatic Performance and Folk arts-

	TYPE - I	TYPE - II	TYPE - III	TYPE - IV
	AERIAL	ACROBATIC	ANIMAL	FOLK ART
PERFORMANCE SPACE	- LONG RANGE /MIXED RANGE VIEWING DISTANCE - BUFFER ZONE FOR AUDIENCE - STREET OR STAGE PERFORMANCE - STRUCTURE FRAME OR EQUIPMENTS - PERFORMER NEEDS TO REST BETWEEN PERFORMANCES - UNITS OF CLIMATIC SHOW OF A TRADITIONAL DAY	- LONG RANGE TO MID RANGE VIEWING DISTANCE - BUFFER ZONE FOR AUDIENCE - MOSTLY STREET PERFORMANCE - SOME PERFORMER NEEDS TO REST BETWEEN PERFORMANCES IN SHOWS IN A DAY - HIGH DIVERSITY - LOUD TO ATTRACT AUDIENCE	- LONG RANGE TO MEDIUM RANGE VIEWING DISTANCE - BUFFER ZONE FOR AUDIENCE IF LARGE ANIMAL/CART USED - STREET OR STAGE PERFORMANCE - CAGES AND HARNESS EQUIPMENTS - PERFORMER AND ANIMAL NEED TO REST BETWEEN PERFORMANCES - NEED A SEPERATED PERFORMACE SPACE	- MOSTLY MED RANGE TO SHORT RANGE VIEWING DISTANCE - VIEWERS CAN FORTUITOUS AND VIEW FROM ANY ANGLE - STREET OR STAGE PERFORMANCE - CAN PERFORM MORE FREQUENTLY AND ALLOW MORE IMPROVISATION - HIGH DIVERSITY
TRAINING SPACE	- LARGE TRAINING AREA - LONG SPAN AND HIGH CEILING HEIGHT IF INDOOR - PROTECTIVE GROUND MATERIAL (MATT, PAD, ...) - EQUIPMENT STORAGE SPACE	- MIMICS ROOM WITH MIRROR WALL - PROTECTIVE GROUND MATERIAL (FOR HEAVY-SCALE EQUIPMENTS) - SMALL EQUIPMENT STORAGE SPACE FOR VISUALS ETC. - MOST TRAINING PRIVATELY	- LARGE TRAINING AREA AND STABLES - ONE WAY PERFORMANCE SPACE FOR TRAINING - SAFETY DISTANCE BETWEEN ANIMAL TRAINING AND OTHER STAGES - EQUIPMENT STORAGE SPACE - TRAINING PRIVATELY	- FLEXIBLE TRAINING SPACE - TRAINING PRIVATELY

[3] WATER AND MATERIALITY

- Water phenomenon/Integration with Acrobatic Acts-

STATE OF WATER AND MATERIALITY



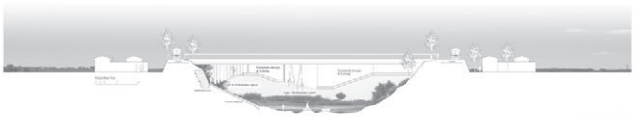
INTERGRATION OF WATER AND ACROBATICS

[4] PROGRAMED SECTIONS

- Acrobatic Performance and Waterway Integration

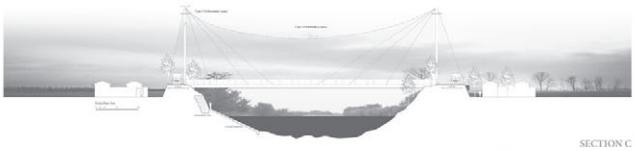
SECTION A

BRIDGE -LOW WATER LEVEL — RIBBON PLAY /MID RANGE BALANCE PLAY



SECTION B

BRIDGE -HIGH WATER LEVEL — POLE PLAY / HARD WIRE PLAY



SECTION C

DECK & LEVEE — LONG RANGE BALANCE PLAY/ GROUP ACT/ FOLK ART

SECTION D

FLOATING STAGE & DOCK I — LONG RANGE POLE PLAY/MID RANGE ACROBATIC PLAY

SECTION E

FLOATING STAGE & DOCK II — LONG RANGE STRENGTH PLAY/ ANIMAL TRAINING ACT

SECTION F

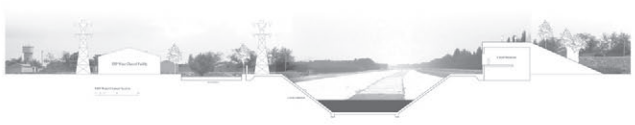
VILLAGE — SHORT RANGE ACROBATIC PLAY / FOLK ART

SECTION G

FIELD — CAMPING/ FISHING/ FRUIT PICKING/ FARMERS MARKET

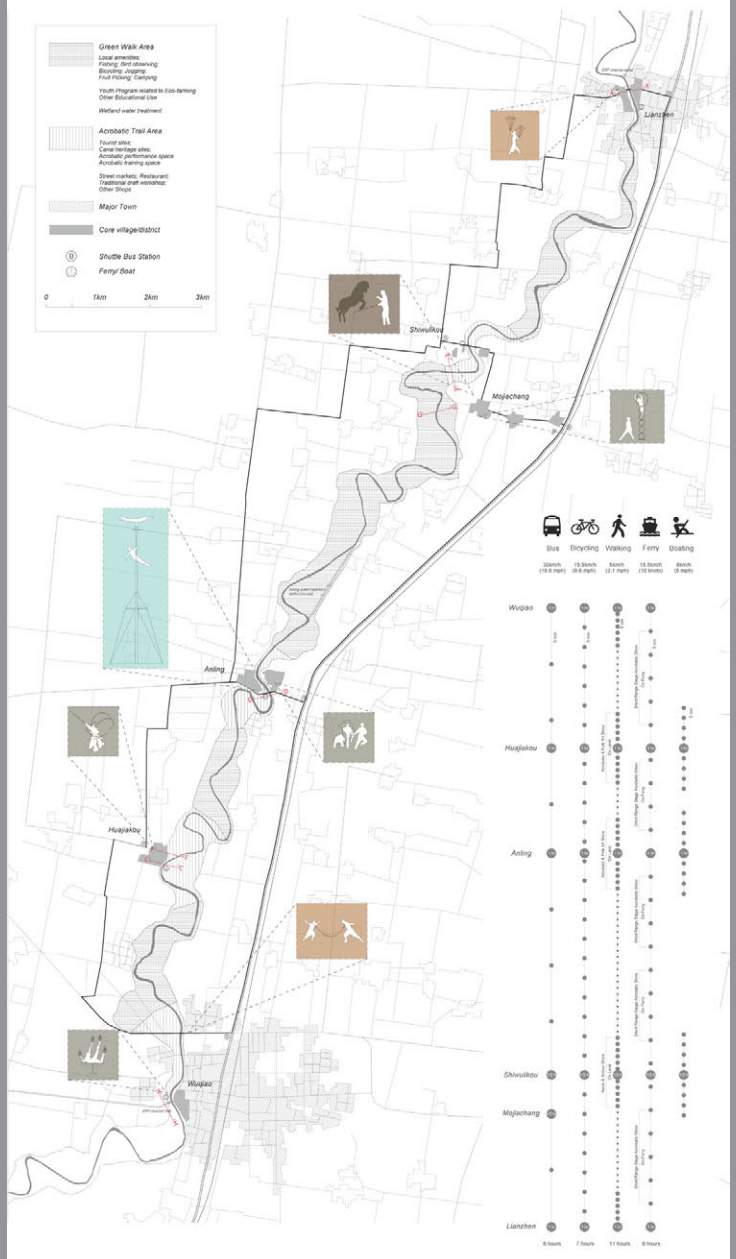
SECTION H

ERP WATER CHANNEL — CANAL MUSEUM/ WATER TREATMENT



[5] MASTER PLAN PROPOSAL

- Heritage Tourism and Local Amenities



[6] WATER SYSTEM AND SITE PLAN

- Integrated Water System for Beneficial Use

Analysis of Flowrate in Historical Waterway

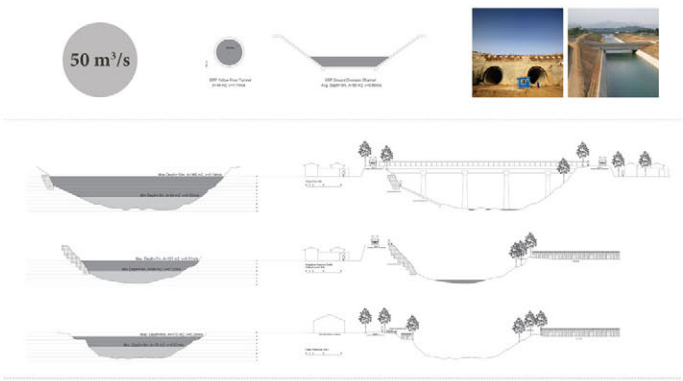
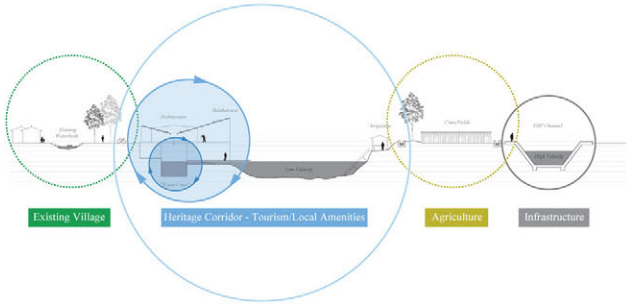
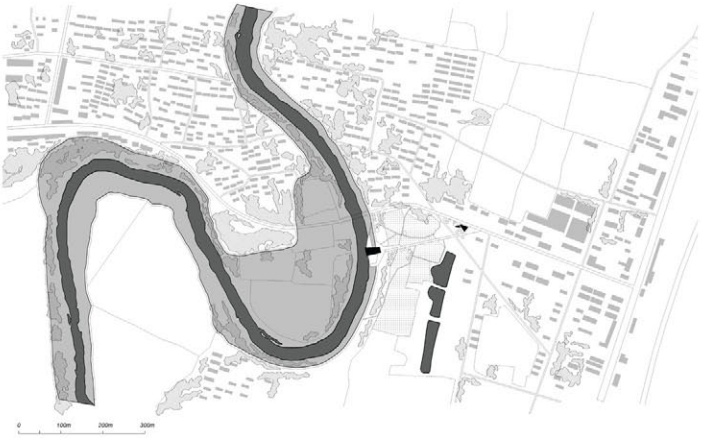


Diagram of Integrated Water System

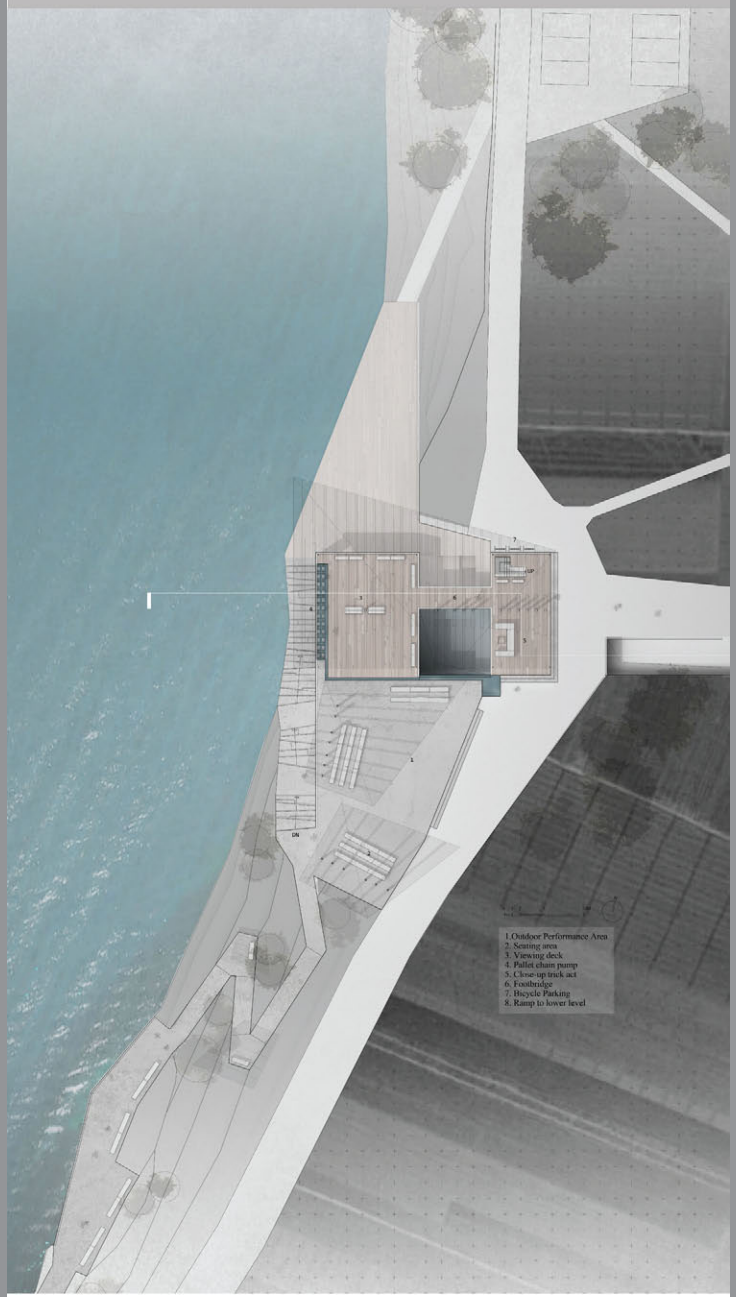




Site Plan of Anling Site

[7] NEW WATER ARCHITECTURE

- Water, Heritage, Communites



Upper Level Plan

Lower Level Plan

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