



Vegetation Analysis



Since the initial development of neighborhood 1, there has been an increase in development and deforestation in the surrounding area. New campus developments have the opportunity of conserving a considerable portion of undeveloped land.



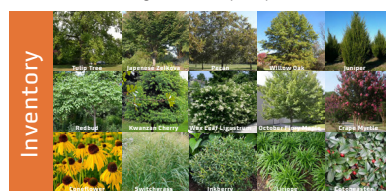
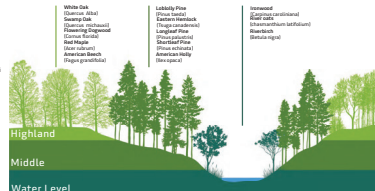
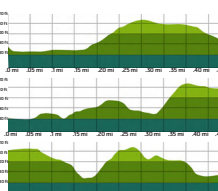
The site for CU-ICAR consists mostly of woodlands. Whether the surrounding trees are evergreen or deciduous may play a role in designing for sun patterns. Open space should be accounted for when designing for views and buffers.



Residential Green	The plant life of residential neighborhoods consist of lawns, shrubs, remaining woodland, planted trees, flowers, and gardens. The land is largely subdivided by roads and driveways, with the presence of automobiles.
Open Space	The plant life of open spaces consist of wild flowers, various grasses, sparse trees, and barren ground. Most open spaces are near highways and are regularly mowed.
Deciduous Forest	The plant life of Deciduous forests consist of dense trees, a number of invasive vines, and red clay soil. These forests are typically flat and comparatively dry.
Pinewood Forest	The plant life of pinewood forests consist of a pinestraw ground cover, sparse shrubbery, and a series of mature pines such as Loblolly and Longleaf. Undeveloped pinewood forests tend to remain due to varying terrain elevation.



There are a network of creek systems that run throughout the site. These water ways should impact what is planted where. Slope also plays a role in the kind of plant typologies that occur. Pinewood forests tend to grow on the steeper slopes, while the deciduous forests tend to grow on flatterland.



There are a set of Architectural guidelines that provide a starter plant palette and planting principles. These elements should be referenced and met during the design process. The more sustainable elements such as the green roof and Piedmont Prairie should also be carried over to future Neighborhoods.



Plant Principles
2.5 Trees and Space The most important resource that contributes to the beauty of a Campus setting are large, grand trees. The Campus will consist of a series of spaces that connect buildings and link together often-diverse functions. Some of these spaces will have the character of a garden. However, the common thread that will run through the new landscape is the ubiquitous presence of trees. The tree canopy is the single defining element that will make the CU-ICAR Campus memorable and beautiful. The trees will shape and reinforce the Campus character. 2.15 Plant Life and Well-Being The appropriate use of vegetation in the built environment is a major influence on the quality of human life. Shrubs, herbaceous plant material, and trees filter pollutants in the air and water, mitigate wind and solar heat gain, stabilize soil to prevent or reduce erosion, and provide an aesthetic counterpoint to the built environment. These attributes are essential to balancing the effects of humans on the land. Furthermore, the native plants of a region provide some of the strongest clues to the unique identity of a place. In turn the creation of a healthy growing environment for the plants requires the collaboration of arborists, horticulturists/landscape architects, and native plant biologists.

Invasive Plants on Site

These plants pose a threat by outcompeting native species. Eradication of these aggressive plants will improve the health of the ecosystem.



Patch and Corridor



Native Residents

Plant life creates animal habitat. Lots of animals live in the patches of Greenville and need a place to live. Connecting the patches can improve the mobility and biodiversity of the area.

Migratory Birds

Migratory birds need greenspace in order to feed and rest on their journey. Greenville is a destination for a number of migratory birds on their big trip.

Endangered Species

Interrupted corridors can hurt the migratory patterns of endangered animals, as well as damage the environment of endangered plants.



Protected Heritage trees (trees greater than 20" within buffers and setbacks or trees greater than 40" located anywhere) must be replaced at a 1:1 caliper inch ratio.

Strengths

- Large preserved woodland
- Creeks and water flow for lush vegetation
- Sustainable design precedent

Weakness

- Highways split patches of vegetation
- Ecosystems lacking visual interest
- Lacking in biodiversity

Opportunity

- Create a new corridor connecting different patches across the highway
- Protect native species
- Create new parkland as a part of Greenville's 'green necklace' masterplan

Threats

- Increasing development
- Dumping of trash in the forest
- Invasive species

Design Strategies

- Conserve existing woodland
- Create new corridors for animal habitat
- Create parkway that connects to Greenville's 'green necklace'
- Plant native species

GRAND CANAL 揚州 YANGZHOU

THROUGH THE AGES

10,000 - 2,000 BCE | Neolithic Cultures

ca. 2100 - 1600 BCE | Xia (Hsia) Dynasty

ca. 1600 - 1050 BCE | Shang Dynasty

ca. 1046 - 256 BCE | Zhou Dynasty
(Chou, pronounced "Joe")

In the 4th & 3rd centuries BCE, Yangzhou was a fief known as Changling in the state of Chu. At this time China was divided up by "warring" who were ruled by various royal families. The social and hierarchical political system of feudalism was established, which brought cohesion and order because of the hierarchical order of ancestral gods. This system eventually broke down due to competition between rulers.

China

Jiangsu Province

Yangzhou Municipality

Changzhou District
Huaiyin District
Jiangdu District

Yangzhou City

Wuyue City

Guanyu City

Baoying County

SIGNIFICANCE OF YANGZHOU THROUGHOUT HISTORY

China's Administrative Division

- The country is divided into provinces like Jiangsu, autonomous regions and municipalities directly under the Central Government (Beijing, Changping, Shanghai, & Tianjin).
- Provinces and autonomous regions are divided into autonomous prefectures, counties, autonomous counties and cities.
- Counties, autonomous counties and cities are divided into townships, ethnic minority townships, and towns.

Yangzhou is classified as a **Municipality or a Prefecture-level City**

Prefecture-level Municipality - is subject to the jurisdiction of a provincial government and directly controls some urban districts while exercising some counties or smaller cities on behalf of the provincial government.

221 - 206 BCE | Qin Dynasty
(Ch'in, pronounced "chin")

The unification of the country at the beginning of this dynasty, founded in Yangzhou becoming a seat of a county.

206 BCE - 220 CE | Han Dynasty

During this time it was the seat of a feudal principality.

220 - 589 CE | Six Dynasties Period
"Period of Dynasty"

581 - 618 | Sui Dynasty
(pronounced "sway")

In the 5th & 6th centuries it was the seat of a commandery (district) controlled by a semi-autonomous official. During this early period, Yangzhou was the traditional name for southeastern China - one of the nine traditional divisions of China. In 581, the old city of Changzhou was renamed Yangzhou. Between 605-618, under Emperor Yang of Sui, a canal was built to connect the Yellow River to the Yangtze River. This made it a major port and transportation point, as well as the chief commercial city of the Yangtze valley.

618 - 906 | Tang Dynasty

After 618, Yangzhou became the administrative center for the state's financial apparatus in southern China and the headquarters of the salt administration, while also being an important seaport.

DETERIORATION OF YANGZHOU

Scope of Yangzhou (A486C to 91212AD)

Historic and Current Yangzhou (1644-1949)

Scope of the Yangzhou Yellow River (1910-1910)

1907 - 1960 | 'The Ten Kingdoms' (Shiqiao or Shi-Kiao)

Yangzhou was the capital of the Wu state (902-937). During this period there was a lot of unrest and political confusion, but the economic condition and the cultural level of the society was high.

960 - 1279 | Song Dynasty
(pronounced "song")

1279 - 1368 | Yuan Dynasty

1368 - 1644 | Ming Dynasty

Yangzhou declined throughout the Song and Yuan dynasties, but during the Ming Dynasty Yangzhou's importance as a port diminished with the decline of Chinese seaborne trade.

1644 - 1912 | Qing Dynasty
(Ch'ing, pronounced "ching")

Yangzhou remained a regional administrative center from the Ming to the Qing dynasties, forming a superior prefecture of the same name. During this period it was of national importance as the base for the Yangzhou salt administration. The salt merchants of Yangzhou grew immensely wealthy and from the 16th to the 18th century they were patrons of the arts and letters making Yangzhou's important center of culture. The eight literati of Yangzhou were a notable group of 18th-century painters who were active in the vicinity.

The city declined due to the Yangtze rebellion (1850-64). The city was taken by the rebels in 1850, and in 1860 it was the site of a major battle in which the Imperial (Manchu) forces were disastrously defeated. During those years Yangzhou was seriously damaged, its temples and public buildings destroyed. Its recovery was hampered by the fact that from 1850 onward the Grand Canal was blocked and its southern reaches damaged, so grain shipments to Beijing and Tianjin were increasingly sent north by sea from Shanghai. At the same time the changes in the salt administration also struck at the other base of Yangzhou's traditional prosperity. In 1912 Yangzhou ceased to be a superior prefecture and reverted to a county municipality.

1912 - 1949 | Republic Period

TOURIST GARDEN CITY

Ministry of Culture Recognition

- National Cultural City (1984)
- One of the country's first 24 historical and cultural cities
- Number 4 in China's Top 10 Leisure Cities
- Honored as "National Civilized City" and given the United Nations Habitat Scroll of Honor Award
- Dongguan Street is honored as one of China's top 10 famous historical and cultural streets (2006)

Yueyan Garden

He Garden

Slender West Lake

Grand Canal

Shou Xihu

The Dumei

Industrial Growth

State Housing

Food Security

Constant Pay

National Identity and Prosperity

Residential Spread

1982: 100% State Housing, 0% Industrial Growth, 0% Food Security, 0% Constant Pay, 0% National Identity and Prosperity

2021: 100% State Housing, 0% Industrial Growth, 0% Food Security, 0% Constant Pay, 0% National Identity and Prosperity

1949 - Present | People's Republic of China

China's National Grand Canal Museum has roughly 250,000 monthly visitors

5 Major Highlighted Tourist Attractions that offer direct routes to Hong Kong, Beijing, and Shanghai

Over 5 km² of protected cultural heritage sites over 1,000 years old

GRAND CANAL 揚州 YANGZHOU

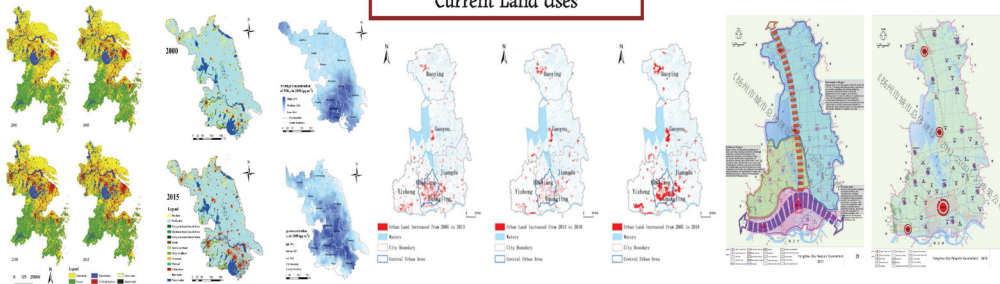
WDS
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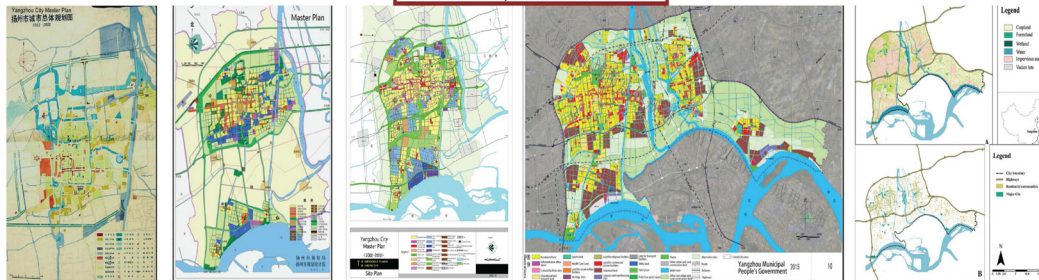
HISTORY OF DEVELOPMENT

YANGZHOU DEVELOPMENT AND LAND USES

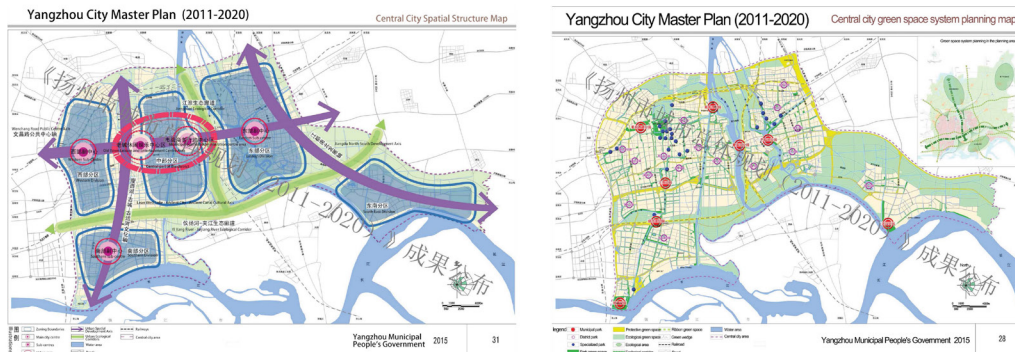
Current Land Uses



Development Trends



Future Development Trends



GOALS FOR YANGZHOU

Regional Issues

Rapid economic development
Traffic issues
Loss of cultural heritage
Younger, wealthier residents are moving
one of the historic core
Flooding
Spatial scarcity



Underground Development

Depth investigated:
Shallow: 0 to 15 m below the surface. Short term city planning
Sub-shallow: 15 to 30 m
Long term planning
Deep: 30 to 40 m and deeper
Future planning

Topographic, hydrology, soil type, geological, historical and cultural preservation districts, burial sites, electric water system underground areas were all studied to clear areas prohibited and available areas for underground



Chinese slogan: Green is Gold

China's ecological revitalization and environmental strategy. They are turning over a new leaf from the industrialization era of making money to valuing the environment while pursuing economic growth.

"BEAUTIFUL CHINA"
"CHINESE DREAM"



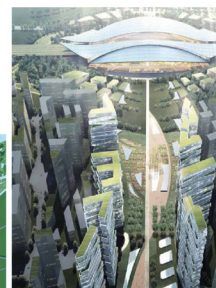
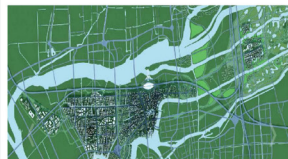
President Xi Jinping coined the term "Green is Gold"



Current Project - The New Yangzhou Ecological Master Plan

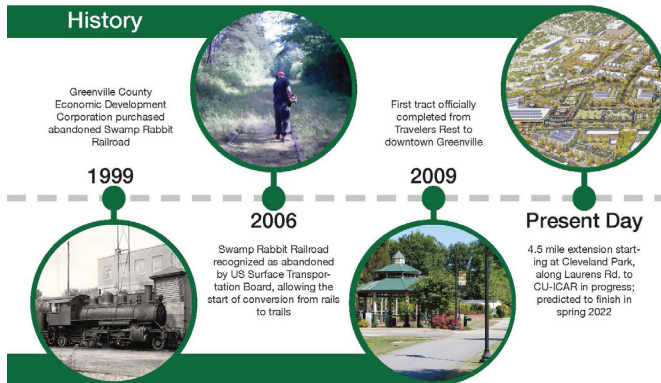
City Goals

- ecological restoration
- merge agriculture lands and city
- tourism, housing, linear parks
- high speed rail system to improve historic core life

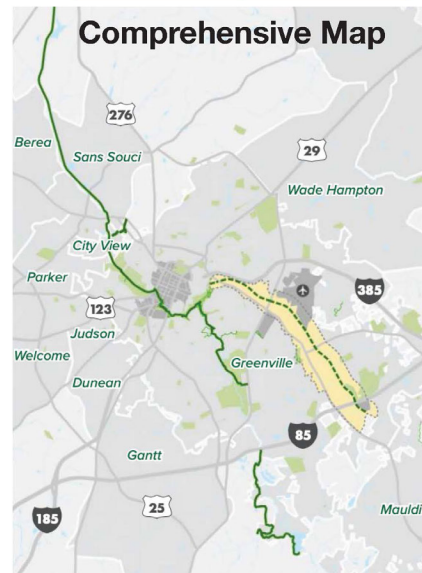
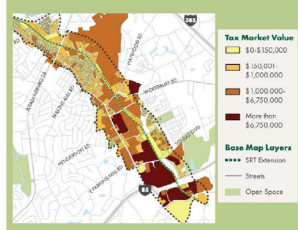




Swamp Rabbit Trail Analysis



Benefits of Rails to Trails



Community Priorities & Goals

- More trees and public open spaces
- More dining options
- Development of trail spur
- Connections to neighborhoods
- Bike and pedestrian safety
- Key Destinations: Cleveland Park, Gower Park, and CUICAR
- Ease of biking, walking, using public transportation
- Reduce driving
- Connect with community
- Be active and healthy



- S** Strengthens sense of community, connectivity
Trail path is already set
Public support
Increase in general public health
- W** Maintenance of trails
Housing market, affordable housing
Safe interactions
- O** Alternative modes of transportation, reduce traffic
Attractive to tourists
Huge economic benefits
Historic preservation
- T** Safety of users along trail, especially along major roads
Cost of expansions

Marketing

- Trail popularity leads to successful businesses and marketing
- Greenville Swamp Rabbits
 - Swamp Rabbit Inn
 - Swamp Rabbit Cafe and Grocery



Recreation

- Bike tourism
- Business development
 - Increase in local business economy
 - Benefits permanent residents
 - Affordable



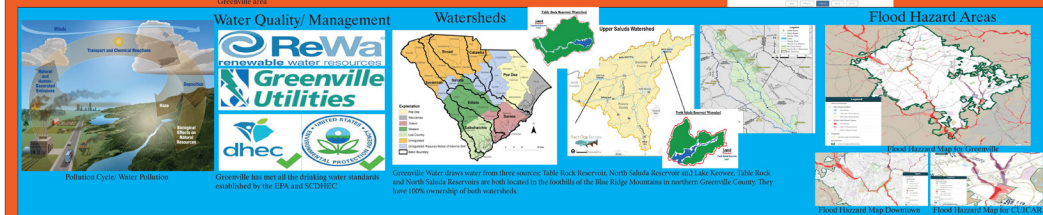
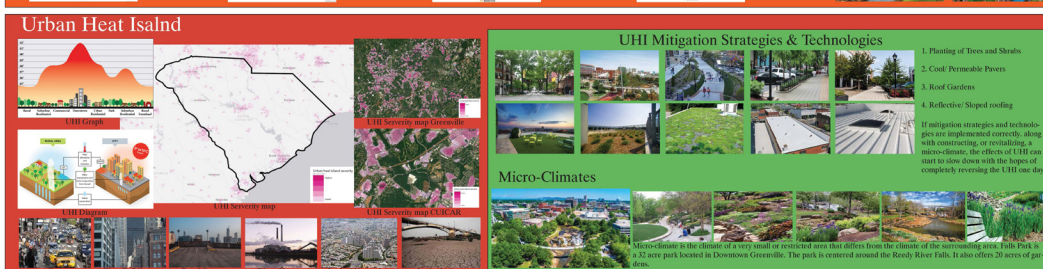
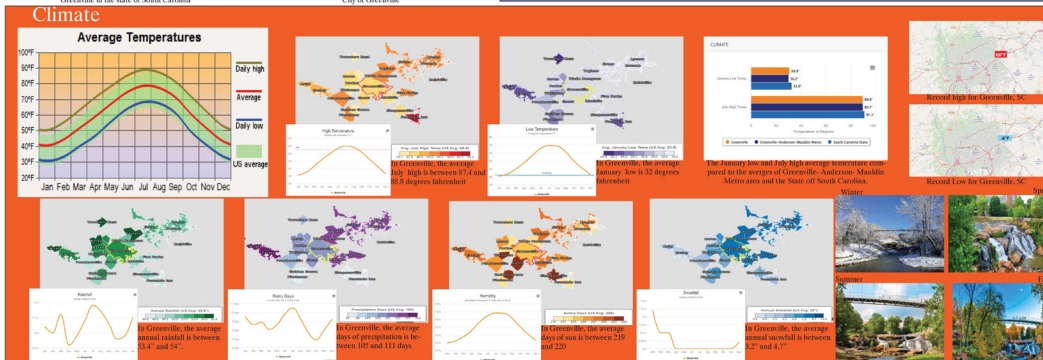
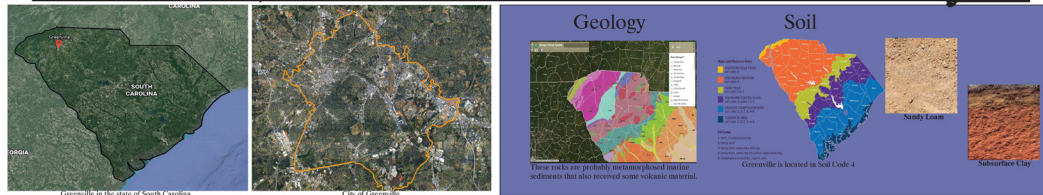
Local Economy

- 2016 study showed:
- 25% of users were tourists
 - Greenville county estimates \$7 million per year increase in the economy





Greenville, SC Environmental Urban Analysis



SWOT Analysis			
Strengths	Weaknesses	Opportunities	Threats
- The water in this area is relatively healthy and Greenville has very moderate climate and weather conditions. - As Greenville is one of the fastest growing cities in the Southeast, it has a lot of potential for growth. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth.	- It can be hard to penetrate and it is not ideal to build structures on. - Even though the average climate and weather is relatively moderate, if there was an extreme weather event, would Greenville be prepared? - Even now the UHI is being controlled somewhat, but with population and urban growth this could be a problem in the future. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth.	- Greenville is a relatively young city, that has a lot of new ideas and is not afraid to try new things. - Greenville is a relatively young city, that has a lot of new ideas and is not afraid to try new things. - Greenville is a relatively young city, that has a lot of new ideas and is not afraid to try new things. - Greenville is a relatively young city, that has a lot of new ideas and is not afraid to try new things.	- Population growth is only going to go up, with that there is a threat of pollution levels rising. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth. - As Greenville is moving towards being a sustainable city, it has a lot of potential for growth.

GRAND CANAL

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YANGZHOU

SLENDER WEST LAKE ANALYSIS

WDS world design studio

SIGNIFICANCE

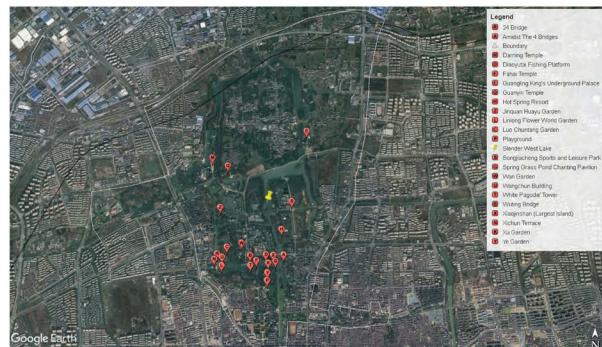
Slender West Lake is a district in Yangzhou, China whose lakes and canals are connected to the larger water system of the Grand Canal. The 480-acre district includes historic gardens and buildings, recreation areas, museums, galleries and some commercial uses. This area is a state park and protected by city zoning policies to protect and preserve its historic character. City policy protects the viewsheds of this area by limiting the height of buildings in the surrounding commercial and residential areas. Slender West Lake is currently being evaluated to become a UNESCO World Heritage Site. The gardens are considered some of the most advanced art in terms of layout, architecture, stone laying, water conservation, and plant arrangement.

Slender West Lake is a remarkable example of how a city can preserve its history, while also allowing new development to occur and facilitating tourism and recreation in the area as well. This area of Yangzhou brings in money from tourism as well as provides a place for residents to participate in group sports or solo recreation.

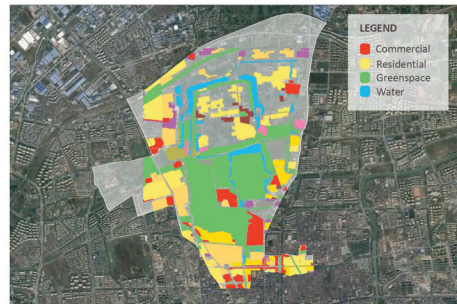


SCENIC AREA ANALYSIS

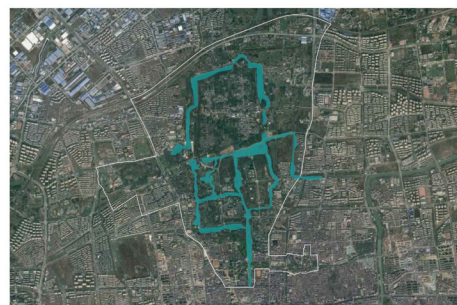
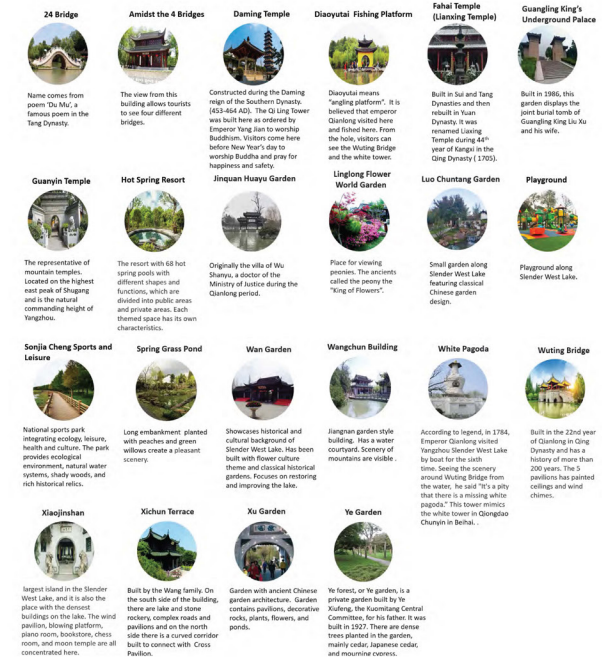
Landmarks of Slender West Lake



Wuting Bridge



Land Use of Slender West Lake



Water System of Slender West Lake

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URBAN DESIGN | LARC 4540/8520
FEBRUARY 3, 2023