Graduation Plan

Master of Science in Architecture, Urbanism & Building Sciences

MSc Landscape Architecture 2023 - 2024

[Chenye Yang]

Graduation Plan

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), your mentors and delegate of the Board of Examiners one week before the P2 date at the latest.

I Personal information	
Full name	Chenye Yang
Student number	5794722

II Studio / Lab information		
Name / Theme	Flowscapes / Circular Water Stories	
Main mentor	Inge Bobbink	Landscape Architecture
Second mentor	Willemijn Wilms Floet	Architecture
Argumentation of choice of the LA graduation lab	I chose Circular Water Stories lab for several reasons. In my motivation letter for admission to TUD, I expressed my desire to deepen my understanding of water systems, which was my primary objective for seeking admission. Firstly, during my childhood, I frequently traversed the river near my home by ferry. The carefree experiences of playing in the water at a young age fascinated me with the idea of symbiosis between humans and water. However, rapid urbanization has limited people's access to water. I aspire to restore this connection through design. Secondly, after completing the design courses in the first year, particularly the Q2 program, I developed a strong affinity for the teaching style of my mentor, Professor Inge Bobbink. Having a suitable mentor during my graduation project will significantly contribute to the success of my design.	

III Graduation project	
Title of the project	Water Culture: Sustaining the Legacy of Japan's Biwako Lakeside Water Village in Contemporary Urban Development
Context and aim of the project	
Location (region / area / site)	Lake biwa, Kansai region,Shiga Prefecture, Japan
Problem statement	Lake Biwa is the largest freshwater lake in Japan. It is located in the center of Honshu Island in the Japanese

	Archipelago. It serves as a reservoir for Kyoto and Otsu, providing drinking water for approximately 15 million people in the Kansai region. In the past, the "village, river, rice fields, inner lake, and Lake Biwa" system operated seamlessly, with rivers or springs flowing through each household, fostering a harmonious coexistence between people and nature. However, today, due to rapid development, the traditional water systems have deteriorated, and the points of contact between people and water are gradually disappearing. Society: Rapid urbanization has led to the proliferation of social issues in both private and public domains. People around the Lake Biwa face numerous challenges, including an aging population, declining birth rates, low agricultural product prices, and fluctuating fishery yields. Additionally, many residents are reluctant to have their private waterside living spaces visited by tourists, as it disrupts their daily lives. This reluctance also hampers the potential transition of some villages to the tourism industry. Natural Disasters: Over the past century, Japan has faced unprecedented tsunamis and earthquakes, underscoring the urgent need to discuss effective solutions and collaboratively navigate the potential occurrence of future natural disasters, especially near a large lake. Environmental Issues in Lake Biwa The transitional zone from inland water areas to forest ecosystems along the shores of Lake Biwa underwent significant changes in the 20th century, particularly during the rapid economic growth in Japan. The development of buildings and large-scale infrastructure led to water pollution, and the construction of rigid embankments severed the delicate transitions between ecosystems, resulting in a depletion of local natural resources. The cultivation of the inland lake and the establishment of water supply systems also disrupted the water circulation between daily life, rivers, and Lake Biwa in the surrounding area, rendering these connections imperceptible. The Disappearance of Lake Biwa's Water Culture: The emergence of water supply systems has replaced traditional water systems, leading to the gradual

	disappearance of some water cultural heritage. Particularly, certain privately owned water elements are vanishing since they are not used anymore.
Research question(s)	Main Research Question: How can the water culture landscape be designed by using landscape architectonic methods to redirect it from the private to the public domein to rekindling waterfront living of the Lake Biwa region? Sub-RQ1: What water cultural values can be identified in the area? And what makes them valuable? Sub-RQ2: How can the water culture landscape be employed to reconstruct points of contact between humans and nature, while concurrently enhancing ecological resilience? Sub-RQ3: In capturing water usage spaces, architecture, lifestyle habits, etc., from traditional water systems, how can a singular water element (such as kabata) be seamlessly reintegrated into the urban structure and embraced by the community? Sub-RQ4: How can transitional spaces be created to ensure the privacy of residents, safeguarding their private domains while simultaneously showcasing traditional water culture to a broader audience?
Design assignment	The graduation project will span various scales within the Lake Biwa region, deriving new, sustainable water typologies from historical water systems for application in future living environments. Exploring how to rediscover new value for these cultural heritages in contemporary urban development, and enhancing their wider recognition, acceptance, and integration into the urban fabric. On a broader scale, the research involves the categorization and comparison of traditional water usage and elements along the shores of Lake Biwa's villages. This encompasses a comprehensive analysis of the values inherent in water cultural heritage, along with an assessment and prediction of the transformation of water functions in representative villages. Furthermore, through the integration of local policies, a novel water system network will be constructed. Employing landscape-oriented approaches, a series of strategies will be formulated to seamlessly integrate

	valuable traditional water culture into new urban development and establish new points of contact between humans and nature. At the village level, the demarcation between the private domain of water culture and public spaces warrants further discussion. Water will be utilized in the design of new public spaces and transitional areas to ensure the exhibition of traditional water culture to visitors while preserving the undisturbed water routines of the indigenous population, in accordance with local policies.

IV Graduation process

Method description

Methodology

Literature Review:
Through literature research and study, gaining insights into the regional background and operation of the traditional water system of Lake Biwa.

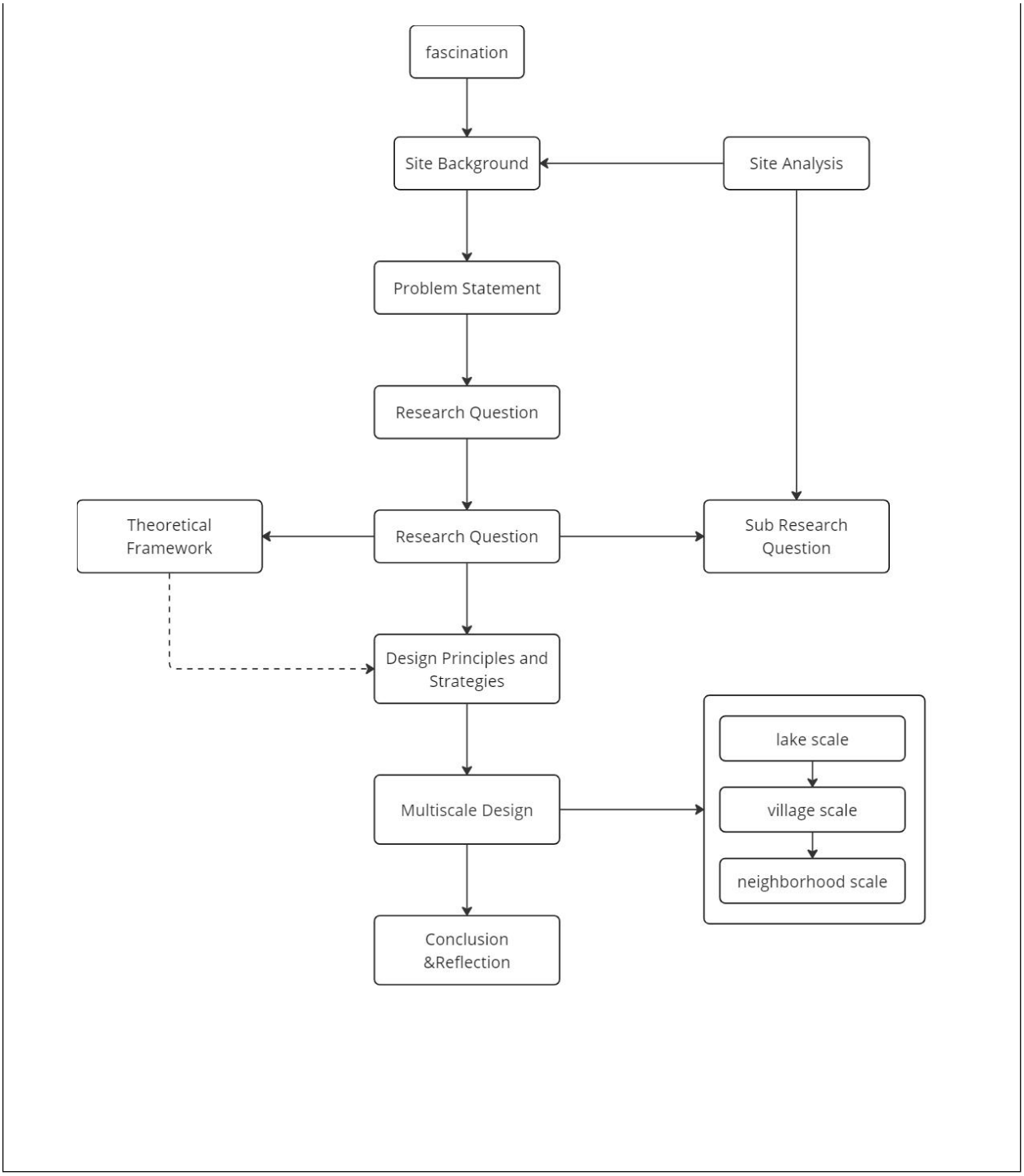
Case Study:
The outcomes of the traditional water system analyses done by the illustrative method serve as a primary reference for studying the water systems. Furthermore, I will examine other cases, such as the landscape transformation of a fishing town in Portugal (Amphibia), and those related to the preservation and transformation of cultural heritage, transitional landscapes, public-private domains, etc.

Mapping and Data Analysis:
Studying historical maps to derive new types of sustainable water use from the historical water systems. Additionally, using drawings to visualize the textual and data collected from literature, aiding in further analysis to formulate specific strategies.

Multi-scale design:
Analysis and design both need to encompass various scales. The analysis includes the Lake Biwa scale and village scale. The design outcomes comprise strategies at the lake scale, design principles at the village scale, and detailed designs at the specific architectural scale. Different scales can emphasize different research aspects. This is essential for understanding the overall logic of the narrative.

Theoretical Framework

Cultural heritage landscape
Transition landscape
Private to public landscape


fascination
Site Background
Site Analysis
Problem Statement
Research Question
Theoretical Framework
Research Question
Sub Research Question
Design Principles and Strategies
lake scale
village scale
neighborhood scale
Multiscale Design
Conclusion &Reflection

Literature and more applied references

Books:
-MacHarg, I. L. (1969). Design with nature.
-Biwa Lake to Land Integrated System

Papers and articles:
-Kawanabe, H., Nishino, M., & Maehata, M. (Eds.). (2020). Lake Biwa: interactions between nature and people. Springer Nature.
-Yamamoto, K., & Nakamura, M. (2004). An examination of land use controls in the Lake Biwa watershed from the perspective of environmental conservation and management. Lakes & Reservoirs: Research & Management, 9(304), 217-228.
-Kumagai, M., Vincent, W. F., Ishikawa, K., & Aota, Y. (2003). Lessons from Lake Biwa and other Asian lakes: Global and local perspectives. In Freshwater Management: Global Versus Local Perspectives (pp. 1-22). Tokyo: Springer Japan.
-Nishino, M., Nishino, M., Kusuoka, Y., Ichise, S., Kishimoto, N., Tsujimura, S., ... & Nishino, M. (2020). Biodiversity of Lake Biwa. In Lake Biwa: Interactions between Nature and People: Second Edition (pp. 69-257). Cham: Springer International Publishing.

Website:
-文化庁 HP：https://www.bunka.go.jp
-国土交通省 HP：https://www.mlit.go.jp

V Reflection on the project proposal

1. What is the relation between your graduation topic, the lab topic, and your master track?

My graduation project originates from traditional water systems, exploring how water elements and the water heritage of villages around Lake Biwa can transform from a more domestic use into the public domain. Additionally, the design strategies in my graduation project, spanning different scales, are presented through landscape techniques. The aspiration is to integrate water heritage elements to create high-quality spaces that achieve ecological benefits and redefine the relationship between humans and nature.

2. What is the relevance of your graduation work in the larger social, professional, and scientific context?

In the context of the social background, the graduation project aims to reintegrate a singular water cultural heritage that does not align with urban development back into the social structure through landscape architectonic techniques. The goal is to showcase and facilitate the learning of valuable cultural aspects, allowing the continuation of this traditional heritage to enhance a sense of identity among residents. Furthermore, reestablishing interactive spaces between people, nature, and water can enhance ecological awareness, contributing to better preservation of this sacred environment.

In the context of the professional and scientific background, the graduation project

seeks to explore different types of water cultural villages, aligning them with local policies to formulate strategies for the reintegration of cultural heritage into urban structures. The project also delves into interactive strategies between tourism and traditional ecological culture.