

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

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



The graduation plan consists of at least the following data/segments:

Personal information	
Name	Yiwen Ji
Student number	5704251

Studio		
Name / Theme	Planning complex cities	
Main mentor	Roberto Rocco	Spatial Planning and Strategy
Second mentor	Luca Iuorio	Environmental Technology & Design
Argumentation of choice of the studio	I am interested in the development of metropolitan areas, particularly secondary cities, due to my personal experience of witnessing the transformations in my hometown of Jiaxing. As a secondary city situated near Shanghai, Jiaxing has faced challenges from rapid and homogenised urban expansion, as well as competition from neighbouring cities. This has put the unique character and livability of the area at risk, resulting in a blurred perception of our city. I am eager to explore how Jiaxing, along with other secondary cities, can position themselves to thrive in the future.	

Graduation project	
Title of the graduation project	RECLAIMING THE WATER CITY Sustainable Strategies Based on Water City Identity of Jiaxing
Goal	
Location:	Jiaxing, China
The posed problem,	In the development that puts the economy first and emphasises the central city, Jiaxing's water city character has been weakened, posing challenges to future sustainable development in the economic, ecological and social aspects.
research questions and	Main Research Question: How can we enhance sustainable development in Jiaxing in the context of the Yangtze River Delta by re-considering the role of water in the city to stimulate positive changes in economic, ecological and social aspects? Sub-Questions:

	<ol style="list-style-type: none"> 1. SQ1: How has water influenced the identity of Jiaxing? What role has water played in shaping Jiaxing's history? 2. SQ2: What are the current ecological, social, and economic trends and challenges in Jiaxing and the Yangtze River Delta (YRD) region? Are there any opportunities for more sustainable development? 3. SQ3: In what ways do the various roles of water affect the citizens of Jiaxing today? How do they use the water? How do the citizens of Jiaxing perceive their relationship with water? 4. SQ4: Based on the analysis of the previous questions, what strategies could be implemented to improve economic attractiveness, ecological resilience, and social well-being in Jiaxing? Are these strategies prioritised? How can these strategies be implemented step by step? 5. SQ5: To what extent are these strategies effective in shaping the water city identity? How will they specifically enhance economic, ecological and social benefits? Are there any limitations to their effectiveness?
<p>design assignment in which these result.</p>	<ol style="list-style-type: none"> 1. Strategic vision for Jiaxing considering its history and policy 2. Strategic plan for sustainable development in Jiaxing through the water identity restoration 3. Spatial and policy advice on actions and tools improving ecological resilience, economic attractiveness, and social well-being in Jiaxing
<p>[This should be formulated in such a way that the graduation project can answer these questions. The definition of the problem has to be significant to a clearly defined area of research and design.]</p>	
<p>Process</p>	
<p>Method description</p>	
<p>The research can be divided into three phases: vision, strategy, and reflection.</p>	

	<u>QUESTION</u>		<u>METHOD</u>	<u>EXPECTED RESULTS</u>
1 <u>VISION</u>	SQ1: How has water influenced the identity of Jiaxing? What role has water played in shaping Jiaxing's history?		literature review historical analysis	a timeline of the water's role
	SQ2: What are the current ecological, social, and economic trends and challenges in Jiaxing and the Yangtze River Delta (YRD) region? Are there any opportunities for more sustainable development?		literature review policy analysis news reading SWOT analysis visioning	a conclusion of regional trends a regional vision
2 <u>STRATEGY</u>	SQ3: In what ways do the various roles of water affect the citizens of Jiaxing today? How do they use the water? How do the citizens of Jiaxing perceive their relationship with water?		mapping layer analysis interviews news reading stakeholder analysis	a set of spatial analysis maps a conclusion of water-human relationship
	SQ4: Based on the analysis of the previous questions, what strategies could be implemented to improve economic attractiveness, ecological resilience, and social well-being in Jiaxing? Are these strategies prioritised? How can these strategies be implemented step by step?		literature review mapping research by design stakeholder analysis	strategic plan stakeholder strategy phasing
3 <u>REFLECTION</u>	SQ5: To what extent are these strategies effective in shaping the water city identity? How will they specifically enhance economic, ecological and social benefits? Are there any limitations to their effectiveness?		literature review comparative study	reflection & limitation

In the vision phase, the research method is mainly through literature review, combining historical, policy, news, and other materials to analyze and derive the basic situation of the Jiaxing water system, as well as the opportunities and challenges faced by Jiaxing in the Yangtze River Delta. Based on the results of the analysis, large-scale vision targets were set using Voros' methodology (2003).

The strategy phase involves analyzing specific spaces of the city. The impact of the various functions of the river on the space will be analyzed, as well as how people use the river, based on the theory of Mačiukėnaitė and Povilaitienė (2013b). Through interviews, a more comprehensive understanding of the water identity was developed. On the basis of the vision and spatial situation described above, several strategic principles can be derived, which will then be refined into actions, the development of implementable staging tools, and stakeholder tools.

Finally, the strategy will be reflected upon, and limitations will be summarized. By integrating the research results of Lu et al. (2021) and Saiu et al. (2022), a sustainability assessment framework applicable to this study is derived. This framework will give a localized assessment of the different dimensions and examine the impacts of the strategies on regional sustainable development.

Literature and general practical references

water identity theories

- Cheshmehzangi, A. (2015). Urban Identity as a Global phenomenon: hybridity and contextualization of urban identities in the social environment. *Journal of Human Behavior in the Social Environment*, 25(5), 391–406. <https://doi.org/10.1080/10911359.2014.966222>
- Mačiukėnaitė, J., & Povilaitienė, I. (2013). The Role of the River in the City Centre and its Identity. *Journal of Sustainable Architecture and Civil Engineering*, 4(5). <https://doi.org/10.5755/j01.sace.4.5.4820>
- Ziyadeh, M. (2018). Assessment of urban identity through a matrix of cultural landscapes. *Cities*, 74, 21–31. <https://doi.org/10.1016/j.cities.2017.10.021>

sustainable development theories

- Broman, G., & Robšert, K. (2017). A framework for strategic sustainable development. *Journal of Cleaner Production*, 140, 17–31. <https://doi.org/10.1016/j.jclepro.2015.10.121>
- Saiu, V., Blečić, I., Meloni, I., Piras, F., & Scappini, B. (2022). Towards a SDGS based Neighborhood Sustainability Evaluation Framework: a tool for assessing sustainability at the urban Micro-Scale. In Springer eBooks (pp. 195–215). https://doi.org/10.1007/978-3-031-12814-1_12
- Lu, X., Zhang, Y., Lin, C., & Wu, F. (2021). Analysis and comprehensive evaluation of sustainable land use in China: Based on sustainable development goals framework. *Journal of Cleaner Production*, 310, 127205. <https://doi.org/10.1016/j.jclepro.2021.127205>
- Voros, J. (2003). A generic foresight process framework. *Foresight*, 5(3), 10–21. <https://doi.org/10.1108/14636680310698379>

analysis on situations of Jiaxing and YRD

- Zhang, X., Liu, Y., Tleubergenova, A., Liu, J., Fan, R., Tang, Y., & Meng, X. (2022). Evaluation of urban sustainability based on development structures and economic aggregates: a case study of Jiaxing, China. *Sustainability*, 14(17), 10683. <https://doi.org/10.3390/su141710683>
- Deng, X., Xu, Y., Han, L., Li, G., Wang, Y., Xiang, J., & Xu, G. (2016). Spatial-temporal changes of river systems in Jiaxing under the background of urbanization. *Acta Geographica Sinica*, 71(1):75-85. DOI:10.11821/dlxb201601006.
- Huang, Q., Lu, Y., Yan, M., & Sun, H. (2021). Development Course and Characteristics of Urbanization in the Yangtze River Delta Urban Agglomeration. *Modern Urban Research*, 12, 88-95. DOI:10.3969/j.issn.1009-6000.2021.12.014.
- Hu, C., Guo, X., Lian, G., & Zhang, Z. (2017). Effects of Land Use Change on Ecosystem Service Value in Rapid Urbanization Areas in Yangtze River Delta—A Case Study of Jiaxing City. *Resources and Environment in the Yangtze Basin*, 26(3), 333-340. DOI:10.11870/cjlyzyyhj201703002
- Liu, X. (2011). Institutional Innovation of the Further Integration Development in Yangtze River Delta. *Journal of Jiaxing University*, 23(4), 64-68. DOI:10.3969/j.issn.1008-6781.2011.04.011.

Reflection

This study aims to discover a sustainable path for the future of Jiaxing, with a focus on its water city identity. The issue is complex and requires a governance approach that promotes sustainability. Different strategies and tools are required on regional and urban scales to address the problem. To ensure a just and long-term transition, it is crucial to identify relevant stakeholders within the region. This project will

explore potential regional spatial strategies to help Jiaxing find its unique position in the area, while balancing ecology, economy, and well-being.

Scientific relevance

Although there have been many studies conducted on the ecological value of restoring rivers and utilising the cultural heritage of rivers to enhance industrial structure in Jiaxing, there are very few have combined the two. Economic development always remains the absolute dominant factor. This study aims to address this lack of consideration of values by putting the two in a balanced system. It provides a fresh perspective on how water resources can be utilized as a basis for ecological restoration, economic transformation, and well-being.

Societal relevance

The society is gradually becoming more concerned about ecology, and the government is taking actions to address it. In 2019, the construction of the Yangtze River Delta Ecological Green Integrated Development Demonstration Zone was initiated. However, the actual needs of local areas, like the continued neglect of river network restoration, are still being overlooked. When planning Jiaxing's ecological structure, only the connection with Shanghai is given importance, while the watershed structure of Jiaxing itself is disregarded. Therefore, this project aims to increase people's awareness of the local water identity. Valuable resources such as water culture, river environment and cultural heritage can be preserved and fully utilised.