

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

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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	Katerina Pavlou
Student number	585241

Studio		
Name / Theme	Designing Resilient Coastal Landscapes	
Main mentor	Steffen Nijhuis	Landscape Architecture
Second mentor	Sophia Arbara	Urbanism
Argumentation of choice of the studio	The choice of the DRCL studio lies in its specialized expertise in addressing the complex intersection of ecological, cultural, and urban dynamics, as demonstrated in the Ōi River watershed project. Emphasizing a holistic approach, the studio is dedicated to enhancing the overall vitality and sustainability of the river system.	

Graduation project	
Title of the graduation project	Satoyama 2.0: A New Chapter in the Culturally and Water-Sensitive Satoyama Landscape of Kameoka
Goal	
Location:	Kameoka-Kyoto, Japan

The posed problem,

The river landscapes in Japan face multifaceted challenges, including frequent floods, the decline of natural ecosystems and water quality and the diminishing cultural relevance of water transportation traditions.

The upcoming threat that towns like Kameoka face from floods, due to the increasing probability of heavy rainfall events, is a pressing concern. These issues pose a risk to both the environmental integrity of river watersheds and their rich cultural heritage. Therefore, there is a critical need to thoroughly examine and develop sustainable strategies for **river landscape management**. These strategies should simultaneously **address ecological preservation, cultural revitalization, and flood mitigation** to safeguard the vitality of communities like Kameoka and others along these vulnerable river systems.

In the context of landscape architecture, the approach is to establish an inclusive framework that integrates ecological preservation, cultural revitalization, and urban resilience. In the search for sustainable principles and strategies for river landscape management, the following research questions will guide the project's exploration.

research questions and

[Main question]

How can landscape-based urbanism play a fundamental role as a catalyst for comprehensive and sustainable management of the Ōi River (大井川, Katsura River) watershed? In the context of the Kameoka riverfront community, what landscape-based design strategies and principles can be spatially translated to address but also make use of the potentials of diverse challenges, including ecological preservation, cultural revitalization, and urban resilience?

[subquestions]

01. How did the Ōi River landscape operate in terms of ecological, cultural, and urban aspects in the past, and what is its current condition in the context of ongoing expectations of floods and human interventions and alterations considering the landscape?

DIAGNOSIS

02. How do the aspects of the Anthropocene influence the overall ecological health and adaptation to seasonality in the Ōi River watershed in the context of Geologic time*?*Geologic time according to Robert Smithson is the relationship between human intervention and the natural environment.

CHALLENGES + POTENTIALS

03. What landscape-based principles and strategies rooted in working with nature/ natural and social-cultural processes are essential for mitigating flood hazards while simultaneously enhancing the cultural importance of water transportation, riparian land, and traditions associated with living in harmony with water?

DESIGN TOOLBOX: LANDSCAPE PRINCIPLES + NATURE-BASED SOLUTIONS

04. In the natural and cultural landscape of the Kameoka area, how can the landscape principles and nature-base strategies that emerged from the research, be effectively applied to specific case study areas?

SPATIAL DESIGN IMPLEMENTATION

design assignment in which these result.

[Design Assignment]

Research question 01:

Understanding how the Ōi River watershed used to function before and what is its current condition according to human interventions and alterations. The outcome would be maps and diagrammatic landpieces. These visual representations serve as effective tools to communicate and highlight the identified patterns, challenges, and complexities of the landscape findings.

Research question 02:

Identify the challenges and potentials of the Anthropocene influence and understand how the current situation of the landscape evolves with season changes. The consequence would be small-scale sections of the landscape explaining the human influence and larger-scale sections visualizing the current landscape response to seasonality and water fluctuation.

Research question 03:

Develop a collection of landscape architecture principles and strategies applicable at both basin scale and within specific case studies of the landscape. Begin by constructing a toolbox based on the research problematization and create the first application by creating a vision for the city of Kameoka.

Research question 04:

Identify areas of interest emerging from the initial phase of the landscape diagnosis, and subsequently, translate the insights from research question 03 into spatial interactions. Two sites have been chosen to demonstrate these principles within diverse and inclusive contexts. The first site includes a tributary (Nanatani River), known for its cultural sensitivity, which includes historically significant villages vulnerable to water-related challenges. The second area is situated along the main river stream (Katsura River) and the surrounding floodplains and riparian land.

Process

Method description

The graduation plan will involve various methods, including on-site research, a workshop in Japan, literature review, analytic cartography, speculative cartography (developing a vision plan for Kameoka), strategic mapping, and case studies, all within the framework of research by design.

On-site research and workshop

The workshop 'Living with Blue and Green in Kameoka' took place in Japan, Kameoka between November 19 to 22 including interviews with local citizens and on-site inspections. The primary focus was to exchange ideas regarding the direction of urban development in Kameoka City within the context of watershed management. The daily on-site visits throughout the workshop were crucial for comprehending the current functioning of the Katsura River watershed, identifying the individuals engaged with the landscape, and understanding the locals' present relationship with the river. The workshop resulted in a deeper understanding and connection to the study area, leading to individual case study research and design projects within each group. Also, we had the opportunity to delve deeply into a case study within the city of Kameoka, crafting a vision for it, and advancing the translation of our landscape design principles and strategies into the spatial context of the area itself.

Literature review

Delve into the scientific discourse surrounding theories and conceptual methods in several key areas. Firstly, it will explore landscape-based urbanism, investigating how urban planning and design can harmonize with natural elements. The examination will then extend to landscape authenticity, focusing on preserving genuine character and cultural significance among development efforts. Additionally, the review will investigate the concept of Genius Loci, exploring how design can capture and enhance the unique spirit of a place. Lastly, the discourse will touch upon rebalancing human impact and the natural environment, seeking insights into approaches that mitigate the environmental footprint of human activities.

Analytic cartography

Construction of maps that provide a deep understanding of the current spatial dynamics.

Speculative cartography - A vision plan for Kameoka

Create maps that explore potential future scenarios or visions for the city. Visualize and communicate future landscapes and urban configurations.

Strategic mapping

Developing a tangible strategy to reshape the territory, informed by an understanding of the local context, encompassing both challenges and potentials.

Case studies

Choosing particular sites that can exemplify current exploitation practices and might be suitable for potential interventions.

Literature and general practical references

Hough, M. (1990). Principles for Regional Design: Theory in Landscape Architecture.

Hunt, J. D. (1992). Reading and Writing the Site: Theory in Landscape Architecture.

Marsh, W. M. (1991). Landscape Planning: Environmental Applications.

Norberg-Schulz, C. (1979). Genius Loci: Towards a Phenomenology of Architecture.

Nijhuis, S. (2020) Landscape Authenticity. The Landscape as Living System, History and Spatial Experience. Bulletin KNOB, 119(4), 32-37. <https://doi.org/10.48003/knob.119.2020.4.702>

Nijhuis, S (2022) Landscape-Based Urbanism: Cultivating Urban Landscapes Through Design. In: Roggema, R. (eds) Design for Regenerative Cities and Landscapes. Contemporary Urban Design Thinking, 249–277, Springer Nature. https://doi.org/10.1007/978-3-030-97023-9_11

Smithson, R., Becher, B., Becher, H. (2002). Field Trips.

Steenbergen, C. (2008, October 9). Composing Landscapes: Analysis, Typology and Experiments for Design.

Steiner, F., Weller, R., M'Closkey, K., & Fleming, B. (2019). Design with Nature Now.

Woodward, J. (1997). Signature-Based Landscape Design: Theory in Landscape Architecture .

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

Relation between the graduation project topic and the topic of the Design Resilient Coastal Landscapes (DRCL) lab

The graduation topic ‘**Satoyama 2.0: A New Chapter in the Culturally and Water-Sensitive Satoyama Landscape of Kameoka**’ aligns with the DRCL lab focus on landscape-based urbanism utilizing landscape timeline diagnosis and nature-based solutions. Specifically, the graduation project examines the Ōi River watershed, focusing on the intersection of ecological, cultural, and urban dynamics. In the first phase, an in-depth investigation uncovers the historical operation of the Ōi River basin subsystem, exploring its ecological, cultural, and urban aspects before flood disasters. Simultaneously, the project explores the current condition post-flood disasters, analyzing the impact on the system's functionality. This assessment also considers Anthropocene influences, providing insights into the Ōi River's overall well-being. The second phase of the project centers on Nature-Based Design for Flood Mitigation, a method used under the scope of DRCL lab. It involves identifying and analyzing design principles rooted in nature-based approaches crucial for mitigating flood hazards. This exploration will extend to understanding how these strategies can enhance the cultural significance of water transportation, riparian land, and traditions associated with harmonizing with river water fluctuations. Following this, the project transitions to urban landscape design for resilience, evaluating the potential contribution of urban landscape design principles to enhance the overall resilience of the entire river system.

Relation between the graduation project topic and the master track of landscape architecture

The graduation project integrates within the expansive realm of landscape architecture, as its primary focus on ecological, cultural, and urban dynamics perfectly aligns with the fundamental principles and objectives of the discipline. By delving into the historical and current facets of the Ōi River watershed, the project inherently embodies the core of landscape architecture. It emphasizes the discipline's pivotal role in not only understanding but actively shaping urban environments to be both sustainable and culturally sensitive. Through a lens that considers the interconnectedness of ecological health, cultural significance, and urban functionality, the project contributes to the broader mission of landscape architecture—to cultivate urban landscapes that are not only aesthetically pleasing but also environmentally resilient and culturally enriching.

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

Societal relevance

In the face of climatic change and the consequential challenges faced by vulnerable communities, the graduation project takes on profound societal relevance. By establishing an inclusive framework within landscape architecture, the project actively engages communities through workshops and university program activities to address pressing issues. This comprehensive framework seamlessly integrates ecological preservation, cultural revitalization, and urban resilience, presenting a holistic approach to explore multifaceted challenges. Moreover, the project extends its societal impact through educational initiatives and participatory design and thinking, playing a crucial role in raising awareness within communities about the delicate balance between economic activities, river ecosystems, and cultural heritage.

Professional-scientific relevance

The project exhibits strong professional and scientific relevance by addressing current challenges in landscape architecture, contributing to advancements in design methodologies, and offering practical solutions for sustainable and culturally sensitive urban development. 'Section Along the River' delves into the historical operations and considers the influences of the Anthropocene. Furthermore, the project examines integrating academic research into site-specific practical design solutions in Kameoka, Japan. This in-depth exploration not only addresses current challenges but also places them in a broader historical context, enhancing our understanding over time.