

# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: Landscape Architecture

Personal information	
Name	Naeema Ali
Student number	4910850
Telephone number	
Private e-mail address	

Studio		
Name / Theme	Circular Water Stories, Flowscapes	
Main mentor	Dr. Inge Bobbink	Landscape Architecture
Second mentor	Dr. Fransje Hooimeijer	Urbanism
Argumentation of choice of the studio	Landscape Studio related to water infrastructure with a choice of any relevant site	

Graduation project	
Title of the graduation project	Land can Sometimes be Water: Bridging the Dichotomies between land and water through flexible amphibious landscapes
Goal	
Location:	Kuttanad, Kerala, India
The posed problem,	<p>Globally, agricultural landscapes in deltaic regions are suffering from low productivity (F.A.O., 2017). The prime cause of this could be attributed to the agricultural intensification techniques disrespecting the hydrological regime of these landscapes. In Kuttanad too, the invisible ecological, political and cultural costs of these practices modelled on Green Revolution became visible after four decades rendering many of the paddy fields fallow (Sreeja et al, 2015). Hence, Kuttanad which was once the rice bowl of Kerala is slowly disappearing.</p> <p>These improper landscape management practices were modelled on a terrestrial centric ontology. These approaches kept water and the natural dynamics behind water under control to pave way for anthropocentric activities as in the case of Kuttanad. The concrete dikes, dams and salt barriers are monofunctional infrastructures that cannot cope with the changing levels of water. Subsequently, in 2018 during the monsoons, there was a cloudburst flooding which brought massive destruction to the agricultural fields and rural settlements. The people were surrounded by water and stranded in their houses coupled with improper evacuation strategies.</p> <p><b>Therefore, the inadaptability and inflexibility of these landscapes has resulted in their low socio-economic value causing severe social distress.</b></p>
research questions and	<b>How to redefine the relationship between land and water through an adaptive design framework for a flexible amphibious landscape in order to improve the quality of life in the Kuttanad Delta?</b>

	<p><b>Sub-questions include:</b></p> <p><b>Knowledge questions</b></p> <ol style="list-style-type: none"> <li>1. What are the hydro-social processes that shaped the deltaic region of Kuttanad?</li> <li>2. What is the relationship between hydrological processes and social processes, if any?</li> <li>3. What are the recurrent, evolving patterns in the spatiotemporal extent of these processes?</li> <li>4. How do the hydrological processes affect the materialization of the amphibious landscapes?</li> </ol> <p><b>Design questions</b></p> <ol style="list-style-type: none"> <li>1. How to create a design framework for a flexible landscape that fluctuates with the identified patterns in the spatiotemporal extent of hydro-social processes?</li> <li>2. How to translate this framework into strategies specific to critical design intervals exclusively applicable to the context of the deltaic region of Kuttanad?</li> <li>3. How can people carry out these strategic interventions based on participatory urbanism approaches?</li> <li>4. How can the preceding approach be converted into a comprehensive spatial planning approach? How to create flexible landscapes at the regional scale by replacing administrative boundaries with watershed boundaries?</li> </ol> <p>Fore-grounding these main questions are a set of preliminary inquiries:</p> <ul style="list-style-type: none"> <li>· What are the theoretical dimensions behind definitions of land and water in landscape architecture, and which related notions inform its critical revision?</li> <li>· What are the existing dichotomies between land and water, and which of these need to be bridged?</li> <li>· What frameworks for adaptive/ flexible landscapes already exist, and which one of these best matches the particular scope of flexibility elaborated in the preceding?</li> <li>· Which aspects of this framework are sound, and which require consideration and revision?</li> <li>· What is 'amphibious', and what are the spatial qualities associated with amphibious landscapes?</li> </ul>
<p>design assignment in which these result.</p>	<p>The result of the design assignment can be described as:</p> <p><b>The four-lens approach: Volatility, Hydro-sociality, Rhythm and Wetness</b></p>

A new analytical approach is proposed to the study and design the life in delta: Volatility, Hydro-sociality, Rhythm and Wetness. To begin with analysis of the volatility of the delta will delineate the anthropocentric activities that shaped the delta. A critical reflection of these changes would explore the hydro-social relations manifested in these processes. On identifying the relationship between the natural and social processes there exists a need to understand the recurring patterns within the spatiotemporal extent of these processes. Ultimately, this will form the basis of an adaptive design framework for a flexible landscape that will be guided by the dynamics specific to the particular delta, in this case the Kuttanad delta. The wetness analysis is intended to analyse the materialization of these landscapes.

**New Spatial Vocabulary:** The wetness analysis will give rise to the new spatial typologies of Kuttanad. These typologies are based on the new fluid geographical or amphibious approach this project embraces. It will be done on an experimental basis through experimental mapping, modelling and section drawings.

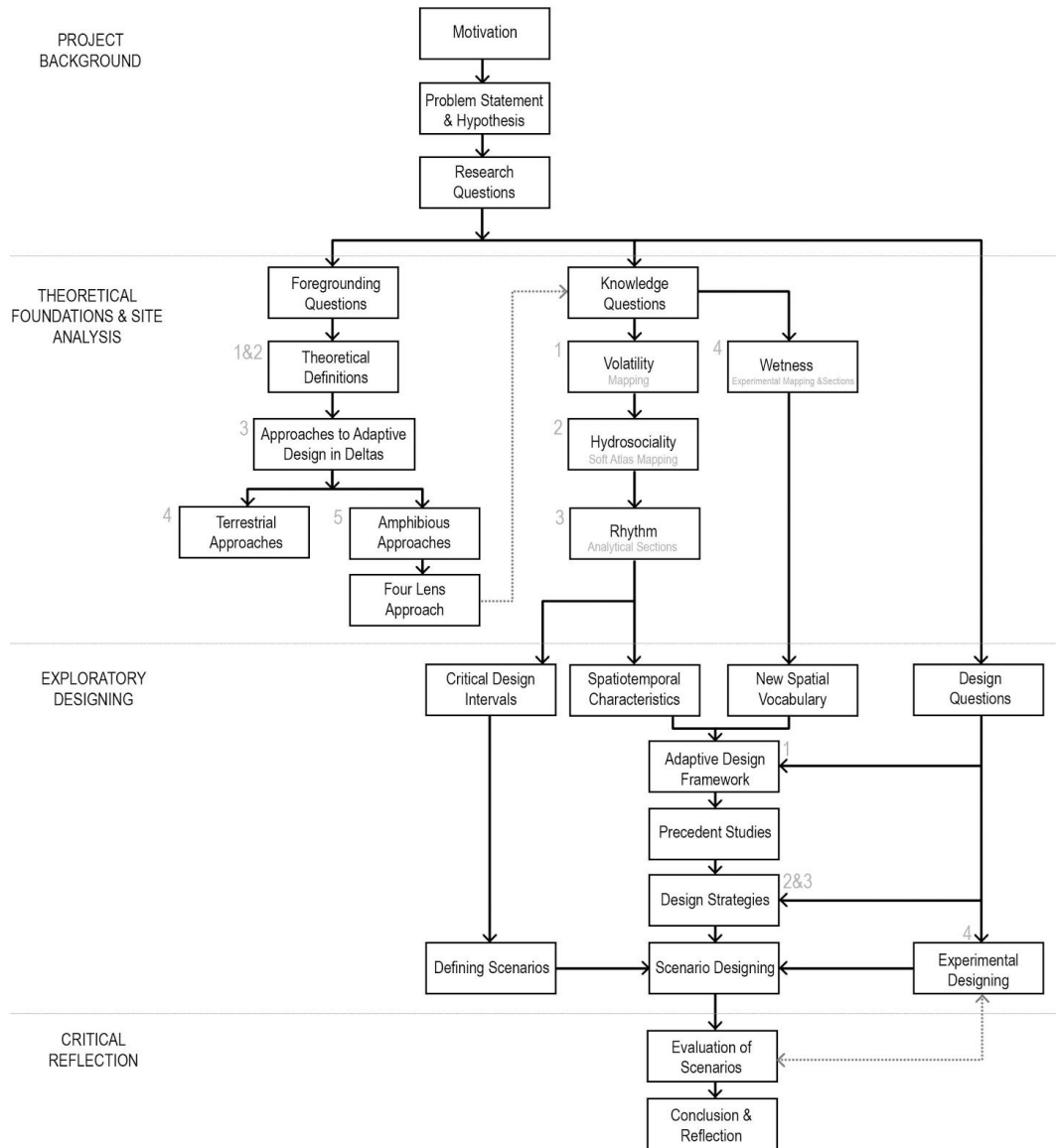
**Adaptive Design Framework:** The rhythmic analysis will culminate in identifying the objective spatiotemporal characteristics of Kuttanad. This will define the threshold design conditions on site.

**Design Toolbox for Kuttanad:** On defining the design conditions, precedent studies will be identified to recognize strategies that could be used. This design toolbox could be applied to any location on the site to come up with a very location specific design according to its spatiotemporal characteristics.

**Critical Design Intervals:** The rhythmic analysis will also define the temporal extent of the multiple processes occurring and group them into periodic design intervals characterized by the identified spatiotemporal aspects. The Design Toolbox can be applied to these intervals to define the different scenarios which the design assignment will explore.

# Process

## Method description



## Literature and general practical preference

De Meulder, B., & Shannon, K. (Eds.). (2013). *Water Urbanisms: East*. Park Books.

Gagné, K., & Rasmussen, M. B. (2016). Introduction—an amphibious anthropology: the production of place at the confluence of land and water.

Krause, F. (2017). Towards an amphibious anthropology of Delta life. *Human Ecology*, 45(3), 403-408.

Kuriakose, M. (2014). The saga of the commons in Kuttanad: appropriations, contests, developments. *Decision*, 41(2), 217-228.

Mathur, A., Da Cunha, D., & Da Cunha, D. (2001). *Mississippi floods: designing a shifting landscape*. Yale University Press.

Mathur, A., & da Cunha, D. (Eds.). (2014). *Design in the Terrain of Water*. Applied Research+ Design Publishing.

Prominski, M., Stokman, A., Stimberg, D., Voermanek, H., Zeller, S., & Bajc, K. (2017). *River. Space. Design: Planning Strategies, Methods and Projects for Urban Rivers*. Birkhäuser.

Pouderoijen, M., Campanella, R., Zagare, V., Dijk, W. V., Broesi, R., Marchand, M., ... & Le, T. (2014). *Urbanized deltas in transition*. H. Meyer, & S. Nijhuis (Eds.). Techne Press.

Sreejith, K. A. (2013). Human impact on Kuttanad wetland ecosystem-An overview. *Int. J. Sci. Technol*, 2, 670-679.

Swaminathan, M. S. (2007). Measures to mitigate agrarian distress in Alappuzha and Kuttanad wetland ecosystem. *Chennai, India: Swaminathan Research Foundation, Union Ministry of Agriculture*.

Ten Bos, R. (2009). Towards an amphibious anthropology: water and Peter Sloterdijk. *Environment and Planning D: Society and Space*, 27(1), 73-86. Hagen, J. (2019). The Invention of Rivers: Alexander's Eye and Ganga's Descent.

## Reflection

### Relation between project and Flowscapes

Flowscapes explores infrastructure as a type of landscape and landscape as a type of infrastructure and achieves this through multiple research groups focussing on specific themes. One such research group is the circular water stories. The main intention of this studio is to redesign today's technically driven water management systems into resilient, multi-functional spaces based on the knowledge of traditional water management systems. This graduation project runs in line with this central theme based on an agricultural landscape below sea level, a unique practice which was developed over more than a century through traditional knowledge and expertise. So, the project explores how a flexible landscape can act as a valuable water management related infrastructure if you allow it to adapt according to the embedded hydrological dynamics.

### Relevance

Classical geomorphologists and geography scholars have always understood and explained land by excluding water and vice versa (Sauer, 1925; Hartshorne 1939). These definitions and explanations were extended to the theory and practice of landscape architecture as well. But while dealing with dynamic landscapes like delta where there is an interplay of land and water, a fluid geographical or amphibious approach needs to be developed in contrast to the conventional terrestrial approach.

The proposed four lenses can be applied to any other real time scenario with similar challenges in order to create an adaptive design framework for developing a flexible landscape corresponding to the specific spatiotemporal characteristics of the particular delta. Hence, this new approach will be vital while dealing with life in deltas and other similar environments.