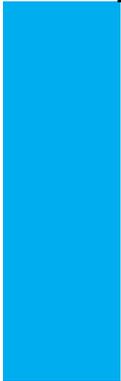


Graduation Plan

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	Chuanzhi Sun
Student number	4736788
Telephone number	+31 0644589501
Private e-mail address	Chuanzhisun.mason@gmail.com

Studio	
Name / Theme	AUT project/ The future resilient urban delta in Pearl River
Teachers / tutors	Steffen Nijhuis
Argumentation of choice of the studio	The Pearl River Delta has just passed Tokyo bay to become the largest urbanized region in the world. This region has been seen a boom in the last 30 years both in the speed of urbanization and population growth. However, since large part of the most densely urbanized area are located in the alluvial plain which was formed 800 years ago, now there are lots of problems such as sea level rising, extreme discharge caused by monsoon and channelization, storm surge and salinization, etc. The future development of this region is becoming less resilient and problematic with the current developing method.

Graduation project	
Title of the graduation project	Resilience by aqua-agriculture transformation
Goal	
Location:	Xingtan County, Shunde District, Foshan City
The posed problem,	The Pearl River Delta has just passed Tokyo bay to become the largest urbanized region in the world. This region has been seen a boom in the last 30 years both in the speed of urbanization and population growth. However, since large part of the most densely urbanized area are located in the alluvial plain which was formed 800 years ago, now

	<p>there are lots of problems such as sea level rising, extreme discharge caused by monsoon and channelization, storm surge and salinization, etc. The future development of this region is becoming less resilient and problematic with the current developing method. At the same time, the unique agriculture and aquaculture system in this region has been efficient both in producing and in storing excessive water during flood season, which makes it an adaptive and productive agricultural approach towards the flooding issue in over hundreds of years. However because of the high speed of urbanization in recent 30-40 years this system has been taken place by industries and new buildings and this capacity of storing water has been lost. Thus, a perspective of how to transform this ecological system into a new typology of urbanization becomes not only a necessity but also a new possibility to make a more resilient urban delta for this region and later may be applied to other places in PRD.</p>
<p>research questions and</p>	<p>Research Objective: To explore the strategies/design principles for water resilient urban landscape development based on dyke-pond system, ecological water management methods in the floodplain of West River through multiscale</p>
<p>design assignment in which these result.</p>	<p>This design will focus on the strategies on regional scale coming to conclusion of a tool box to help transform the existing landscape for a more resilient urbanization in the future and elaborate one of the node to make a detailed design on local scale.</p>
<p>QUESTIONS: Understanding questions: -Answer analysis of the traditional and ecological water management method which has been summarized by the aboriginal in different levels(building, city, region)</p>	

- Answer analysis of the principles of dike fish pond system and how it changes through time
- Answer the analysis of the characteristics, distribution and function of cultural and public space in this region.
- Answer the analysis of the difference and similarities between historical urbanization and modern urbanization

What can you do questions:

- Answer the analysis and summarize of principles about living with water including water cycles(water storage, drainage and purification), ecology(restoration of biodiversity, dynamic), agriculture(recycling) and social structure(water culture, activities)
- Answer the principles in other cases in similar environment of living with water

Application questions:

- Answer design explorations(possible solutions) in different geographical environment(plain and mountain) in relation to water management(flood storage and drainage, grey water purification and storage, rain water harvest), ecology(restoration of diversity, dynamic), urbanization(increase of water dynamics, excessive water storage, water reuse, increase of flood resilience) and social structure(recreation around water, new typologies of public space)

Reflection questions:

- answer lessons learned(principles) of connecting agri-aquaculture, water management, urbanization to make a new type of delta urban landscape and its possible application in other region

Process

Method description

- Layer approach for the analysis of current landscape and the formation process is utilized to study the principles which can be reused in this region.
- Scenario approach is used to build different future development for finding similarities in each plan
- Process approach is used as a basic understanding method of the landscape in PRD and this helps to make a plan or design which is more sustainable in the future.
- A method of overlay mapping is introduced to make analysis based on the understanding of different layers which have effect on each other
- A method of cross reference mapping is used to make connection between the social activity in local scale and the water management in big scale

Literature and general practical preference

Literature such as the paper of

- “Integrated Agriculture-Aquaculture in South China” by Kenneth Ruddle and Gongfu Zhong
- “Shunde County History”
- Pearl River Delta Water Village Settlement “Sangyuanwei” by Zhiming Zhang
- Defensiveness in the Settlement of Shunde Water Township during the Ming and Qing Dynasties by Liyun Liang and Hui Liu
- Study on Spatial Forms of Traditional Village Water System in the Pearl River Delta Based on Flood Control and Drainage by Donghui Yang

-Cultural Geographic Research on Traditional Settlement and Housing Types in Guangdong by Zeng yan
-Research on Evolution and Dynamic Mechanism of Small Towns' Morphology in Guangdong Shunde by Liang Liyun
-Sankey ponds Landscape Heritage Research Of Pearl River Delta by Liu Kehua
-Research on Spatial Pattern of Traditional Villages in Guangfu Area by Zhang Shawei
General practice such as the project of "Room for River" will also be studied
[The literature (theories or research data) and general practical experience/precedent you intend to consult.]

Reflection

Relevance

The value of this graduation project provides a new perspective of ecological agriculture transformation and using traditional water management to make a soft infrastructure for the future urbanization. It focuses on the process from rural landuse to urban environment which inspires a more resilient way of urbanization and proved more possibilities and flexibility for future transformation which can deal with climate change issues.

In addition, it explores a way of combining different scales in planning and design by making a tool box for a regional scale and elaborate it on local scale where the result of local scale can be a proof for regional scale and other part of the delta. In a word, it also inspires solution for larger scale.

[The value of the graduation project in the larger social and scientific framework.]

Time planning

JANUARY

Week 2.7 P2 Pre Presentation 10th Jan; Debate of Course AR3LA040 10th Jan

Week 2.8 P2 Presentation 15th Jan ; Reflection

Week 2.9 Reflection and analysis on the site about topography, hydraulic system and Water management ; Examination of AR3LA040 24th Jan ; Workshop of Flowscales

Week 2.10 Research about similar cases and principles

FEBRUARY

Week 3.1 Initial strategies on regional planning(Analysis)

Week 3.2 Initial strategies on regional planning(Scenario building)

Week 3.3 Initial strategies on regional planning(Evaluation and plan)

Week 3.4 Initial strategies on regional planning(Evaluation and plan)

MARCH

Week 3.5 Site visit

Week 3.6 Analysis on middle scale and design exploration(Analysis)

Week 3.7 Analysis on middle scale and design exploration(Design exploration)

Week 3.8 Analysis on middle scale and design exploration(Design exploration)

APRIL

Week 3.9 Zoom in design for local scale for different spatial nodes

Week 3.10 Zoom in design for local scale for different spatial nodes

Week 4.1 Zoom in design for local scale for different spatial nodes

Week 4.2 P4 preparation

MAY

Week 4.3 P4 preparation

Week 4.4 P4 Presentation

Week 4.5 Reflection and changes

Week 4.6 Reflection and changes

JUNE

Week 4.7 Model making

Week 4.8 Rendering

Week 4.9 diagram modification

Week 4.10 P5 presentation

JUNLY

Week 5.1 P5 presentation

[A scheme of the division of the workload of the graduation project in the 42-week timeframe. Compulsory in this scheme are the examinations at the middle and end of the semester, if required, the minors you intend taking and possible exams that have to be retaken. The submitted graduation contract might be rejected if the planning is unrealistic]