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	Minshi Zhang
Student number	5488877

Studio		
Name / Theme	Planning Complex Cities	
Main mentor	Lei Qu	Spatial Planning and Strategy
Second mentor	Steffen Nijhuis	Landscape Architecture
Argumentation of choice of the studio	In the context of rural revitalisation in China, the multi-disciplinary topics of politics, culture, economy, ecology, and technology form the framework for future research together. At the same time, the future direction of rural development and urban integration is a topic that needs to be studied. By studying the spatial implications of conflicts between urban and rural, I hope to identify the possibilities of developing a 'smart village' model and promoting urban and rural development integration. Therefore, I can study and understand the Taobao village phenomenon from both a top-down and bottom-up perspective, which fits well with the theme of the studio of Planning Complex Cities.	

Graduation project	
Title of the graduation project	Smart Village: Rural revitalisation strategies based on Taobao Village development model in the rural areas of GBA
Goal	
Location:	Greater Bay Area in China
The posed problem,	Due to China's strong urban-rural dichotomy, vast rural areas generally face the development dilemma brought about by resource loss. Despite the limitation of urban-rural resource flow in the post-epidemic era, traditional villages can be developed by applying modern technology to help restructure their economic and social life, demonstrating the potential for future rural revitalisation.
	As a relatively mature model of the rural digital economy, Taobao Village has been developing rapidly in China in the past decade. Although this model has successfully driven the economic development of thousands of villages, it

	lacks attention to the impact on sustainable spatial development and rural society. The dilemma of rural development lies in the rapid non-agriculturalisation of population, land use, and industry. The Taobao Village model has accelerated these changes, which has negatively affected the social life and industrial structure in the villages. Homogenised competition in low-end processing and manufacturing industries, disorderly spatial development and construction, degrading agriculture and ecosystem, and foreign impacts on local society are all problems brought about by the entry of the digital economy into the countryside. These problems arise because Taobao Villages are spontaneously formed as a bottom-up strategy, and their uncontrolled and barbaric growth challenges the original rural structure. Due to the failure to form a complete planning system, villages have always lacked a forward-looking development perspective. Based on the existing Taobao Villages development model, designing spatial strategies to reconfigure the socio-economic life of the rural area and constructing a smart village model can help address these challenges.
research questions and	How to construct 'Smart Village' based on the optimised Taobao Village model to upgrade the agricultural industry and improve rural liveability for future rural revitalisation in GBA? SQ 1: How to understand the spatial impact of the digital economy on rural areas and optimise the Taobao Village mechanism for rural development? SQ 2: What spatial approaches need to be implemented to improve the quality of life and protect ecosystems in rural areas? SQ 3: How can the network system positively impact the development of localised industrial structures and sustainable agriculture? SQ 4: How to mitigate social segregation and help reconstruct social relations in the face of new populations entering rural areas?
design assignment in which these result.	1) Understand the digital development in rural areas The first step of the project is to understand the operational mechanisms of the digital industrial economy and its positive impact on rural spaces by analysing and interpreting the developed Taobao Villages. Envision the possibilities of digital village development by summarising

the spatial pattern and drivers of the autonomous formation of Taobao Villages.

2) Planning rural network systems
From the perspective of a planner, the project aims to understand rural revitalisation at a regional scale and rationally reallocate the development resources while improving the rural system from spatial, economic, and social perspectives. Furthermore, providing the basis of network systems for the digital development of rural areas.

3) Proposing strategies from a spatial perspective
The project aims to provide not only guidance on the systematic development of different villages but also the spatial configuration of the individual village. Different principles and strategies will be applied to improve rural liveability while valuing the ecosystem.
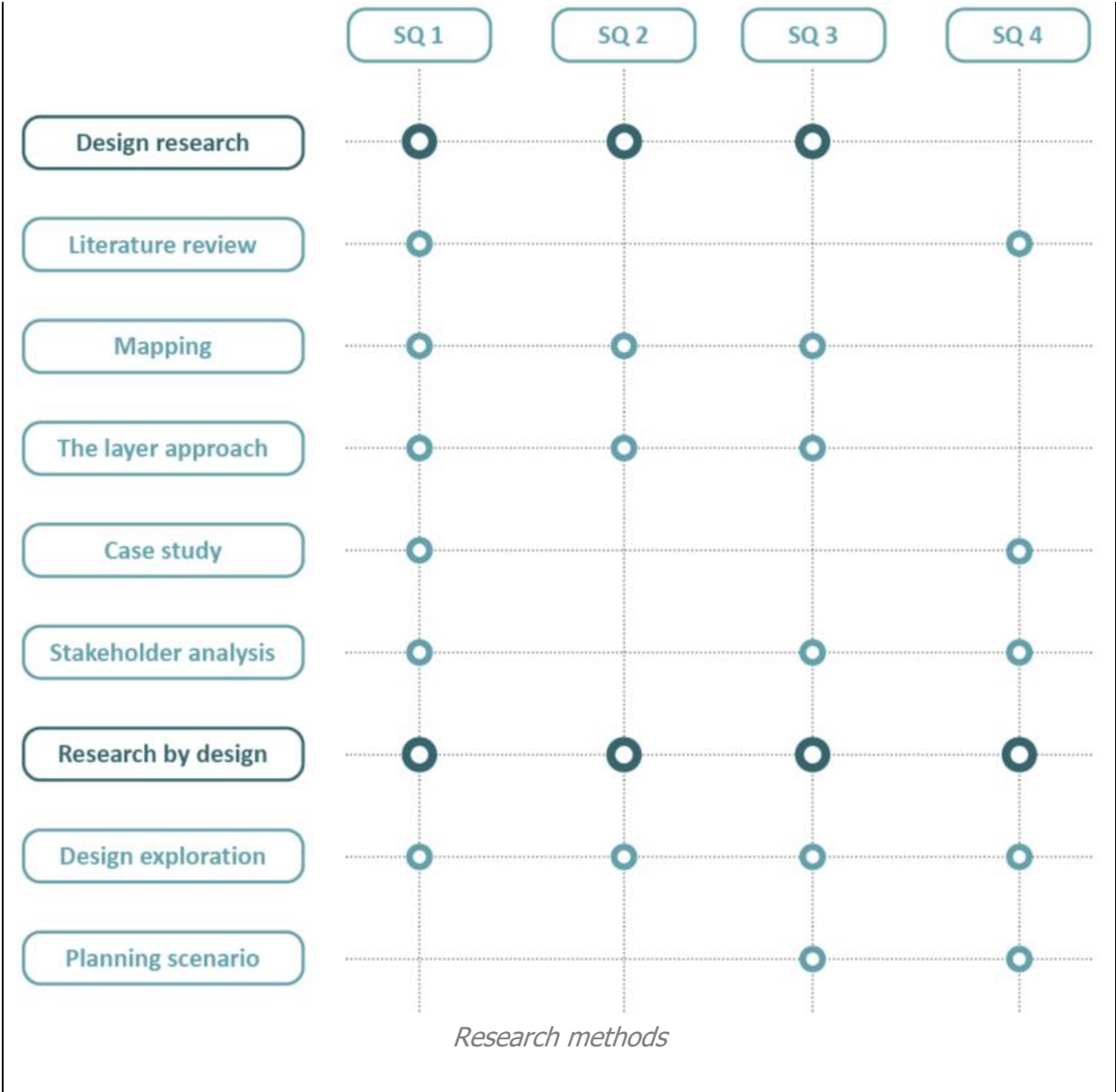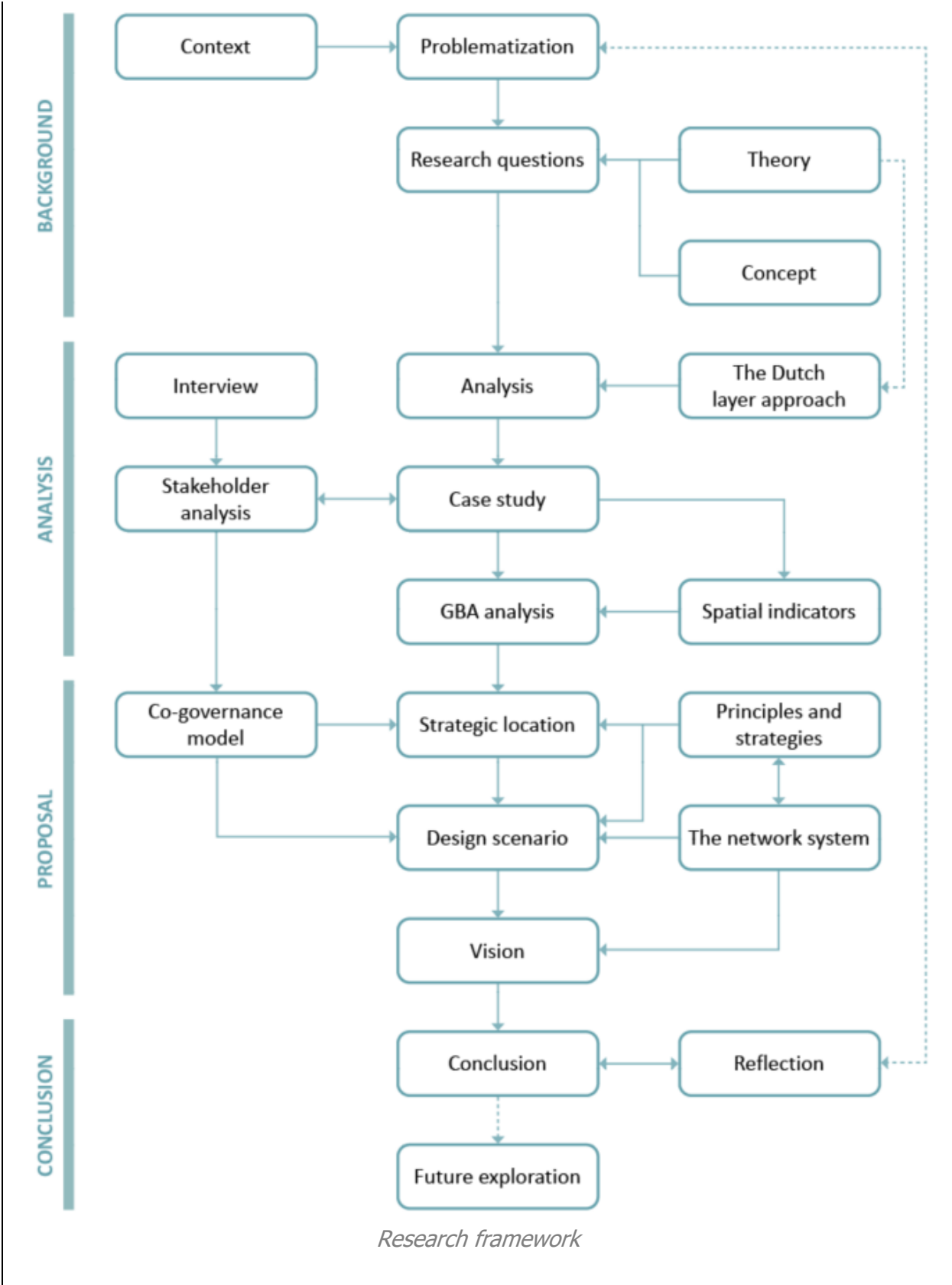
Process

Method description

In order to explore the main research questions, four sub research questions need to be answered in this project. They focus on the spatial mechanisms, design strategies, network systems and social impacts required for the development of smart villages. To investigate the different questions, two main types of methods, design research and research by design, are used in this project. The corresponding specific methods are used in studying the different questions.

Particularly, the methodology of the Dutch layer approach will be used in the project. A variety of factors influence urban and rural development, and complex systems need to be perceived and interpreted. In order to develop a comprehensive approach to understanding spatial development, the Dutch layer approach emerged. The layer approach understands the landscape of urban and rural development as a three-layer system of interrelated dynamics, including substratum, networks, and occupation (figure 2.7). Today, many scholars believe there is also a fourth layer, the cultural dimension (figure 2.6). They have different rates of change, influencing changes in human settlements in different spatial and temporal dimensions.

As the Taobao development model can be seen as a network society developed by all kinds of networks, the Smart Village concept is possible to develop further. With the methodology of the layer approach, it could help me analyse and understand how each layer works for rural development and how these layers cooperate or contradict each other.

	SQ 1	SQ 2	SQ 3	SQ 4
Design research	●	●	●	
Literature review	○			○
Mapping	○	○	○	
The layer approach	○	○	○	
Case study	○			○
Stakeholder analysis	○		○	○
Research by design	●	●	●	●
Design exploration	○	○	○	○
Planning scenario			○	○

Research methods

Context → Problematization

Research questions ← Theory

Concept

Interview

Analysis ← The Dutch layer approach

Stakeholder analysis ← Case study

GBA analysis ← Spatial indicators

Co-governance model → Strategic location ← Principles and strategies

Design scenario ← The network system

Vision

Conclusion ← Reflection

Future exploration

Research framework

Literature and general practical preference

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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)?

My graduation project focuses on the digital potential of rural revitalisation and uses the GBA in China as a research object. The studio of planning complex city hopes to explore the vastly different urban situation from the perspective of spatial resource allocation. As one of the forms of human settlement most closely related to the natural landscape, rural areas has a unique and complex system. The project aims to analyse and study the countryside at both regional and local scales, and to explore how spatial resources support particular patterns of economic development. In addition, the dichotomy between rural and urban areas has long been a key topic in regionalisation development. Exploring the development potential of the countryside can help to alleviate the dichotomy between urban and rural areas, and contribute to creating a more sustainable built environment for humanity.

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

By focusing on the possibilities of rural revitalisation, a vision can be made for the job opportunities and living quality for rural development. From the perspective of urban development, the revitalisation of the countryside is conducive to reducing the one-way movement of people to the city, thus balancing the urban-rural relationship. From the perspective of social management, a smart village can provide a digital method for rural management and also facilitate local public participation in the management process. From the perspective of disciplinary inquiry, envisaging a non-traditional pathway for rural development can provide a reference for theoretical exploration of built environment construction.