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	Ardian Wiratama
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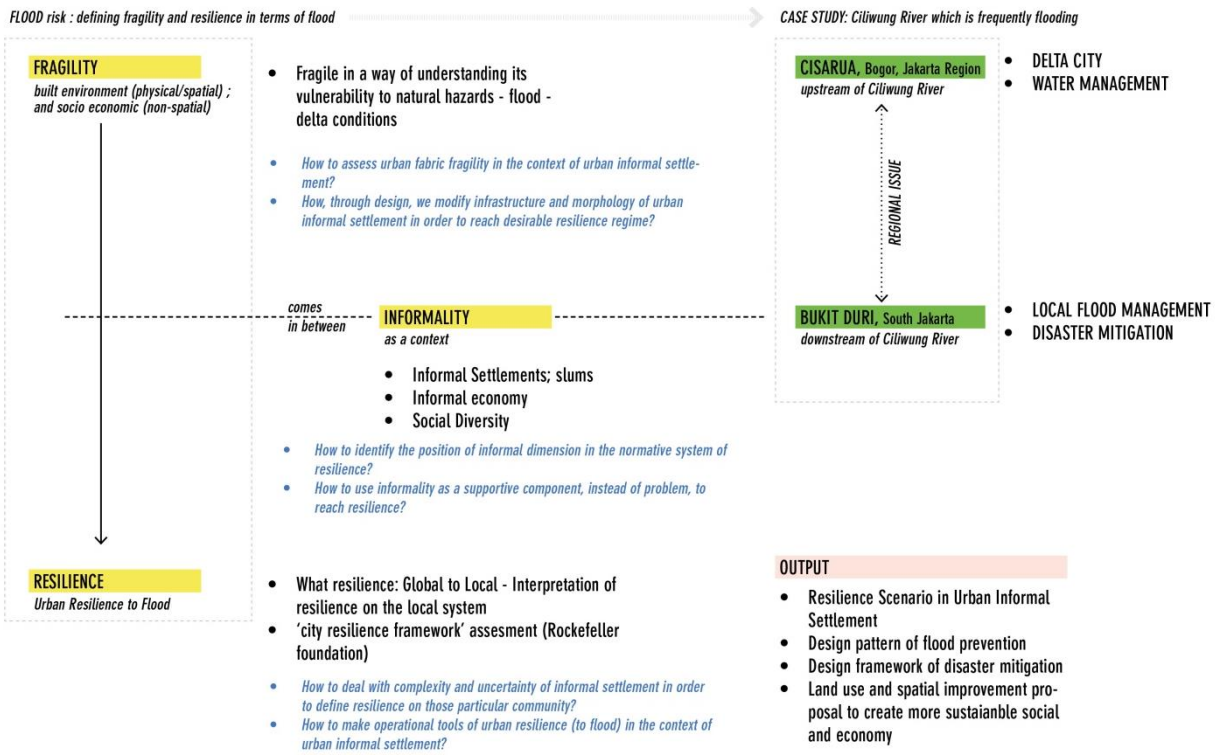
Studio	
Name / Theme	Complex Cities Studio
Teachers / tutors	Arie Romein (1st) – Roberto Rocco (2nd)
Argumentation of choice of the studio	This topic will be more related to the Complex Cities subject, especially on the relation with the informality, social issues, and urban context in Global South country. The issues that are elaborated will be more happening on broader scale, in which planning approach on the macro scale will be very significantly useful. Moreover, since the focus of the research is the complex socio-spatial and also economic-environmental dimension, therefore multiscalarity working process would be more enhanced not only on the physical spectrum. By the assistance from Complex Cities research group, especially with Arie Romein, this project found its chance to be very comprehensive yet strategic. Still, on the way to propose tangible intervention, there should be proposal on the lower scale, for example on the neighborhood, in order to find alternative solution. Moreover, dealing with this specific community needs an intimate scale which might open the opportunity to initiate participatory method. This low-scale approach also need certain technical understanding in the aspect of water and environment. Therefore, working within Delta Urbanism research group will also enrich the understanding of the context by go deeper to the micro-scale**.**

Graduation project	
Title of the graduation project	Transformative Resilience : A Study of Derivative Form of Resilience in Informal Settlement
Goal	
Location:	Bukit Duri, Jakarta, Indonesia https://goo.gl/maps/qGXeXZqQK1U2

The posed problem,	In the Third World country, slum settlements has been growing and spreading very fast. Due to the lack of planning strategy and engagement to the major system, its inhabitants has found themselves more and more vulnerable to the disastrous event, such as flood, fire accident, earthquake, etc. Meanwhile, the city always try to propose their resilience rhetorical slogan in order to convince the slum's inhabitant that there will be a better future for them. The disaster could be the shocking point, but the impact to the neighborhood could also be exacerbated by even worse factor, such as violence, poverty, aging infrastructure, lack of macroeconomic transformation, and environmental degradation.(http://www.100resilientcities.org/resources/). Those conditions are even more acute when we put the slum settlements as a context. *Resilience as a concept is still way far and untouchable for those marginal community. What they can only do is survive from one event to another.* One interesting illustration is Mike Davis's on his book, *Planet of Slums," The Caracas and Manila examples illustrate how* ***poverty*** *magnifies local geological and climate hazards. Urban environmental vulnerability, or risk, is sometimes calculated as the product of* ***hazard*** *(frequency and magnitude of natural event) times* ***assets*** *(population and shelter exposed to hazard) times* ***fragility*** *(physical characteristics of built environment).* ***Risk=hazard x assets x fragility.*** Based on those illustration, the motivation came to research on one of the factor, fragility aspect, which can explore the built environment, for example the fabric, building typology and try to relate this physical properties to the social aspect which may contribute to the way this society get their resiliency.



research questions and

Main Research Question:

How can **inclusive planning strategy** *promote* **multi-state resilience-to-flooding** *to create* more **livable and sustainable thriving community** *in the* **informal settlement**?

Case: Bukit Duri, Jakarta

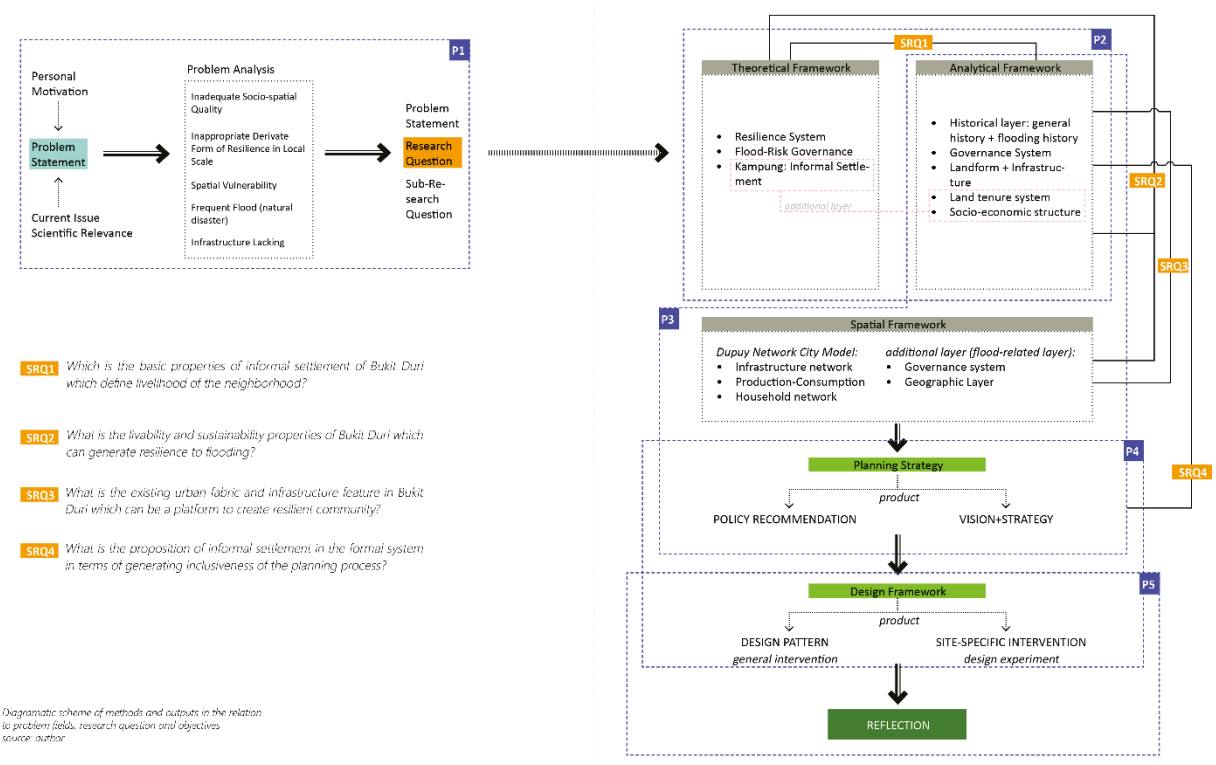
Sub-Research Question:

- What is the basic properties of informal settlement of Bukit Duri which define livelihood of the neighborhood?
- What is the livability and sustainability properties of Bukit Duri which can generate resilience to flooding?
- What is the existing fabric and infrastructure feature in Bukit Duri which can be a platform to create resilience of the neighborhood?
- What is the proposition of informal settlement of Bukit Duri in the formal system in terms of generating inclusiveness of the planning process?

design assignment in which these result.	**Project Aim:** 1. To find interrelated factor between socio-spatial issues and dynamic natural change 2. Finding in what extend informality can go further in a way to deal with natural disaster in order to gain sustainable and resilience 3. Finding adaptive and applicable disaster mitigation for vulnerable community by identifying urban morphology 4. Finding relationship between social vector and environmental vector in the informal settlement 5. Proposing framework and design solution to reduce disaster risk in the slum settlements 6. Exploring appropriate design tool and design pattern while dealing with small scale intervention within certain society/neighborhood **Application:** One of the main output of the research is the applicative way of adapting resilience on the local level, especially on the particular context of informal settlement or slums. This resilience (to flood) will also adaptable to many cases in which this topic engage multi dimensional perspective. At the end, there would be a proposal of local resilience system which can engage the stakeholders to reach the goals together.

Process

Method description



Diagramatic scheme of methods and outputs in the relation to problem fields, research question and objectives
source: author

This project will consist of 5 main phase in which every phase will be ended by short reflective point to consider the complexity of the issues. The first two phases will be enhance to know deeper issue and context based on literature and prior research.

On the middle of the research there will be empirical study on location to get more data and motives of the issues as stepping step to the final phase of designing and making proposal. The first two and last two phases are more iterative.

Literature and general practical preference

Reference:

Davis, M. (2006), Planet of Slums. *New Perspectives Quarterly*, 23: 6–11. doi:10.1111/j.1540-5842.2006.00797.x

Liao, K. 2012. A theory on urban resilience to floods—a basis for alternative planning practices. *Ecology and Society* 17(4): 48.

Maloney, W. (2004. Informality Revisited. *World Development*, 32, 1159-1178.

Tunas, D. (2008). The Spatial Economy in the Urban Informal Settlement. *International Forum on Urbanism: doctoral thesis*

Meerow, S., Newell, J. P, & Stults, M. (2016). Defining urban resilience: A review. *Landscape and Urban Planning, 147*(), 38-49

http://www.100resilientcities.org/resources/

There will be collaboration with the local initiatives, such as Ciliwung Merdeka and also with the government institution in terms of finding data and getting feedback of the proposal.

Reflection

Relevance

Societal Relevance:

As the inhabitant of slum settlement are more vulnerable to disaster, there is a big urgency to engage those marginal community to invite them on more participation to plan their own future. That is why this project is really intended to bring more social and economic dimension to create better-resilience community in informal settlement.

Scientific Relevance:

Based on many literatures, many aspect has been discussed to define resilience in certain community. While on one hand, it is still difficult to find applicative form of making this resilience system useful to be adapted. Moreover, defining resilience on this specific context need more understanding in terms of its complexity. This project will enrich the vocabulary of action not only discussing the theoretical dimension.

Time planning