Reflection P4

Rethink Can Tho.
I am delighted and proudly announcing you the result of my research work and the result of my graduation thesis: "Rethink *Can Tho*". *Rethink Can Tho* is related to the vision of graduation lab Delta Interventions and proposes innovative design solutions for the Mekong Delta on building level in Vietnam in the year 2100 adapting towards the global problems of climate change. This documents describes a reflection on the graduation phase with eight topics: 1) graduating without graduation lab, 2) consequences, 3) opportunities and lessons, 4) methodology, 5) personalized chosen methodology , 6) evolving scope and limited available data, 7) research and design and closing this document with 8) limitations and further research.

1. Graduating without graduation lab

I witnessed the sad consequences of flooding problems due the Tsunami in Sendai, during my exchange period in Japan in period Q3-Q4 2012. Facing the problems of this sad disaster has been the start of my graduation project and also the start of my exploration about the knowledge of the Dutch Water Management. This is why I decided to pursue this project in order to research the problems of floods in my origin homeland, Vietnam. However, the general official graduation program of Delta Interventions canceled its start in spring semester period Q3- 2013 February, since I was the only enrolled student. Despite, I've been given the high exception to start my *self-made-graduation-project* that spring semester as a single student in period Q3- 2013 on 11-02-2013 officially and scheduled my own program of lectures from other graduation lab's, with a comparable delta theme.

2. Consequences

Graduating without a team of students has given me more difficulties during the graduation phases. The problems I faced due my decision are: no weekly meetings with a team and group of student facing the same graduation obstacles, no clear and fixed rooms dates and times for formal presentations, no fixed working places, no group works for the urban master plan, no group lectures, no group mentors and fixed field trips, no direct comparison, discussion and competition and whatsoever from day one.

3. Opportunities and lessons

The graduation process, personal organizational development, bilingual interviews, internship and decisions have been a great life lesson to me. Despite, the experience of obstacles due missing certain facilities, which I used to consider as "normal", teaches me to appreciate all the effort for the organizational planning and discussions per graduation lab, as a result of my very own choice to start this research alone, the process have given me more as I expected in the first place. I've met a diversity of inspiring professors, mentors, students, engineers, professionals in architecture, water, climate change and spatial quality practices from both the Netherlands and Vietnam, who have been willing to discuss my ideas and problems, exchange theirs and help me with this research along this long graduation road. I believe the most important lesson, which is given to me throughout this graduation is to concretize and acknowledge the scope of the research problem and thus the limiting solutions, through the vision of an architect.

4. Methodology

The data research and analytical applied methods (*typologies analysis, context analysis, interviews etc.)* are used as research tools during my graduation phase. I had two objectives: the toolbox and the design (*see 5a: left diagram).* The thing which was missing is a concrete plan of approach per objective. The further the process of my graduation evolved itself, the more clear the different approaches were more categorized and linked to the actual goals. The plan of approach has developed during the graduation phase into the final concept approach for a concrete thesis scope with the three clear objectives and final results (*see 5b: sketch diagram on the right*).

5. Personalized chosen methodology

The common graduation process of studio Delta Interventions can be divided into two parts: Urban group research and Architectural individually research. The methodical line is about conducting group- research and designing a urban master together in the first part of the graduation and the second and last part of the graduation process consist about individual research and developing the final architectural design. I've chosen to conduct both first part "urban research" and second part "architectural research" of the graduation process individually. The sources are conducted from post- graduate lecture series, former graduation works, congress, internship, divers professors of urbanism and civil engineering and practice professionals in the field of water management on urban and architectural scope of both from the Netherlands and Vietnam.

6. Evolving scope and limited available data

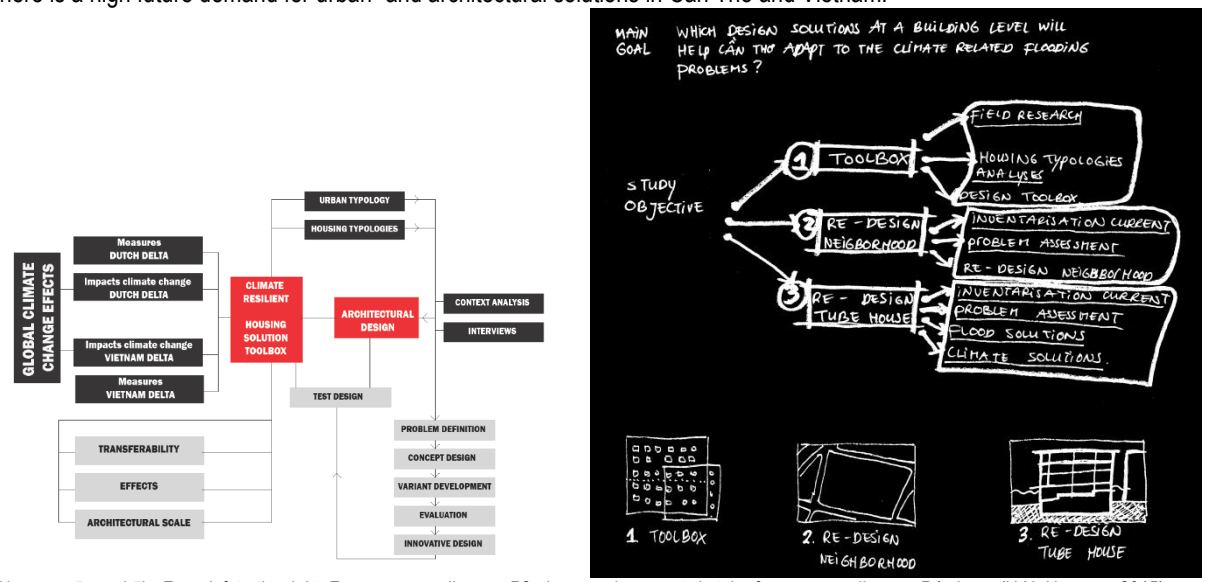
The framework of approach in the problem assessment in the first phase (*P2*) of the graduation was too broad and general, but the chosen methodologies did worked out well. The scope of the design location has been undergoing several developments and the framework became more clear. There was a huge lack of available data (*no detailed CAD or PDF urban maps with the cadaster lines and sidewalks, build and uncultivated areas, sections, heights map etc.)* available of my chosen location. All I had was google maps, thus drawing an urban map has been quite an effort, since I worked individually,

but needed the information badly. The limited available data has been a big obstacle to make good assumptions, thus I organized interviews and a very intensive 10- days fieldtrip to Can Tho in Vietnam, actively searched and contacted a mentor in Vietnam for safety reasons, since I conducted the bilingual interviews, site measurements and whole fieldtrip by myself for the first time. Analyzing, side observations and interviews with local inhabitants and local professionals of practice has helped me choosing my final framework and final focus of design with respect for the perception of the local habitants in mind. Reflecting on the scope diagrams (*see diagrams from left to right: 5a:old to 5b:new*) and it evolved itself into a decision tree of objectives and its approach- steps.

"Which design solutions at a building level will help Can Tho adapt to the worldwide climate related flooding problems?", has been the main goal of the research. Several design solutions have been reported in the thesis. The main solution to adapt to the climate related flooding problems, with particular attention to the tube houses of Ninh Kieu, are living and functioning from the 1st floor. The three different study objectives:

1) To create a toolbox with climate adaptive and particularly water robust solutions on a building level for the design process of houses in delta areas.
2) To propose a sustainable climate adaptive solution on a neighborhood level with particular attention to the existing tube houses in Ninh Kieu (*Disrict Centre of Can Tho*) for the year 2100.
3) To propose a climate adaptive and water robust architectural re-design for the tube houses in Ninh Kieu (*District Centre of Can Tho*) for the year 2100.

Reflecting on the study objectives shows a startup solution toolbox for the design process of houses in delta areas includes a collection of pre-existing measures from the Netherlands and Vietnam and own proposed innovative measures. Problem analysis and climate adaptive solutions on a neighborhood level are proposed and a conceptual re-design and prototype on how to use this toolbox is proposed. The complexity of such a location, with very rare available data has been underestimated by myself. The complexity for such, would've been a very interesting research theme for a group of students since data is lacking and due the rapid developing modernization in combination with the threats of global climate change there is a high future demand for urban- and architectural solutions in Can Tho and Vietnam.



Diagrams 5a and 5b: *From left to the right: Former scope diagram P2 phase and concept sketch of new scope diagram P4 phase (H.H. Nguyen, 2015)*

7. Research and design

Starting from research to design and from design again back to research. *Objective 2: Neighborhood* and *Objective 3: Re-design* are input for the *Objective 1: Toolbox*. Inputs of solutions for two objectives circulates. Bottom line: Design (*testing and result*) are input for new innovative research data.

8. Limitations and future prospects

Vietnam is a rapidly developing country, a business plan needs to be made to map the estimated costs and funding for these projects to meet the demand for climate adaptive architecture. The perception of local inhabitants is very important for further investigation. A survey to evaluate the perception of local inhabitants to the proposed new lifestyle (*on the 1st floor)* needs to be conducted. Increased criminal rates should be considered, since the boundaries between private and public spaces are reduced. Measures on greater scale are required. Besides architectural housing measures, measures on a greater scale (*e.g. urban or public building*) are necessary to overcome the climate related flooding problems. Expansion of measures in the solution toolbox. In order to optimize the toolbox, solutions from other worldwide delta areas can be added and more prototypes using this toolbox are required to evaluate and improve the toolbox for generic use by architects.