The theme of the studio
“(it is) an interdisciplinary studio in which architects, civil engineers, urban and landscape designers will collaborate. Within this studio the students will be challenged to find innovative and endurable build interventions, on a wide variety of scales that will transform and strengthen the identity of the Delta.” (Delta Interventions Graduation Studio, 2013).

My graduation project is motivated by the triple layers analysis we made in the beginning few weeks of the studio. Through this research practice, the gap between natural processes and human interventions after the construction Deltaworks has been discovered. Later on, I was inspired by the ideas from the research program “Integrated Planning and Design in the Delta” (IPDD), and quickly started my research on the integrated relationship of flood risk management, ecology, urban design and landscape planning. As can be imagined, the research tasks involve diverse disciplines and scales, but thanks to the lectures that held by the studio, I had chance to get close to the experts from other disciplines, which makes me further convinced that these disciplines are indeed overlapping with each other. So my research and design project try to involve different disciplines and to explore “on a wide variety of scales that will transform and strengthen the identity of the Delta”.

Research and design
When looking back the whole project, it can be concluded that design could be regarded as research (chapter 2). The research consists of 4 parts, as listed:

1. Basic research & General research question: The starting point of research;
2. Design research: Based on the existing knowledge and practices to figure out the generic knowledge;
3. Research-by-design: Narrow down the research topics through in depth study of a particular situation. The generic knowledge is tested and visualized under concrete requirements and situations;
4. Conclusions/ Reflections: Answer the research question and it will allow further elaboration or hypothesis creation on a subject.

The wider social context
The research and design project relates to the social context in different aspects. This project has showed how ecological and spatial conditions could be improved with the help of integrated flood risk management. Take the interventions of Numansdorp as an example. The intervention is based on the survey results of the local residents, and the strategy is contributing to provide sufficient senior apartment and health care to the increasing population of elderly people. Besides, after the construction of Deltaworks, the urban-rural fringe has become the far side of Randstad which hardly attract any private investment. Today more and more young people have left the rural areas to the big cities for better life. The graduation project provides a new possibility for this region. With integrated planning and design, the whole region will be transformed into the gateway to the hinterland. The unique delta landscape, creek network and polder landscape, together with the robust agriculture, housing program and recreational facilities, will help to improve the socio-economic status, and transform the region into an attractive and safe place to live, to work and to stay.

Furthermore, the mutual benefit system between urban and rural could also be used for urbanized delta areas worldwide, because it could on one hand protect the unique delta landscape, and on another hand guarantee the sustainable urban development.

The wider academic context
The graduation project is combining the flood risk management together with urban planning. This research can add to the research of “integrated planning and design” as one case study. The IFRM Toolbox is based on the existing theories, such as multi-layered safety, “Room for the river” program, etc. But this project is also an evaluation research, which shows the common features and
differentiation of these theories and practices. Besides, by narrowing down the topics during the design study, the effectiveness of several tools has been further developed and visualized under concrete requirements and situations. With the design interventions, the generic knowledge of integrated flood risk management received realistic responses. Since there are numerous possibilities of the IFRM Toolbox, it could be applied to other areas as well in coping with the relationship between water management and spatial planning. And the IFRM Toolbox is really like a “Box”, new techniques, theories and approaches could be gradually added to the toolbox, since it is both reliable and flexible.