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	Eva Ventura
Student number	4279565
Telephone number	
Private e-mail address	

Studio	
Name / Theme	Flowscapes
Teachers / tutors	Frits van Loon Nynke Tromp
Argumentation of choice of the studio	Only option

Graduation project	
Title of the graduation project	Erosion for betterment: designing erosion to improve well-being | a case-study of the Volta Delta in Ghana
Goal	
Location:	Volta Delta Region Ghana
The posed problem,	Severe coastal erosion is putting pressure on livelihoods all over the world. In developing countries this pressure is devastating. Finding a symbiotic way to live with the dynamic character of nature and thereby erosion has not yet been found.
research questions and	Main question: *How can landscape architectural design turn erosion into an integrated beneficial element of daily life in the Volta Delta Region?* Sub Questions: *What are the living qualities in the communities of the Volta Delta Region?* - What is social behavior like in the region (where do they meet, share space, etc.)? - What living arrangements exist in the Volta Delta Region?

	- How do people make a living? - How do people build their homes? *How does the Volta Delta as a system currently affect living quality of the communities in the Volta Delta Region*? - How does the water-system work in the region? - Which elements of the system can be used to benefit the social flowscape?
design assignment in which these result.	To come up with an integrated and sustainable design solution for regions like the Volta Delta Region by designing erosion which will shape a living environment that interacts and thrives through allowing erosion while at the same time respecting the inhabitants wishes to improve well-being of livelihoods around delta's suffering from erosion

Process

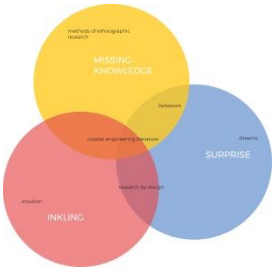
Method description

The methodology of this project is a multi-disciplinary one. It combines civil engineering, anthropology, and sociology to finally, create a landscape architectural design proposal. This research will be done with advice from the civil engineering, industrial design and landscape architecture faculties and its students,.

The civil engineering research will focus on coastal engineering comparing multiple papers written about the coastal dynamics of the areas. Unclarity will be resolved by asking aid from more specialized contacts obtained during the workshop week in October, in Ghana. To truly grasp the dynamics of the area a dynamic model will be made simulating the possible effect of my design and thereby adding a deeper understanding of the systems of the delta landscape. The more anthropological or social research will be more of an intuitive one based on findings made during the workshop and a cross-sectional questionnaire distributed to Ghanaian students by email. The two researches together will be overlapped, finding the common grounds. This, will be translated into a landscape architecture design proposal. The proposal will be tested by communicating with the Ghanaian contacts for feedback. With this feedback the proposal will be optimized and finalized.

Within this research 3 categories of source depletion are recognized: missing knowledge, inkling and surprise. The missing knowledge simply means I needed more knowledge on the subject. This is a very rational domain. The second one is the inkling or hunch. This one is more intuitive. An intuitive thought points into a certain direction of further research. The third one is the surprise. This one is when a thought or an idea comes from an unexpected place, like a dream.

These three domains are interconnected and circular. During the process they interact and interchange.



Literature and general practical preference

Literatuur: Addo, Dr. K. A. (2015) *Assesment of the Volta Delta Shoreline Change*, Accra, Ghana
Boateng, I (2012) *An Application of GIS and Coastal Geomorphology for Large Scale Assessment of Coastal Erosion and Management: a Case Study of Ghana*, Portsmouth, UK
Ly C. K. (1979) *The Role of the Akosombo Dam on the Volta River in Causing Coastal Erosion in Central and Easern Ghana (West Africa),* Ghana
Anthony, E.J. and Almar, R. and Aagaard, T. (2016) *Recent Shoreline Changes in the Volta River Delta, West Africa: the Roles of Natural Processes and Human Impacts*, France

Advies: Janneke van Bergen, Annemieke van Boeijen

Reflection

Relevance

After finishing three years of the architecture bachelor and one year of the landscape architecture masters it was time for graduation. While reflecting upon those previous school years it became clear that I was missing something. That is where my first fascination comes from. I was missing a more direct urgency. I wanted to be part of a project that could improve the well-being of people most need it. This quickly steered into an interest in developing countries. With this another aspect was triggered, my interest in discovering and thereby designing for another culture. Not only does it ask for another approach within landscape architecture but also within my own design process. In order to do this I would have combine multiple disciplines and their techniques and theories. This will in turn test the limits of landscape architecture. What can landscape architecture achieve?

Besides these more general fascinations, I was also interested in some other more specific topics. From the Holwerd course I learned that the topic of erosion and the future is one I find interesting. I was always astonished that erosion is a never ending stroy that in itself and in most solutions holds a paradox. This is the paradox of the ever dynamic characteristic of nature versus the stability human race demands.

In areas where this is most vulnerable are areas where inhabitants rely on natural resources for their livelihood. As they depend so on natural resources the dynamic characteristic of them puts a lot of pressure on livelihoods. With this it is also imaginable that climate change adds even more pressure on a system like this.

Many deltaic/coastal areas are currently facing severe erosion issues. Erosion is an example of how the dynamic character of nature contrasts the stability necessary for human life. Especially with the future prospect of climate change, balanced solution is needed. The Volta Delta in Ghana is one of these coastal/deltaic areas. The morphodynamics of the delta cause the coast to erode with an average of 4m every year. When in 1965 the hydraulic Akosombo dam was built in the Volta River, this doubled to

8m/y. Ninety percent of the sediment that is usually transported from the Volta basin to the coast now is sequestered by this dam. So you can imagine the effect this has. Inhabitants of the area say that they "see the houses fall of the shores" and that many initiated developments are simply "washed away". The poor (less than 2$ a day) Volta population depends on their land for their livelihood. Fishing and agriculture economies depend on the characteristics of the coast to be effective. With 40% of the Ghanaian population living at the coast their coastal activities makes 56% of Ghana's GDP. The receding coast puts a lot of pressure on these economies. Local communities turn to alternative economies like mangrove cutting to still be able to support their families. However this short term thinking does not go without consequences causing livelihoods and the wellbeing of the people to worsen. We need to find a sustainable and integrated solution so in the future we don't have to fight natural dynamics, but we can benefit from them.

Time planning

Q2 [Continue research and start first design proposals]
Week 2.1 _ Tutoring merging the analysis and the research
Week 2.2 _ Tutoring and discussing the anthropological research
Week 2.3 _ Tutoring and discussing the first design ideas
Week 2.4 _ Tutoring and discussing dynamic modeling workshop
Week 2.5 _ Tutoring merging anthropological findings with design
Week 2.6 _ Tutoring and discussing the design proposal
Week 2.7 _ Tutoring and discussing the design proposal
Week 2.8 _ Tutoring and completing the design drawings
Week 2.9 _ P3 Presentation: Complete overview on the design

Q4 [Definition of the Design at the detail scale: materiality, experiences, technical details and testing it]
Week 3.1 _ Tutoring and working on fixing the design issues unrevealed by P3
Week 3.2 _ Tutoring and design at a lower scale, detailing
Week 3.3 _ Tutoring and optimizing at bigger scale (strategy/policy)
Week 3.4 _ Tutoring and finalizing design
Week 3.5 _ Tutoring and experimenting with communication techniques
Week 3.6 _ Tutoring and design of communication technique
Week 3.7 _ Tutoring and finalizing communication technique
Week 3.8 _ Tutoring and finalizing communication technique
Week 3.9 _ P4 Presentation: Elaborated Design

Six Weeks after: P5 Presentation – GRADUATION