Reflection | Identified Floating Landscape

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General overview

In the beginning of this graduation year, my project developed around the adaptability and ability of a building to endure the extreme conditions caused by global warming followed by climate change. This then developed into a project that revolves around flooding. Because there is a higher occurrence rate and the intensity of a flood is increasing. All because of climate change, caused by all of us. Now our houses are not resilient to this problem. During a flood, water will enter our homes, there will be no fresh water, no electricity and in extreme cases it is not even possible to leave your home. Probably only with the help of first responders. This called for a diverse approach as we want to solve this problem but also make the original cause of this problem not worse. Meaning, designing a home in such a way that all functions of a normal house still work. Freshwater, electricity and that the house is still accessible. And doing this while keeping in mind that we do not want to harm nature even further.

My approach to this was to gather a lot of information regarding the circumstances during a flood, like soil and water characteristics. But also how a building interacts with a flood and would be able to survive one. As this information is not all based on architecture, I relied on current academic, and governmental information, case studies and the knowledge of professionals in the involved fields besides architecture within this problem. I believe that this approach helped me get a very wide understanding of how the different elements during a flood interact with each other. The danger in this was that there are so many fields involved that the new information can be overwhelming to the point where everything seems to be of high importance. It is then only after a while of interacting with this new information that it becomes clear how significant or insignificant it is. This led me sometimes to do extensive research while it was not of the utmost importance at that moment. Though it is always good to have more than enough information it could have helped to have a sharp eye as to what it is you are exactly trying to figure out.

This is where the feedback from the mentors was really helpful. They were listening to what I was telling them every week, and by looking through the products of that week and hearing my story they asked the right questions as to what I was doing. Was it in the correct direction, does it miss something and does it fit into my whole storyline? After a feedback session, I would write down the important points as to what to keep in mind for the next week. And this way I was able to incorporate the feedback of my mentors.

Nevertheless, this broad spectrum of information helped me to develop flood-resilient housing types called the IFL, Identified floating landscape, which can provide everywhere all over the world housing resilient against flooding. This project has given me a lot of insights into the possibilities when designing in a flooded landscape. It has given me a lot of knowledge even besides architecture, based on water and soil during a flood and how important it actually is to create architecture that improves our future.

Specific questions

What is the relation between your graduation project topic, your master's track (architecture) and your master's program in Architectural Engineering?

To design flood-resilient housing in a sustainable and nature-inclusive way, the choice of a studio that is directed towards Architectural Engineering would help the outcome of this project. There are a lot of different fields of expertise involved in this project, making architecture an apparent choice. Since I think it is architecture that can absorb all the knowledge of other specific experts and then find a way to transform this knowledge into a fitting design for the problem. So in the end being able to combine this technical knowledge into an architectural design for living with floods, would fit perfectly within the architectural engineering studio.

How did your research influence your design/recommendations and how did the design/recommendations influence your research?

The research about the foundation gave me insight into the characteristics of how soil and water interact with each other during a flood and finding possible foundations for a house in a flood-prone area. Which helped me to develop the recommendations for the design. My research regarding has led me to several recommendations for the design. The design should be lightweight, the foundation mechanism should be one that is able to move up and down, and therefore the design should be able to fit in a green landscape but also in a water landscape. This influenced my

research as to what is a lightweight structure, how a building fit in a landscape and which adaptable foundation option would generate a good solution for my problem.

How do you assess the value of your way of working (your approach, your used methods, used methodology?
It was very valuable to be able to talk with experts outside of architecture regarding my project. This helped me to get a bigger and broader understanding of my project in design. Most information was gathered through governmental sources for water and soil characteristics. Therefore this information is reliable and in combination with experts very useful to base my project on.

How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?
In November 2022 the government of the Netherlands stated the high importance of soil and water in the Netherlands through a letter to the government. In it, it stated that water and soil should be the main priority in every step taken, en therefore it should be incorporated into any project involving water and or soil. In my project designing a floodproof house, everything comes together when thinking of water and soil. Besides this floods are not only a problem occurring in the Netherlands. Multiple countries all over the world experience floods which makes this an all the more valuable and relevant project. My project does not really involve ethical aspects, as it is looking at solutions for floods which happen all over the world and therefore not excluding anybody.

How do you assess the value of the transferability of your project results?
This project can be a solution for everyone experiencing floods. The only element that would exclude some people from being able to build a home like this, is if they do not have the finances to generate such a house, though the principles used in this building can also be translated into more low-tech and less costly options. Only the quality of the end product would not be the same. Meaning it wouldn't be as durable. But in general, this project should be able to be replicated all over the world. There are several different foundation typologies to choose from when designing a floodproof home so there could be some differences in there. But the overall elemental strategy is where one building can become more through the use of standardised elements.

How do you ensure the reproducibility?
This brings us to the reproducibility of the Identified floating landscape By dividing the building into several structural elements that can be combined together it is possible to develop a house that fits the needs of everybody as it is possible to tweak the elements in such a way that fits for the interested party. Even though it is possible to generate multiple options it will always be possible to connect another house to the property. The reproducibility of the building makes it also very easy to switch parts if they may end up damaging for any reason.

How do you ensure the self-sustainability of your project?
This goes hand in hand with the project's sustainability and self-sustainability. And partly why this project is called the Identified Floating Landscape (IFL). As I have been searching for nature-inclusive solutions it is important that the land being covered by the building develops a new identity, that is able to float on water, with landscaping on top of it to simulate the ongoing landscape from outside the project to the inside. A natural element is therefore implemented into the list of elements this project will exist out of. Further, as part of the self-sustainability, solar panels on the edges of the roof are implemented, a green roof is installed for natural cooling nature, a vegetable garden with a greenhouse is introduced as an element to allow the residents to grow their own vegetables, there is a heat pump working on air to produce heat and cooling for the building, instead of a normal toilet there is a compost toilet which compost can be used for the vegetable garden, a rainwater collection system is integrated into the project combined with open ponds to see the actual collected water and filter system to transform the rainwater into drinking water, and last but not least a chicken coop will help with the green waste collection as it can be used for them as food while they produce eggs for the residents. This makes the building completely self-sustainable and able to produce its own facilities.

How will you fill the final part of the graduation project?
In the final part of this graduation project, I will be making the final adjustments to the design and great clear visual representations of the characteristics of the project. The elements, the construction, the self-sustainability climate and architectural qualities. This will also be represented in a scale model produced in this last part. And lastly, I will develop a presentation which will represent the project and explain all the characteristics of the IFL Identified Floating landscape.