Reflection Paper

Recovering *The Water*

Enhancing the health and wellbeing of Indonesia's kampung system while contributing to the recovery of water ecosystem services

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What is the relation between your graduation project and your previous studio experience?

I took Architectural Engineering (AE) studio twice during my first year, specifically in the EXTREME course. What I found interesting in AE studio was the integration of research, design, and technology. The studio's approach always began with research and experimentation as the basis of knowledge, providing further insights for the design process. EXTREME course taught me to design beyond my comfort zone, dealing for extreme events, including disasters and climate, as well as socioeconomic challenges. This required me to think about mitigation and create adaptation scenarios, which then I applied to my graduation project.

How did your research influence your design/recommendations?

Research has become an essential tool for me to validate and justify my design strategy. Before making decisions, I always test various aspects, whether they relate to climate, structure, or materiality, to ensure they are feasible and implementable. Additionally, to justify my design, if I cannot personally prove an idea, I refer to literature that has tested and proven its validity. This is especially important when selecting materials; for example, when I cannot directly verify the compressive strength or thermal conductivity, I cite relevant literature to support my justification.

How you approach the feedback from mentors and translate it into the work?

All my tutors have always been critical and provided new perspectives that I should consider during the design process. Their feedback was invaluable, pushing me out of my comfort zone and encouraging me to think innovatively and beyond conventional building methods. Translating this feedback into my work was challenging due to the cultural differences between building in the Dutch way and in Indonesia. Thankfully, since the site is my neighborhood, it was easier for me to observe local culture and practices while incorporating a mixed approach from my learning experiences in the Netherlands.

How do you assess the value of your way of working (your approach, your used methods, used methodology)?

During the project, I found great joy in using various approaches and methods, including testing structural models, conducting climatic analysis, and calculating CO_2 emissions. These methods were very effective for me in justifying my design strategy, making decisions, and proving that the design works. Additionally, since this project aimed to serve lower-income communities, I set strict boundaries for myself: my design had to be simple, low-tech, and affordable for the community. This challenged me to look deeply into existing resources, materials that could be reused, and the community's living conditions and local practices. It taught me to be creative in reusing materials and looking for substitutions for traditional building methods.

Furthermore, I found that working on this graduation project, which was large in scale and had many aspects to consider, sometimes made me lose focus on my initial research or design questions. Therefore, I had to frequently reread the questions and reassess their relevance, creating a back-and-forth working process. Along the way, I discovered a more comprehensive and suitable goal for my design questions, which required me to reshape my initial questions. The lesson learned is that it is good to remain open to new ideas, as clarity often emerges through the learning process and by the end of the day.

How do you assess the academic and societal value, scope and implication of your graduation project, including ethical aspects?

At first, I struggled to balance academic innovation with practical thinking. I needed to innovate new ways of building that differed from our usual techniques. However, since the project site was my neighborhood, I leaned towards practical, simple solutions that were feasible and straightforward rather than utopian. After discussing with my tutors, I gained confidence to explore various ways of thinking and potential materials derived from local buildings.

My project showcase to how to invite kampung residents to improve the kampung's health and wellbeing as well as preserve ecosystem. Contribute to a city level and become a kampung example to the others. Promote an innovative way with building more ecological and lessen emissions, at least reduce at the kampung level

Ethical Issues and Dilemmas

There are issues and dilemmas that I encountered during the design process, and here is the position I have taken on them:

A bamboo housing for urban Kampung?

Bamboo is indeed sustainable and has minimal environmental impact. However, the question remains: are people, especially those living in urban areas, familiar with bamboo housing? Do they want their houses built entirely with bamboo structures? Will my bamboo housing fit within the culture of kampung in Indonesia? These questions have frequently arisen from both my tutors and myself.

During my visit, I observed that bamboo is still used in urban areas, specifically in Surabaya. However, its use is limited to temporary shelters and furniture; whole houses made of bamboo are not common yet. Therefore, my challenge is how to convince the kampung residents that it is possible to have a home with a strong bamboo structure while also encouraging them to contribute to environmental preservation.

In the end, I came up with the idea of combining existing materials like brick with bamboo. My aim was to gradually shift the paradigm rather than make a sudden change. Therefore, I created a prototype by retrofitting and demonstrating that it is possible to combine brick and bamboo. Over time, as architects gain the trust of local residents to build entirely with bamboo, it will become easier to implement.

Between eviction vs a room for river?

Either eviction or giving space to the river is a major personal consideration for me. These two issues both have valid reasons to be addressed. Eviction and displacement often happen to informal and lower-income families, specifically those living near riverfronts. Due to their illegal status, the government has more political power to displace these vulnerable communities under the guise of "protection." From an environmental perspective, they are indeed prone to floods, landslides, and water pollution. The government's offered solutions were either a housing fee or relocation to social housing. However, these solutions often fail to account for the social and cultural values of communities that have lived together for years in the kampung and formed a strong, grounded community.

From the river's perspective, it also has a right to exist and function properly. The river plays a significant role in the city by managing floodwater and providing irrigation for nearby livelihoods. Buildings or obstructions near the river can increase pollution and decrease the river's livability. This issue presents a significant challenge for me as an architect. How can I find solutions that respect both the rights of the people and the river? How can I integrate their functions so that people serve the river, and the river meets human needs?

In the end, I decided to create a win-win solution: to preserve the river's functionality while allowing the community to stay, even if it means partially modifying their homes.