

## **Reflection on Research and Design**

*Graduation Architectural Engineering*

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The theme of textile industry in Bandung area is directly related to water pollution, rapid urbanization and thus a lack of green. Trying to close cycles and create a space for the community in the chosen kampung aligns with the needs and the theme.

In the wider social context of the area where our project is situated there is a lack of education and future prospects. Lack of schools and ignorance on environmental issues maintain the low and unhealthy living conditions. In this social context my project fits very well as a possible alternative future. Although I am aware, if it were implemented, there would be a lot of 'humps' and 'bumps' to overcome. Showing them in the built environment alternatives to their current situation can help change their mindset.

My research paper was quite technical and also not directly related to architectural design. As a consequence I feared it would be hard to connect a design to my paper. However by using material and landscape as guiding principles it was very well possible I found out in the end. So although my research on the use of plants was still quite distant from actual architectural design, my final design does fit in the scenarios that I elaborated on in my research paper.

During the graduation studio it was the idea to relate the design to the research you did the semester before. The gathered knowledge and design-tools elaborated in the research would be guiding elements in our design phase. Although parts of my research were quite useful I sometimes had difficulties to remind myself of the 'why' of the project. For example when I was too focused on the architectural design and how my domes would look. Only now in the end I start stitching back together the loose ends between the design and the research. Which I think goes quite well.

In my planning I expected more and more design throughout my design semester and less research. This partly corresponded to what actually happened. Research was still an aspect of my process, although now in the form of smaller research subjects like acoustics, materials, schools and landscapes. Of course it is always like that in throughout my career I will do research.

During my design I used parametric tools to design my dome shells. This worked quite well; however in combination with the FEM methods was also time consuming. Furthermore I tried to make a lot of physical models which were useful for the appearance of the structure. I have to admit that a lot of time is spent to try and learn new was to develop a design besides actually designing. I thought this was also important to see be able to independently work on a design. For this reason I tried where possible to integrate 3D printing. Besides this I was maybe a bit too focused on trying to get a 3D computer model of my entire project (including plants/ landscape). There are a lot of promising developments in this field but my computer had problems working with complex models. As a consequence I had to decide to cancel some initial ideas. Besides this it is a time consuming habit to learn new 3D modeling processes. It does pay off in the end however and furthermore it gives me also the insights in the possibilities and downsides of its use.

In the end the approach did work and I think the reasons for my research and design are clear for me. I might not have had a very clear vision of what kind of concluding design my project would become I am satisfied in the result. I am not sure if I would approach future designs in the same way because the limited timespan for those designs. I think there will be more overlap between design, research and practical learning.