"When people use terms such as " art" and " intuition," they usually intend to terminate the discussion rather than open up to inquiry. It is as though the practitioner says to his academic colleague, "While I do not accept your view of knowledge, I cannot describe my own"."

(Schön, 2009, p. viii)

To me, the quote above strikingly illustrates one of the underlying uncertainties I have had in Architectural design education. I do not intend this as a critique on any of the teachers or university, but it describes the inability to explain my own actions instead. Coming from a technical background and having a fascination with science, I have always found satisfaction in giving answers that I was able to back up with evidence, proof, and even mathematical substantiation. Hence, my favourite subject in middle school was physics. Coming to Delft, with little knowledge of design, I expected an increasingly difficult education that presented deterministic problems which could still be solved traditionally. Instead, I was confronted with a more personal and internal struggle between objective and subjective, absolute and relative, and determinate and indeterminate.

The design classes did not introduce problems to be solved, but situations of practice. These are problematic situations characterized by uncertainty, disorder, and indeterminacy instead (Schön, 2009). The 'problems to be solved' are only abstractions extracted from these situations by analysis (Ackoff, 1979). The problems are interconnected, the environment turbulent, and the future indeterminate (Ackoff, 1979). How can one be expected to come up with an answer or absolute 'best' solution for such complex issues?

"There is no end to the questions you can ask, and no end to the answers you can give. Where then, in this space of endless possibilities, can research begin; and how can researchers be expected to reach any consensus on what are useful question-answer-pairs?"

(Baciu, 2020, p. 1)

The inability to explain my own actions is rooted in the indeterminate 'problems to be solved'. Since no 'absolute best' solution exists, I will never be truly able to completely explain my own actions. This realization has given me more confidence in the design practice and has made me a more nuanced person outside of my education as well. I came to understand the importance of storytelling and narratives and I have been able to be more open to another opinion regardless of the subject matter.

What is the relation between your graduation project topic, your master track (Ar, Ur, BT, LA, MBE), and your master programme (MSc AUBS)?

I chose Architectural Engineering (aE) secretly hoping that there still were unambiguous problems to be solved. In hindsight, this was very naïve. Although at the time I was already aware that design is not that straightforward. aE granted me the opportunity to pursue a personal fascination, which at first was the topic of timber engineering and high-rise buildings. Over time it became clear that this interest stemmed from a more personal activism in contributing to a more sustainable world. Climate change, an essential theme to aE, the master track 'Architecture' and the MSc AUBS, is probably the most ambiguous and complex problem we are facing today. In the research, I attempted to find out what sustainability actually entailed by researching material efficiency in structures. The design attempted to provide the TU Delft with a way forward in the midst of contradicting ambitions regarding growth and sustainability.

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

The research has given me a sense of urgency for the design and it has given me a more critical stance towards the glorification of the use of timber. The research showed that timber structures are environmentally more favourable even if they have to be transported from further away. Nevertheless, we should always attempt to use the least material either way which I feel is often overlooked in practice. Concretely, the load-bearing structure in the design is directly related to the research. Conversely, the design has showed me that reducing the environmental impact not only relies on the material used but on many more things like building lifetime, flexibility, adaptivity, and many more design considerations. Moreover, the design showed that we always have to deal with many contradicting considerations and that an 'absolute best' answer hardly ever exists.

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

The analytical approach of the research and the more explorative and experimental approach of the design actually strengthen each other in many different ways. For me, the value lies in the combination of these methods because a single method is hardly ever enough to deal with complex situations. An approach that I would like to mention specifically is the use of scenarios. After the P3 I asked myself: 'What if we fail to meet our sustainability targets?', which has opened up new dimensions in my design. Scenarios are not predictions or forecasts, but rather projections of the future. So the value of scenarios does not lie in their capacity to predict the future but in their ability to provide insights into the present. (Rotmans et al., 2000).

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

In aE, students are encouraged to explore their societal role as architects in facing today's challenges. Discovering how to design, innovate and initiate change are central themes. Consequently, the societal value of aE is evident. My graduation mostly revolved around the theme of sustainability, which literally affects us all. Every increment of environmental improvement can have very large benefits in the future. Simultaneously, we should be aware that we do overestimate our own importance. In the end, we will need all professions to truly initiate change.

How do you assess the value of the transferability of your project results?

The project results are to a certain degree transferable whereby the most important result, in my opinion, is an architectural position. This mainly regards climate change, whose forecasts are increasingly grimmer. However, I think it is a moral duty of an architect to translate these pessimistic predictions into an optimistic design proposal. Viewing architecture as a positive tool to initiate durable change is an architectural position that is transferable. Concretely, the research proposed ways to reduce the environmental impact of building structures in general and the design provides the TU Delft specifically with a way forward in the midst of many contradicting considerations.

Closing statements

My inability to completely explain my own (design) actions is something that I might never lose entirely as there is a limit to what you can explain in indeterminate situations. Nevertheless, I realized that a strong narrative and critical stance (to others and myself) can help in explaining. Fortunately, I feel as if I have become a better designer during the graduation. Whenever I can not explain my design actions (being stuck), I can now much more quickly change my method or approach, or work on a different scale. The teachers have been extremely helpful in taking away some doubts I have had continuously as they encouraged me to look at the design in different ways. I am increasingly aware

of the fact that design is not a linear process that leads to the best design in the end. Design is a process that can be steered by critically reflecting on it. In the end, the result is a product of the amount of work you put in which can generate a 'relative' best solution to the issue at hand.

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