

REFLECTION PAPER

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For my graduation project I was proudly part of the Architectural Engineering (AE) studio Valuable Neighborhoods. I always had a fascination for unraveling the hidden potentials of different fields within the neighborhood scale and how they can strengthen each other to create a symbiosis. The AE environment has a good feel and balance for the integration of technical aspect with architectural principals. As described on the internet page of the TU Delft master studios, Architectural Engineering seeks innovative and inspiring architectural solutions for environmental and societal issues. The studio is driven by the need to think differently about the current building culture. Understanding existing potentials, knowing the possibilities of renewal and discovering how to design, innovate and change are the central themes.¹ Seeing this approach from the perspective of the architecture master program of the TU Delft in general, I believe the neighborhood is a great scale to operate for a modern architect. The architectural spatial design can be seen as a glue and as an element in which different needs and necessities within a neighborhood can be merged into a fitting space. This will result in a multidisciplinary spatial design and create a more inclusive, resilient, activated and complete neighborhood.

The Product

My graduation project resulted in an pavilion where a symbiosis is reached between necessary installations of a flexible, sustainable, neighborhood scale, heat and electricity grid and a necessary social agenda for the Louis Couperusbuurt in Amsterdam Sloterveer.

The main objective of the project was to find a way to smartly integrate sustainable solution on a neighborhood scale instead of an individual level and by doing so, combining the space necessary for these measures with a social agenda for the neighborhood and its surroundings to create a mutual benefit.

The topics on which the sustainable improvements are based were extracted from the Routekaart 2050 published by the Municipality of Amsterdam. The social agenda was compiled out of studies done by the municipality of Amsterdam and by researching the history of the neighborhood.

In the final products the ultimate symbiosis between research and design is achieved. The conclusion of the thematic research formed the ultimate spatial core of the design. The conclusions from the social researches took shape as spaces that needed to be created. By shuffling the core elements of the thematic research, spaces for social activities could be formed. The installations were used as dividers, but placed and

¹ TU-Delft. (z.d.). Architectural Engineering. <https://www.tudelft.nl/en/education/programmes/masters/architecture-urbanism-and-building-sciences/msc-architecture-urbanism-and-building-sciences/master-tracks/architecture/programme/studios/architectural-engineering/>

displayed in a way that they actively contribute to the experience of the whole pavilion. Once the program and layout was clear, the influence of the installations on the social spaces changed. The installations were now complementary elements to the physical elements needed to make a building. These include the structure, the façade, floors and roof. By carefully crafting the building elements around the installations the symbiosis was reached. In the end the engagement with the installations strengthens the awareness on sustainable systems for the visitors. Or, in a simpler way, locals can experience the machines that keep their houses livable.

The Process

Following the Architectural Engineering graduation program the process can be split in two parts: The Research and the Design.

The first half of the graduation year was fully dedicated to finding a topic and doing an extensive research on one specific theme. As I stated in the introduction I always had a passion for exploring different layers within a neighborhood and therefore I was quickly linked with Jos de Krieger from Superuse Studios to have the proper guidance in researching these layers in the form of flows. I very much agree with the INSIDE Flow method to systematically understand the working of flows in our environment and using the knowledge of these systems to give a positive contribution to design.² I believe it is an absolute necessity for an architect to be aware of the systems that are present within the area where a possible intervention or rehabilitation / renovation development will be added. Besides awareness of these systems it is key to adapt the design in a way that it won't harm and, desirably, could cooperate with the to create a closed circle of resources. A quantitative method is therefore essential.

Sustainability is one of the core design principals of an architectural design so for a stronger scientific relevance for the project I positioned myself within the current sustainability ambitions of the municipality of Amsterdam to extract possible themes on which I could focus in my thematic research. This themes became heat and electricity.

As I got on the way with the thematic research I already quickly found myself in a world I wasn't really familiar with. The broad outline was always a vague presence in my mind, but the details were quite overwhelming. Nonetheless I continued to learn more and more about the topics and really tried to familiarize myself with the systems and installations I came across. I did however drew a line at a certain point. Even though my curiosity was there, it wouldn't be helpful to become a full on installation expert. During the process I also realized that outside the academical environment there are enough professionals that can be consulted to have specific information on the topics and that only this kind of collaborations will make the best projects. I feel that as an architect I have the responsibility to take these kind of systems into account but also need to keep a certain distance to still obtain a creative and fresh approach on how these systems can be implemented.

Eventually at the end of my research I created a clear evolution from the current heating and electricity flow to an optimized sustainable system. More important, I linked the

² Jongert, J., Dirxx, L., Venhuizen, H., van der Burgh, M., & Van der Burgh, M. (2013). Inside Flows. Den Haag, Nederland: Inside, Royal Academy of Art in The Hauge.

results to physical installations that can support these outcomes and therefore created a general understanding on what spatial requirements the implementation of such system needs. It was an important step for me to actually get a feel for these machines.

After the P2 presentations the focus switched towards implementing the research in a design. I feel that at my P2 I missed a crucial step of modeling the installations and their connections unto a more detailed version than the masses I reserved for them in the first place. A bit frightened by the unknown I dived into a design process with the installations being abstract masses, thinking I will detail them later and that the masses were the most important elements. At first this approach resulted in interesting design studies and good exercises of looking for extremes. My tutors pushed me into not being afraid to envision extreme scenarios and that motivated me to try new things. Even though most of the results were not usable as a main design, it did gave me a comfortable position to motivate eventual design choices. Also it created new insights that I would previously have overlooked.

But, it also resulted in a deflection of the main design elements: The installations. Therefore the designs were acceptable, but lacking a core. The main essence of which the design should have thrived was lost and the process had to be brought back. I was happy that my tutors and myself came to this conclusion. After the full detailing of the installations and the connections between them I had a much stronger base from which I could develop the design of the pavilions.

In the end all the studies I made played a part in the final design. What I found really pleasant in the whole process is to always develop at least 3 variations on a problem of which a next design discussion can be based (supported by previous studies as site analysis and research). The variations should include the both extreme scenarios and an additional option of something in the middle. After this a critical reflection on the pro's and cons of each design needs to be made before a supported decision can be extracted.

As I previously mentioned I postponed the precise detailing of the installations and therefore a crucial step in the project. I should have jumped in a more detailed phase earlier to already start testing some scenarios of the program and relations within the sections. This delay eventually resulted into a shortage of time and confidence to explore the more physical side of the project as the materialization, structure and connections between the elements. The unpleasant truth is that this had happened for almost every project I worked on and I really hoped I would be able to dive into the details earlier this time around. I also remembered lessons I learned before that forced me to produce instead of overthink. Only on physical documents a proper reaction can be made.

The wider social, professional and scientific framework

The final product is specific for the context, but the method, especially for the thematic research, can be applied to other Post War Neighborhoods. By combining the already known qualities of an urban context and adding the vision of the energy transition, new possible breakthroughs may occur and develop into a resilient design.

In the case of my project the studio already provided an area and I decided to intervene in an existing neighborhood. But I can assume that the concept and vision of a neighborhood heat and electricity grid combined with public spaces can be of great value also in new, yet to be developed, neighborhoods. The key part is the integration.

Another thing I learned from this project is that architects and designers should be more aware of the spatial consequences of the often schematic proposed sustainable solutions for a project and look for possibilities to be part of a larger system than the project alone. This way the integration in the current context, the proposed developments and the long term future of the new configuration should be optimized for maximum benefit.