

# Reflection

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## Reflection at P4

The process of research and design of the graduation project will be discussed in this reflection. The aim of this reflection is to look back at the process and to reflect on the applied approach and method. By reflecting on the process, one can learn from the aspects that went well but most of all from the experienced difficulties. The obtained knowledge can be applied in future design processes.

## From research to design

The research for this graduation project focussed on the state of the art of energy neutral renovations, mostly within a Dutch context. Since this research is an exploratory study of a relatively new study subject, a reference study is the right tool for this research. By conducting a case study analysis of thirty renovation projects, an overview of actually realised renovation projects is created and a wide spectrum of knowledge is gained. To be able to make this knowledge applicable in the design, the renovation projects are translated into icons for different themes. The use of icons make the obtained knowledge easy accessible and insightful, which was an aim within the research.

Despite the research concluded in an integrated view on renovation, no qualitative components could be added to these design guidelines. In future projects this could be avoided by making the outcome of the research more explicit. By conducting interviews with the stakeholders attached to each of the study cases, actual successes and a more qualitative overview could be given through more inside information of the study cases.

The straightforward findings of the research were a small setback, but emphasized the need for innovation within the field of renovation. Especially, the architectural part of the technical driven energy neutral renovations can be improved. Although this creates a sound design challenge and ambition, the lack of qualitative components resulted in an open and unclear defined design question. Making the design question as scoped down as possible with a limited set of subquestions is something to keep in mind for future design processes.

During the first half year the focus was completely on the case study analysis and the development of the icons for the design guidelines. Only a few studies were conducted for the design itself, which resulted in a sketch design that was not elaborated enough. The design as presented on the P2 should have been brought further, in order to have a sound starting point in the design process.

## Way of working

To formulate a program of requirements, a value assessment of the chosen context is conducted. Within this assessment the strong points of the existing building block are translated in the qualities and the weak points are translated into the focus points of the design assignment. With a trial and error approach different studies were conducted by sketching to discover the potential of the design project. Since the lack of a clear focus within the project an increasing number of ongoing possibilities were studied. All these possibilities made the decision making process hard since everything was open for discussion and the decisions could be made based on several reasons. It became clear an overall guiding theme or concept was missing to guide the decision making process. The guiding theme helped in choosing the studies that belong to the story and process and strengthened the overall story line of the graduation project. A second aspect that hardened the decision making within the process, is the apprehension of getting stuck to one particular choice without knowing if this is the right choice or not. The outcome of this choice cannot be controlled and organized, since it is still unknown where this choice will lead. The fear of having no control within the design process, caused in making more studies until the 'right' decision could be made. Finding this 'right' decision took so much time in the end, that a delay in the overall time schedule was incurred.

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To force myself to make these decisions, model studies became a right tool. In contrast to drawn sketches or 3D computer modelling, it is not possible in a real life model to leave things out. So sketch models were a nice method to discover the parts of the design that needed attention. Then I could work on these parts in the model and completely focus on them, without getting distracted. The studies in models of different scale levels resulted in the outline for the final design. To make these outlines explicit and more specific, the next tool within the process is Computer-Aided-Drawing. From previous projects I know I can lose myself in a 3D computer program. The perfectionist in me wants to solve every part of the building, which is very time consuming in a 1-to-1 computer model. It is almost irrelevant in a large project as this graduation project, since principles say more about the overall storyline than a small detail. Despite the fact I sometimes caught myself drawing the small details, I could let go in time and focus again on the storyline.

## Location and object

Beyond the Current of the Architectural Engineering studio is looking for ways to deal with the energy question within the existing building stock. Since this topic is the reason to graduate within the aE-studio, the relationship between the studio and this graduation project is clear: a shared passion for the energy transition of the built environment.

The added value of this graduation project is the way it shows that energy efficiency can be reached with architectural elements and not only by technical measures. Architecture is about how users will respond to the building and how they will use it. To not only focus on technology but also on the architecture, thus the users, a larger effect in sense of energy efficiency can be reached. Although the strategy for this renovation is specific for this building, certain elements can be generalized and form new design guidelines as formulated in the research. Elements like orientation, daylight, user comfort and health should apply for every dwelling.

The existing stock challenge is mostly in the centre of our cities, just like in this graduation project. The location is an extra motivation to make an technical and architectural renovation, because with a renovation not only the existing situation can be upgraded. The context can also be improved and create new opportunities for the building and its users. This project can therefore be seen as an example of how to deal with the energy transformation of the existing building stock in the Netherlands.

### **Project within a larger social context**

As said above, the focus of this graduation project is to bring energy efficiency to the existing stock and create architectural and social value by doing it. The implementation of architectural elements within the technical renovation business has multiple advantages. Next to the energy efficiency the dwellings are also renovated in a user-related way, since nowadays users have a different lifestyle than the users when the building was built. By implementing architectural elements that contribute to the energy efficiency of the building, users will become more aware of their influence on energy consumption. This contribution to the realisation of energy use by users is an important future (architectural) topic because: people use energy, buildings do not.

### **Overall**

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Overall it can be concluded that the way of working within this project has a learning curve, since decision making went better and quicker further down in the process. The approach of trial and error by sketching worked and really helped in developing the plan by keep discovering options. With help of a guiding theme the overall picture is represented within this project. To overcome the part of the process that did not have much progress, a different way of working was used. Sketch models became a nice way to develop the design. The outcome of these model studies was made specific in computer drawings. Focusing on not losing myself in the details, the elaboration of the project was done in the computer. This elaboration resulted in the final design, on which I am proud of. The design shows that an energy efficient renovation can create more value within the building and its context and is ready for the future.