Draft Reflection
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26-11-2015

Aspect 1: The relationship between research and design

The research was characterized by two points.

- The first part was a study of the current capabilities within the installation (heating/ventilation) techniques. Which techniques are applied in the Netherlands for energy neutral dwellings?. These suppliers are mainly engaged in the research and literature available. This was the input for further development of the research

- The study served as input for the design, as previously proposed. The relationship between research and design was in general ok, but had some up and downs. This was largely because I'm working on a product development. Therefore, is important that I needed to know whether something is possible or not, such information was not always in the available literature, but it was helpful to contact and ask suppliers, which sometimes provide information, making it difficult to make the right decision. I was not prepared for this, but I had decided to reduce this and to gather as much information from the literature that's available and my research mainly rely on information from interview in combination with literature.

Aspect 2 :T he relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework

The building technology Master - Facade design focuses on an integrated approach to the façade package, which should lead to new innovation in the construction industry.

The selected subject is a study that focuses on the feasibility of integrating the all-electric heating system in a prefabricated façade. This choice has been originated by a literature and practical research. This is also a part of the 2ndSkin research that is done within the department. Where prefabrication and assembly technique of Zero Energy renovations being enhanced.

Therefore, this thesis topic could further expanding and contribute within the academic field of Facade Design in the department. The interface between facade design and sustainable development has a direct link with this topic.

Aspect 3: The relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework

For this research and design the aim was to develop a product design that can fit within the 2ndSkin research group. However, a lot of the information about project, zero energy and façade design was available, but some information was hard to find, such as the boiler. There is not much written about these installation component.

Also the questions that I had were new but interesting for professionals from the building industry, especially construction companies that were facing the same problems. Therefore, the method was to ask information from suppliers that had all the experience and the special knowledge about such components. This was a different approach/method than usually. It worked very well because the suppliers

provide me with usual information that I could use for my research and design, but I must admit that this took more time then I had planned. I was not really prepared for this kind of workflow, but it was necessary for the research! I can’t think of a different way of gaining the knowledge about special components.

Aspect 4: The relationship between the project and the wider social context

The design has a strong relationship with the developments in the construction sector. The promotion , optimization and industrialization of energy-neutral renovations for housing is an issue emerging , particularly porch floor dwellings.

The integrated façade design that is part of the theme outlined above is presented to suppliers , builders and architects who now operate within this project in the Netherlands. They are enthusiastic about the approach within the research and see opportunities in the design. In particular, the integration of the heat pump in the facade is interesting for the suppliers. There is demand for such a design in the further, to accelerate such project in a industrial process.

This has advantages , but as I mentioned earlier, it is difficult to find the correct and reliable information.