

Reflection P4 – Carlyn Simoen – Building technology graduation lab – 23/02/2016

My graduation topic concerns the product development of thin, chemical strengthened Aluminosilicate glass. In the begin phase of such a process it is hard to understand where to begin. In literature much is written about product development. However, this literature gave me some difficulties in understanding since most of it concerns market strategies. I questioned where the separation was between practice and literature. No model or method found in literature was chosen.

Nevertheless, I discovered that the most important part of product development regards the advantageous aspect of the product (potentials). And so this became the start position of my research. Like in any other design discipline, research is proposed in the abstract form where analysis is followed by synthesis/design and design is followed by evaluation.

One chapter of material description and research in essential properties gave me a much better idea of the potentials of the glass. However, the analysis was not ready yet, since also the feasibility of implementation had to be researched. The material knows many ambiguities in terms of mechanical behavior. This analysis took quite some time and therefore still some more time is needed to make progress in the synthesis and the evaluation stage. However, the period from p4-p5 will be enough.

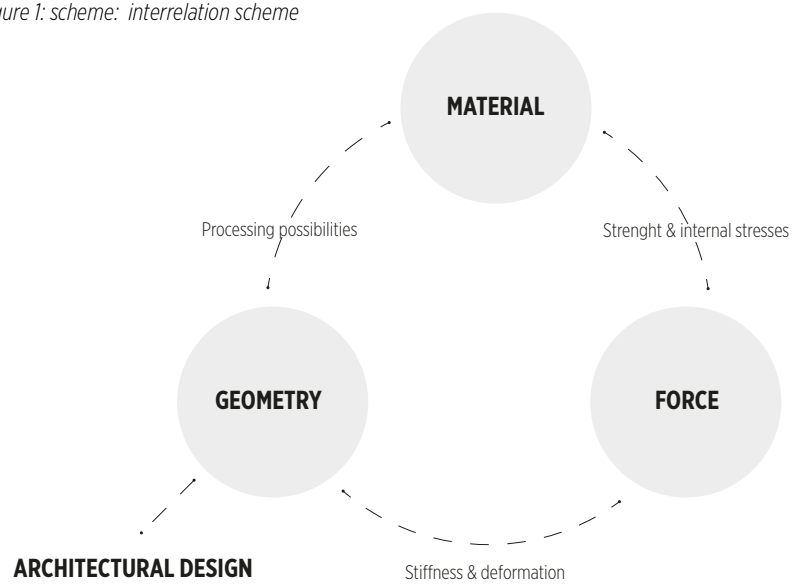
I discovered that there are multiple ways to do research in product development. A research can start from a generic position where argumentation eventually brings the researcher to a project specific elaboration. There is also the possibility to skip this generic part and start with project specific goals (derived from for example a case study). In this manner, eventually something specific can be said about the relation between the product and the project specific goals. Here, I choose for the first option while I was not that much aware of the latter one. I could not say that my preference is given to one or the other. However, the latter option would lead to more project specific elaborations and the process would have been less difficult.

During this process it was the importance to understand interrelations between material, geometry and force (see figure 1). This scheme is derived from Martijn Velkamp (2007), who uses a similar scheme as a theoretical framework as a guide through his research in freeform architectural design. In the analysis part of my research, all aspects are investigated and in the synthesis part there is looked more into the possibilities in architectural design. In this manner, design is directly related to the analysis.

To be honest I am not aware of a so-called methodical line of approach of my graduation lab. However, interest lies in innovation and sustainability. I would say that my topic is directly related to these interests. I try to investigate the ecological benefits of the material since I think this shows their essence in nowadays perspective. I don't like the word innovative since its relative, but I truly believe that thin glass can change the future building envelope and thereby the total embodied energy production of the flat glass industry.

It took me two extra months to complete my graduation. I was able to further elaborate the design and details. This makes the end result complete. The problem that I didn't pass my previous p4 had to do with the eventual lack of time due to the relatively slow start. In the future, I would understand the progress of research, and don't have to waste time on exploring this progress.

Figure 1: scheme: interrelation scheme



Veltkamp, M. (2007). *Free form structural design: Schemes, Systems & Prototypes of Structures for Irregular Shaped Buildings* (Vol. 6). Delft: IOS Press under the imprint Delft University Press