REFLECTION

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First of all, I would say I am satisfied with what I have done for my graduation project. Although I met many challenges, it finally turned out to be a good result, and I learned a lot from the project.

My graduation project focuses on the adaptable timber building, developed under the 'Open Building' topic in the Architectural Engineering studio. Adaptability and timber are both extensive topics. It takes me lots of time to narrow the scope. Since adaptability is closely related to the context, I chose the site in TU Delft Campus South in the early time, studying the site context to figure out what kind/extent of adaptability it needs. When the problem was stated, the design objective of 'from a student housing towards a mixed-use building' came out clearly. Then, I needed to figure out how the building could adapt to different functions. My research was developed from this point.

In the shearing layer theory by Stewart Brand, the high-degree independence of layers helps achieve a building's adaptability. But how to access the independence of shearing layers? Based on Brand's model, I developed my research model, showing how dependencies between building elements affect the dependencies between shearing layers. The DSM model I learned from the book Adaptable Architecture: Theory and Practice (Schmidt & Austin, 2016) was used to analyse the relationship between building elements and point out the critical joints that affect the results. These critical joints are analysed graphically to illustrate the results further.

The methodology worked well in the research and led to precise results. It also helped me to make decisions during my design project to make it more adaptable. It was proved to be able to verify an existing building's adaptability and also assist in designing a new adaptable building. It helps locate the critical joint positions that affect adaptability in a specific context. Detached joint design in these positions can significantly promote adaptability, which is unnecessary in other unimportant positions. Except for the context discussed in the graduation project, the methodology can also be applied to other contexts in further research or design projects.

In fact, the development process of the research did not run smoothly. I changed my research question and methodology after P1. Due to my interest in timber joinery, I initially focused on 'how the modern application of timber joinery helps to achieve the independence of shearing layers in timber building'. When I did more research on it, I found it lacked materials and was more like a part of design rather than research.

Finally, I adjusted the research direction to 'how joint design affects the independence of shearing layers to achieve an adaptable timber building under the scenario of altering the function', thanks to the suggestions from my research tutor. He also helped me in choosing comparable cases and making the research more feasible and understandable. Gladly, my former works provided a good basement for the adjusted research direction, and the idea of using timber joinery instead of steel joints was achieved in my design project.

During my graduation project, I learned much about timber construction and adaptable strategies and applied them to my project. For example, timber, as a biomaterial, is more vulnerable to rain and pest than steel and concrete, while adaptability requires the structure to have a longer life span. Therefore, extra protection strategies, such as overhanging and breathing principles, must be applied to timber structures. I also learned how to consider the technical solutions with space and human experience as a whole. All of the strategies work together to form an integrated design. My tutors gave me great support during the whole project. Every meeting was meaningful and helped me fix the problems and move forward. Thanks to all my tutors.

In the following weeks, I would perfect my design and express my works clearly through text, drawings and physical models.