

## E. REFLECTION

---

The following paragraphs will reflect on the full graduation project. It will describe the process and approach of the research, but also the impact of the results of this project.

### POSITION IN THE STUDIO

In the sustainable design graduation studio, this project is mostly related to the section of climate design. Along with for example thermal and acoustical comfort, visual comfort is one of the most important topics within the section of climate design. And for this project it is also one of the objectives to make recommendations for designers and engineers, in order for them to be able to design visually comfortable offices.

This research however investigates more than visual comfort only. It investigates the influence of the Dutch and European building standards on the access of daylight, exposure to sunlight, view and glare. Besides that, this part is not only about buildings physics, but also about the use of simulation software. Therefore, the project is also related to design informatics.

### APPROACH

For the various parts of the research, the approach differs. The part about the assessment methods and requirements of the Dutch and European standards, is investigated with a literature review. This is compared with own experiences during the other parts of the research. By reviewing the standards and evaluating them, not only the differences but also the advantages and disadvantages are made clear.

The effects on daylight quality are investigated with case studies and a systematic study, in which several variants are assessed according to the Dutch and European standards. Both studies showed that the ways the Dutch and European standard affect the daylight quality differ a lot. The systematic study particularly, showed the extent of the differences and it showed which factors influence the amount of daylight, sunlight, glare and view. These insides were very useful for the establishment of the recommendations.

The approach changed a little during the process, because the initial objectives were too ambitious. This led to some uncertainties, unnecessary research and delay of the project. The change of the second supervisor also contributed to this. This setback however made the final approach clearer and achievable.

### RESEARCH AND DESIGN

For this graduation project, designing was not one of the objectives. However, for the systematic study, several variants were designed. For each variant, one aspect of the original design was changed. By assessing and simulating the designs, research is done. This might resemble research by design. It however is not, because design was no substantial part of the research.

### APPLICATION IN PRACTICE

This research can be used for several purposes. The first focusses on designers. They can use the recommendations that are established at the end of the research, during the

design process to design a building with good daylight quality. The recommendations can also be used in several ways. For example, to improve the assessment or simulation of a design or to determine the appropriate daylight quality of a room.

This conclusions from this research can also be used for the establishment of new standards or guidelines.

#### **SUSTAINABLE AND SOCIAL IMPACT**

Generally speaking, this graduation project affects the daylight quality in buildings. With good daylight quality, rooms can be lit more naturally, instead of artificially. This not only decreases the energy use, but also contributes to a healthier indoor environment.

Therefore, building occupants, employers, health institutions and more will benefit from this research.