During my studies I got inspired by two trends:

- the increasing use of glass in architecture,
- the increasing need for energy reduction and sustainable energy.

These trends seem to contradict one another, since large glass surfaces in the facades of office buildings lead to higher cooling loads, which indirectly leads to a higher energy consumption. One way to generate energy is by photovoltaic cells (which generate electricity from sunlight). This technology is the most suitable renewable energy technology to integrate into a facade. My problem definition was therefore as follows: “How to use photovoltaic cells to improve current glass façades, so that they comply with the technological and social demands required five years from now?”

Synergy stands for sun and energy. This design is a sun shading system which is optimized to generate as much energy as possible. This has been done by calculating the optimal size and positioning of the slats. The user also played a central role. Since criteria like view, glare and daylight collide, the user should be able to adapt the system in such a way that it meets the criteria he thinks are the most important at that moment (thermal or visual comfort).

The user therefore always has the possibility to overrule the system. Not only the design of the slats is innovative, also the way they are connected to the glass façade. This is done by Fischerplugs, which make the façade easy (dis-) mountable and gives it a high-tech, lightweight look.

“How to increase the energy efficiency of glass facades?”