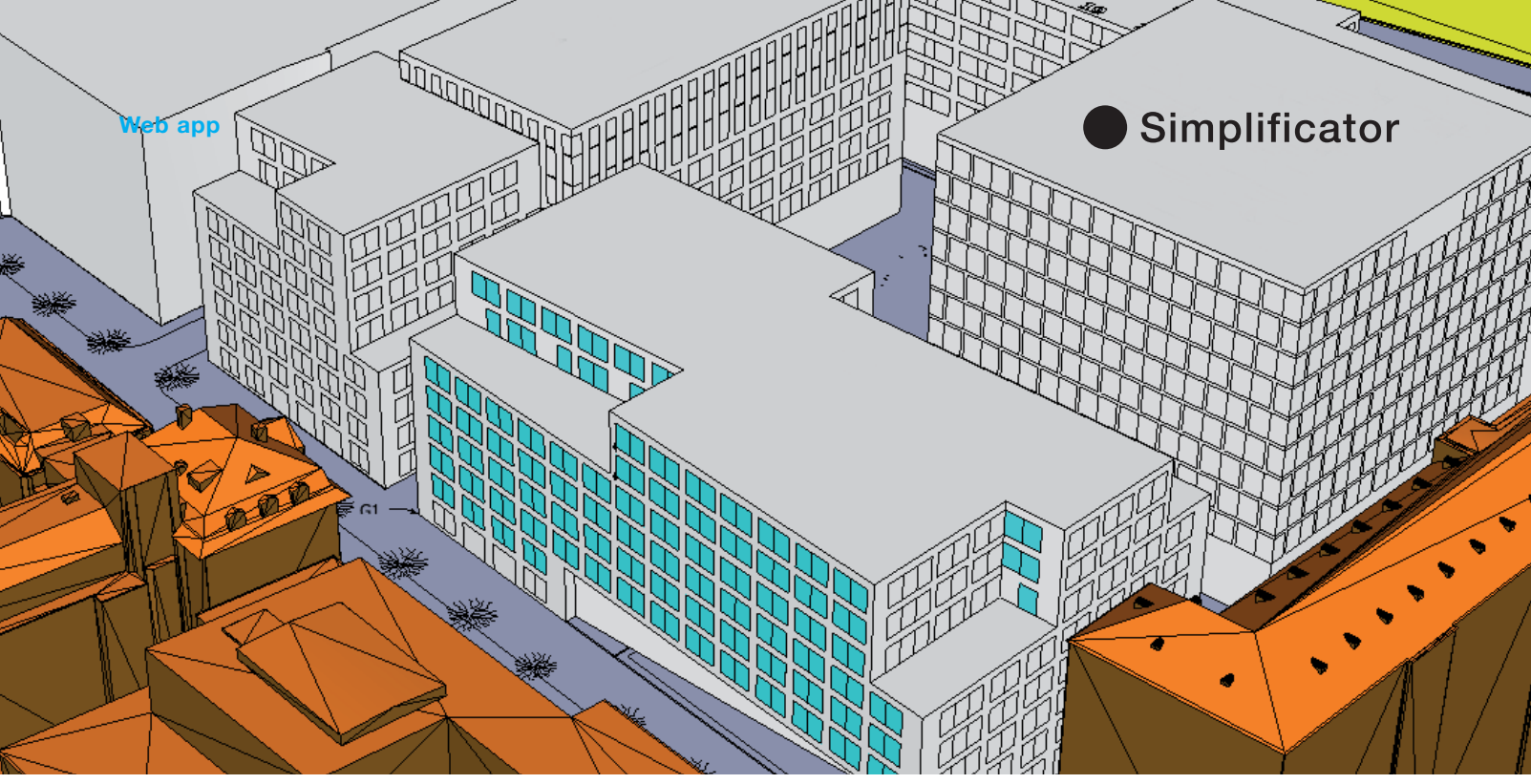

For Sigren Engineering AG

BUILDING AUTOMATION WITH GOOGLE SKETCHUP 3D

Challenge

Sigren Engineering AG (Sigren) offers high-quality solutions in the area of automation and industrial data processing. The aim is to allow precise control of sunshades in large building complexes to reduce glare. To achieve this, Sigren engineers created illustrations of the buildings in Google Sketchup 3D with centimeter accuracy. The angle of the sun must be calculated for every time of day and every shade area in order to generate the corresponding instructions for opening or closing the sunshades. Large neighboring buildings can sometimes block out the sun, a fact which also has to be taken into consideration.

Solution

The solution consists of two software components. With the embedded Ruby API, Google Sketchup can be customized with the integration of plugins. Simplificator developed a plugin to index the windows and calculate the angle of the sun throughout the day. The results are transferred to a second web-based software component that evaluates the calculations and generates instructions for the control modules. Unforeseen shade – caused by construction sites, for instance – can additionally be configred for any desired period.

Result

Sigren's requirements were fulfilled by the two software components within the agreed time frame. Simplificator chose to use open source software in order to guarantee operations for many years to come. Possible deviations in the accuracy of the 3D models represented a major risk. By editing the Sketchup models and using multiple measurement points, such potential deviations were reduced to just a few centimeters. The project is already heading into the next phase. The interfaces are being simplified and the user interface optimized. The architecture enables the software to be used at various sites.

"The competent and goal-oriented collaboration with Simplificator led to innovative solutions that we are particularly proud of. We look forward to many more years of collaboration."

Thomas Rüedi,
Sigren Engineering AG