



Report: 3D-Visualization of “Unipark Nonntal”, Salzburg

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1. Task and motivation

Our task was to present an interesting geovisualization for our class. So we decided, inspired by the 3-D tour through Florence, to build the new Unipark Nonntal building in Salzburg and secondly the task of a group from last year who designed the natural science campus (NaWi) in 3D. The motivation to do this task was to improve our experience with the Google SketchUp-Tool. In our opinion it is good to have knowledge in 3-D visualization because it might help you in further business and private life.

The original aim of the project was to model the new building of the University of Salzburg with the free version of Google SketchUp 8 and then display it on Google Earth. The project should also provide a contribution to expand the so far poor pool of Google Earth 3-D buildings for Salzburg. However, the main goal was to learn the software Google SketchUp and their functions and to gain experience in the field of 3-D modeling.

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2. Used Software – Introducing Google SketchUp

For our approach we used the Google Software SketchUp. The software was originally developed by @Last Software then overtaken by Google in 2006. SketchUp is nowadays available as a free-version and a pro-version. The difference between the two versions are different export-types and creating-tools. For our project we tried the pro-version (30 days-trial) and then used the free-version to create our 3D-model.

While the free version includes (for home) all the important basic functions, simultaneously a paid "Pro" version exists that includes additional features, which appear to be actually necessary for professionally work with SketchUp . These additional functions include mainly import- and export functions to programs like AutoCAD or Autodesk 3-Ds Max. A shape-file import or export in SketchUp is not available by default. However, SketchUp is expandable with "Ruby" programming language and there is a variety of plugins, including a Shapefile Importer.

3D models generated with Google Sketchup are saved by default as KMZ files (zipped KMLs) and can thus easily be opened in Google Earth. Google also offers an integrated way to provide download-able building models in the "3-D Warehouse" and integrate them into the Google Earth 3-D Buildings layer. In this way, models are provided to others for further processing and refinement.

3. Approach

For creating a 3D model of the Unipark Nonntal we contacted the architect bureau "Storch Ehlers Partner Architekten GbR" for the exact measures of the building. Unluckily we didn't get any reply, so we went out to the Unipark Campus and did a GPS measurement of the four corners. Furthermore we took a lot of pictures to see the details of the building. So with the outline and the pictures we could start creating our model. Working with SketchUp is intrusively and lots of steps are logically. After the model was build we connected it with Google Earth and saved it as a KMZ File. So we are able to show the Unipark Nonntal in its original environment.



Fig. 2: Base Layer Plan (Storch Ehlers Partner Architekten GbR, 2012)



Fig. 3: Sectional View (Storch Ehlers Partner Architekten GbR, 2012)

5. Results

As Fig. 4 shows we created the complete 3-D building including the roof-deck with its benches, trees, areaways and diaphanous building parts. We included also different online models like the stairs as you can see outside the building in Fig. 4. As a last step we exported our model in a KMZ file to implement it as a 3-D model in Google Earth. Now we are looking forward to publish our model for everyone.

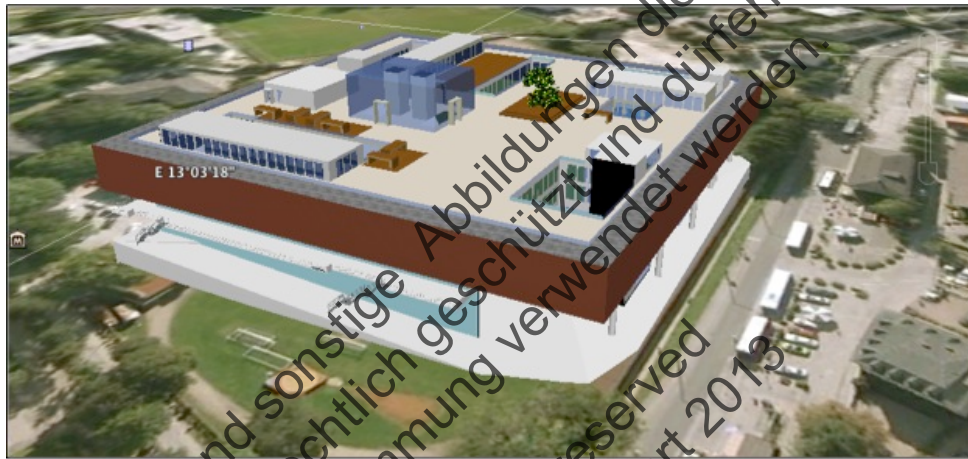


Fig. 4: Google SketchUp Model of the Unipark Salzburg

6. Personal value

As we already wrote in the report, SketchUp offers you a wide opportunity of new experiences. It is quite simple to handle, although you need a bit of time to learn some steps. Our main problem was the height-difference of the building. For example is the entrance at the front side (Fig. 4) lower than it is at the backside. This led into different problems in creating the base of the building. In our final version there are still too many mistakes but we couldn't find another or better solution. In context to the whole project we thought that creating a kind of a realistic base-layer is better than spending too much time in a correct one – even with the background that we don't have the correct property data of the building. The same problem we had in the construction of the different buildings and courts inside. We didn't elide any of them but the proportions and size of the buildings might be not 100% correct. Furthermore including Internet models from the

SketchUp online model library brought us too diverse challenges because we had to change sizes or delete parts of the model.

As a conclusion, SketchUp is a nice tool and also with not too many experiences in 3-D modeling it is nice to handle and easy to learn. But if you want to work on details it could take some time and specific knowledge when you are not so firm in this program. We think that SketchUp is quite handy and a first step to do some great 3-D architecture models in Google Earth.

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7. References

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