Project Assignment MA

Form groups of three students each. Program a virtual world using OpenGL 3.0 Core (or above) and the shader language GLSL. Do not use any additional libraries. In particular, do not use game engines or scene graphs. Your virtual world must use modeling, animation and shaders.
You can either do a good re-implementation of existing ideas, algorithms and models (found in papers, textbooks or web) or do a combination of the above with own ideas.

The setting is the inner courtyard of the University of Paderborn (bounded by buildings A, B, C, D). We provide a basic model of our University, that can be (but does not have to be) used. Try to concentrate on a single or maybe a few perspectives and make it as attractive, or realistic or non-realistic as possible.

Modeling: Every group member has to model at least one simple object of the scene. Additionally, you can add free models from the internet or use tools, such as "Autodesk 123D Catch" to fill your virtual world. Make clear, which objects are not modeled by yourself.

Effects: Add additional effects using shaders. Each group member has to program at least one rendering effect that was not part of the homework.
At least one effect of the project has to be a global effect that is computed in two or more passes (e.g. global illumination, reflection, refraction).

Animation: Add any type of animation.

Important dates and deadlines

April 30, 23:59: Submit project proposal (see below).

May 2: Presentation of the project proposals in the lecture (exactly 5 min).

a) Set up a scene graph with dummies for all your final objects.
b) Create a short 3-5 slide presentation of your idea, goals and the used techniques. You must use screenshots of your scene graph to explain your ideas!

May 21 - 27 in labs: Stop modeling and animating and show results in your lab. The next week only shader based effects should be further evolved.

May 28 - June 3 in labs: Stop programming effects and show your results in your lab. In the next days you will need the time to prepare slides and presentation.

June 5: Install your project on the presentation PC.

June 6: Present the project in lecture (approx.10 min).

a) Give a live demo.
b) Create a presentation up to 5 slides about the results of your project.

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With downloading the Campus model you agree to not publish or hand out the file or its contents to anyone except of attendees of the lecture. This includes publishing in the internet or social networks.

Advice: If you want to modify the model, I suggest to download the FBX file from koala. It is better structured, when using programs like Maya, Blender or 3ds Max. For your project you will have to export an OBJ file. Most packages support this file format innately. Maya supports this file format too, but you have to enable the export. Go to "Window > Settings/Preferences > Plug-in Manager" and check objExport.bundle.