

Project Report

CA1030A: Virtual Web Worlds

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Chapter 1.

Project Presentation

1.1. Project Information and Project Aim

This project demonstrates the benefit of a 3D environment and enables the user to interact with the environment. A 3D model of the library's first floor has been created for this purpose. The user interaction takes place in form of a virtual guided tour through the library. This is especially useful for new students which needs to get acquainted with the most important locations in that building. Amongst others, the latter are the study zones¹ and rooms, printers and printer credits machine, coffee room, enquiry desk, book return machines and toilets.

1.2. Commercial Benefits

This guided tours could also be used for large buildings, such as airports or museums, where the user have to find a location quickly. For this reason some money could be made, in proposing machines with touchscreen displays running a navigation and guided tour software. Furthermore, it might be necessary to update the building model frequently for growing buildings or buildings which often change emplacements of important locations.

¹group study, quite and silent zones

1.3. Project Work Steps

1. In a first step it was necessary to get accurate maps from the library. With a lot of efforts², it was possible to get a hold of some basic blueprints of the library. The blueprints were made for the AutoCAD program as shown in figure 1.1.
2. Using AutoCAD '07, the maps could be exported and used in SketchUp. Figure 1.2 on page 5 shows the map imported into SketchUp.
3. Once the map imported, the remaining step is to draw a basic outline of the walls and tear them up. The map on the X-Y layer is of great help to make an accurate placement of the walls.
4. Finally the building can be filled with furnitures and textures can be applied. For this purpose some pictures were taken from the library in order to make the shapes, colors and textures as similar as possible (Some pictures can be found in the folder 'Library\Pictures\Library Pictures' on the CD). Once finished, the first floor looks like the screenshot in figure 1.3 on page 5.

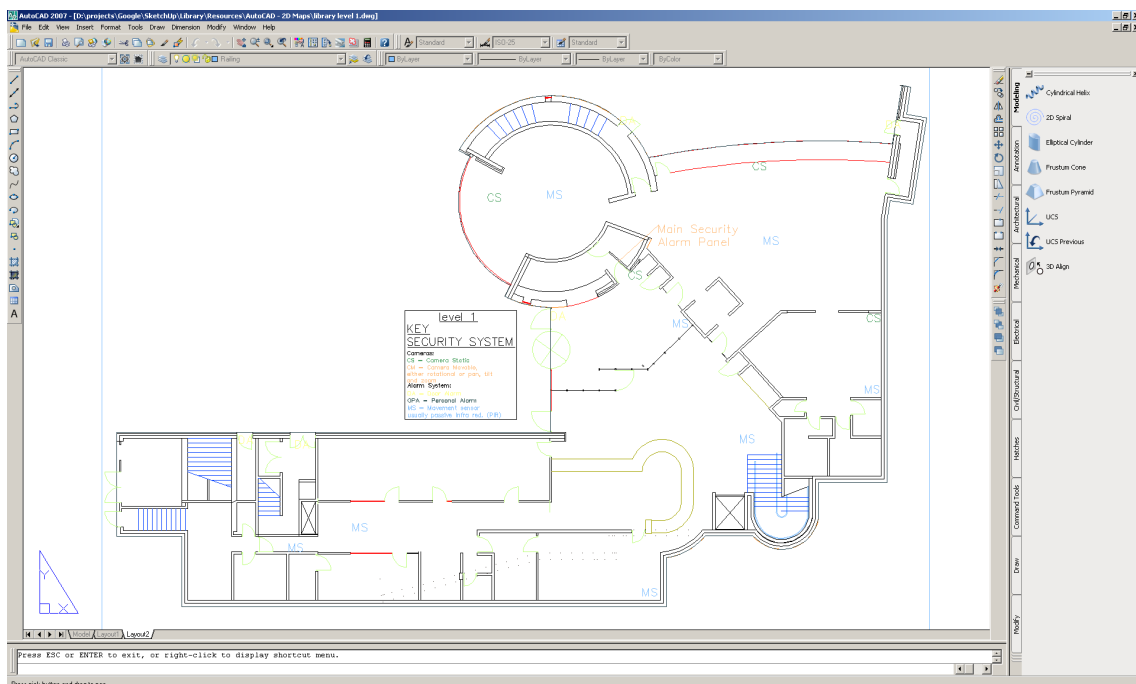


Figure 1.1.: AutoCAD 2007 Screenshot: The map of the first floor

²Thank you goes to the library and University staff and the architects of the library in Glasgow for their very kind help.

Chapter 1. Project Presentation

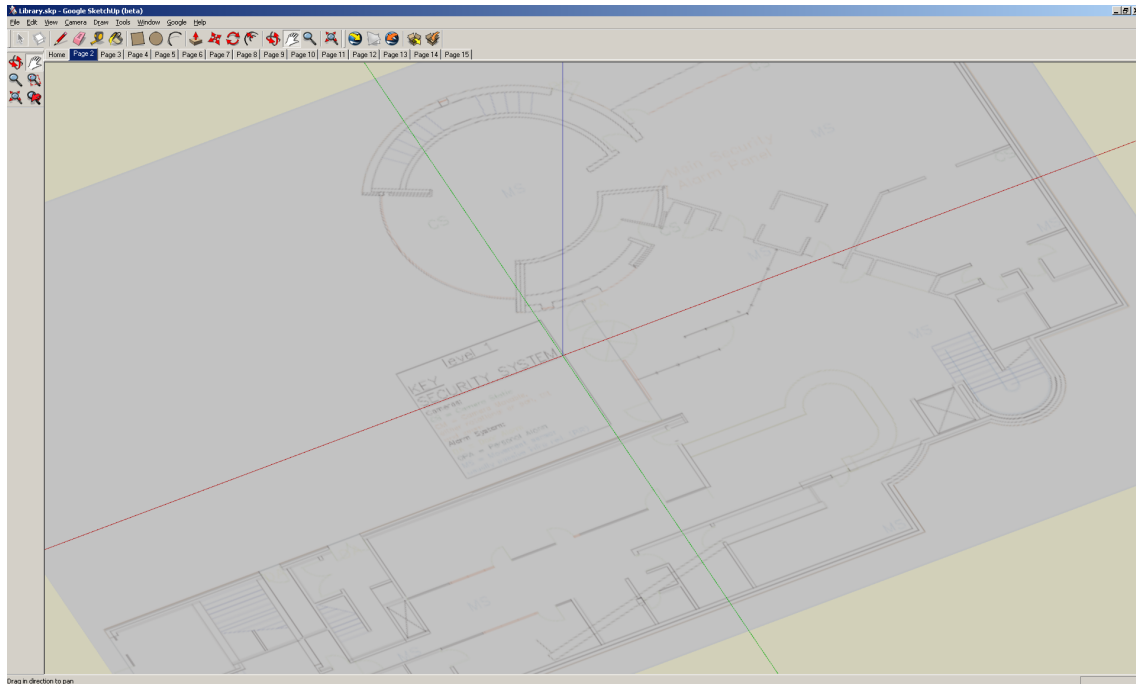


Figure 1.2.: SketchUp Screenshot: The map of the first floor imported into SketchUp

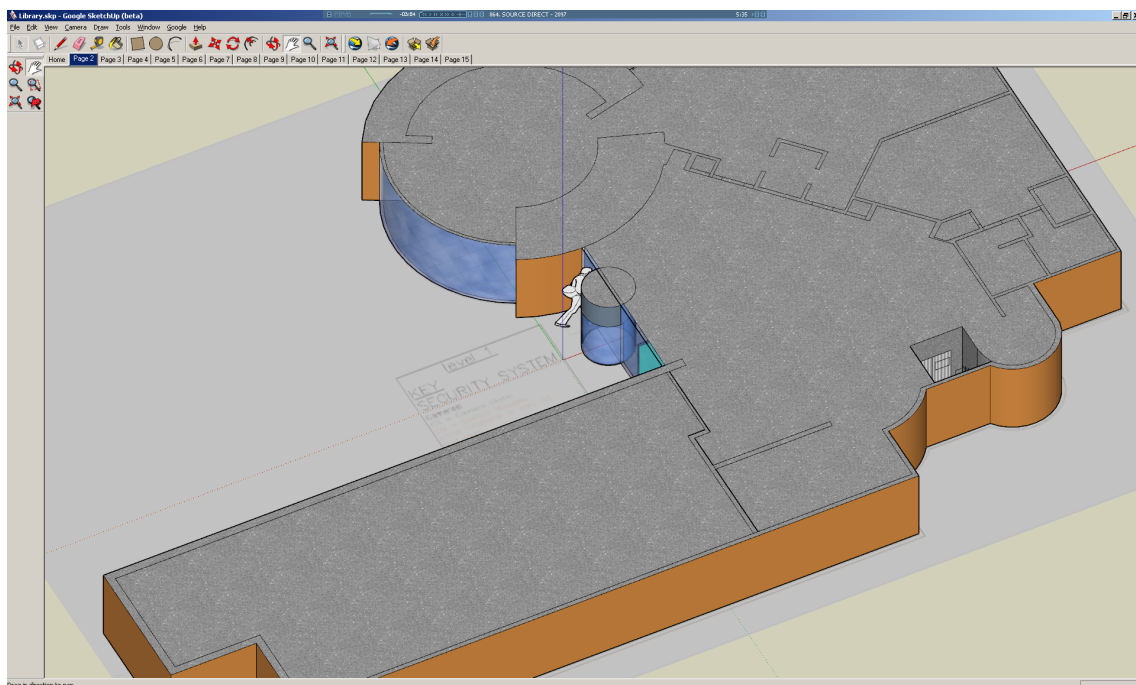


Figure 1.3.: SketchUp Screenshot: The first floor, once finished

Chapter 2.

Project Results and Outlook

2.1. SketchUp Files

The folder ‘Library\SketchUp Files’ on the CD, contains the file `Library.skp` which can be opened with SketchUp. It offers 100% interactivity with the 3D model. The guided tour can be done at ones own pace using the tabs (page 2 – page 15) on top of the window (see figure 1.2).

2.2. Guided Tour Videos

The folder ‘Library\Guided Tour Videos’ on the CD, contains a video of a guided tour through the library’s first floor. Some of the important locations have been marked with red signs. The video stops at each important location.

2.3. Outlook

Model of entire Library

For a final version, a model of the entire building could have been made; it would however have taken too much time. Furthermore, the first floor was sufficient for demonstration purposes.

Google 3D Warehouse

As proposed in [Lanquetin \(2006b, slide 9 and 15\)](#), the library model could be uploaded to the Google 3D Warehouse and made available to everyone to watch with Google Earth. Because the entire building was not created, this step has been skipped.

Improved Usability with H-Anim Character

Instead of using signs to guide the user, it would have been possible to implement an *H-Anim*¹ character for the tour, as explained in [Lanquetin \(2006a, section 5\)](#).

Support for Audio

For further usability, the H-Anim character could also explain each important location with an audio speech.

Various Languages

The guided tour could easily be made available in different languages. This is especially useful for a University library with visitors from various nations. To realise this, the signs and audio files (and subtitles respectively) must be made available in different languages, and a language menu must be made available for the user.

Search Support

The guided tour could support a search engine to query the locations of the most important places. The user interface to the 3D model must then propose a query field ([Lanquetin, 2006a, section 5](#)).

Path Finder

Furthermore, the user could also be supplied with the quickest path to get to the location he was looking for. This could be implemented using a graph representation of all locations and paths ([Lanquetin, 2006a, section 5](#)).

¹humanoid animated

Appendix A.

SketchUp Screenshots

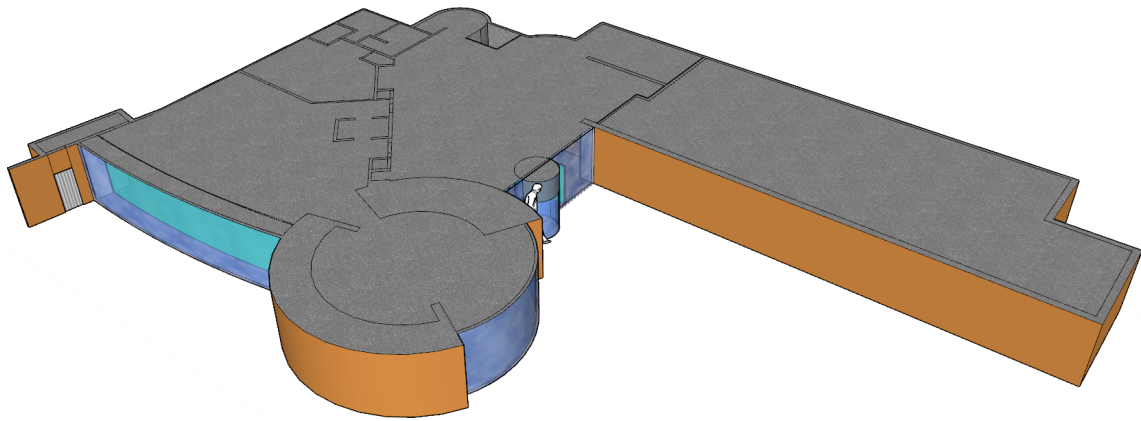


Figure A.1.: Library's first floor

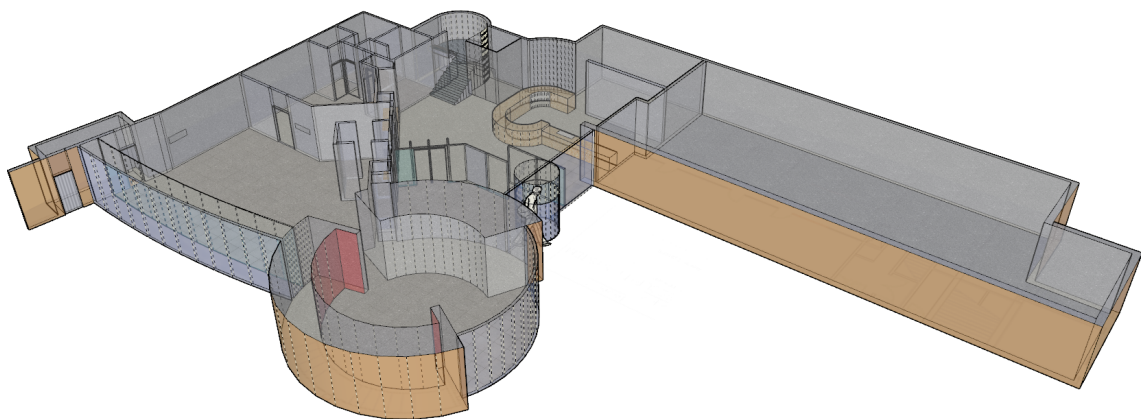


Figure A.2.: Library's first floor with wireframes

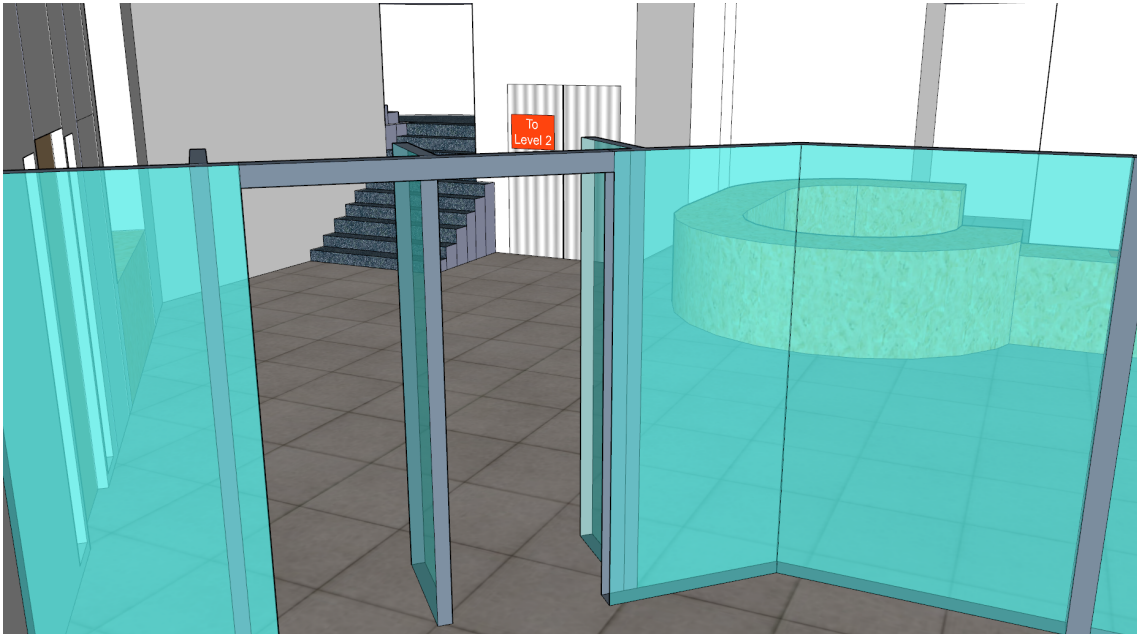


Figure A.3.: Library Entry in the first floor

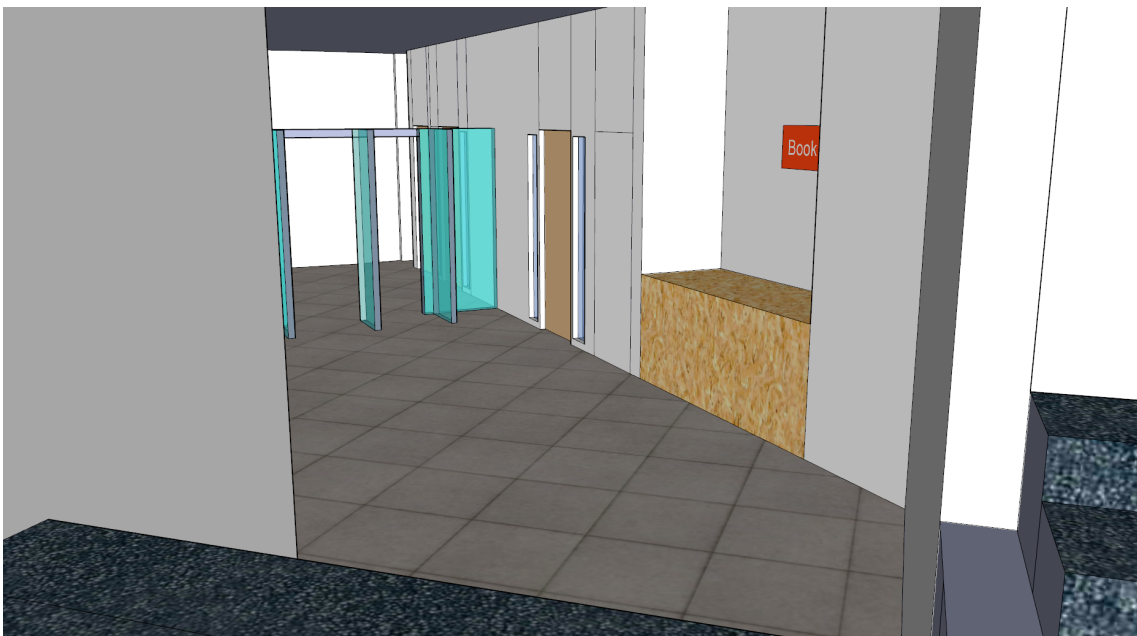


Figure A.4.: View from the stairs in the first floor

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Bibliography

Lanquetin, Nicolas. 2006*a*. "Virtual Reality Online Communities (Rev. 20)." Available at: http://www.psbases.com/studies/uad/wdd/ca1030a_essay/ca1030a_essay_rev20.pdf.

Lanquetin, Nicolas. 2006*b*. "Virtual Web Worlds Project Proposal (Rev. 2)." Available at: http://www.psbases.com/studies/uad/wdd/ca1030a_project_pres/ca1030a_project_pres_rev2.pdf.