

The aim of the project is to investigate how a game engine can be used as a tool – or so to speak – as a game for architectural design. Therefore I used the game engine “3D Game Studio”, which offers the possibility to program and run my own scripts (based on C++) and also have the possibility to publish it. Within a game engine anything is possible and that can present a large problem. To use it for an architectural design task I have divided the process into two main parts. The first, is to break down the specific design task (e.g. planning a hospital) into some rules and to define the environmental conditions of the virtual space, i.e. gravity, size, time, goal of the game, perspective of the user etc. That is a very useful way for an architect to handle the resources, the time management, the planning regulations and the budget in a project.

The second part is called the “runtime.” The architect, now, is the player and thereby part of the virtual three-dimensional simulation; he tries to win his own game. Additionally to the simulations, (like the famous “Game of Life” of John Conway) the player is part of the system, he can influence the spatial events, and according to the logic of the game engine he can be the user, the player, or even the architectural object itself. The architect becomes part of an infinite, generative, and reactive game. At every moment you can stop and freeze the game and export it to a program like 3DS Max.

To summarise, the first part could be called the textual design step, according to the fact of programming scripts and the second part could be called the spatial design step, here you act in a three-dimensional space. The more often you alternate the two steps the better the game will fit into the design task.

In the project *Architecture\_Engine\_1.0*, the player starts as a human being in the ego-perspective within a virtual space, where four objects act and react to him and to each other. The architect can take the role of the player or even of an object. The four simple cubes always ‘know’ where the player is and follow him. The player is pressed for time, because he is losing time-credits every five seconds and only in doing something can he “time” back.

Some of the interesting experiences as an architect using a game engine are the following:

The basic rules in the application are very simple, however the result can get very fast and extremely complex.

You can find in transferring the individual design task into algorithms (programming a machine-readable script), a new way of textual thinking, and that is quite unknown for architects.

The result is always different and unpredictable, and the possibility to change the perspective in the game, which means to become even the architecture itself, really changes the definition of an architect:

Play architect before your game is over!

see more at  
<http://www.atelierprozess.net/hoog/>

(divx movie)  
[http://www.atelierprozess.net/hoog/files/arch\\_engine.divx](http://www.atelierprozess.net/hoog/files/arch_engine.divx)

