

# Abstract

The topic of this thesis is a research about the application possibilities for game engines in the architectural design process. Therefore a short theoretical and historical overview of computer games, an introduction to game engines, and a definition of recent scripts is given.

The aim is to show how a game engine can be used in architectural design processes. However, this thesis is meant to be an approach and not a ready-to-use tool. The abstraction of the relevant parameters informing design processes is very important in this context and can be divided into two parts:

First, environmental factors like resource- and time-management, planning regulations and budget. Second, specific design tasks like the abstraction of a building program and sequences of use. The result of these abstraction processes are algorithms (behaviour) which can then be assigned to entities. These entities interact in a three dimensional virtual reality. The result is a reactive three dimensional virtual architecture. The user can interact in runtime, which creates an important difference compared to the usual simulations.

The game software “architecture\_engine\_1.0”, which has been developed based on the research mentioned above, demonstrates possible applications.

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