Space Imagery - Model Simulation as Work Equipment

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The architectural design task involves the development of a building or an urban space, which communicates a social and cultural meaning and allows sensual experiences. Therefore, there is a need to design the building or urban space from the users view. In order to achieve this aim, architects use different methods and techniques of representation such as various kinds of drawings, models and images.
The main impact of this is: Creating and developing the architectural form by drawing or modelling the architectural form. By using Video-Supported-Model-Simulation the benefits of representation can be utilised in a very simple way. The following report gives an introduction to

- the method of Video-Supported-Model-Simulation
- the principles for organisation the process of architectural design

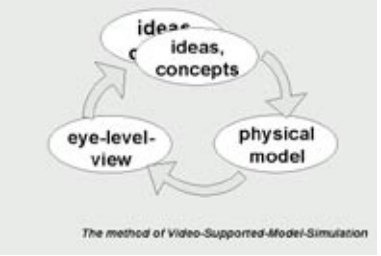


Figure 1: *The method of Video-Supported-Model-Simulation*

1. The Method of Video-Supported Model Simulation

The method of Video-Supported Model Simulation uniquely combines the creation of a design idea into a physical model with the visualisation of an eye-level-view. The method icomprises of 2 working steps:

1st: Modelling – Transmitting the idea of design in a physical model
2nd: Simulation – Observing the architectural form of the building or space from natural points of perception.

By using the method of Video-Supported-Model- Simulation the concept of a building or space is taken by the architect and made into scale models. For this purpose scales can be used from 1:2000 up to 1: 20. Afterwards the model is inspected by the architect with the help of a miniature- CCD-camera. With this instrument the architect is taken to the natural points of perception, so as to get an eye-level-view on a screen. The screen image gives an impression of reality of the architectural form, so that the sensual experiences and meaning can be explored and judged. (Figure 1)

Benefits	
eye - level -view	**physical models**
sensual characteristics	geometric characteristics and structure
interdependence of form, texture, color, and light	material characteristics of surfaces like color, texture ...
consequences of the points of view and their sequence	the layout and the configuration of the rooms

Changing the architectural elements, the lighting situation or the point of view helps to recognise the complex connections between the characteristics of the architectural form. In this way, the design solution becomes more concrete with each step. Concrete characteristics of the buildings or spaces and their sensual impacts are developed in one process. The interdependence of both of these architectural components is understood by the architect with the help of the physical model and the produced eye-level-views. (Picture 2)

Figure 3-5: *Landscape by Görlitz, Diploma Work, TU Dresden, Model scale M 1:2000*

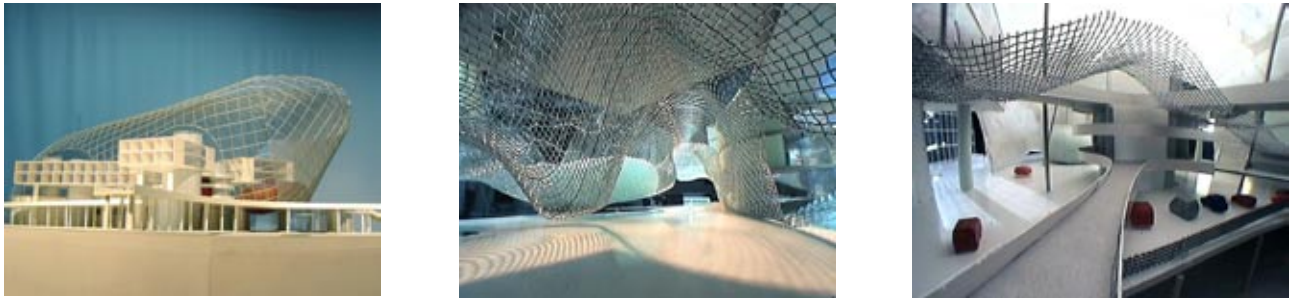
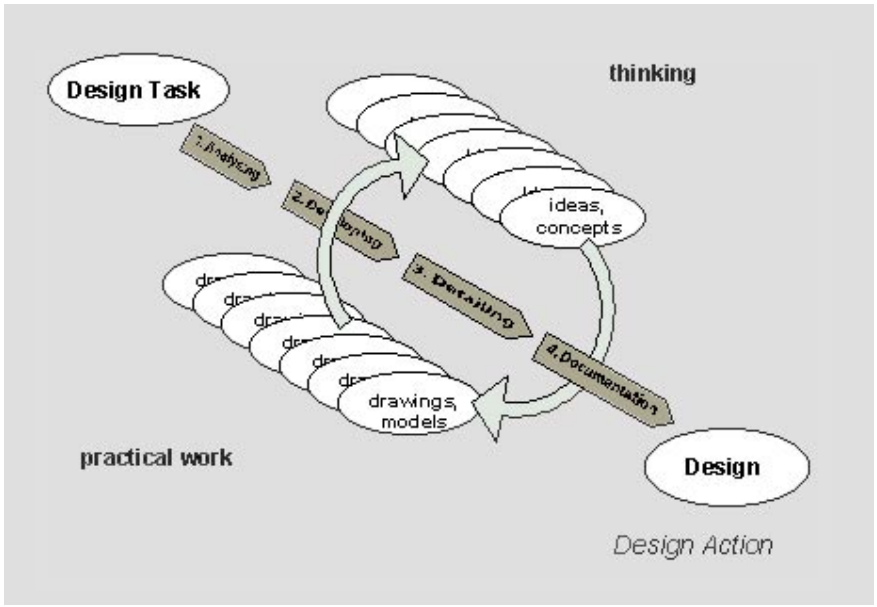
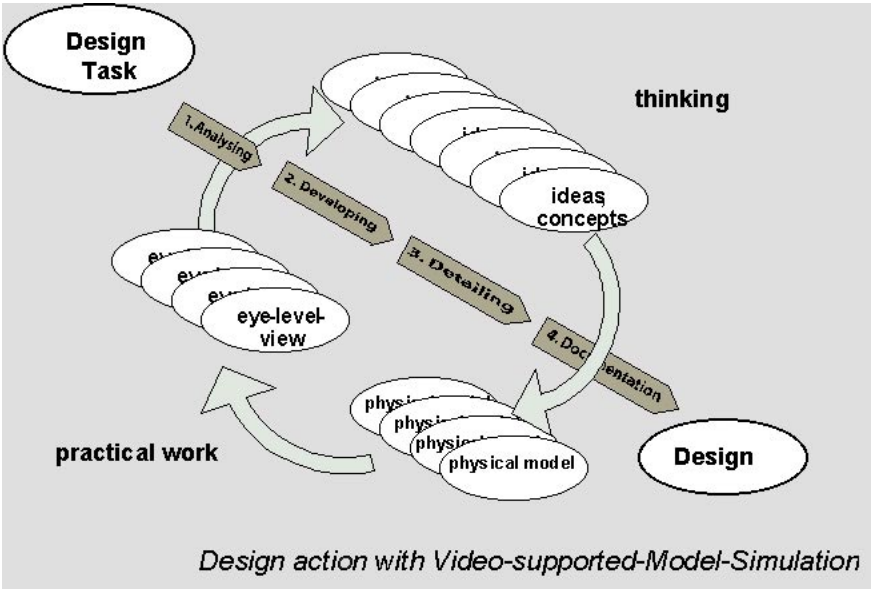


Figure 6-8: *Interior, central hall of a design-factory for cars, Diploma Works Sylvia Hänsch, TU Dresden, Model scale 1:200*

The method of Video-Supported Model Simulation is usable for the work on various aspects of a design task. The range of aspects includes tasks ranging from urban space to interior development. (Picture)
(Picture 6-8: Interior, central hall of a design-factory for cars, Diploma Works Sylvia Hänsch, TU Dresden, Model scale 1:200)





Video-supported-model-simulation in the Design Process

Architectural design is the transfer of verbally formulated requirements – **The Design Task** – to a concept for a building or urban space – **The Design**. This action includes and requires both thinking and practical work and can be described as a four step process. During the process of Design, the architect generates Ideas and converts these into drawings and models.

Figure 11-13: *Steps of a design, central of an university, Diploma Works TU Dresden, model scale 1:200*

These again are used for observing, looking for new ideas, and communication. (Picture 9)

Every phase of the design work includes the development of the architectural form for the building or urban space. It is a fact: the most important characteristics for the architectural form are created during the first phases of architectural design.

In order for the design to reach a high quality and to avoid expensive corrections the architect should be able to judge and change his decisions in an early work phase. These requirements are realised with the use of Video-Supported-Model-Simulation as a design tool. (Picture 10)

This method is based on using models for the design and completes this well-known and effective practice. Video-Supported-Model-Simulation is useable in all phases of the architectural design process, for analysing, developing, detailing and documentation.

Presentations mark the aim of the design-phases. Their purpose is to inform and to convince the clients about the design. In this case visualisations, which show the building or urban space help the clients to get a realistic impression and to identify with the design. In contrast to eye-level-views, with film and video it is also possible to experience motion. By using the motion of a walk or car alone, it is not possible to reach the quality of a thrilling video. Only through the combination of the specific techniques developed for filming such as changing the angles of view, quick-motion, zoom effects and variations of speed, combined with text, speech and music a result can be achieved, which justifies the high cost of production. (Video)