

Model Based Drafting

The Anatomy of Study Models and their Hidden Influence on Architecture Education

WOLFGANG LIST

Institute of Construction and Design Principles,
Graz University of Technology

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Drafting and designing in architecture involve an iterative process of testing and comparing architectural thoughts and ideas. The goal of this iterative process is to find the best of several possible solutions, at each stage of the design process. To bring these architectural thoughts and ideas to reality designers need tools. Tools for discussing ideas and writing, sketching, plan drawing and model making for explaining, documenting and testing thoughts. But do the users of these tools, the designers, really know how these tools work or do the designers use these tools only out of habit? Some tools are already known for how they transport ideas, other tools are used out of behaviour without understanding their deeper impact on transporting thoughts and generating new ideas.

A typical tool for testing and comparing the different solutions is still the handmade study model. Increasingly, these handmade study models, are being replaced by computer generated architecture models. In a time of computer aided design and computer generated 3D models the question can be raised of whether handmade study models are still needed. The basic question arises of whether there is a difference between physical study models and computer generated study models, in terms of what one can learn from them, and if so, what these differences are and what are the characteristic elements of handmade study models? Can these handmade study models be used in different ways to generate a multitude of diverse knowledge in architecture practice and architecture education?

By drafting with the help of handmade study models this iterative process of designing and of developing architectural ideas can be raised to another, three dimensional level. With the help of handmade study models, two dimensional plans and three dimensional drawings, which have the attribute of a stationary view, are transformed into a three dimensional scale model — an abstract miniature of the original — that can be observed from different angles and perspectives by one or more observers at the same time.

Especially in the first year of architecture education, where the knowledge of computer based designing is just developing, the handmade study model can help to draft space in a three dimensional way. With the help of handmade study models the knowledge and understanding of the complexity of three dimensional space, which is also just emerging among students at the beginning of their architectural education, can be improved.

Even in the advanced stage of architecture education, where drafting with the help of handmade study models is declining, study models can help to improve the understanding and development of complex design tasks. Especially in architectural

drafting by a group of students, in terms of teamwork, the handmade study models can enhance group discussions on architecture and develop architectural design to another level.

The goal of my research at the Institute of Construction and Design Principles at Graz University of Technology is to decipher and demonstrate the process of designing with the help of handmade study models. By deciphering the complexity and diversity of physical made study models, it will be possible to better understand the hidden potentials of handmade study models and to use study models in a more precise way as a design tool in architectural education.

In my work, handmade study models are categorised and analysed according to their different types of production, their different type of knowledge output and their fields of application.

My research is accompanied by case studies taken from my teaching work at the Institute of Construction and Design Principles at Graz University of Technology, recent architecture projects from my own architecture practice MOSTLIKELY in Vienna as well as other international architecture projects, in order to underline and justify my research on the anatomy of handmade study models.

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1: Seminar held at the Institute of Construction and Design Principles: Drafting with the help of study models, October–December 2018



2: Beginners's Workshop held at the Institute of Construction and Design Principles, October 2016



3: Beginners's Workshop held at the Institute of Construction and Design Principles, October 2017



4: Beginners's Workshop held at the Institute of Construction and Design Principles, October 2017



5: Beginners's Workshop held at the Institute of Construction and Design Principles, October 2018



6: Beginners's Workshop held at the Institute of Construction and Design Principles, October 2018