

Modeling after the Computer

Visual Studies B

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Background:

For at least 500 years the articulation of architecture has been through the simultaneous acts of drawing and modeling. With the enhanced digital/virtual environment afforded by the computer, the distinctions between these simultaneous acts have become blurred and their practice integrated into one. The production of drawings and models once served as independent mediums through which these explorations were conducted, but now this is combined within the singular opaque terrain of the virtual environment of the computer. The impetus for this shift was precision; the computer offers complete control. As the techniques and tools advanced the virtual model took on both qualities of the drawing and the physical model. As a result, we are no longer constrained to what can be shown by plans and sections, or built with miniature models. We are finally free to explore the totality of the design.

Declarations have been made that these historic precedents, the section for one, the physical model for another, are dead. Production with the digital tools asks, or even demands, that a cohesive virtual model be made first. From that point, we are then encouraged to extract the drawing or model by either an act of excising sections or establishing tool-paths for fabrication. Either way, this translation can in best be summarized by the single command "Control+P". By printing, either on paper or with material, the acts of drawing and modeling are now reduced to output processes of information that has been first established in another field.

The values of these historic practices are up for debate. Whether we are translating into the flat, planar mode of a drawing or the tectonic mode of a physical model, the purpose of this act should be more than to merely satisfy an established convention or fulfill an arbitrary requirement. However, in a world in which we still feel obligated to render these constructions after the design is complete, we must ask ourselves why we still bother at all. This series shall serve as a laboratory in which these very questions shall be explored. Judgment as to the benefit or detriment of this practice shall be reserved. Rather, the hybrid condition of the drawing/model shall serve as the entry point into these respective explorations.

Course Objectives

Though the distinction between a model and a drawing has never been more blurred, the primary purpose for creating each mostly remains distinct. Models are seen as physical representations of a final construction and drawings as the coding that enable these constructs to be made. This section will attempt to further exploit the contemporary blur between these forms of representation while still valuing the coding/evaluating benefits found primarily in drawings. Specifically, this course will explore a hybrid form of physical drawing, that will be forum through which physical principles are explored and tested.

Through a series of weekly explorations, the student shall produce a model/drawing that either examines underlying principles of construction, or better represents the complete spatial qualities of how a space is used/occupied/experienced that cannot readily be made in a 2D medium. While digital fabrication techniques such as CNC-fabrication, thermojet printing or laser cutting shall be permitted, manual methods of construction are equally valid. In either case the goal is to explore the process of making the physical rather than just simply exporting final forms.

In the five weeks of the course, the student will be asked to prepare at least three iterations of an existing design. There will be weekly meetings where the first part will be a brief presentation of a particular aspect of modeling. The second part of the meeting will be an open discussion sharing the iterative progress of the work. The attitude within the course will be that of a laboratory where experimentation and new thinking will be encouraged. In the end a final presentation will be made speculating on the benefits of their findings.

Evaluation

The starting model for each section shall be a previous model designed by the student for a previous course. No specific notion towards any design shall specifically matter. Rather how the process of design is shaded through the lens of modeling is all that is of concern. The student is expected to come to this forum with an attitude of both self-exploration and a desire to evaluate the mode of the current practice. There is no pre-established opinion of what is the future of these practices, just a genuine curiosity that something still remains undefined.

The evaluation of each students work shall be made on their weekly contribution to their respective pursuit and the insight of their assessment of their own production at the end of the period. A final digital archive of the work produced in the course will be submitted at the end.

Schedule

Week 1 –	Introduction
Week 2–	Weaving
Week 3–	Folding
Week 4 –	Surface/Volume
Week 5 –	Class Discussion
Week 6 –	FINAL REVIEW

All material must be submitted for grading by Monday May 13th at the latest.

Assignment

When it comes to understanding the physical occupation of space, there is no better stand-in for the final construction than a physical model. Although it may not elect to represent every layer of construction and/or material, nor does its scale easily lend to an internal occupation, the model surpasses the drawing as a representation of totality. With the rise of the computer, the virtual model has begun to erode the perceived value of the physical model. While the demand of this virtual model is for completeness, the physical, now more than ever, has the fortune of requiring reductive decisions. Its craft is one of deconstruction as much as construction.

Beginning with a previously developed computer model of your choosing, establish the major critical elements that will drive a systematic/techtonic/spatial evaluation of the design. If the design is thought to be complete, the task of building its physical representation will require prioritization. Through this initial evaluation, determine how the model should be constructed.

The study model and the final model are understood as iterations. How can a meaningful assembly be determined through the testing of its components? Use careful studies to explore and document how the techtonic/spatial conditions of the design can best be demonstrated. The intent of this model is not merely to represent the designed spaces, but to inform how the critical elements of the design necessarily form/shape/support these spaces. To that extent, consider the physical equivalent of the "invisible" construction line. Think of this physical document as a drawing, tracing through space and interconnecting important elements. Consider the bas relief as the precedent in how it occupies dimensional space, but not necessarily in affect or form.

Format – Each student will be required to generate a final physical model. The materials/construction/methodology for this model are left to be determined through the coursework generated.

Readings

There will be a reading assigned each week to be discussed as part of the class the following week.