Surface Paneling and Shading System

The role of the computer as an integral tool for architecture is rapidly changing. When once it was simply used to create construction documents it is now used as a design aid and in some cases a consultant. This class will offer the opportunity for architects and designers to begin to understand and utilize the algorithmic process as a tool for design by way of Rhinoscript. Scripting is not considered a means to an end but rather a valuable tool used to make certain tasks less tedious and certain decisions more informed.

There are many tools currently available to achieve parametric control of a project. We are choosing Rhinoscipt because of its relatively low cost and high level of resources and documentation. We also feel it is important for our students to come away from the class more comfortable with computer syntax. Learning to understand syntax is a timeless skill which will always be at the core of the algorithmic process. Additionally we feel that scripting is something that is learned overtime with a very "hands on" attitude. This is why we leave ample time between classes for independent investigation.

This seminar utilizes techniques that include both "bottom up" and "top down" design strategies, aiming to provide exposure to both theoretical and practical applications of scripting in architecture.

This class is specifically focused on dealing with populations of parametric and standardized components. All scripts and documentation will be provided in class.

At the conclusion of the seminar students will be able to read, modify and compose scripts written with Rhinoscript. Furthermore students will understand the potential of using scripting as a tool for analysis and optimization rather than simply a form generator.

Class Structure

Classes will be held from 7:30 to 10 on Wednesday nights at 28 west 27th St in Manhattan at Studios GO. Each class will consist of a short lecture, guided example and work session. Scripts will be distributed in class to provide an example and basis for independent study between sessions.

Week 1 - Introduction

In the first week we will introduce the idea of algorithmic design and examples of its application in optimization and formal investigations. Then we will jump right into the syntax, investigating variables, loops, conditional statements and program structure. We will then lead you through a simple iterative loop script resulting in a varying arrangement of standard elements.

Week 2 - Parametric Elements, Functions, Vectors

We will introduce you to functions and vectors in Rhinoscriping. Using these new methods we will examine a script which parametrically adjusts elements, creating and populating components for a shading system.

Week 3 - Surface Division and Attractors

This week we will teach you how to analyze a surface via automation, allowing for more controlled organization and parametric manipulation. This week we will use surface normal vectors and surface domain to analytically populate a surface. We will use attractors to inform the gradient of the populated elements.

Week 4 – Shading Analysis

In the final week we will examine the power of scripting in a solar shading analysis . Using excel we will inform the parameters and populations by demonstrating how to import data from an external application. We will test the final designs using this technique. This methodology provides the potential for more intelligent proposals, informed decisions and comfortable environments.

At the conclusion of the seminar students will be able to read, modify and compose scripts written with Rhinoscript. Furthermore students will understand the potential of using scripting as a tool for analysis and optimization rather than simply a form generator.

To reserve a position in the seminar please write to workshopsfactory@gmail.com, no refunds are granted once you have reserved your spot. Workshops Factory reserves the right to cancel a seminar, in which case a full refund will be granted.