Setup

Congratulations! You've passed or waived Architectural Analysis. If you thought you were done forever with the building project you analyzed for a semester, you were wrong. Project two of that course tasked you with creating a digital model of a building. Find that file. You will start from there. (If you waived Architectural Analysis find the equivalent work. If you are an exchange student work, you will have to do or re-a 7,200 cubic foot volume of You are allowed a tolerance of

Phase 1: Draw a Building

or lost your Architectural Analysis do some of that project.) Identify form and space in that building. +/- 50 cubic feet in the definition of the volume, which may take any shape, but must be contiguous. Choose the shape and position of the volume to enclose the most mysterious, problematic, or contradictory conditions in the architecture. Design the shape to accentuate the mysteries, problems, or contradictions. This might mean choosing a shape that contrasts with the nature or languages the architecture or which extends and complements it. Trim the model with that volume so that only the mass within that volume remains. Clean up the model by removing anything other than meshes, surfaces, and polysurfaces and fix any mistakes or gaps. This model will be henceforth referred to as "the sample."

Visual references

Compile 10 of the best examples of works of art, architecture, or cartography that use lines to articulate surface, form, space, depth, or light. Make it your goal to find exquisite, virtuosic systems of lines. There should be no redundancy of projects referenced between anyone in the studio. For each work, scale it to fit on a 8"x8" piece of paper, and on a second 8"x8" piece of paper scale it up and crop it to reveal the intricacies of individual lines. (Low resolution images will obviously not work.) On the back of the first piece of paper write the bibliographic information for that work. Study these ten works so that you're prepared to discuss any projection systems, rules, algorithms, and methods of measure that were used in the creation of these works. Accolades will be given in exchange for the most obscure, surprising, and extreme examples. Dig deep. Use the Library. Use the Museum.

Task

Using the Python programming language and the Rhinoscript Python library, represent the sample using a system of lines. One method of projection should consistently link content on the paper to content in the sample. This projection method can be standard, obscure, or novel. The size of the paper will be 11"x13" in either rectilinear orientation. You may create as many functions (implementations of as many algorithms) as you determine to be necessary although the resulting lines should visibly cohere as one single system.

Agenda and considerations

Rhinoceros offers a three-dimensional digital modeling environment and, relatedly, all topologies in the Rhinoscript library are three-dimensional. However, some of your scripting may occur in the space of the paper and, as a result, will be effectively two-dimensional in nature (the z value will be zero). This is one of those moments where a technical decision may have deep theoretical ramifications. The difference between a line composed in space having been subject to a projection method verses a line drawn on the paper with respect to information or variables corresponding to a spatial condition is significant. Dimensionality is also techno-theoretically linked to the topology of digital surfaces.

Refine your lines based on the material and mechanical limits of the pen plotter, ink, and paper you choose. Consider the implications and opportunities that may arise out of the clarity or lack of clarity of lines. Perhaps now is a good time to ask, what exactly is a line? A mark? A hatch?

Remember your agenda is to convey form and space. You may find that material poses one kind of representational challenge while light, and air (or "atmosphere," if that's more productive for you) pose others. Represent it all.

There are no trademarks on technique. Use and adapt the apparent methodologies from the collection on visual references. Be prepared to discuss how the drawing you create relates to some of the references. Mentally prepare for a review in which you pin up one piece of paper.

Schedule

Sunday February 21: Carl holds office hours (BEB 224 from 2-4 PM) to make up for some of missed time on upcoming Monday. Office hour sessions like this are always optional. If you would like input on portion of your model to trim, this is the time.

Due Monday February 22: Meet as a group at 1:10 in studio with your first round of 10 visual references. Determine if there is any redundancy. If so, flip a coin to see who should replace one or more from their set. Today is thesis reviews all day. Carl will not be in studio. Students are welcome to attend Yasmin/Carl thesis discussions or any thesis discussions. Take notes for discussion about the nature of thesis, the confines of the discipline of architecture and our curriculum on Thursday.

Tuesday February 23: Attend Travess Smalley lecture at Chace Center 7:00pm. (If you have a schedule conflict, contact Carl)

Due Thursday February 25: Visual references should be pinned up before start of class. Upload your trimmed and cleaned Rhino file to the shared folder before class. Bring your laptop to class with Rhino 5 installed. Make sure the command "RunPythonScript" is recognized in your version of Rhino. If it's not, you need to upgrade. Contact Carl.

Due Monday February 29: Group discussion followed by individual presentations. Have tons of tests and experiments printed out (no pen plotting yet). Explore projection systems and languages/rules for lines. Test some algorithmic approaches. If you are uncertain about how to implement a process, do it manually for a portion of the drawing. It is not expected that any of your tests will be complete versions of the drawing although your printouts should be at the required size.

Due Thursday March 3: Individual and small group discussions. Pin up one or more nearly complete versions of the drawing. At least one or part of one using the pen plotter.

Due Monday March 7: Group discussion. Each student pins up the latest complete drawing.

Due Monday March 10: Review. Pin up single final drawing.