Visual Studies I: Arch 1191

Assignment Number: 8

Computer Program(s): McNeel Rhinoceros

Student Learning Objectives:

Upon successful completion of this assignment, the student will:

1. Understand how to model in 3D a simple geometric object in McNeel Rhinoceros (Rhino).
2. Know how create a Rhino model file.
3. Know how to toggle between the four standard view points.
4. Know how to set up units.
5. Know how to set up a grid.
6. Know how to use the solid tools palette.
7. Know how to use Boolean operations (addition, subtraction) in order to create more complex forms.

Assessment:
To evaluate the student's achievement of the learning objectives, the professor will do the following:

1. Evaluate the student's understanding McNeel Rhinoceros by examining both the digital file and the hard copy output.

Project Description:
In this assignment, you will model in three dimensions digitally your first assignment from Arch 1110, Rectilinear Forms.

Process:

1. Create a new file in Rhino.
2. Practice toggling between the different view points: top, perspective, front, and right.
3. Familiarize yourself with the tool palettes: some tools will be universal between all programs studied this far: save, folder, print, copy, past, pan, zoom, etc. Scroll over all the icons that are unfamiliar. Find the solids tool palette.
4. Choose units, inches and match units with Distance Display.
5. Choose grid tab, and set grid snap and grid spacing: a grid of 8 is best when working in inches.
6. Choose one view port to begin your drawing.
7. Choose the rectangular solid tool as this is appropriate for the Rectilinear Forms project.
8. Create the first solid: defined by two points and a height.
    a. Use multiple view windows to create your rectangular form:
        i. Define the base points in either the top view or the perspective view.
        ii. Activate ortho at the bottom of the modeling window.
        iii. Extrude the rectangular form in either the front or side view.
9. Complete three dimensional model of entire Rectilinear Forms design.
10. Create page layout for printing:
    a. Select view>Page Layout>New Page Layout.
    b. Choose printer.
    c. Choose page size: 11x17.
    d. Choose orientation.

     e.   Set initial Detail Count to 4, hit OK. Detail count is equal to the number of viewports in Autocad. Note Autocad will automatically create a viewport for each tab.

     f.   Manipulate viewports:

         i.   Double click inside the viewport.

         ii.   Rotate, pan, zoom, and orbit or use the select view icon.

         iii.   Lock chosen view.

         iv.   Shade chosen view.

         v.   Choose background color.

11. Print hard copy. What are the differences between working in three dimensions by hand and working digitally? Pros and cons of each?