New York City College of Technology
The City University of New York
Department of Architectural Technology

ARCH 3609 Integrated Software in
the Architectural Office

RHINO DESIGN

1. Open Rhino and work with feet as units (Type Options/select units from the list on the left / select feet on the right menu. Draw a rectangle 200 by 150 feet.

2. Type **curve** (degree 1) and create a polyline snapping to the rectangle. You have to create a polygon shape (the shape should have 6 angles). Place this curve in a new layer called *site perimeter*.

3. Select step 2 curve and type **planar srf**. Select the resulting srf and type **rebuild** (10 by 10, degree 3).

4. Select the rebuild srf , type **pointon** (F10) and move the control points up and down till you create an interesting srf. Move the deformed srf up so it is above the 0 in z axis and place it in a new layer called *deformed srf*

5. Type **curve** (degree=3) and draw a curve that could be an interesting path in the x,y plane (z=0). **Offset** the curve 9' so you create a path. Place the two curves in a new layer called path.

6. Type **project** in order to project **one** of the above **curves** (layer: path) on the deformed srf (find the srf under a separate layer). Place the resulting curve on a new layer. Name this layer attractor.

CREATE 2 PANELING GRIDS

7.   Select the deformed srf and go under **Paneling tools/ Create panelling grid/ Srf domain variable.** In the parenthesis of the command line **place u and v =10, distancemethod=curve attractors, attraction method = away, magnitude 2, group=yes.** Place the resulting points in a new layer called paneling grid 1.

8.   Select the above points grid and copy 10' in the positive z axis. Place the new points grid in a different layer called paneling grid 2.

9.   Select the 2 grids and type **ungroup.** Now **delete** exterior points so the grids fit better with the perimeter line of your site.

10.   Type **meshpatch** and select all the points grids, the planar curves of your path (step 5) and the perimeter curve of your site (layer: site perimeter).

11.   Type MeshToNurb and place the resulting polysrf in a separate layer called folding. Delete the mesh.

12.   Now explode the folding srf and **trim** or delete faces whenever needed for light insertion purposes.

13.   Organise the structure vs the skin. To do so you will need to pipe the border lines of each srf : **dubborders/explode/seldub/delete/pipe w/round corners** to create the structure out of lines. Place the structure in a separate layer called structure.

14.   Save your Rhino file and upload on Blackboard under workshop 01 by **3pm.**

VRAY RENDER

15.   Go under Render/ Current Renderer and select Vray. Pull out the VRAY Render Tool bar.
(Right Click in an empty space of command tabs / show toolbars / VRAY Render Tool bar).

16.   In this toolbar select the render Options (O), then go under output and select 2048x1536px.

17.   Go under the **Material Editor (M)** and create 2 new materials for the skin and the structure (right click on scene materials / new material / standard). You can also load a default material (right click on scene materials / load material)
        - change the diffuse color.
        - add a layer of reflectivity (Right click on the material, add new layer / reflectivity).

18.   Select your 3dmodel, right click on the created material and **assign material to selection**.

19.   Move in the z axis the skin and the structure so you isolate them in layers. (exploded analysis)

20.   Save as *"exploded analysis"* your file.

22.   Now Render (R) your composition in the saved view. Save the rendering image as .png (png will give you no background).

PLACE THIS WORKSHOP IN YOUR PORTFOLIO WHEREVER YOU THINK IS APPROPRIATE IN TERMS OF CONTENT.