**first year: assignment seven**

**assembly of a volume, part A**

**Issued**
Friday, September 26, 2008 @ 4.00 p.m.

**Objective**
With this assignment you will develop your ability to record the assembly of a three-dimensional object using paraline drawing techniques. Through the use of the paraline drawing you are to tell the story of folding a box or carton.

**Method / Process**
Chose a cardboard box or paper-board carton which satisfies the criteria listed below. Carefully unfold the box or container so you are able to understand the object as an unfolded pattern (plan). Then determine the scale that best represents your box or carton which will allow you to draw it accurately. Should it to be drawn at actual size, or -4x, -2x, +2x, +3x, etc? Develop a series of freehand paraline drawings showing each step of how the container transforms through folding into the box or carton. Arrange these freehand drawings to best show the process of the assembly as part of the composition.

On a sheet or sheets of vellum, construct (drafted) the same series of paraline drawings showing the transformation from the plan pattern (completely unfolded) to final box or carton (completely folded).

**Suggestions**
1. Do not select a box or carton which has a separate lid.
2. Boxes, paper-board milk or juice cartons are acceptable as well as paper-board chinese take-out containers
3. You are to select a carton or box which, when folded, creates a total enclosure
4. In the unfolded pattern, use the dashed line convention to represent the folded parts of the pattern
5. For examples of paraline drawings used in model making, visit http://www.revell.com/support/instructions.html
6. Read all the included hand-outs on paraline drawing before starting this assignment
7. Test each type of paraline drawing type to find the one that best suits the act of folding your item

**Project & Presentation Requirements**
- Wood pencils
- Tracing paper (12” x 12” sheets)
- Vellum sheet(s) 23” x 29”
- Lead holder and leads to create construction lines and lines which represent the contour (light) and edges (dark) of your container or box

**Due**
Monday, September 29, 2008 @ 1.30 p.m. (sketches and constructed drawing on vellum)
first year: assignment seven

assembly of a volume, part B

Issued: Monday, September 29, 2008 @ 4.00 p.m.

Objective: After having some feedback from your instructors on your vellum drawing, carefully draft on Strathmore Board, an improved series of paraline drawings showing the transformation from the plan pattern (completely unfolded) to final box or carton (completely folded).

Method / Process: Construct on a sheet(s) of Strathmore Board using the correct line weight, a series of paraline drawings showing the transformation from the plan pattern to final box or carton.

Materials: Lead holder(s) with 3 suggested leads: 2H (light:construction), H or F (medium: contours), HB (dark:edges)
23” x 29” sheet of Strathmore 500 Series Bristol Board (the watermark should be on the left hand side)

Project & Presentation Requirements: A final drawing showing the process from pattern to container or box on Strathmore board with proper line weight

Due: Wednesday, October 1, 2008 @ 1.30 p.m.
TYPES OF PARALINE DRAWINGS

There are a number of paraline drawings, which are named after the method of projection that is used to develop them. Two of the most common in architectural drawing are discussed in this section: isometric and oblique (in terms of both plan and elevation).

**ISOMETRIC**
- all three visible surfaces have equal emphasis
- relatively inflexible
- orthographic plans and elevations can never be used in an isometric drawing

**PLAN OBLIQUE**
- a 45°-45° oblique has a higher angle of view than an isometric, and horizontal planes receive more emphasis
- in plan obliques, orthographic plan views can be utilized to 16 advantages in showing the true form of horizontal planes and in depicting circular forms in plan

**ELEVATION OBLIQUE**
- a vertical plane remains parallel to the drawing surface, showing itself in true size (to scale), shape, and proportion - this face of the building should be the length of the building, the most significant face, or the most complex

in the above drawings:
1. all vertical lines remain vertical
2. all parallel lines remain parallel
3. all lines parallel to x,y,z axes can be drawn to scale

For more information see: Architectural Graphics by Francis Ching
For more information see: Visual Notes for Architects and Designers by Norman Crowe and Paul Laseau
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