

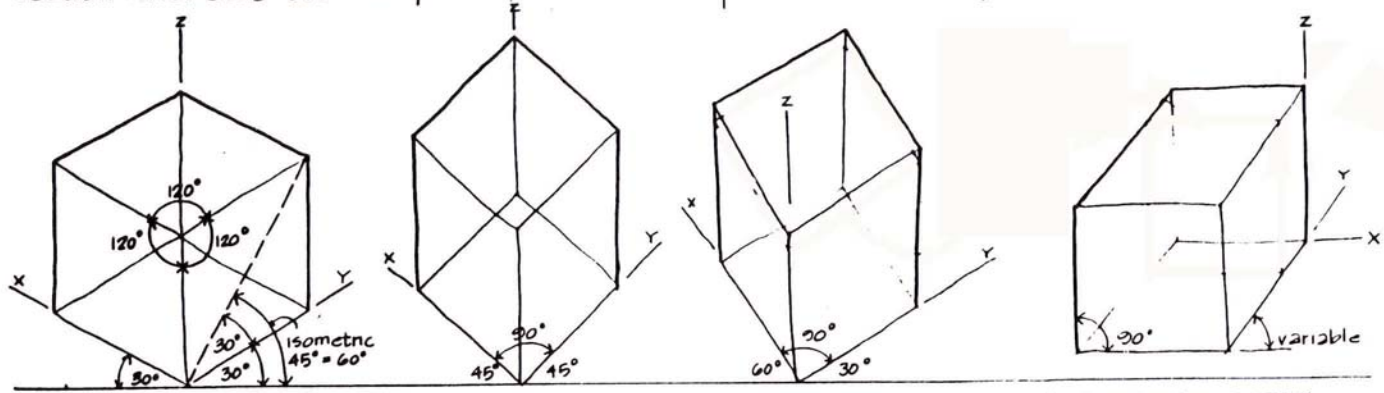
first year: assignment seven

Assembly of a Volume, part B

Issued	Monday, October 1, 2007 @ 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 3, 2007 @ 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

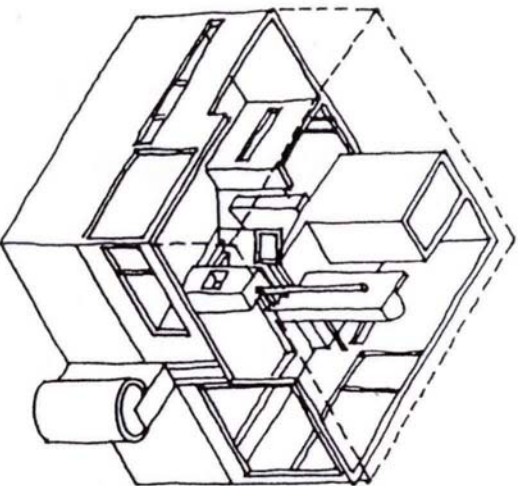
PLAN OBLIQUES

ELEVATION OBLIQUE

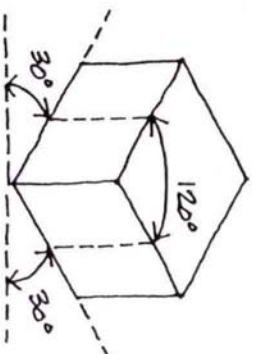
- all three visible surfaces have equal emphasis
- relatively inflexible
- orthographic plans and elevations can never be used in an isometric drawing
- a 45°-45° oblique has a higher angle of view than an isometric, and horizontal planes receive more emphasis
- in plan obliques, orthographic plan views can be utilized - this is advantageous in showing the true form of horizontal planes and in depicting circular forms in plan
- a 30°-60° oblique also has a high angle of view with one vertical plane receiving more emphasis than the other
- 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



5-40 Isometric. Simon House by Barbara and Julian Neski.



Paraline Drawings

These are drawings which are the basic alternate convention to perspective projection for representing three-dimensional space or objects. In paraline projections, all lines which are parallel in space are shown parallel in the drawing. There are three basic types of paraline projections: the plan oblique (commonly referred to as an axonometric); the elevation oblique; and the isometric.

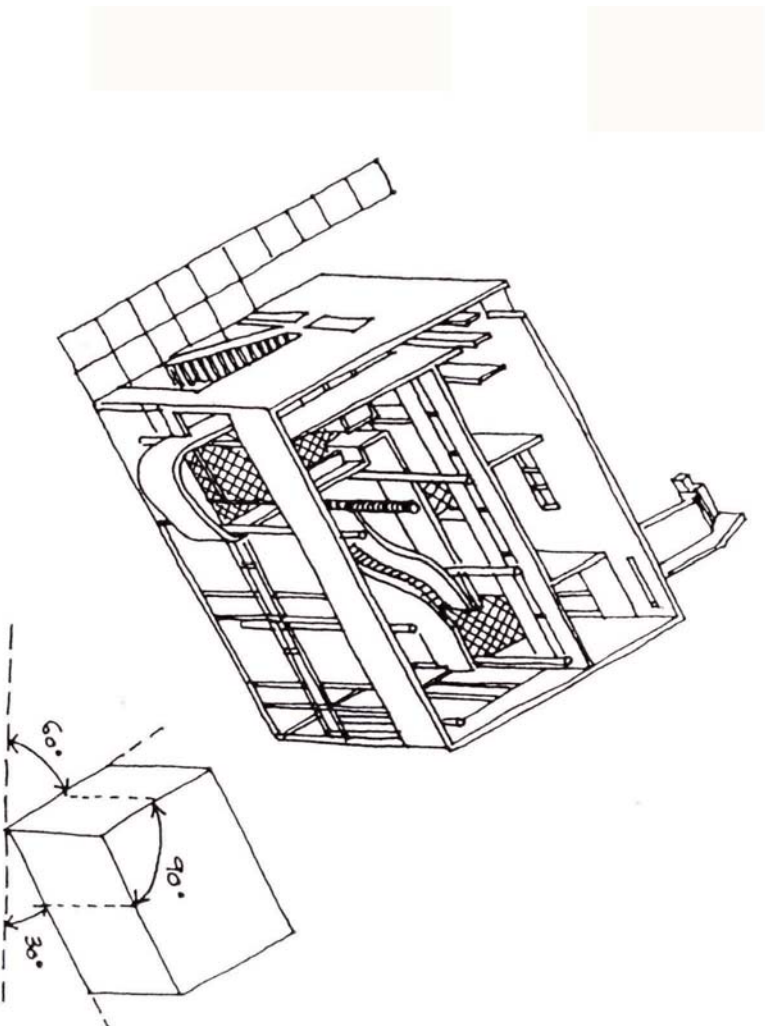
A plan oblique projection is essentially a plan view from which walls or other elements are extended vertically to create the sensation of three-dimensional space and to illustrate information about the vertical surfaces. This convention places the plan on an angle, generally somewhere around 30 or 60 degrees from the horizontal. Vertical lines are then drawn from various points on the plan to describe the walls. All the measurements of pieces in the plan oblique are at the same scale making them easier to construct than perspectives which we will discuss later.

The elevation oblique is constructed in the same manner as the plan oblique except that an elevation of a wall or vertical sur-

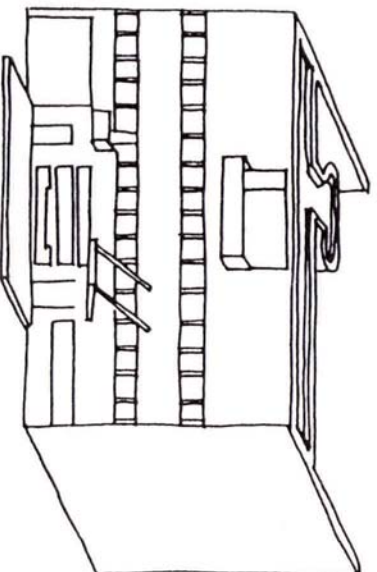
face is drawn first and then the horizontal surfaces and other vertical surfaces are projected at an angle from the elevation. People who are used to drawing perspectives of buildings will often have difficulty in sketching oblique projections particularly in keeping the angled lines parallel. One way to overcome this is to draw the true plan or elevation views first, concentrating on keeping lines perpendicular to each other and then sketch in the parallel projection lines. Gridded paper is handy for this purpose. By simply using a convention of one space over for every two up, it is possible to quickly draw parallel lines and achieve minimal distortion of scale for both plan and elevation lines.

Isometric projections essentially illustrate all surfaces in the three dimensions with equal distortion. The construction grid for isometrics consists of the vertical line, a line 60 degrees to the right of the vertical and a line of 60 degrees to the left of the vertical. Of the paraline drawings the isometric most closely approaches the realistic impression of perspective drawings.

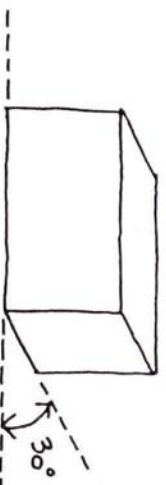
For more information see: Visual Notes for Architect and Designers by Norman Crowe and Paul Laseau



5-38 Plan oblique, Shamberg House by Richard Meier.



5-39 Elevation oblique, Villa Stein by Le Corbusier.



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