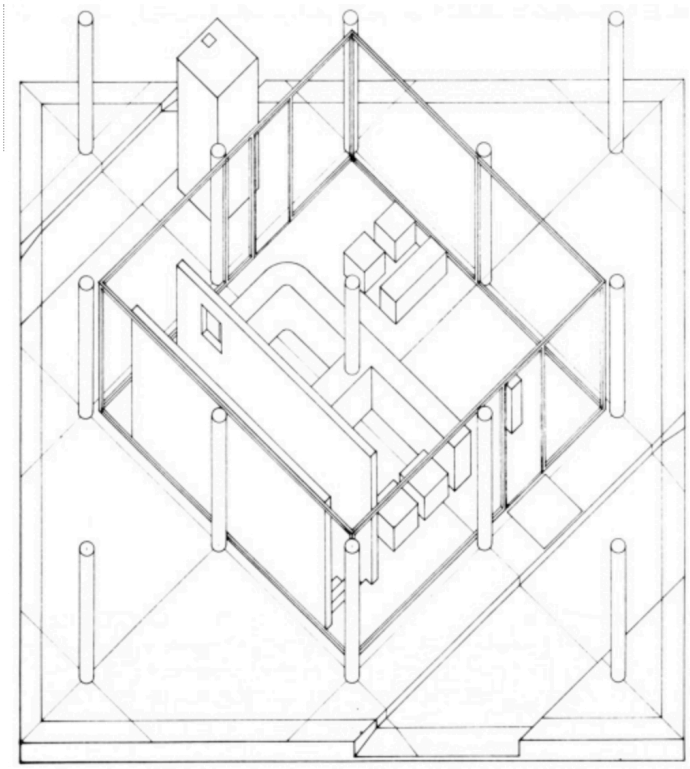
Department of Architecture
Visual Communication
ARCH 5213/LAND5113
First Semester, 2021

Week 6 – Oblique projection – Axonometric and Isometric



John Hejduk
Diamond House Project
House A, 1980

http://archiveofaffinities.tumblr.com/post/25878005628/john-hejduk-diamond-house-project-house-a-1980

In-Class Exercises

Before you start each drawing, take 5-10 minutes to do a quick freehand sketch of the drawing on a sheet of butter paper that is taped over the plan. This is a 'trial run' and should be used to determine the placement of the plan in relation to the A3 sheet of paper, the maximum/minimum heights of various elements in the drawing, and to get the basic gist of drawing in this manner.

Part A:

Do two axonometric buildings of the Unitec Marae building at 1:200. These should be hardline drawings, using a combination of 30 degree and 60 degree angles. You should make one of these drawings of a 'long' façade, and the other of a 'short' façade. *Use different angles for each of the two drawings.*

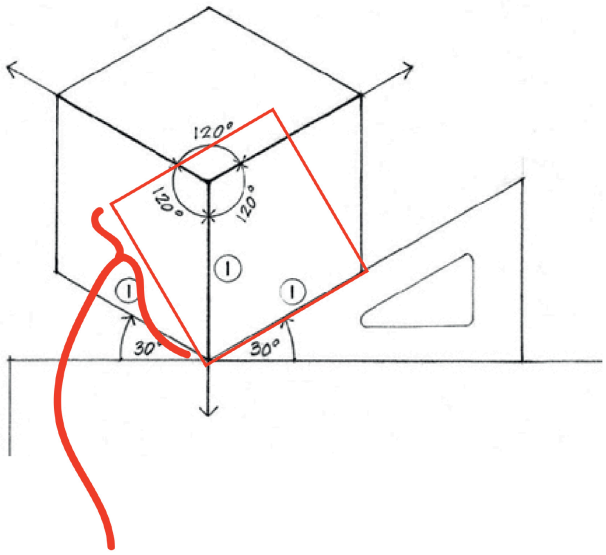
- On a sheet of cheap paper or butter paper, using graphite pencil, do an axonometric view of the building. It might be easiest to use butter paper for this, because you can tape the butter paper over the plan, then project lines up from the plan. Think of this butter paper drawing as your working drawing. We would like the final drawing to be done on good paper (no photocopy paper), so you will need to get it from the tracing paper to the good paper.
- When you make an axonometric drawing, you rotate the plan either 30/45/60 degrees from horizontal, then project lines vertically to the true height. In this drawing, we will be using a combination of 30 degree and 60 degree angles. It doesn't matter which angle goes on which side (i.e., the 60-degree angle can go on the right or left), but the angle determines what is emphasized in the drawing; we will be seeing more of the façade/space that is on the 30-degree angle.
- Remember that the way you tape down your plan will determine what you see and what you don't see. For instance, if some elements in the foreground are higher than those in the background, you won't see what's in the background. You might want to consider this when choosing which elevation/view you are drawing. For example, you might not want to be looking at the elevation from the East view, but instead at the other long elevation.
- When you begin your drawing, you will be projecting upwards, so you will want to tape your plan toward the bottom of your page.
- While making this drawing, you should be asking yourself some of the following questions: What is this type of drawing good at communicating? Does this type of drawing present any problems/difficulties in terms of communicating the three-dimensionality of the object or the space? What kind of decisions have to be made when planning/making such a drawing? How can I make this drawing more visually interesting? How can I use line weights more effectively?
- If it is difficult to show portions of the axonometric that you would like to show, consider doing a cutaway axonometric (removing portions of certain walls/roof) to give a view inside the space, or using a dashed line to draw a 'phantom wall' and effectively look through part of the building.
- Once you have transferred your working drawing onto good paper, adjust line weights as appropriate. If you like, hatch/shade the drawing to make the forms look more three-dimensional.

Part B) Using the given plan, draw it in isometric view.

- Now, you will be using the *same plan* to generate an isometric view

of the building. You might want to draw the short façade that you haven't drawn yet, so that each drawing shows a different view.

- In an isometric, the angles of each façade are 30 degrees from the horizontal. Because of this, all three viewed sides (top or bottom, two elevations) are emphasized equally. Does this influence the angle at which you orient your plan?



The fact that you are using two 30-degree angles in an isometric drawing means that you can only project one of the elevations upward with vertical lines. You will have to measure and draw the other elevation along the 30-degree line, using your scale ruler and the measurements from your plan and elevations. Or, you can draw a 30/30-degree isometric grid at the appropriate scale, and lay out your axonometric on this grid, measuring heights from the elevations, and widths and depths from the plan.

- Ask yourself the same questions that you asked yourself above when drawing the axonometric (see above).
- Once you have transferred your working drawing onto good paper, adjust line weights as appropriate. If you like, you can hatch/shade the drawing to make the forms look more three-dimensional.

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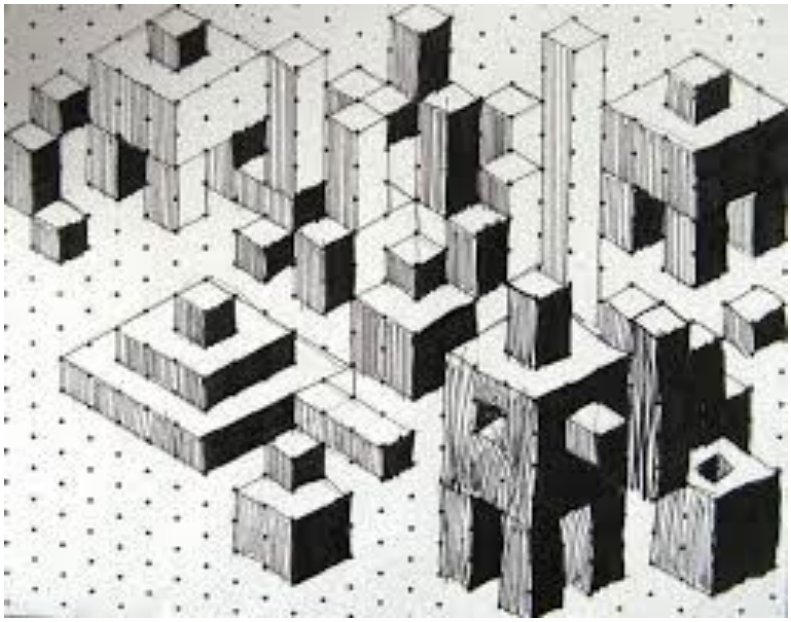
Homework exercise



For your homework this week, you will be taking one of the drawings that you did in class (axonometric or isometric) and using it to produce an *immaculate* inked drawing. The process of taking a pencil drawing and tracing it onto Drafting film with ink is a good way to turn a working drawing into a presentation drawing. This does not mean that you cannot present working drawings; working drawings that show the process of how the drawing was made are often the most informative and beautiful drawings. But, if your working drawings have been worked too much and are looking a bit messy or unclear, or if the nature of your project calls for more crisp, precise drawings, then this is a good technique to use. As we will see in this exercise, the drafting film is great to work with because you can work both on the front of it, and on the back to get a range of tones and interesting effects.

Before beginning this drawing, you might want to use an extra sheet of A4 drafting film– or share an A4 sheet with a classmate to save money-- and practice a bit on it. Try inking just a portion of your drawing and doing the shading, so that you can get a feel for working on the vellum.

On an appropriately sized sheet of drafting film (remember that oblique drawings show true lengths of things), trace your axonometric or isometric drawing with pencil. This will give you another chance to improve the composition of your drawing, as you can change the placement of the drawing on the new A3 sheet.

Now, go back over these lines and ink them. When you ink the drawing, make sure you DO NOT attempt to do this freehand. Try to work in one direction (generally, from the top of the drawing down), so that you are not moving the parallel edge over freshly drawn ink – it will smear if it is still wet. You might want to work from right to left, drawing all vertical lines first, then letting them dry before going back and drawing the other lines. This, as with all hardline drawings, should be very neatly done – a single sloppily drawn line can undermine the authority of the entire drawing.

Once you have inked the entire drawing satisfactorily, choose one side of each element to be in shadow one to be in partial shadow (mid-tone), and one to be in the light (white). If you have some cylindrical elements, you might want to add one or two more tones to render the

cylinder accurately. ***On the back*** of the drawing, ink in the portions of the drawing that should be black. If you have large areas of drawing to fill in, you can use liquid india ink and a brush to fill them in. Just use the ink sparingly, and make sure you let the ink dry completely before flipping the drawing over or attempting to work on it further.

When the ink has dried, use a graphite pencil to shade in the middle tone in the appropriate places ***on the back*** of the drawing. Try to get this middle tone halfway between black and white – not too light or too dark. For the white portions of the drawing (the tops of the elements in the drawing below), use a bit of white acrylic paint and a brush, or white coloured pencil to fill them in ***on the back*** of the drawing. Do this carefully, making sure not to go outside of the lines. If you do go outside of the lines with the ink or the paint, you should be able to gently scrape off the bits of tone you want to get rid of.

Remember that you should be spending about 5-6 hours on this drawing, so we should see something that has been made with the utmost care.