

## 1110: WEEK 12-14: Project05: Folded Planes and Section Drawings

### OBJECTIVES:

Students will continue to:

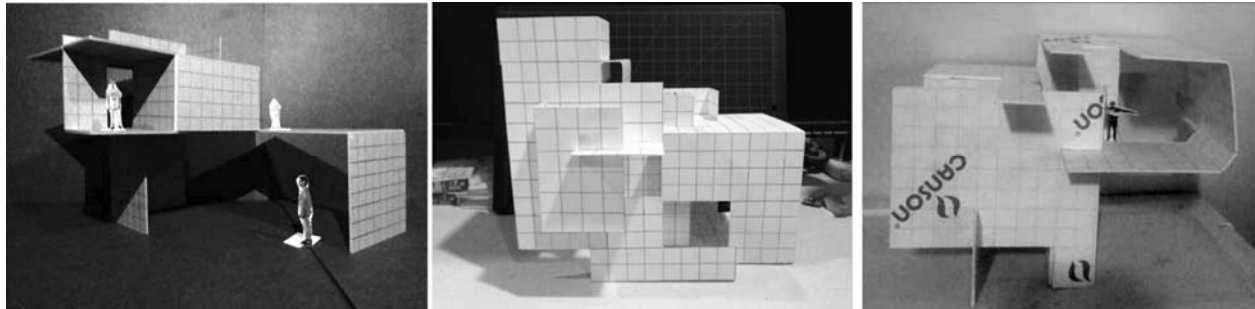
1. Develop strategies for translating and manipulating grids into three dimensional compositions and spaces.
2. Investigate proportional relationships, hierarchy, order, rhythm, balance and adjacencies within a composition.
3. Apply an iterative process in order to arrive to a sophisticated solution.
4. Analyze and develop these techniques to make a habitable space
5. Use section drawings to investigate interior spatial relationships.

### DESCRIPTION:

Design is rarely a question of “right” or “wrong.” Fundamental to a design education is learning how to make elegant spaces and volumes through an iterative design process within contextual, programmatic, and material constraints. This project will test the use of intersecting planar surfaces and folded planar surface in order to create a sequence of spaces. The goal of this assignment is to produce habitable space using basic recognizable arguments (examples: stacking, horizontal, looping) where a sequence of space are experienced. In addition to creating the physical models use sectional drawings to help describe the interior spatial conditions.

*Lab & Homework:*

### PART I: In Class Folded Planes Workshop



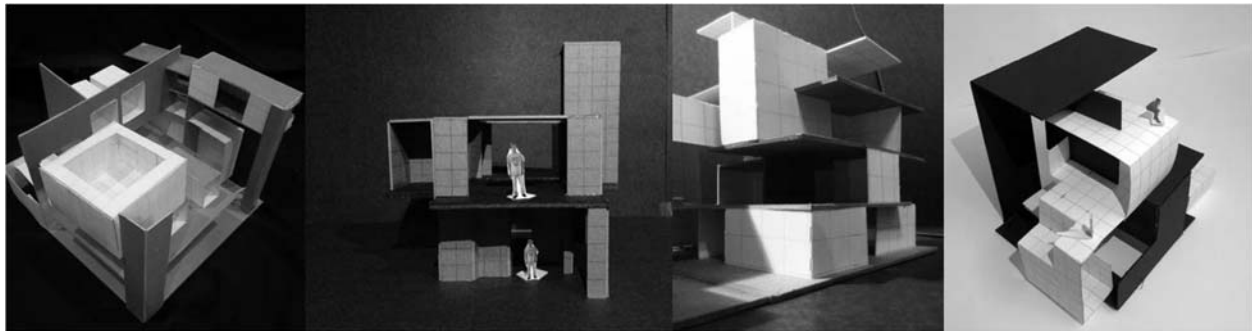
**Using a single sheet of 11x17 generate a sequence of spaces that vary in scale, proportion and amount of enclosure. You must cut and fold a single plane into itself in such a way that no plane segments are detached or discarded.** You will soon realize that different compositional strategies and folding sequences produce very different spatial and volumetric outcomes. Some models will be volumetrically static while others dynamic and expansive. In short, some models will be more “architectonic” than others. This exercise sharpens your ability to understand and describe these qualities.

### PROCESS:

Part A:

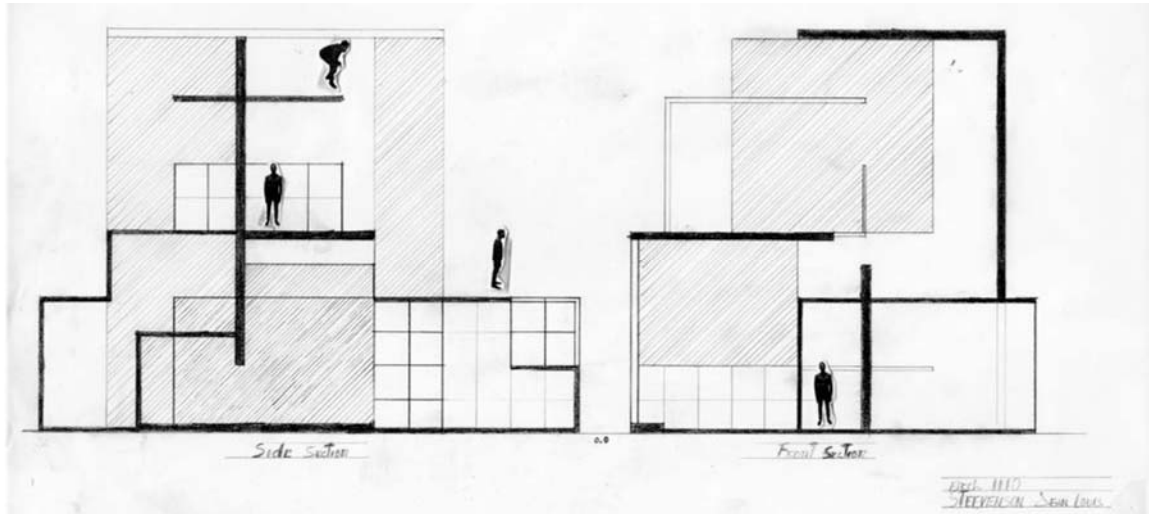
1. Carefully draw a 1/2" X 1/2" grid on both sides of an 11" x 17" sheet of **4-ply (1/16" thickness)** Bristol Board or any other material with the same thickness.
2. Score, fold, and tab each sheet into a 3-dimensional composition. Note scoring the backside of the plane prior to folding creates neat edges. Rules:
  - Only 90 degree connections
  - No coplanar, edge connected to edge or overlap, conditions
  - Minimum 1" overlap on all tabbed connections.
  - No piece may measure less than 1" in any direction
  - Do not detach and discard any of the original planes
  - The composition must be stable and stand on its own
  - Do not use glue.
3. Place at your folded model a silhouette in three positions (standing, stretching, kneeling) at the same scale.

### Part B: Folded Planes Final model



1. Create a composition with a minimum of two distinct covered (interior) spaces that connect with each other through one or more paths either horizontally, vertically or both ways. Part of the process is to rearrange the new folded pieces of your cube composition in such a way that they interact with free horizontal and vertical planes to form an architectural space. When Building the model the following should be considered:
  - a. One horizontal surface is present that might be considered the "floor".
  - b. Vertical planes that enclose and define the edges of the space.
  - c. Consider the materials being used for the construction i.e: 1/8" bristol board, card board, or basswood for partitions, slabs and structural elements. In other words, differentiate the material of the free planes (1/16") from the folded geometries (1/8"). Apart from different thicknesses you may use different material or color.
2. Choose a scale that fits best your composition and position silhouette in different postures inhabiting the produced space.
3. Create a label with your name and a title for your composition
4. Take 17 photos of your free plane and fold composite model against white or black background. Use the Lab spotlight to make clear shadows. Take 4 photos at bird's eye view, 4 photos at eye level, 5 photos as top, front, back, left and right orthographic views and 4 close-up photos.

### Part C: SECTION DRAWINGS:



Cut a minimum of two sections through your model to help describe the interiors space. When selecting where to place the section consider where the most important spaces are, how they connect, and cut through those. Think of the section as a tool to help explain the narrative of the spatial sequence. Ask what spaces do I want to expose through the section that are not evident by looking at the model.

#### When drawing the sections remember to do the following:

- Draw a thick horizontal line as your ground.
- All floors and walls should be drawn as double lines (NOT single lines) – remember these surfaces have thickness.
- Measure volumes with precision.
- Poche with black ink all the cut areas.
- Shade accordingly projected areas. In other words shade accordingly areas that you do not cut but still see them as elevations. Areas closer to your sectional plane are brighter and those that are further away are darker.
- Add silhouettes in scale to your sectional drawings interacting with the space.