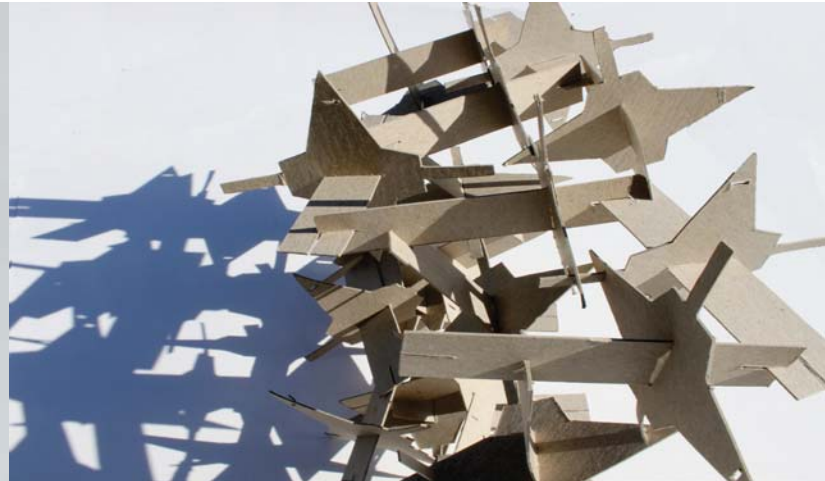


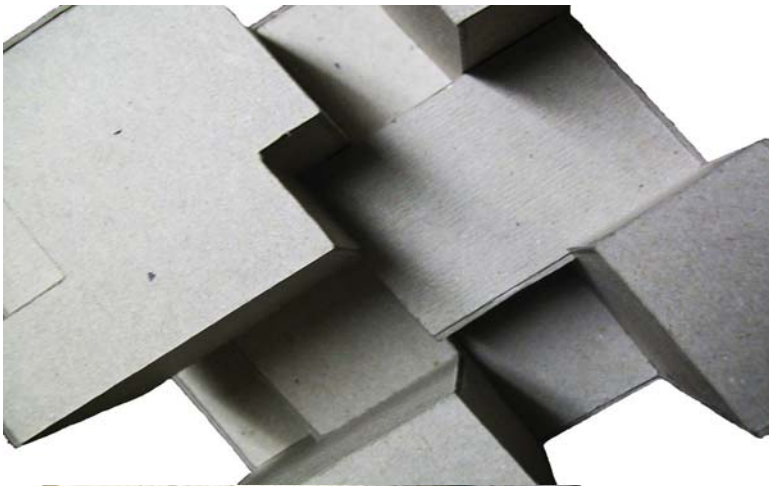
**ARC 102: Introduction to Architectural
Design**

Simplistic Complexity



By: Mario Garcia-Gillespie
Winter 2011

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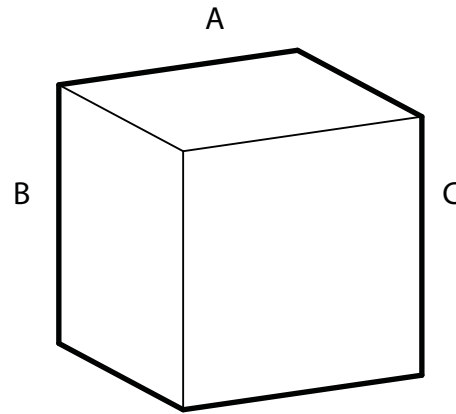
Cube:

In this exercise I took a five inch by five inch cube and divided each side into a unique grid. After my grid was established I removed volumes from each side, until one-third of the cube's total volume was removed. I planned which volumes I would remove and completed a rough drawing of the cube on trace paper,. I used that information to create a mock-up model allowing me to understand the final representation before the final model was to be built. I then created the final model with exceptional craftsmanship and drafted the final drawings in true scale on bristol paper. These drawings consisted of six elevations and two axonometric views.

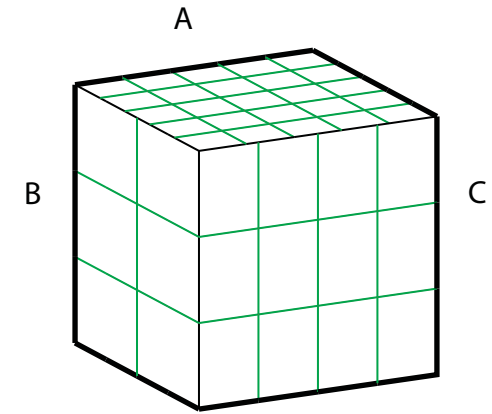
Section:

For this exercise I took my previous cube design and drew a rough sketch of a section taken from the center of my cube. Based on the rough sketch, I created a modeled section using Google SketchUp and developed the final design by letting the surfaces dictate which areas would be altered. When the design was finished I erected a mock-up model. This model helped me to alter my design, in order to create a stronger and more dynamic design. After the final model was created I drafted my perfected design onto bristol including six elevations, two axonometric views, and three sections.

Dividing a Cube



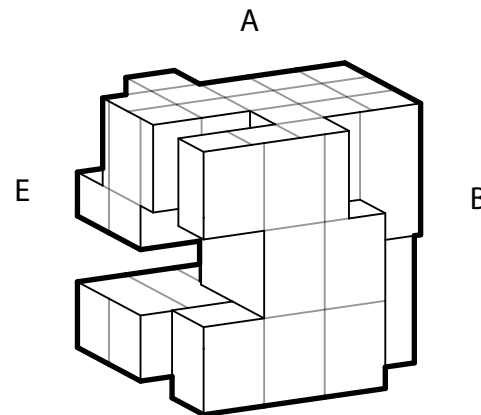
1. Start with a 5" by 5" cube.



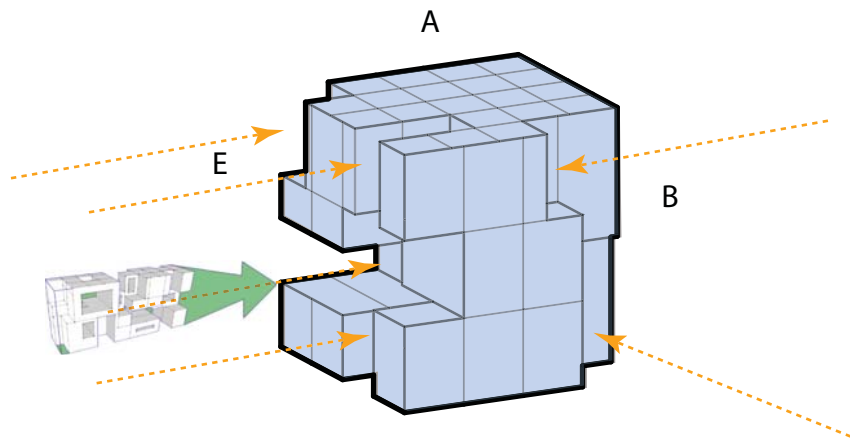
2. Draw the grid lines that correspond to each side.

A: 5 x 5
 B: 4 x 3
 C: 2 x 4

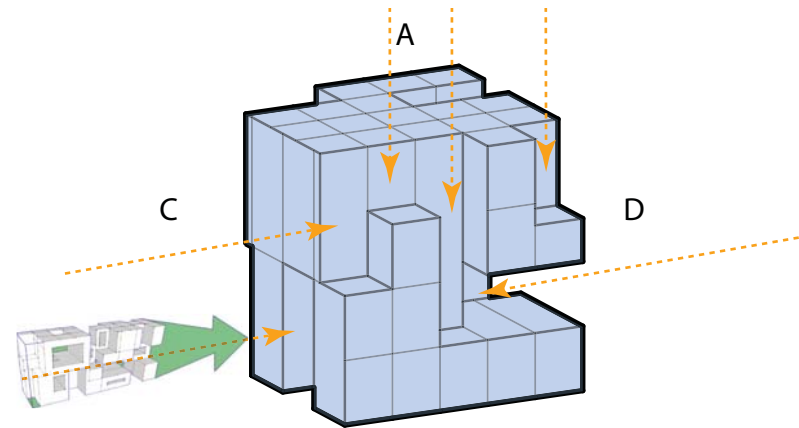
D: 4 x 5
 E: 3 x 2
 F: 4 x 4



5. Now the cube is finished, and has 1/3 of its volume removed .



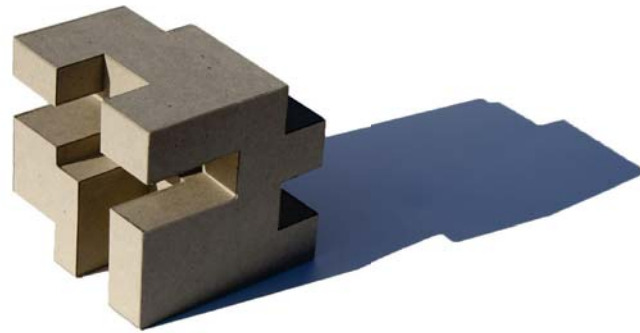
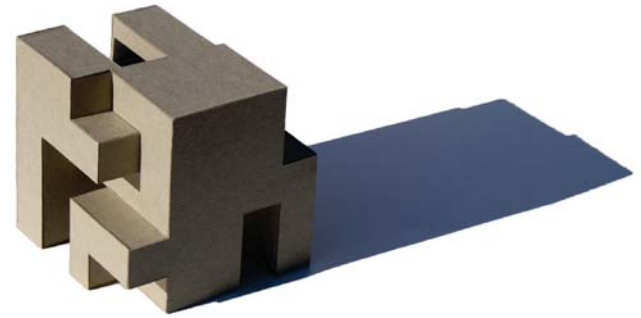
3. Push in the corresponding areas.



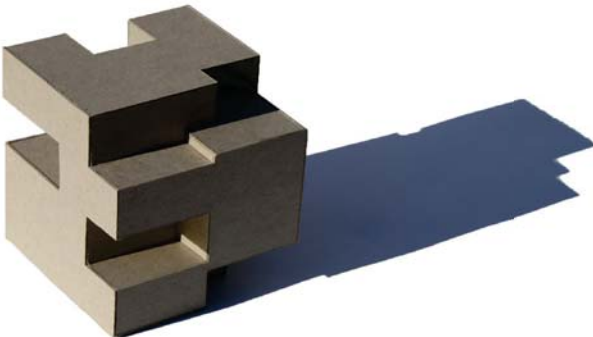
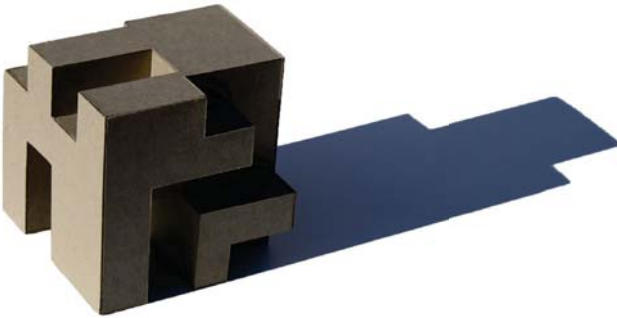
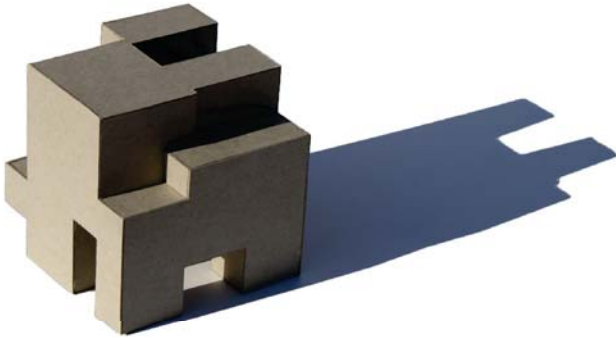
4. On the opposite side push in the corresponding areas.



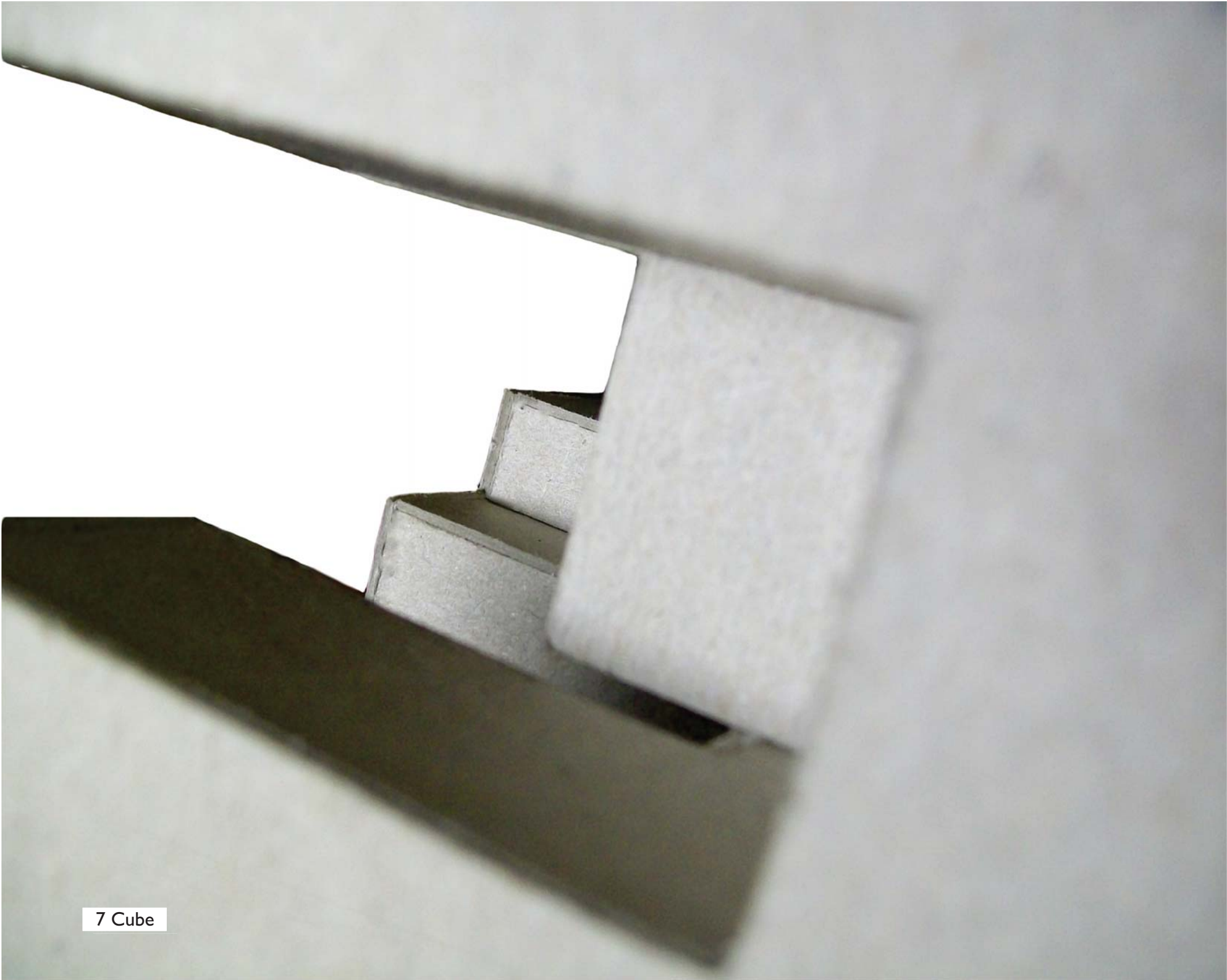
Cube Model



5 Cube

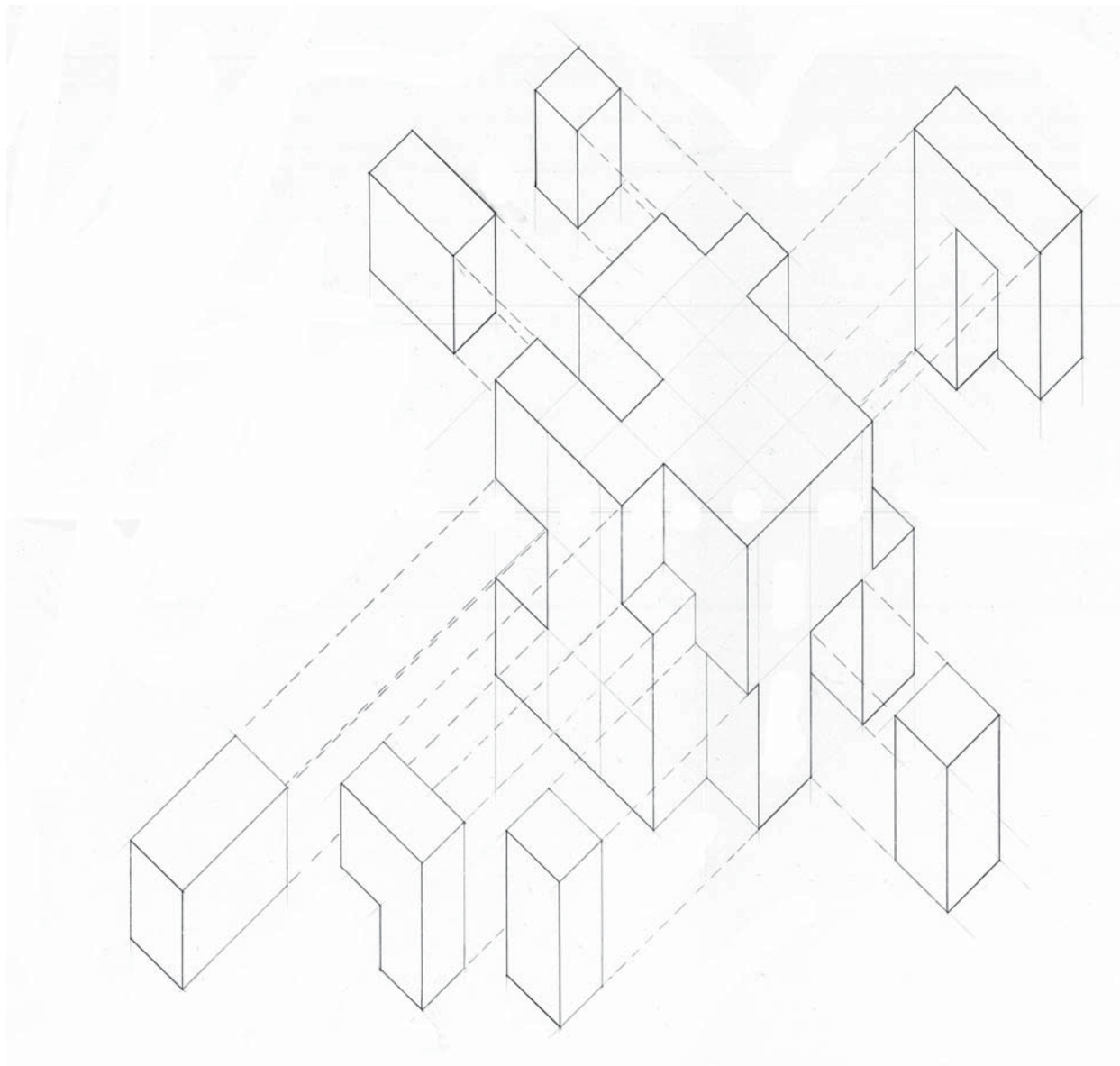


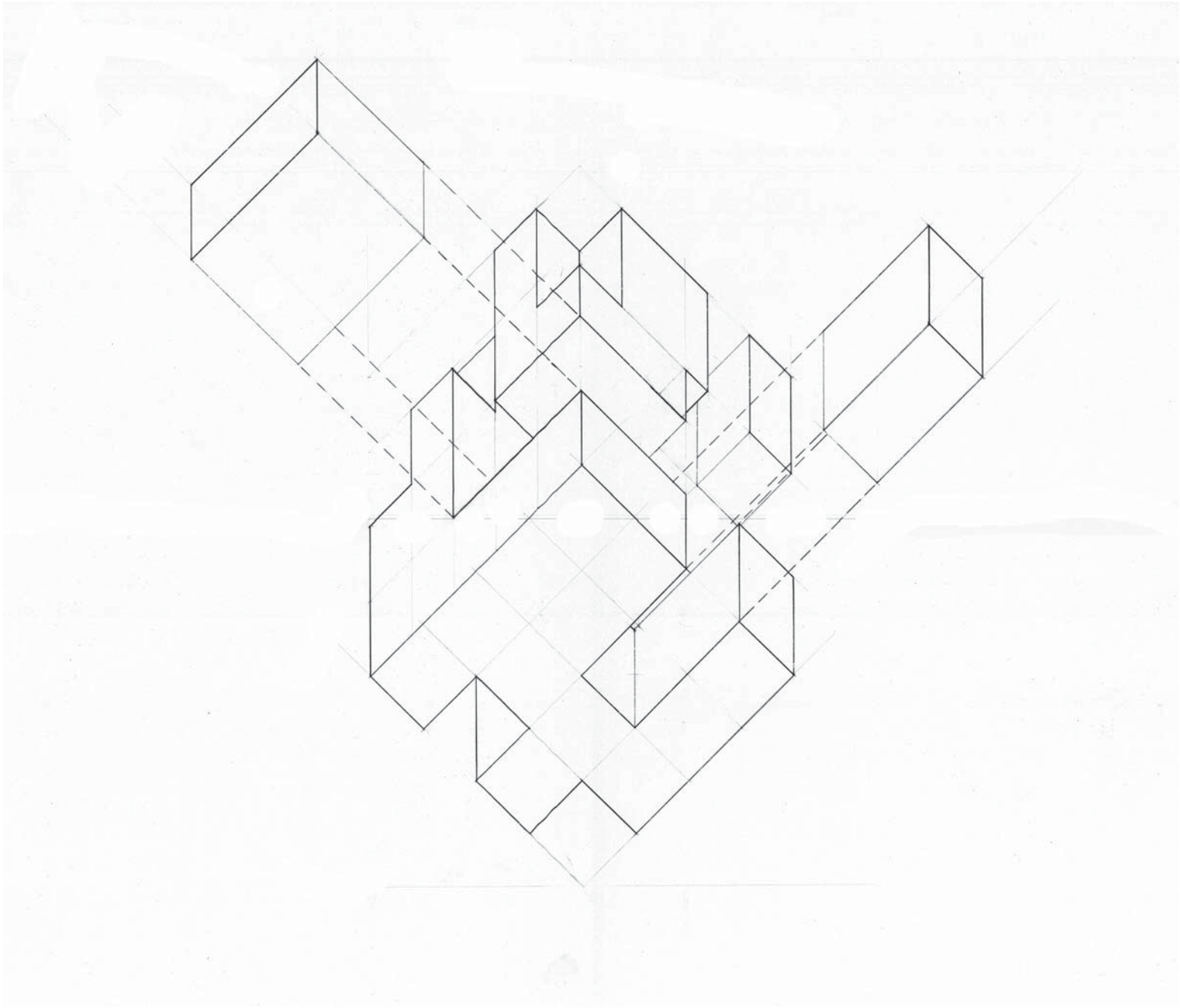
6 Cube



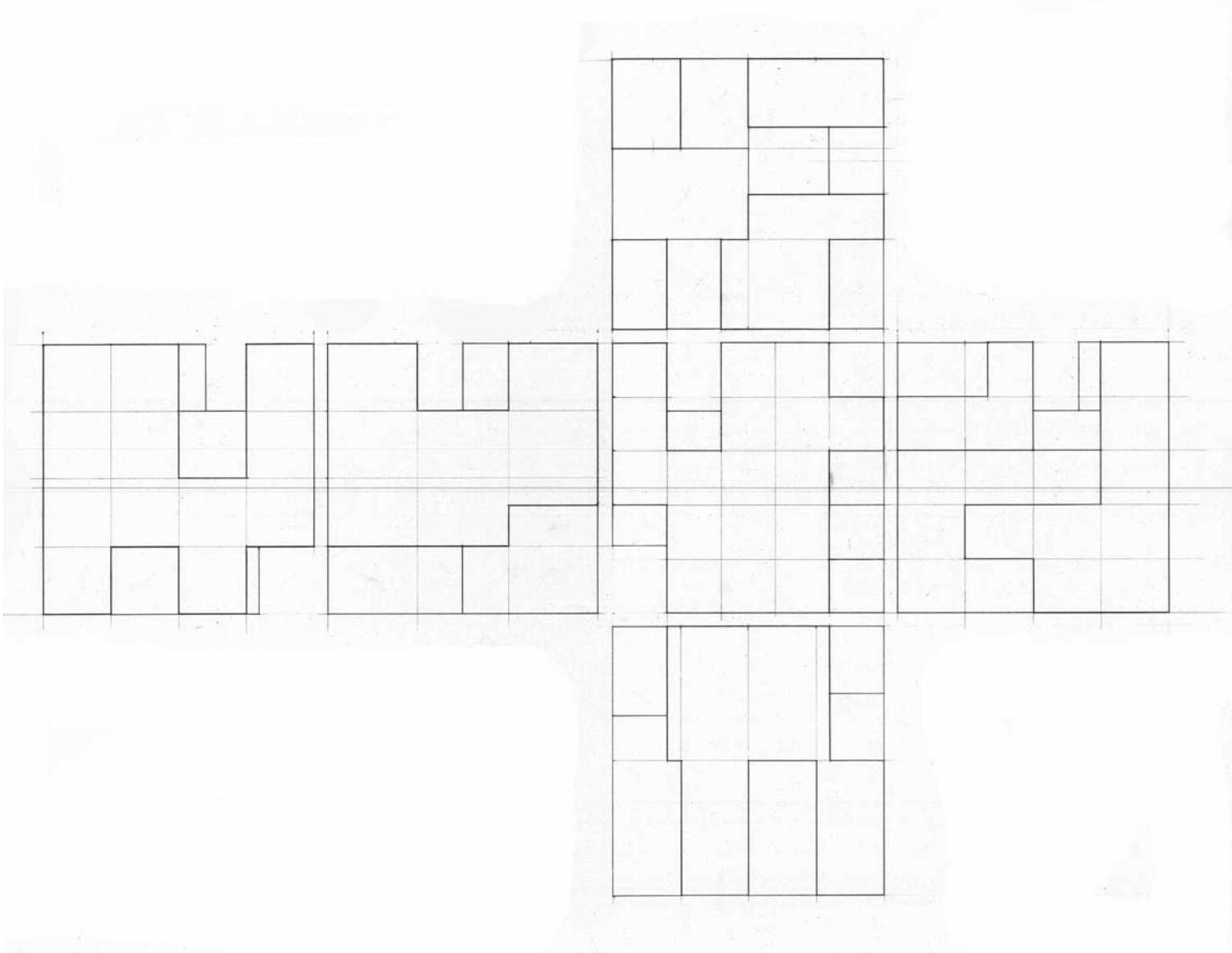
7 Cube

Cube Drawings



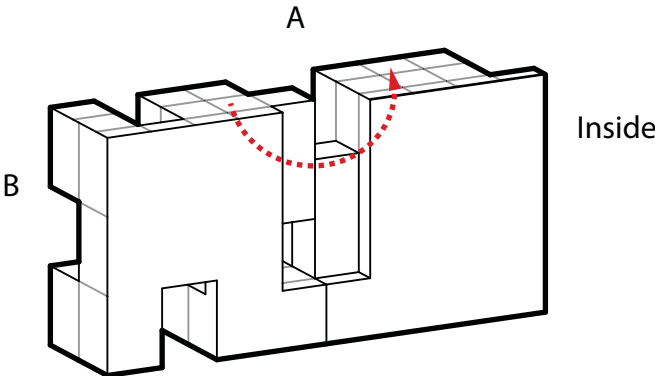


9 Cube

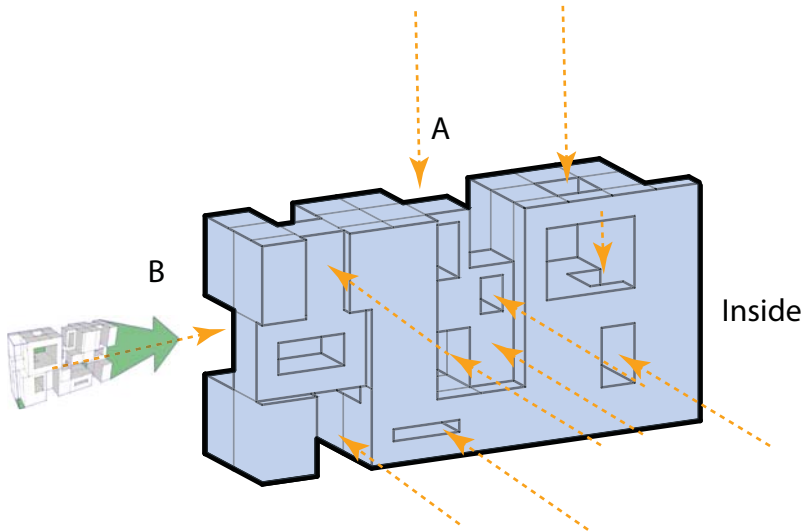


10 Cube

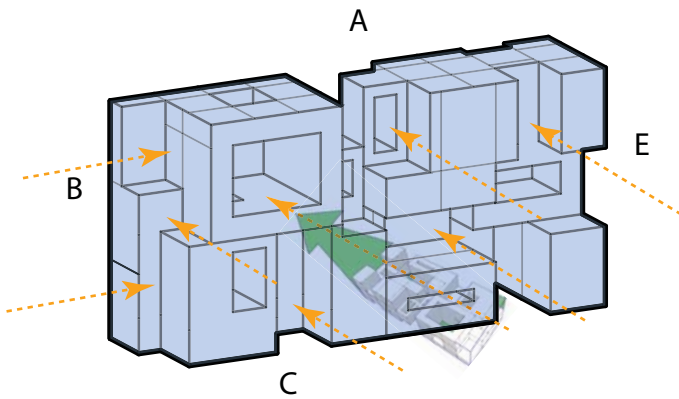
Finding the Section



1. Now cut the cube in half from side B to side D and open it up until side E and C are on the same plane.



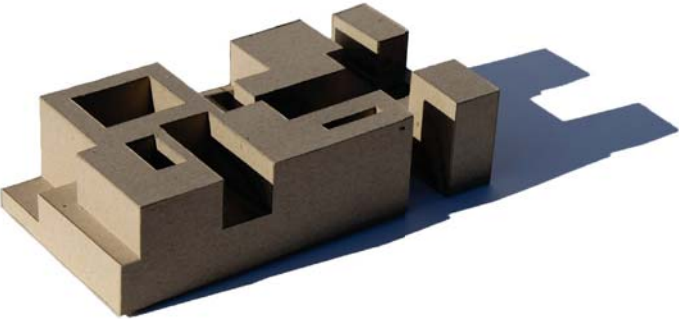
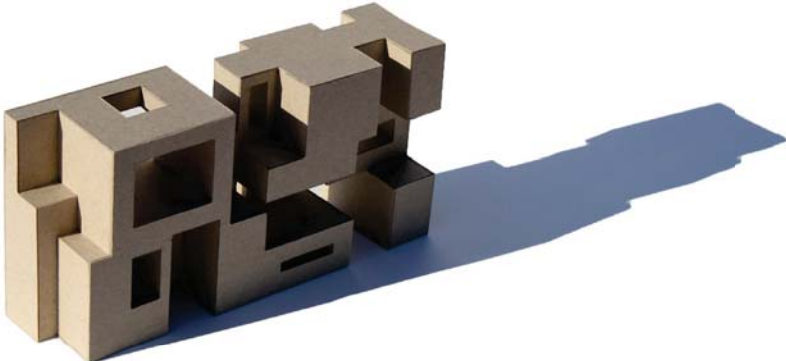
2. Push in the corresponding areas and remove the volume that has been removed.

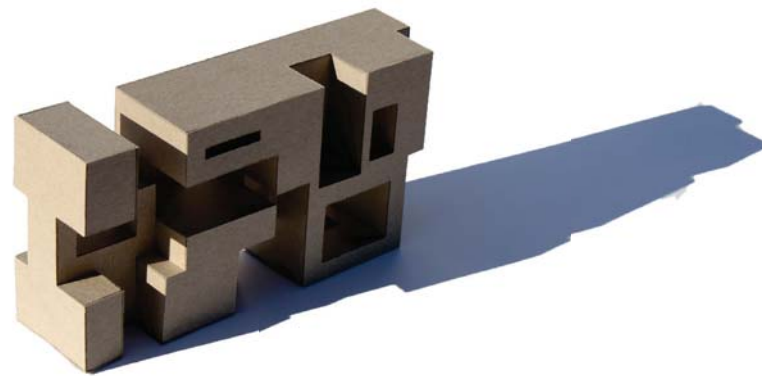


- 3.** On the opposite side push in the corresponding areas.



Section Model

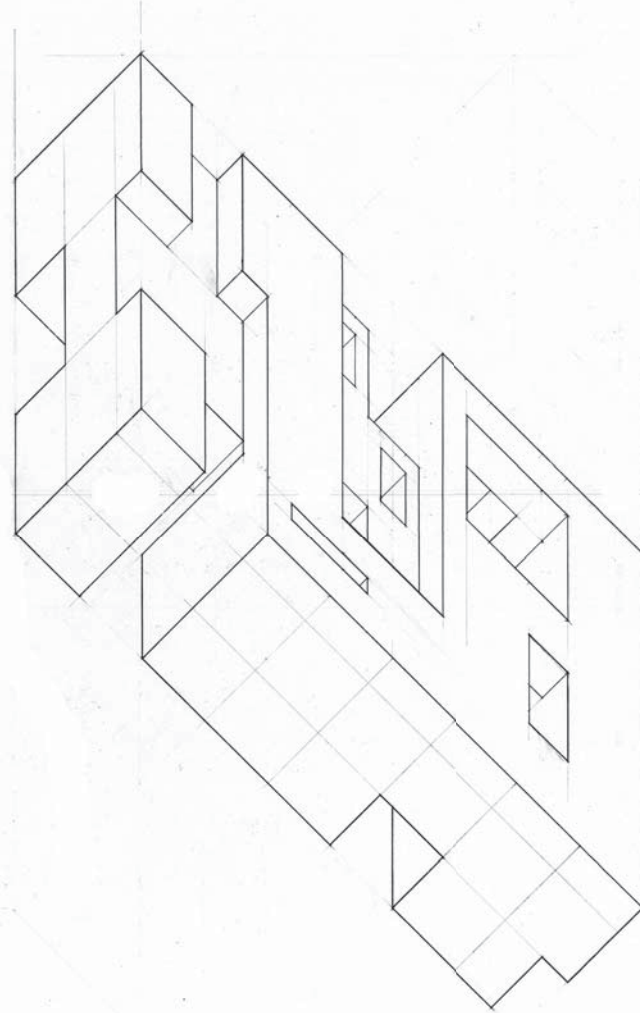
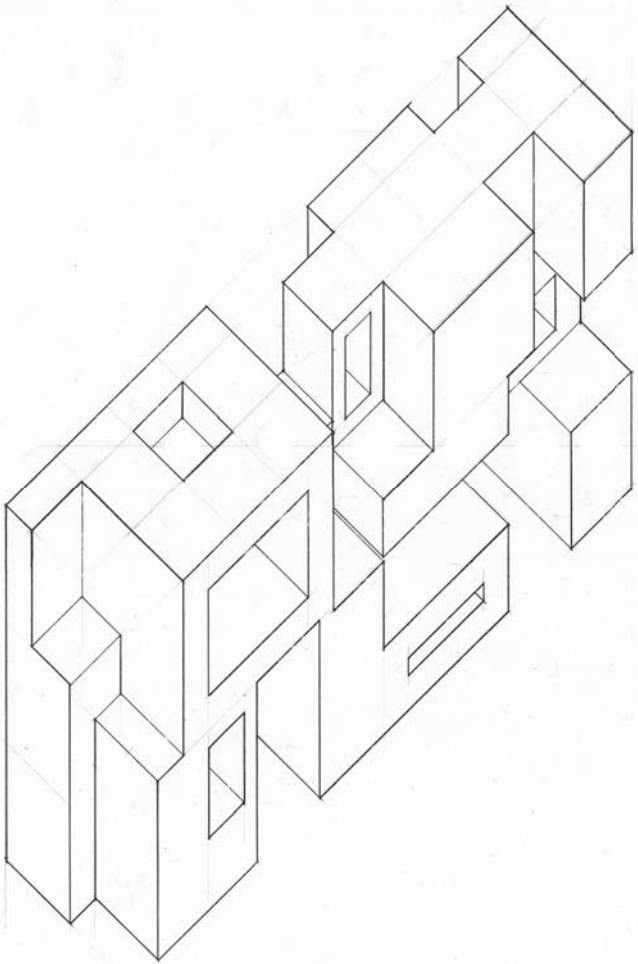


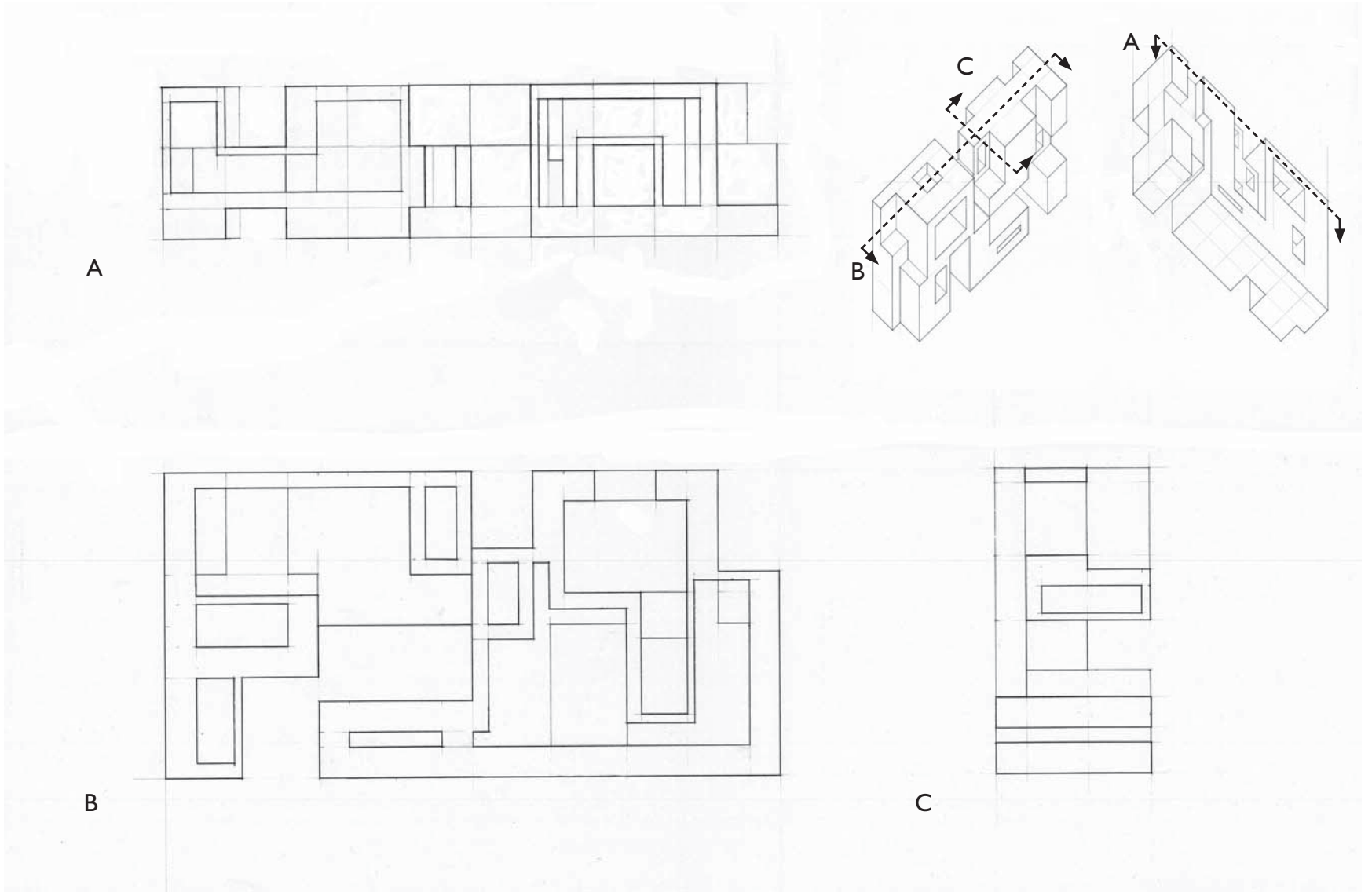




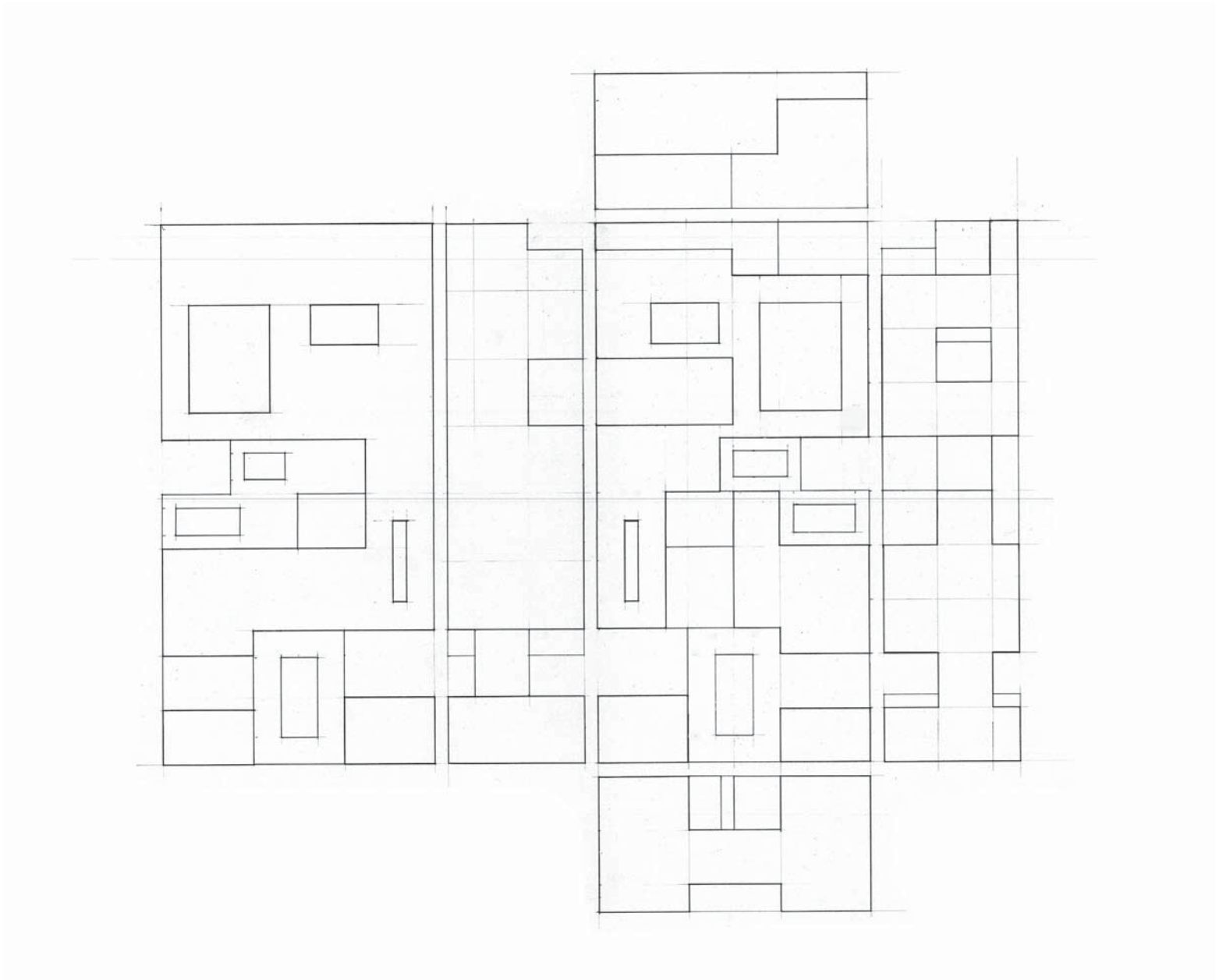
15 Cube

Section Drawings





17 Cube



Module:

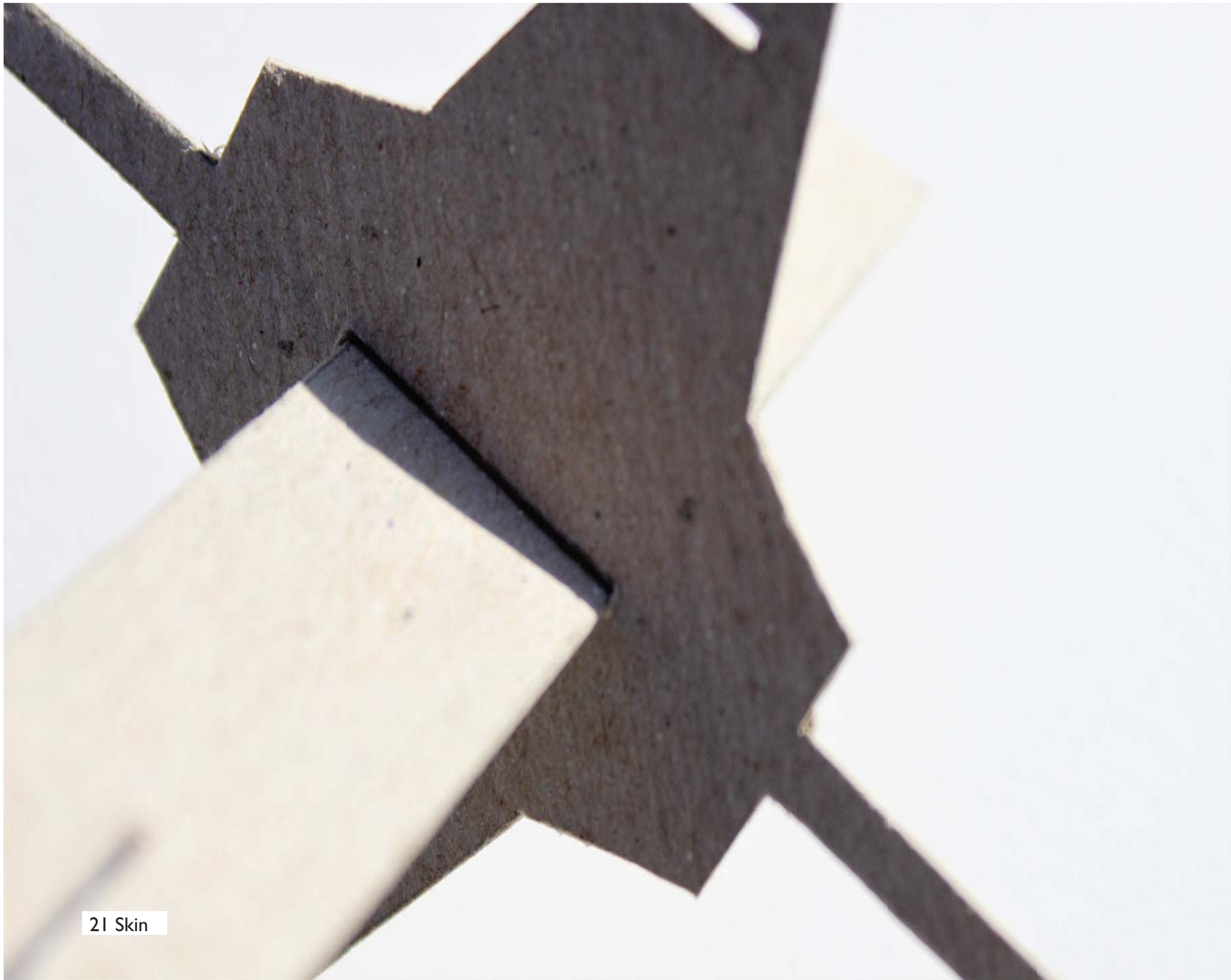
In this project I was assigned the task of creating three walls and a collapsible shelter out of one module. I started my module design by folding paper into shapes and figures. I created roughly forty design ideas and presented two to my instructor. The two I presented I thought were good, but after feedback I presented a four-pointed star module with a single point protruding from the center. This design idea was strong and dynamic in connections. I then elaborated on the design by adding a sixth point on the back, coincidentally resembling a Jax. This module was created out of two separate modules that were connected by a slot in the four-pointed module. After my first module design was finished I decided to create the module out of chipboard and add slits, slots, and rectangular shapes to certain areas. I chose to add these additions to allow for flexibility and strength in the module. The final module was designed using 1/16 inch chipboard to strengthen the module.

Skin:

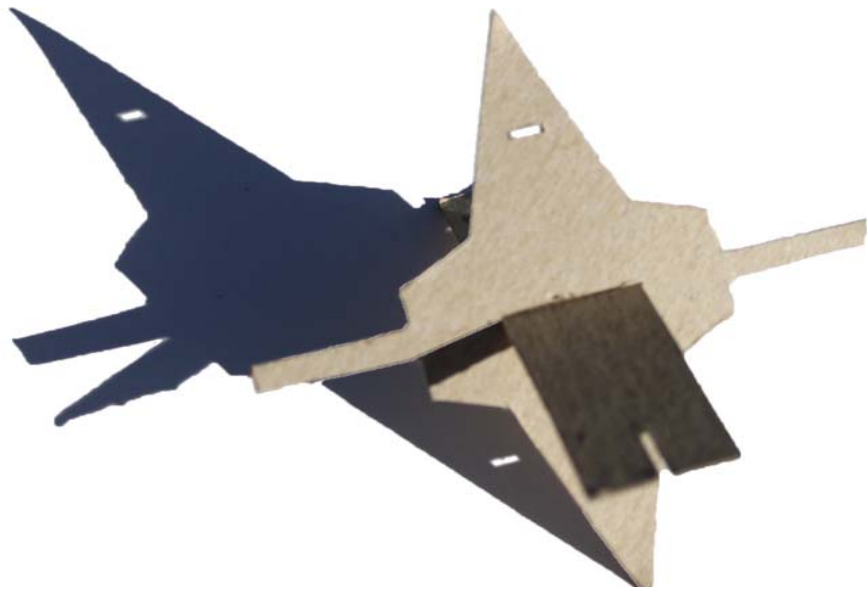
In this exercise I used my module to create three self supporting walls of various transparencies. The three walls I constructed by creating nine inch tall units, and I connected them by alternating the module connection. I then altered the position of the rectangular module and the length that each connector allowed in between each module. This alteration allowed me to create walls with 25%, 50%, and 75% transparency. Each wall is firmly connected and can continue to be connected if a greater lengthen is desired.

Shelter:

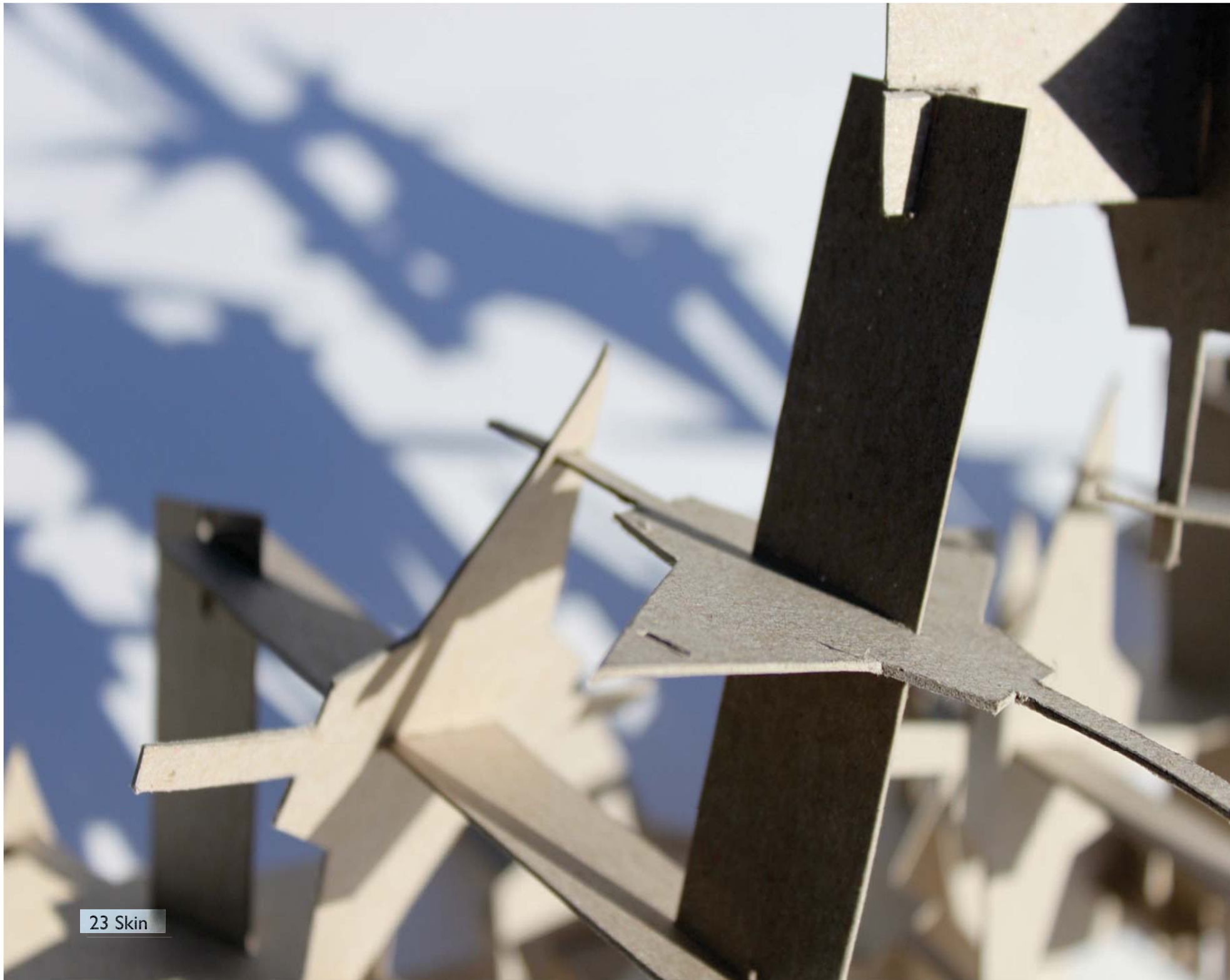
In this exercise I used the same module design from the walls and created a collapsible shelter that was one foot two inches by one foot two inches by eleven inches. I initiated my design by building the outer wall base, and then building up until I had reached a respectful height. I then created a roof and dynamically heighted the design by removing modules to create more openings. The openings allow for more transparency, greater communication between the inside and outside, and openings for entering or exiting the shelter.

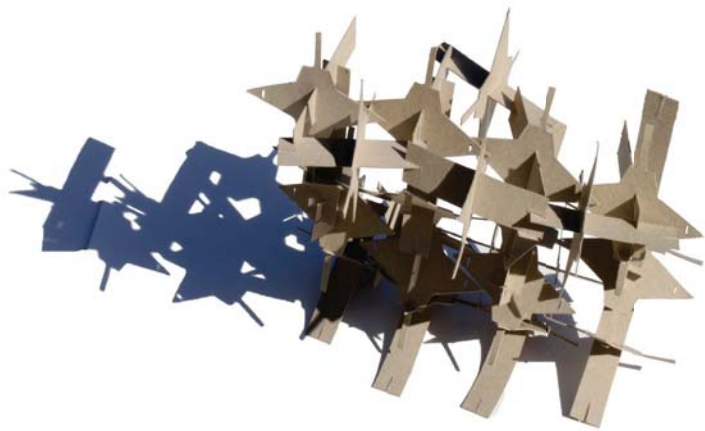
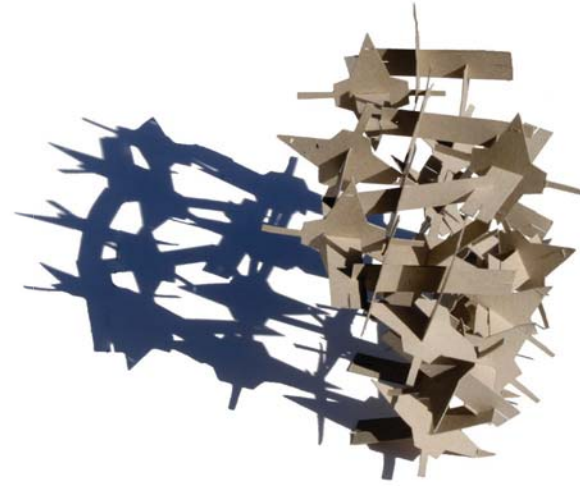
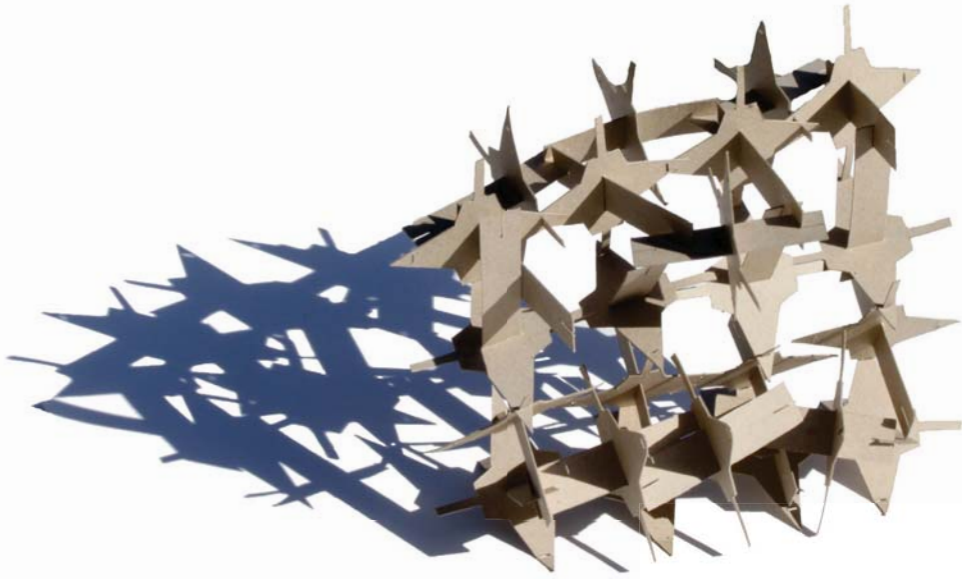


21 Skin

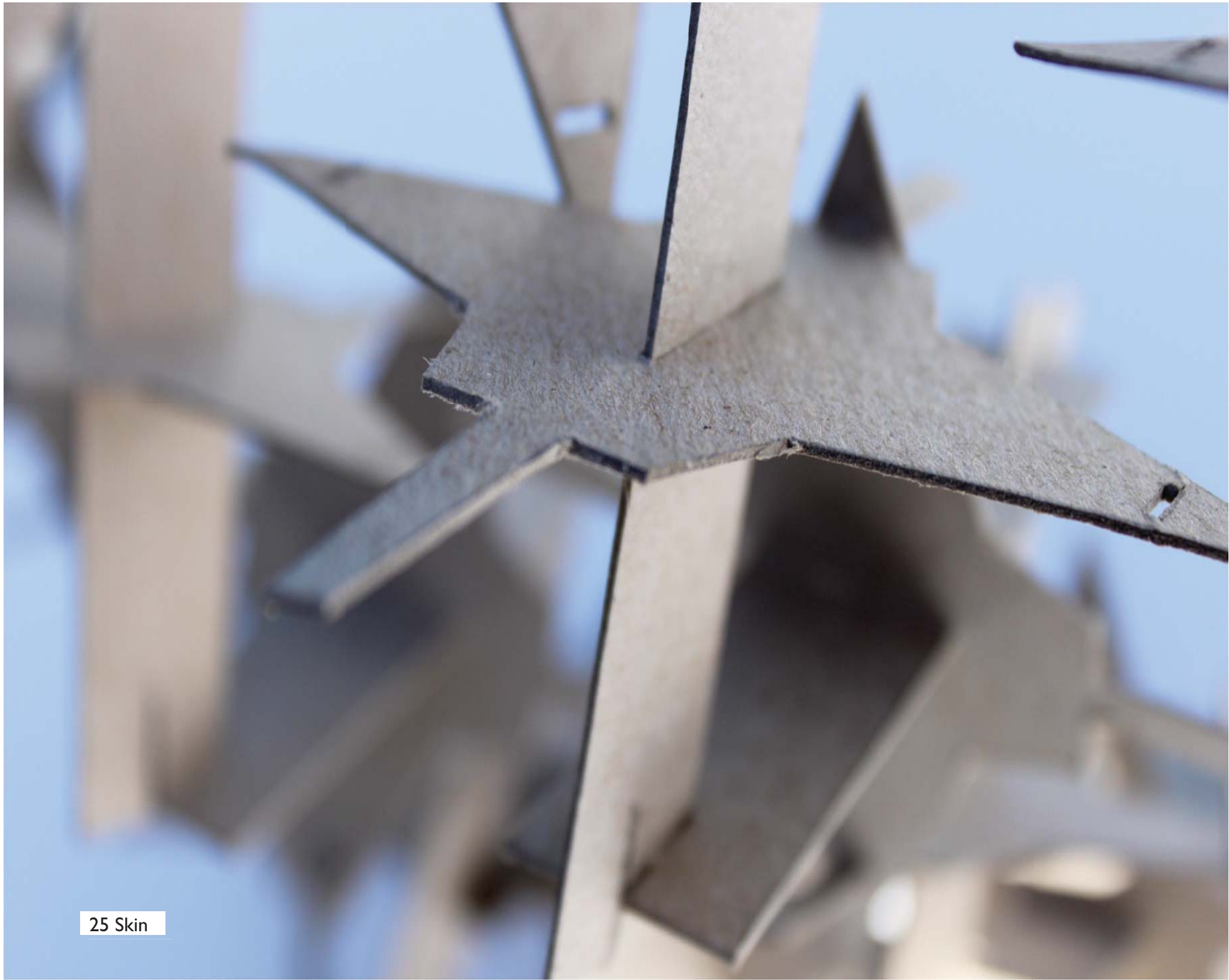


Module

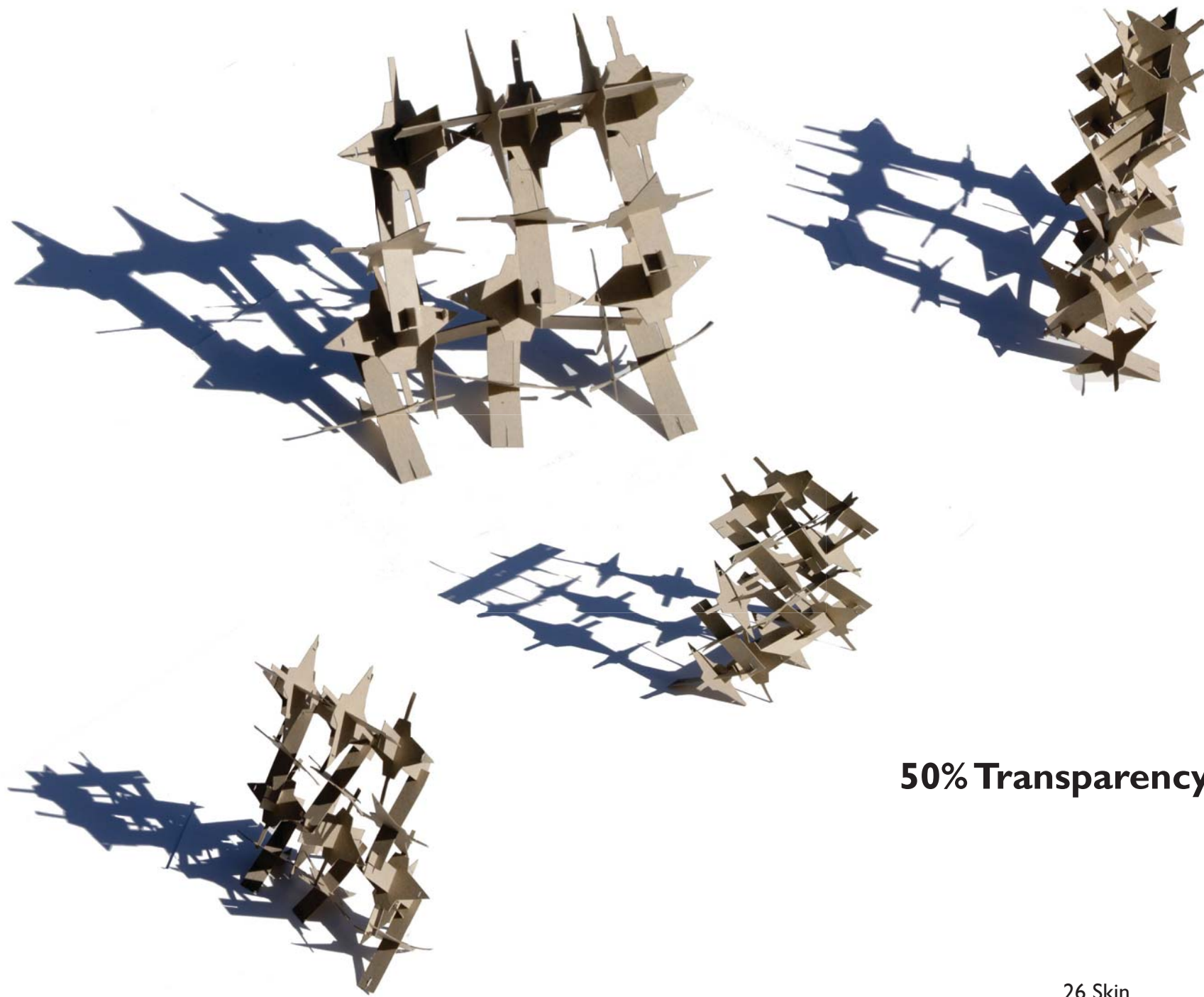




25% Transparency



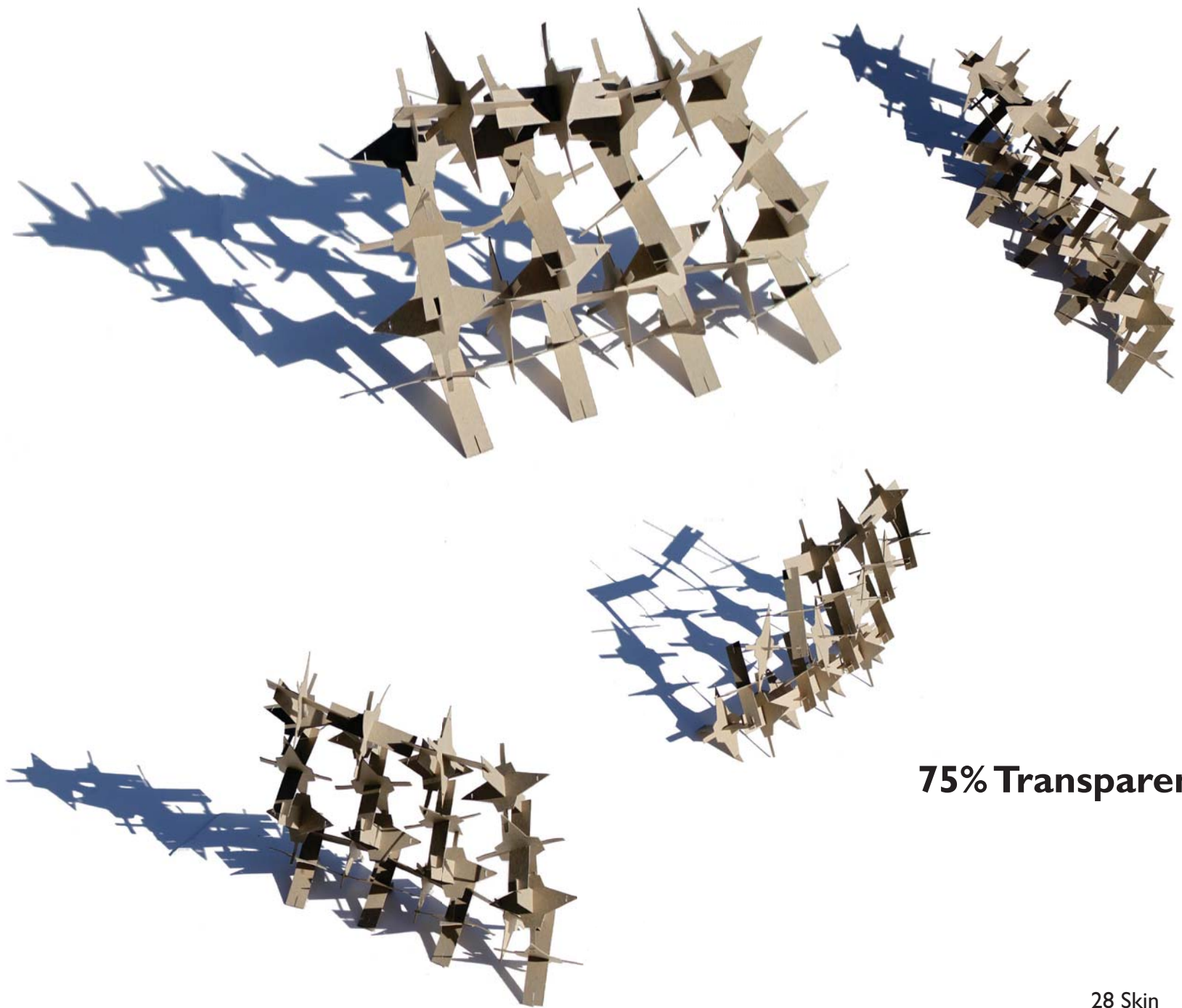
25 Skin



50% Transparency

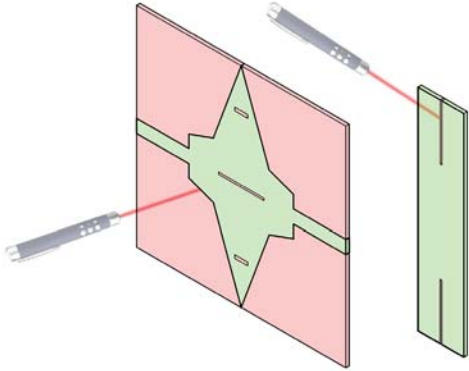


27 Skin

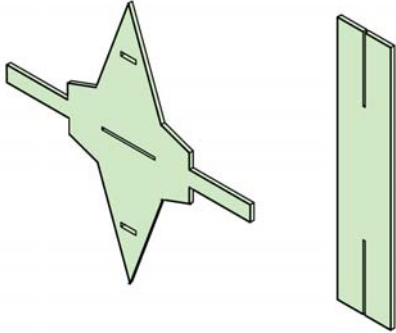


75% Transparency

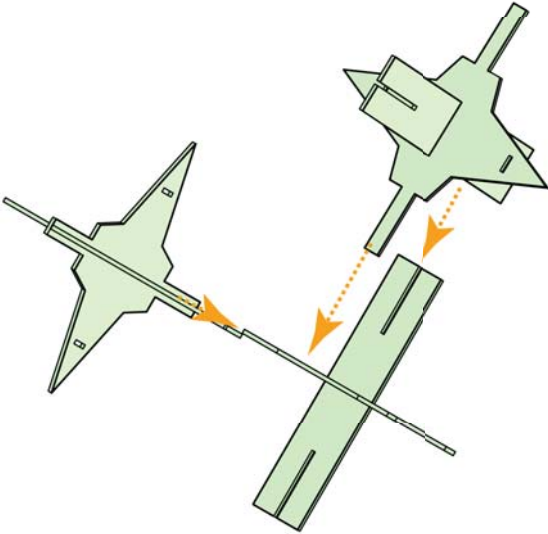
Module and Skin Instructions



- 1.** Take the pre-drawn 4" x 4" square and cut out the first four pointed shape. For the second piece cut out the 1/16" slivers at each end.



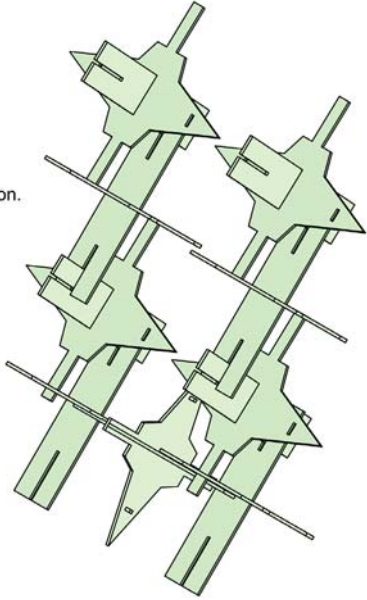
- 2.** The two fully cut peices should look like the above figures.

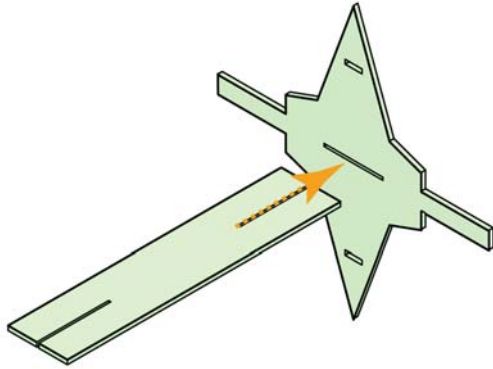


- 5.** The modules join together by rotating the module to insert the corresponding receptors together.

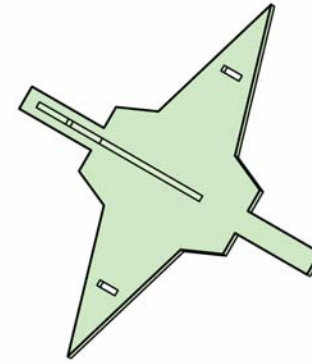
6.

The Modules will begin to form an overall shape that can be guided to fit your desired function.

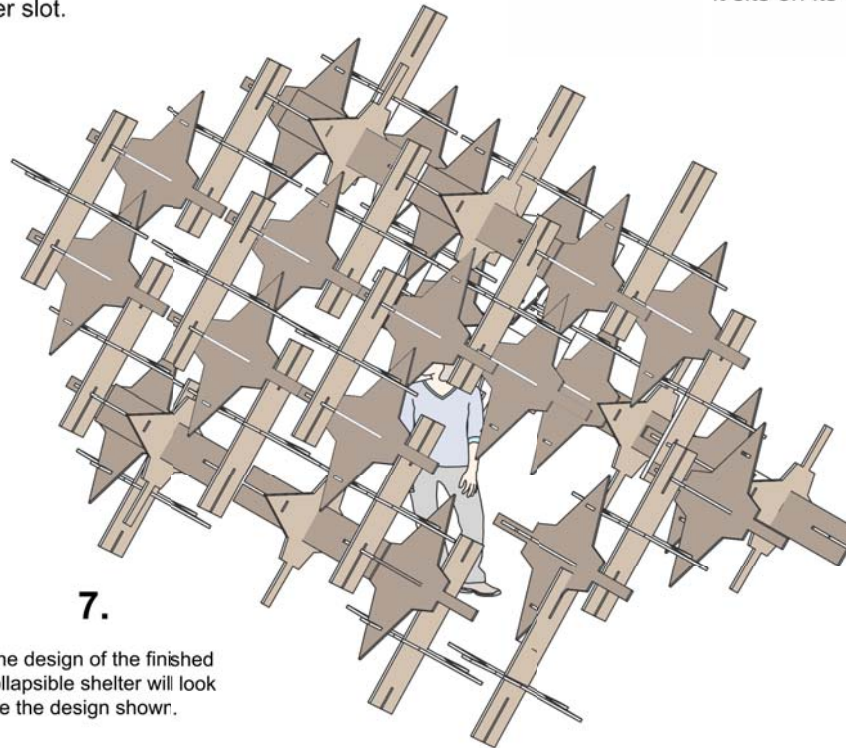




- 3.** Rotate the rectangular shape 90°, then insert the shape into the four pointed peice's center slot.

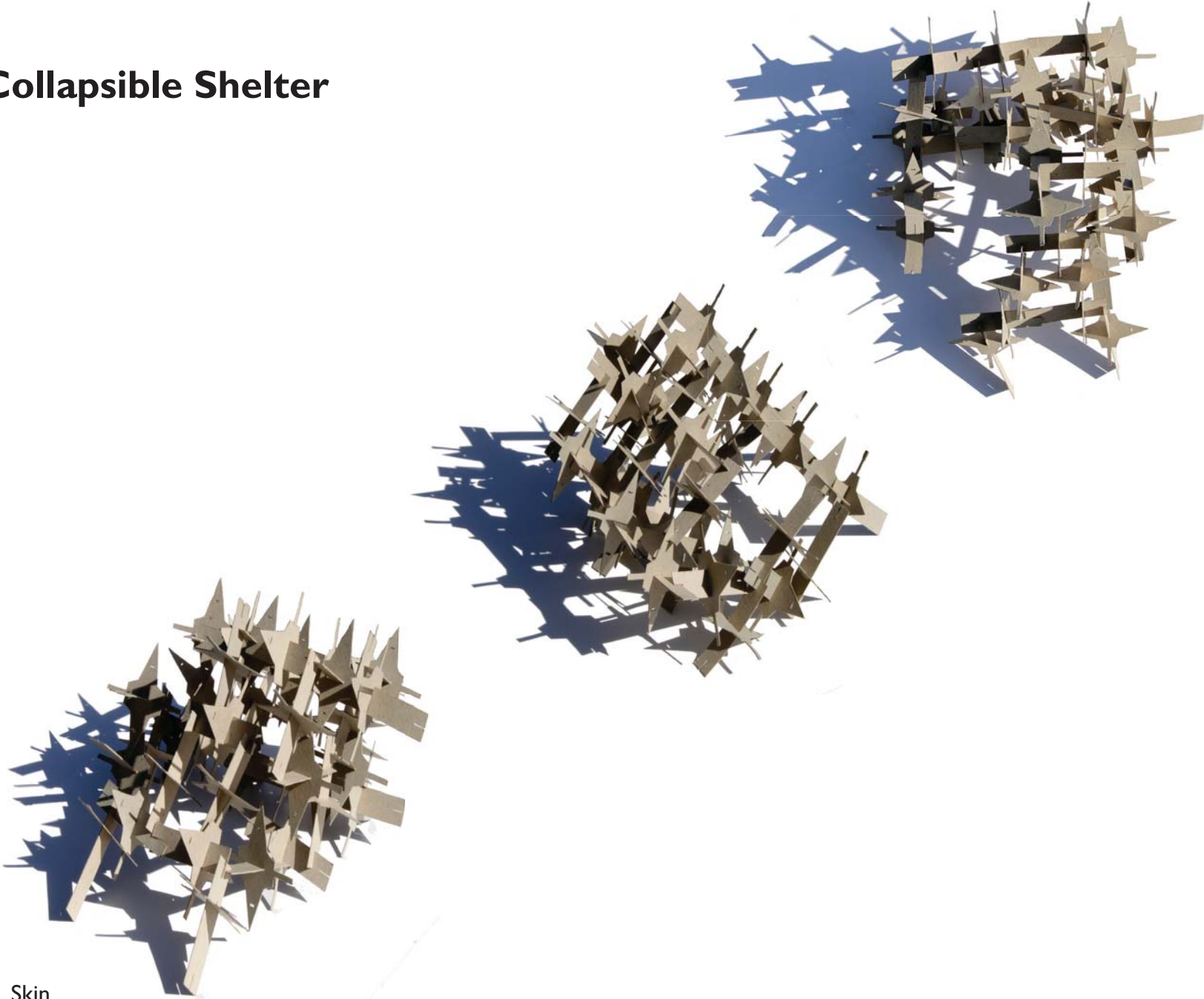


- 4.** The module is finished and it sits on its side at a 45° angle.

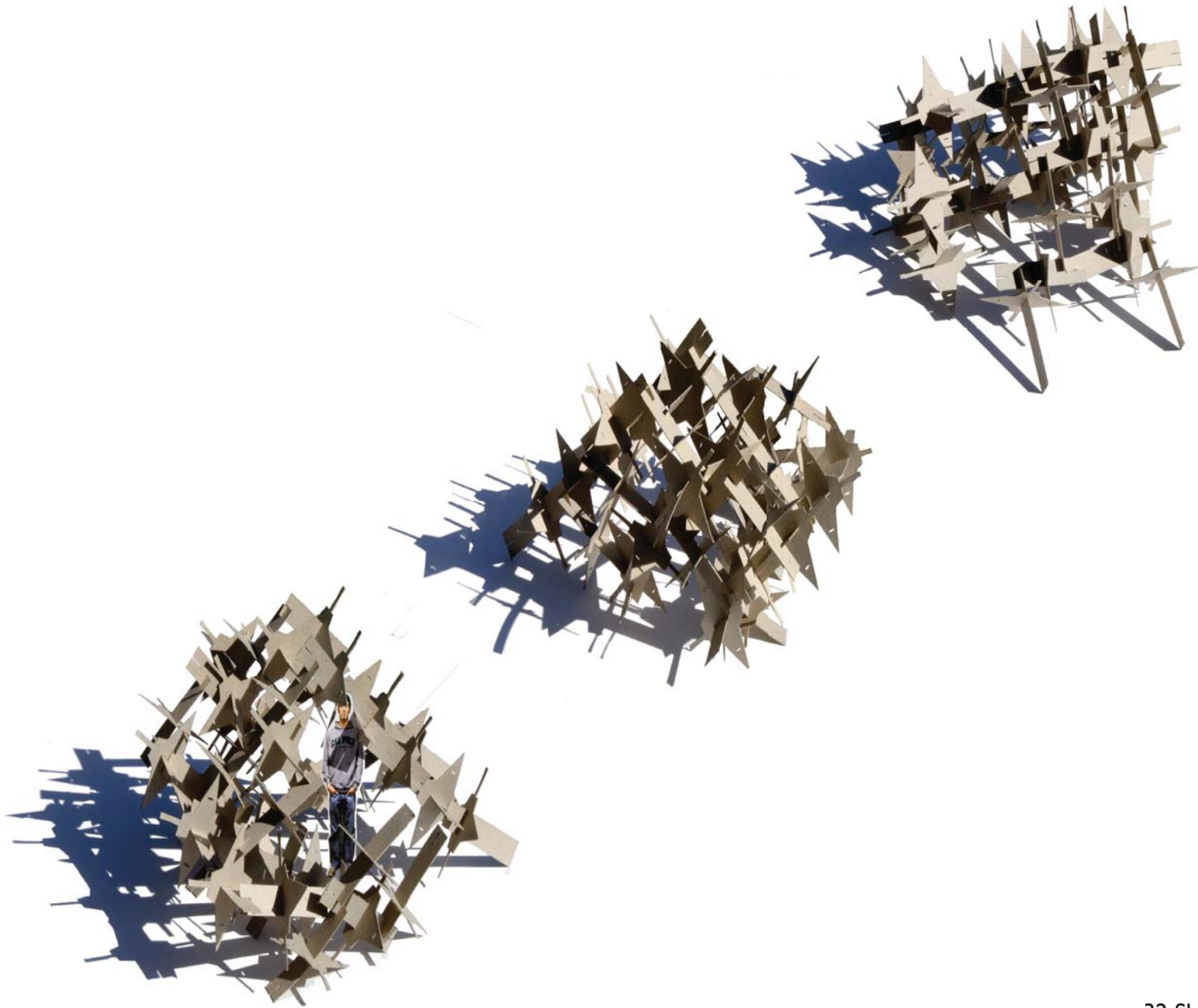


- 7.** One design of the finished collapsible shelter will look like the design shown.

Collapsible Shelter



31 Skin





Shelter Drawings

