

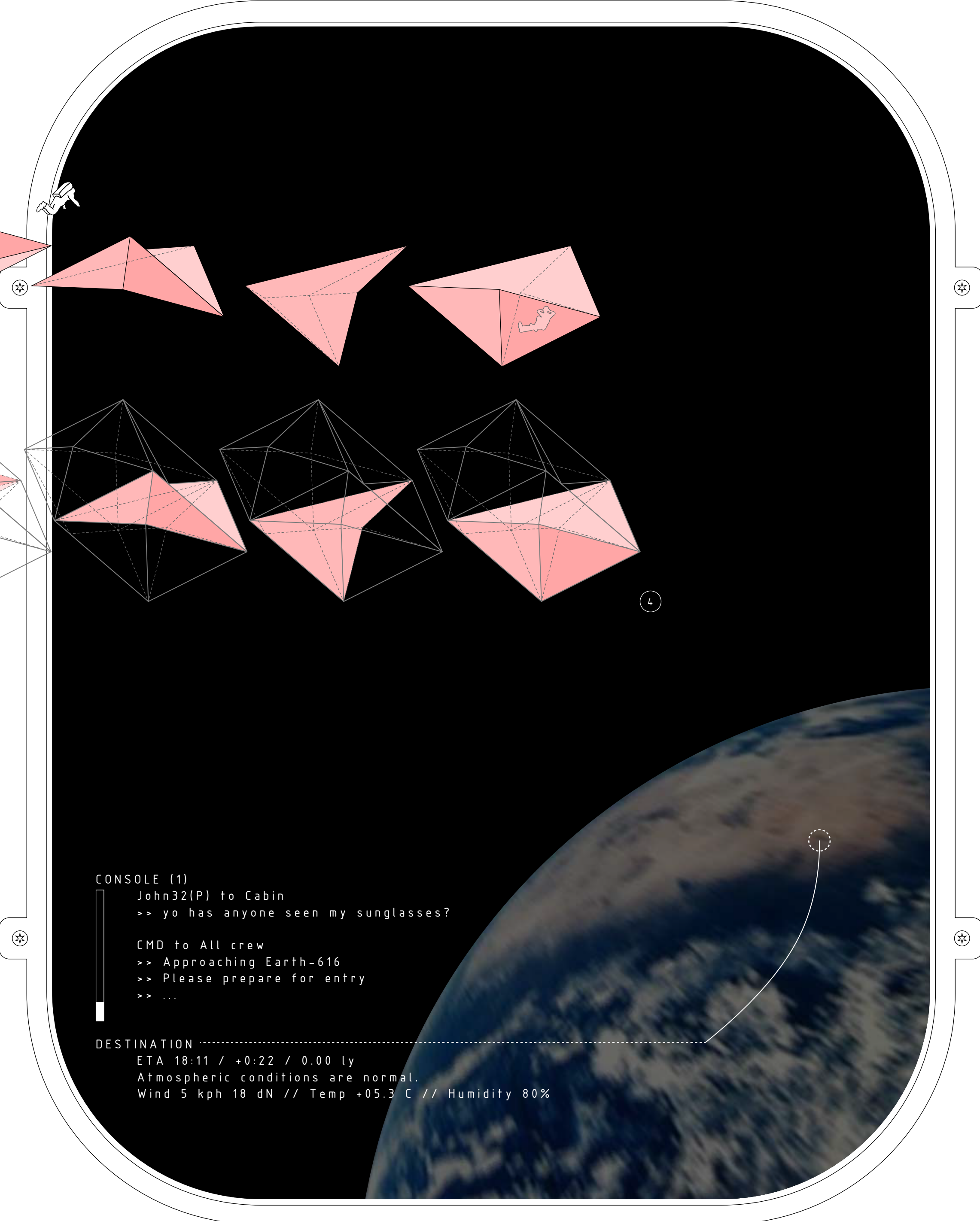
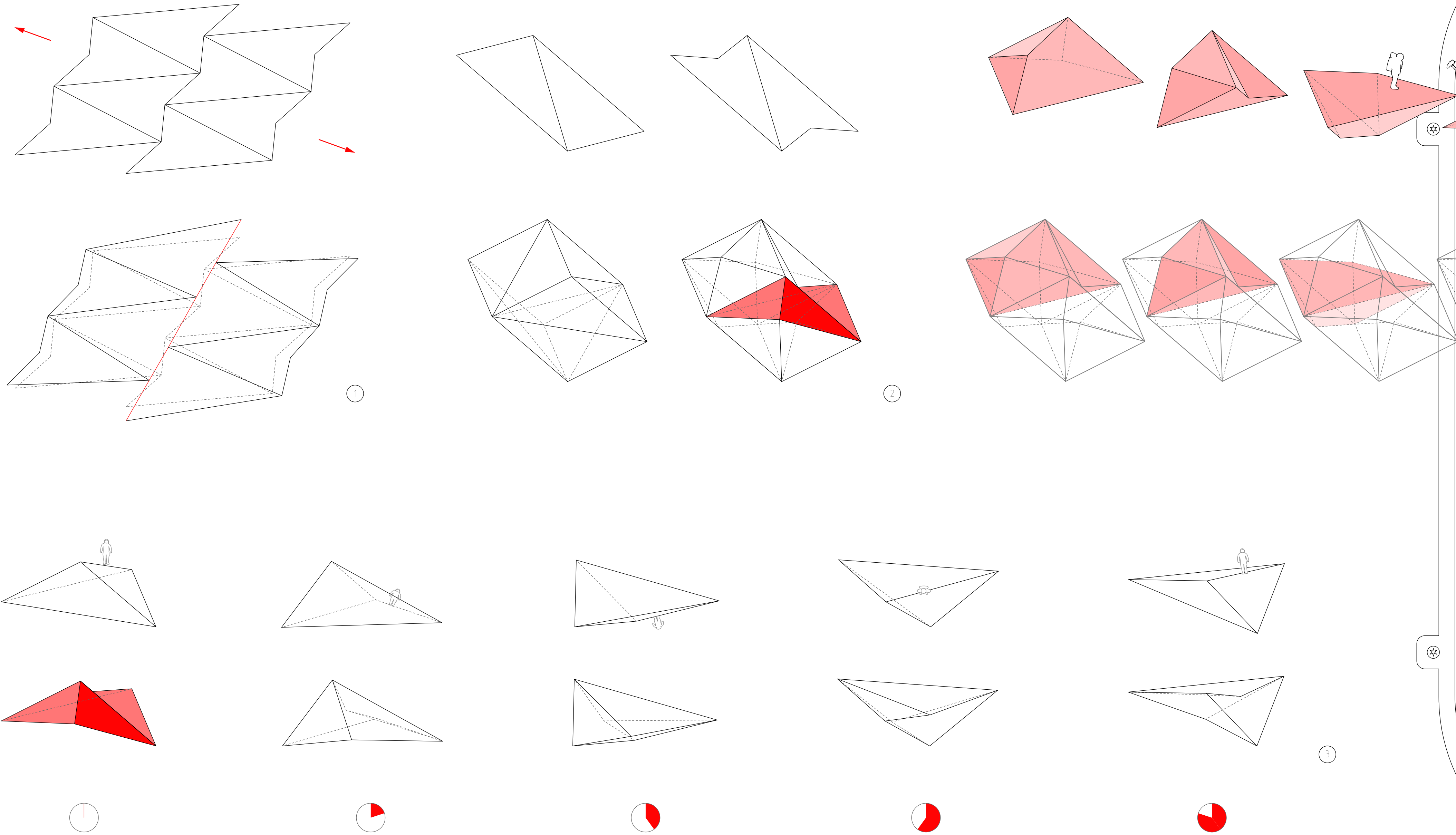
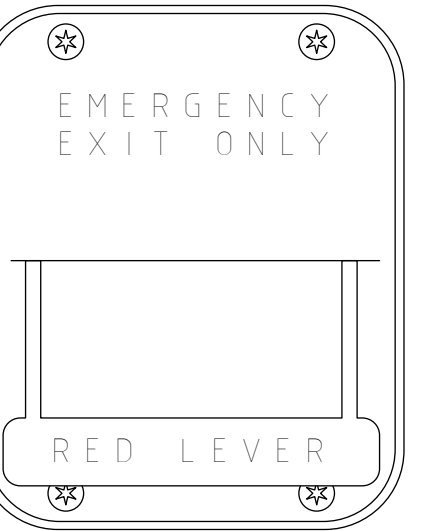
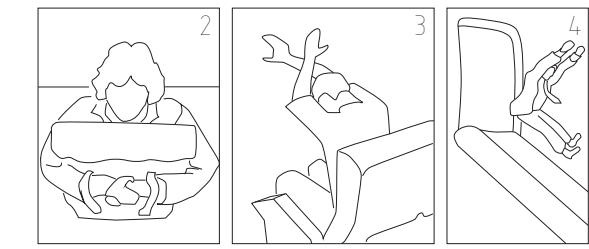


GALACTIC

MIT SA-P
Pre-Orientation Workshops
Anran Li
Instructors
Sam Ghantous
Zachary Angles

EMERGENCY INSTRUCTIONS

- (1) Pull the red lever.
- (2) Locate and hold on to emergency kit
- (3) Brace for impact.
- (4) Exit spacecraft.



CONSOLE (1)
John32(P) to Cabin
>> yo has anyone seen my sunglasses?

CMD to All crew
>> Approaching Earth-616
>> Please prepare for entry
>> ...

DESTINATION
ETA 18:11 / +0:22 / 0.00 ly
Atmospheric conditions are normal.
Wind 5 kph 18 dN // Temp +05.3 C // Humidity 80%

(1) Auxetic Materials

When a 2D auxetic material is pulled in a single axis, the other axis expands rather than contracts. The microstructure shown in both resting and stretched positions would allow for all members to be in tension.

(2) 2D -> 3D Auxetics

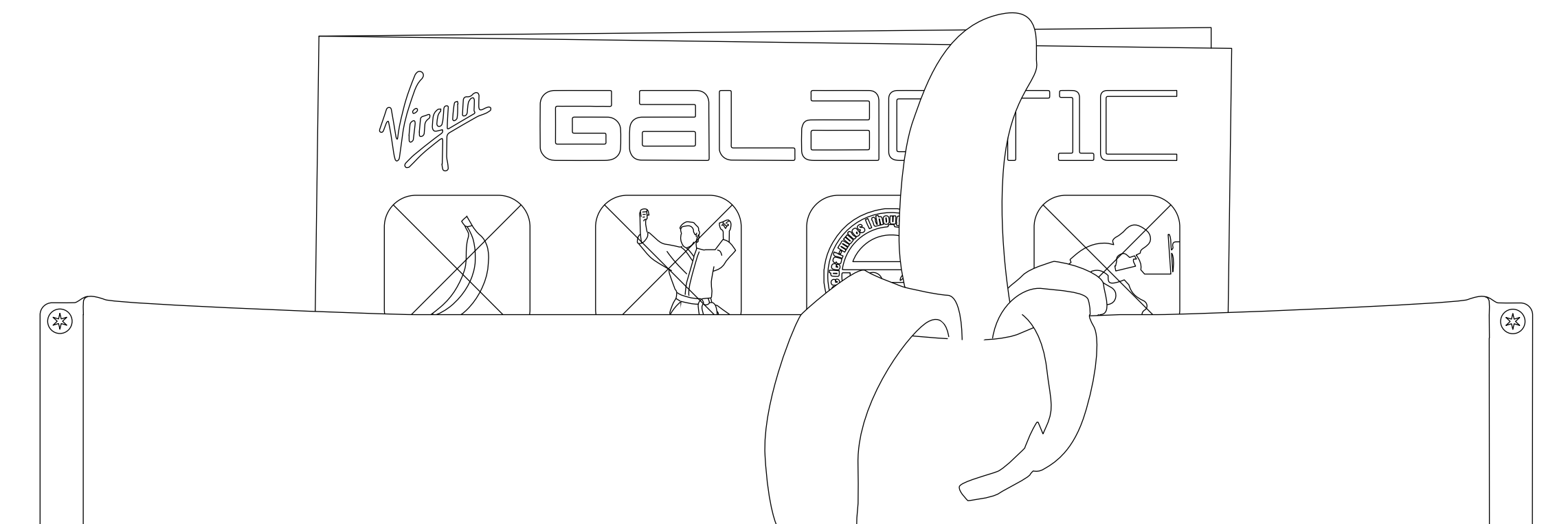
In order to make a 3D auxetic microstructure, I have approximated the two kinked triangles with a parallelogram. This parallelogram can be turned into a 3D parallelepiped rectangle and given kinks.

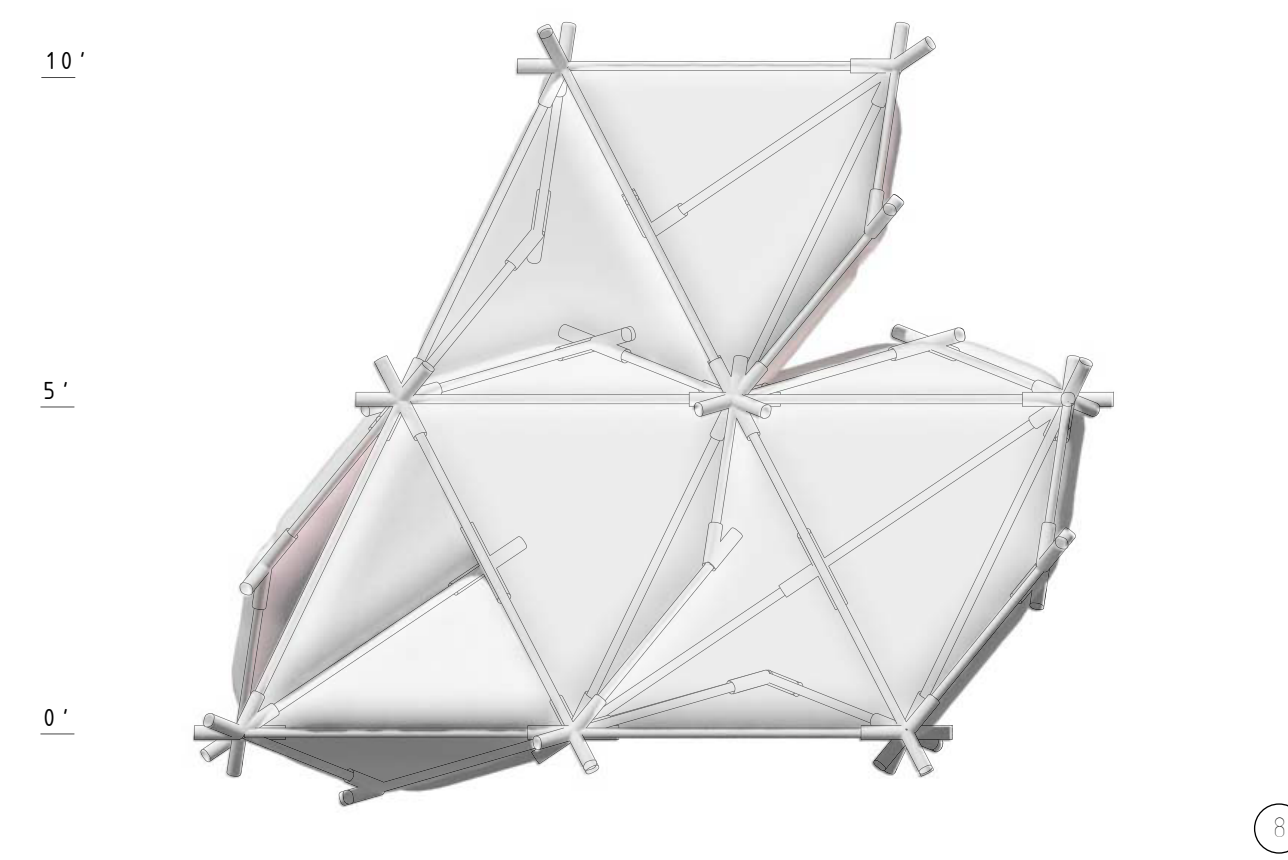
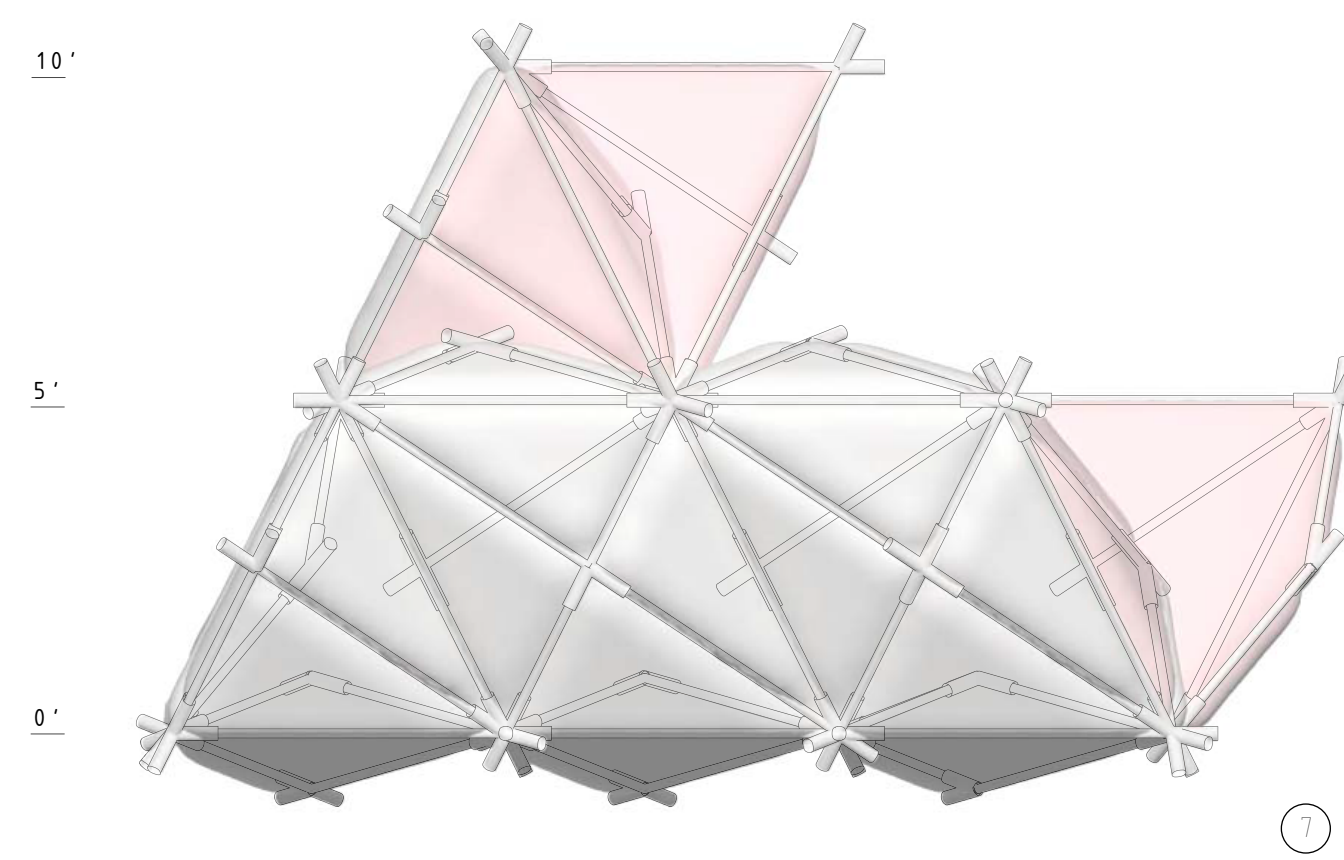
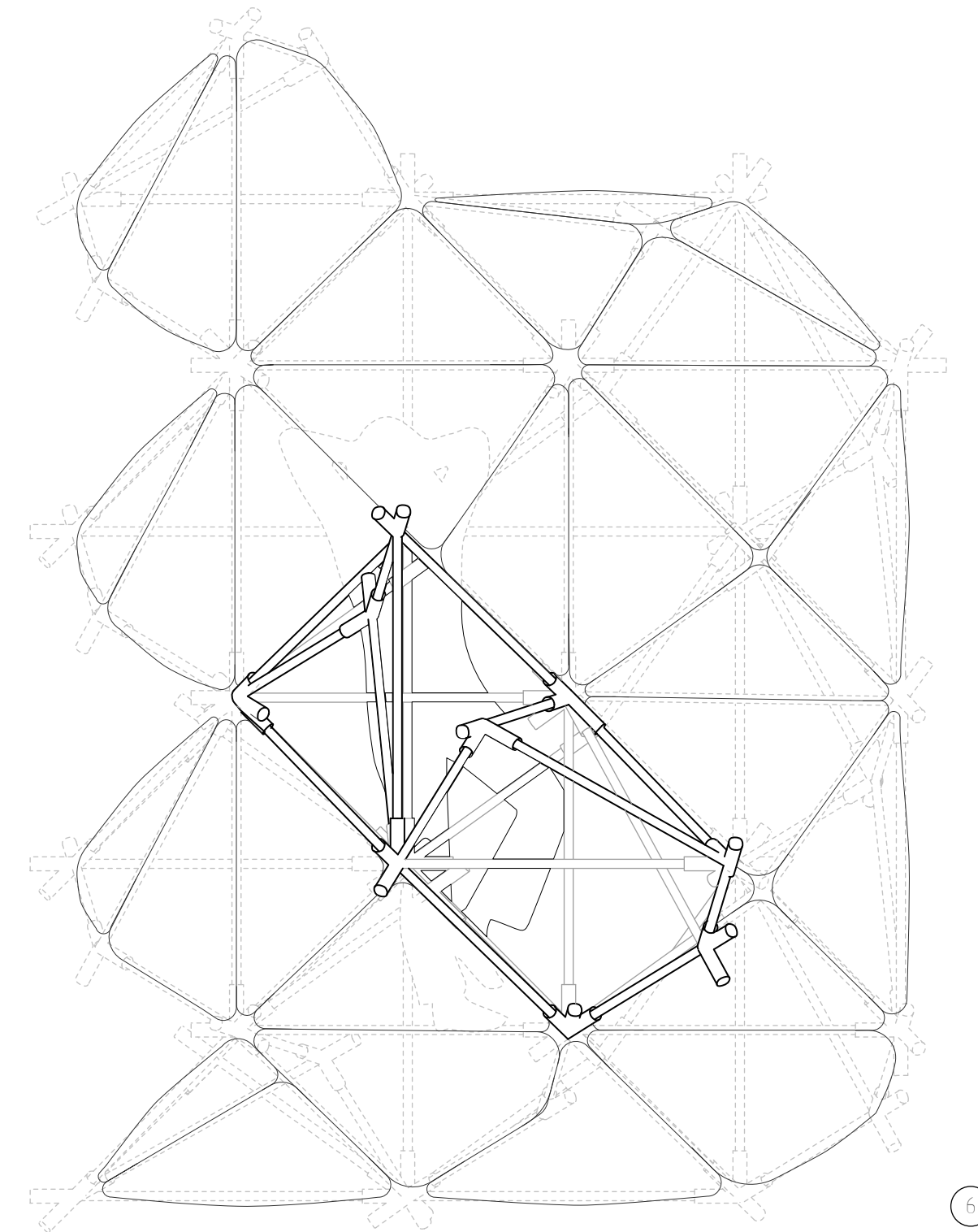
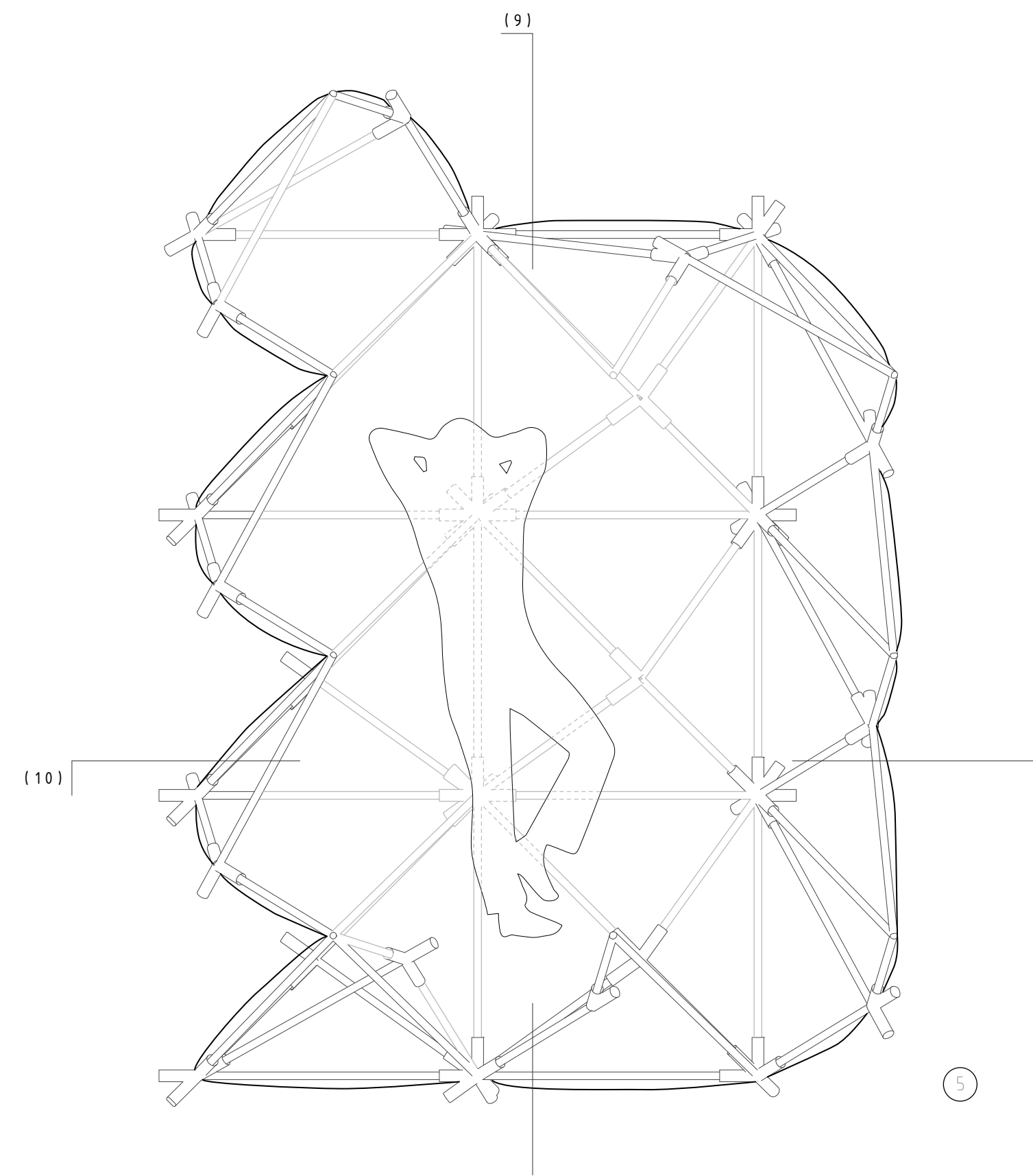
(3) Rotation of a Sub-module

In the first row, a tetrahedral approximation of the sub-module rotates about an axis horizontal and planar to the page 72 degrees at a time. Below, the actual rotating sub-module shows its one concave and one convex kink.

(4) Six Sub-modules

There are two each of three sub-module instances. Below, each module is shown relative to the position of the main module.





(9)

(10)

(5) Level 1 Floor Plan / 1in = 5ft
0ft Above Ground

(6) Level 2 Floor Plan / 1in = 5ft
5ft Above Ground

Cut through ETFE plastic and joints.
Vertical bay on second floor.

(7) Right Elevation / 1in = 5ft
(8) Front Elevation / 1in = 5ft

Transparent ETFE as fenestration (pink).
Insulated white tarp as enclosure.

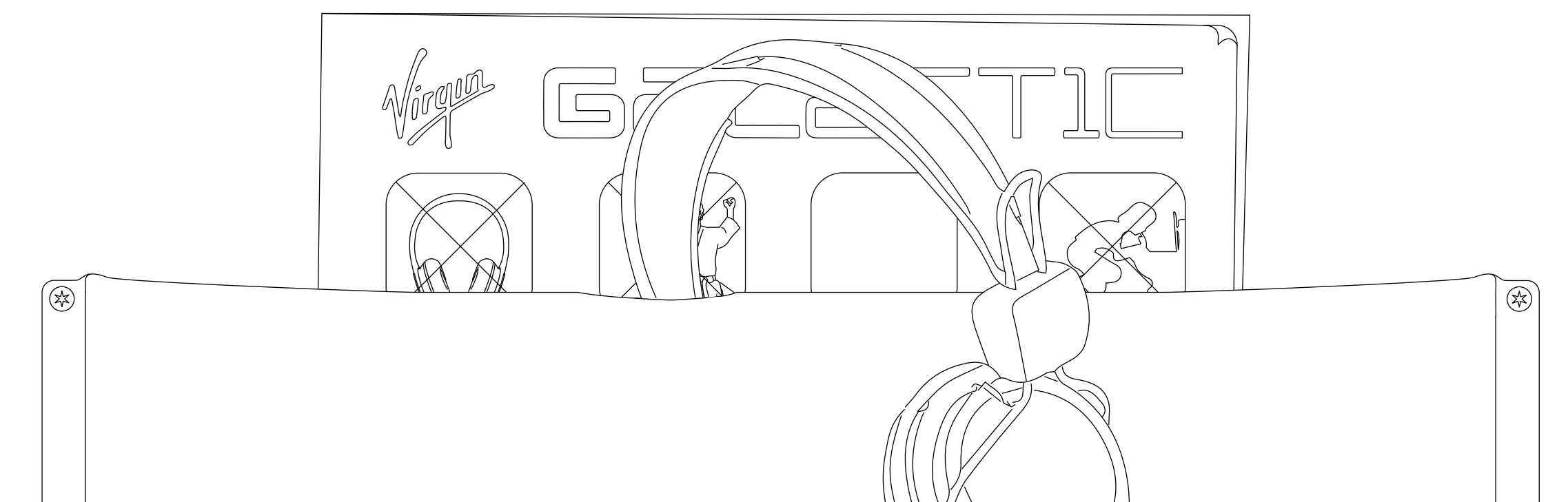
(9) Longitudinal Section / 1in = 5ft
(10) Transverse Section / 1in = 5ft

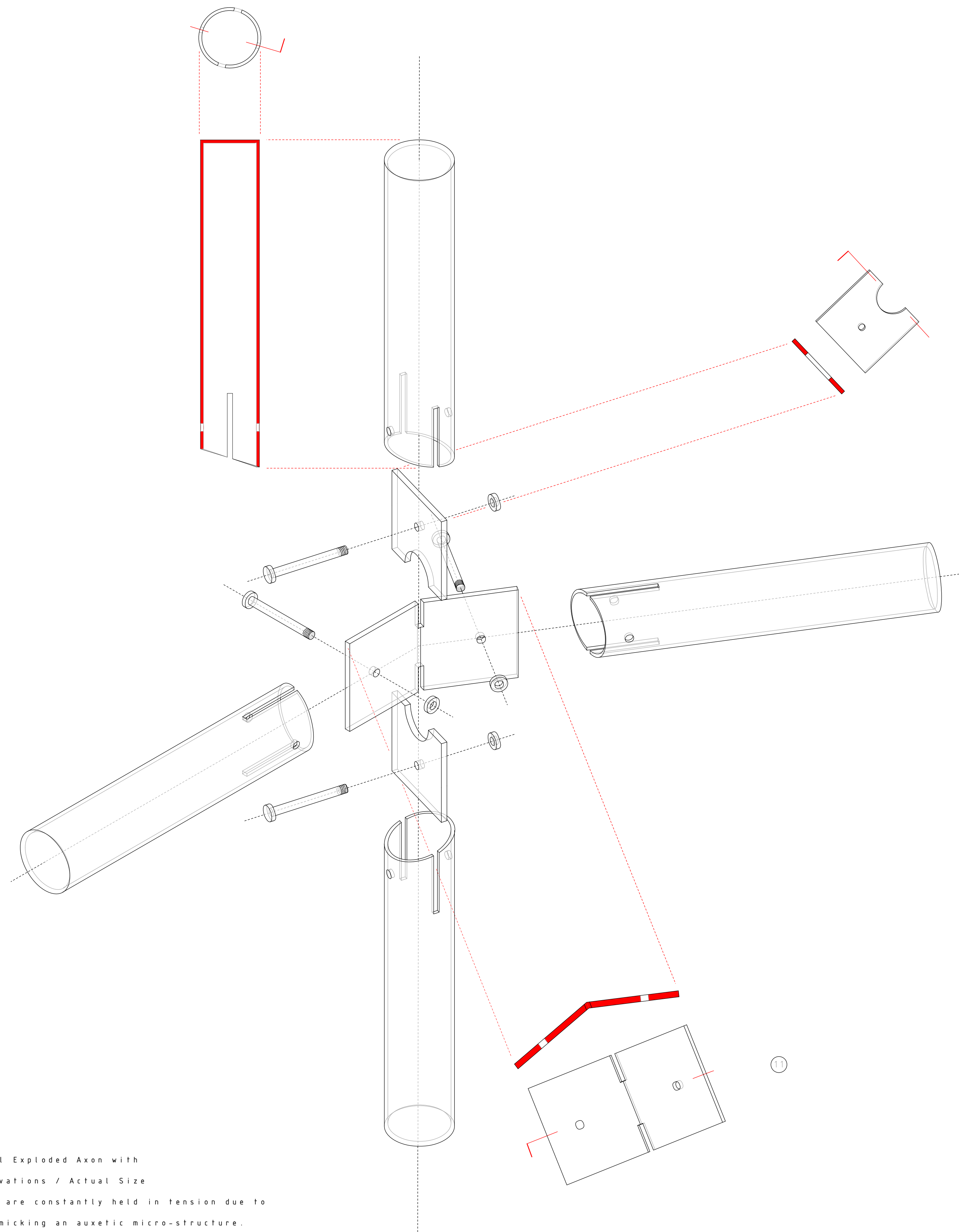
EMERGENCY INSTRUCTIONS

- (1) Pull the red lever.
- (2) Avoid water if you have 80's hair.
- (3) Hands in the air.
- (4) Just do not care.

EMERGENCY
EXIT ONLY

RED LEVER





(11) Connection Detail Exploded Axon with Sections and Elevations / Actual Size
Small steel rods are constantly held in tension due to the structure mimicking an auxetic micro-structure.

(12) Rendering of Module Clusters
The final frontier.

EMERGENCY INSTRUCTIONS

- (1) Pull the red lever.
- (2) Locate and hold on to emergency kit.
- (3) Brace for impact.
- (4) Exit spacecraft.

THIS IS NOT THE
RED LEVER

