

HYPERLAXITY

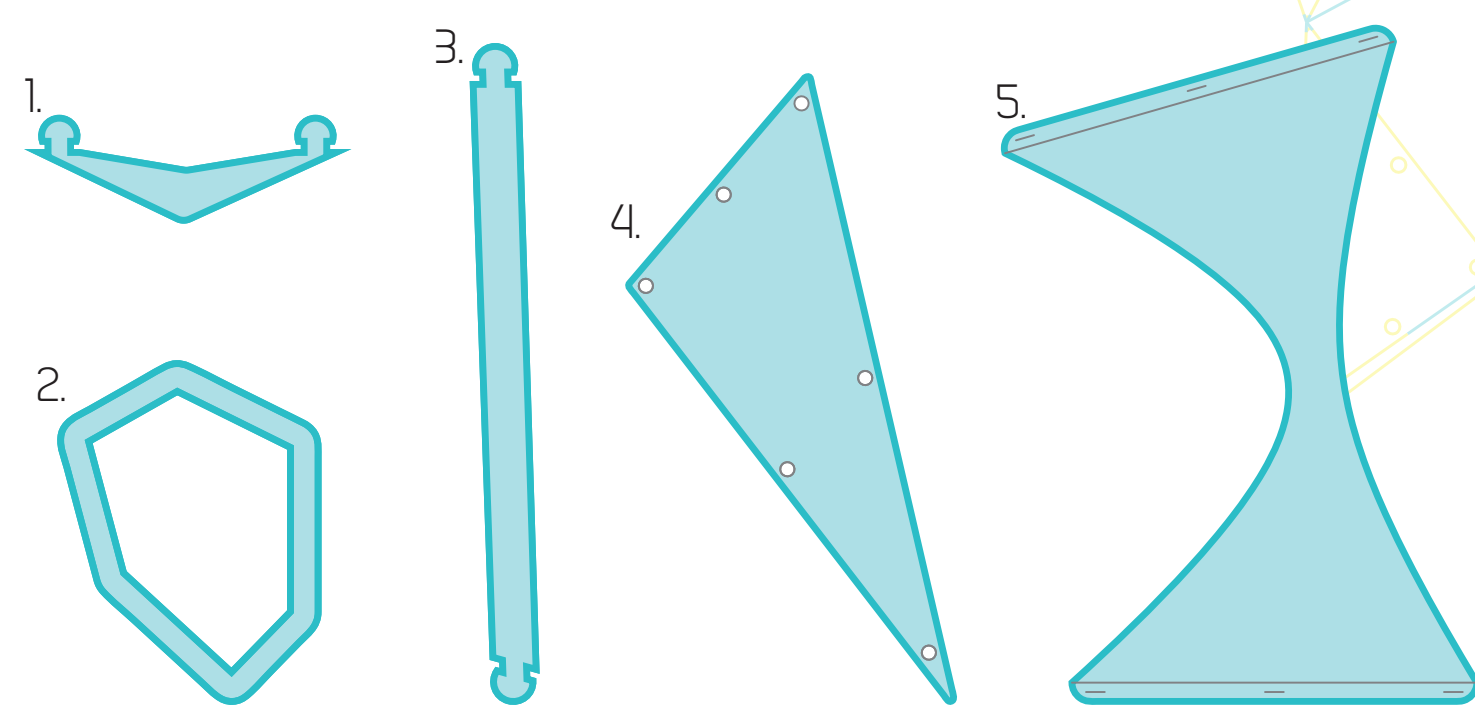
parabolic ligaments

FORM

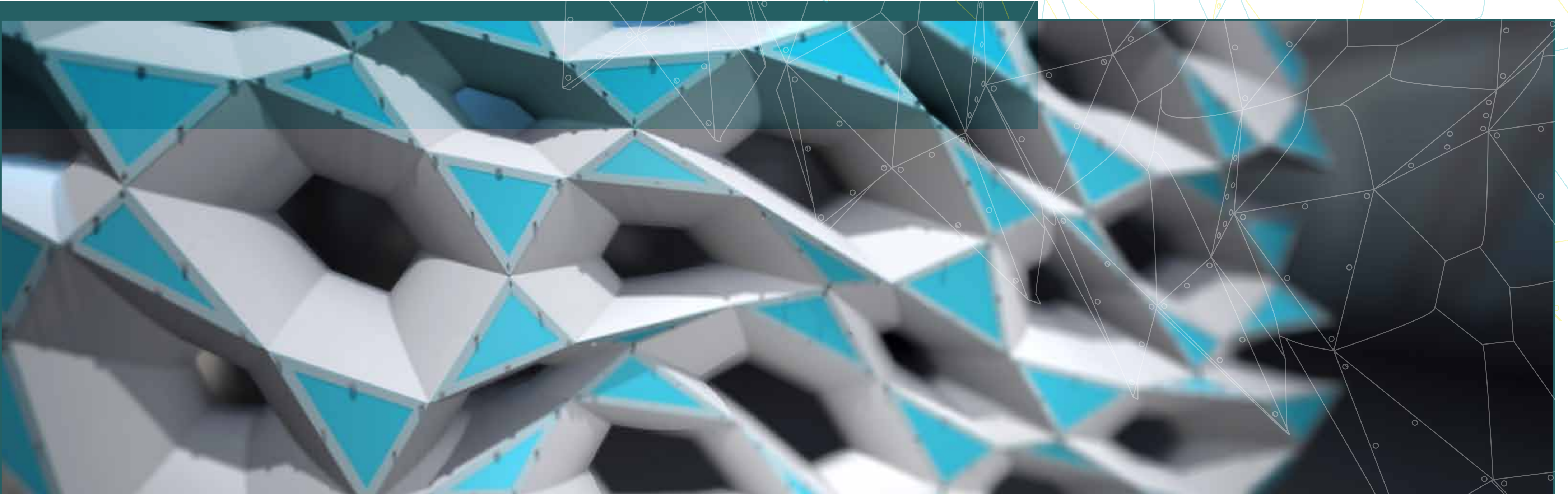
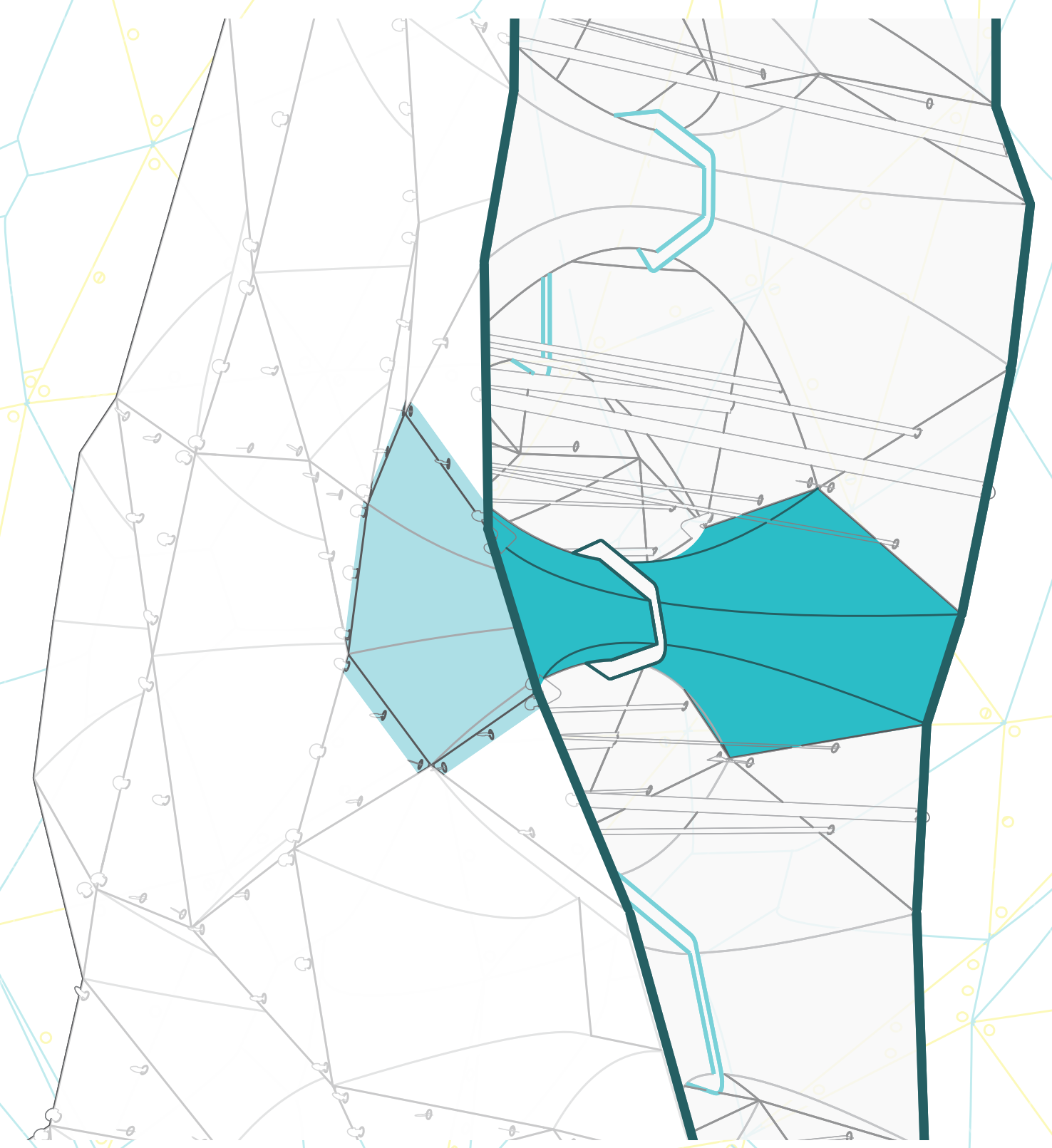
The system's component organization was derived from the geometrical dissection of a hexagonal network into a composite hexagon and triangle pattern. Two surfaces generate the formal strategy, an extraction of the resulting intermediate space. A parametrically driven definition was created to produce the aggregation and can be adapted to any two surface-based data sets. Once populated, the interim space hosts the primary geometry while the extent of the original surface information functions as its armature. Depth, cluster, density, and aperture size all vary to adjust transparency and respond to structural requirements.

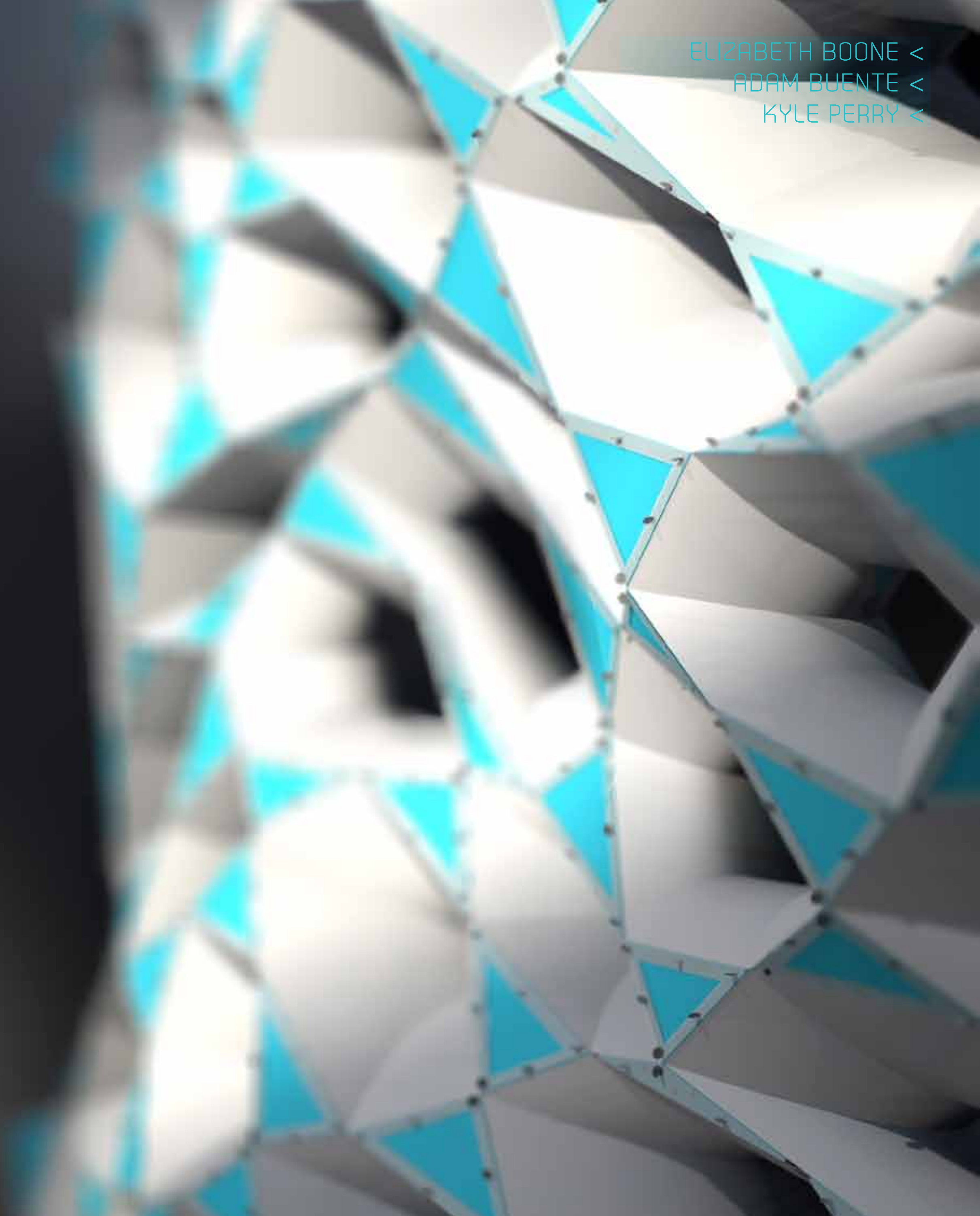
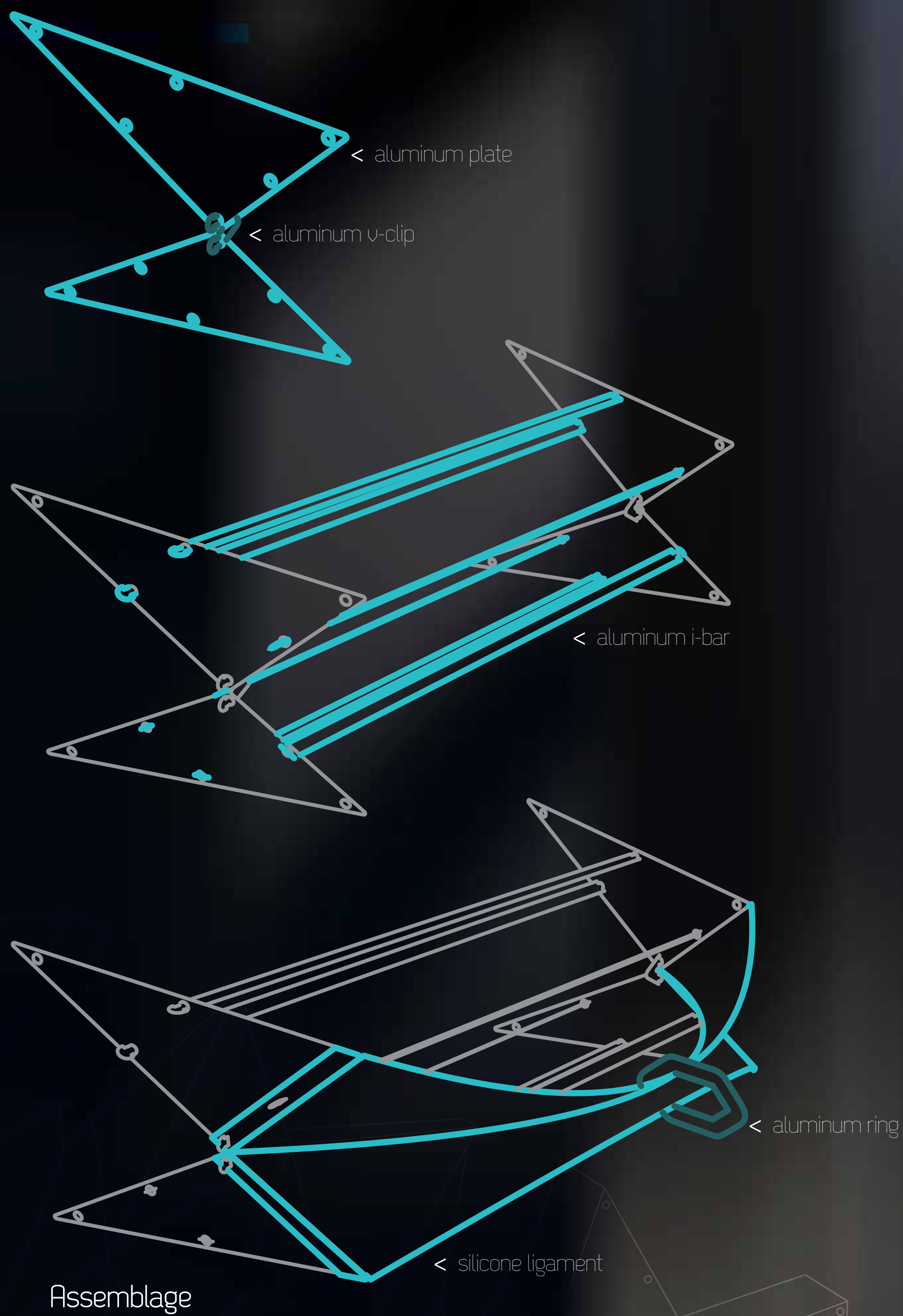
MATERIAL

Intentionally, a dependent structural relationship exists between the two chosen materials, aluminum and silicone. The system is secured in compression by the tensioned silicone ligaments which connect all of the rigid aluminum members. Each part is necessary in order to maintain a cohesive assembly. The two materials work in contrast both structurally and qualitatively. The high gloss, light-deflecting properties of the aluminum compliment the smooth light-capturing characteristics of the silicone. Soft, malleable, and pliable, the silicone offers a relief to the rigid metal components. The thin aluminum network suspends the white translucent silicone which expresses volume, depth, and density.



1. aluminium v-clip (x287)
2. aluminium o-ring (x38)
3. aluminium i-bar (x315)
4. aluminium plate (x217)
5. silicone tendon (x253)



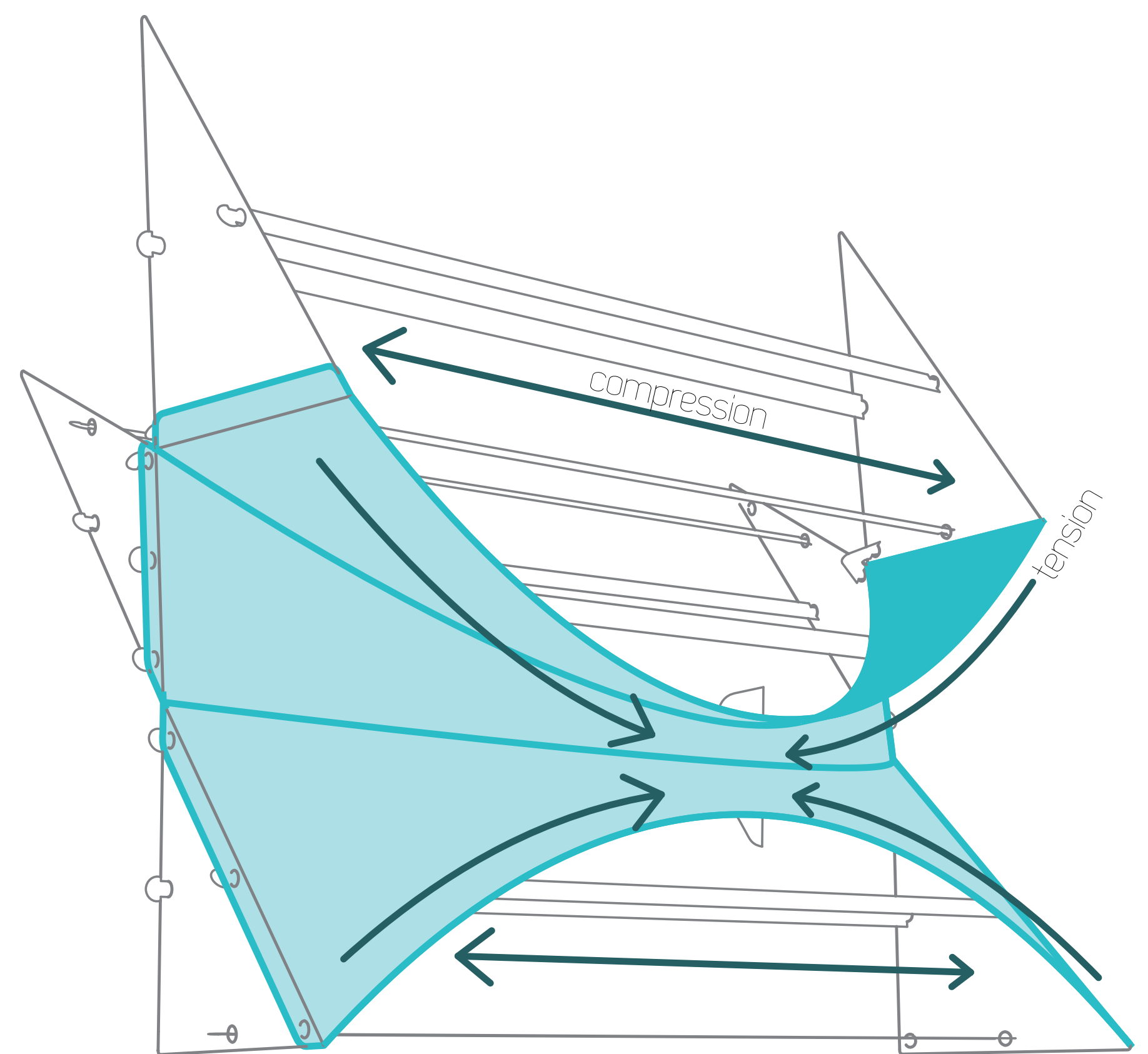
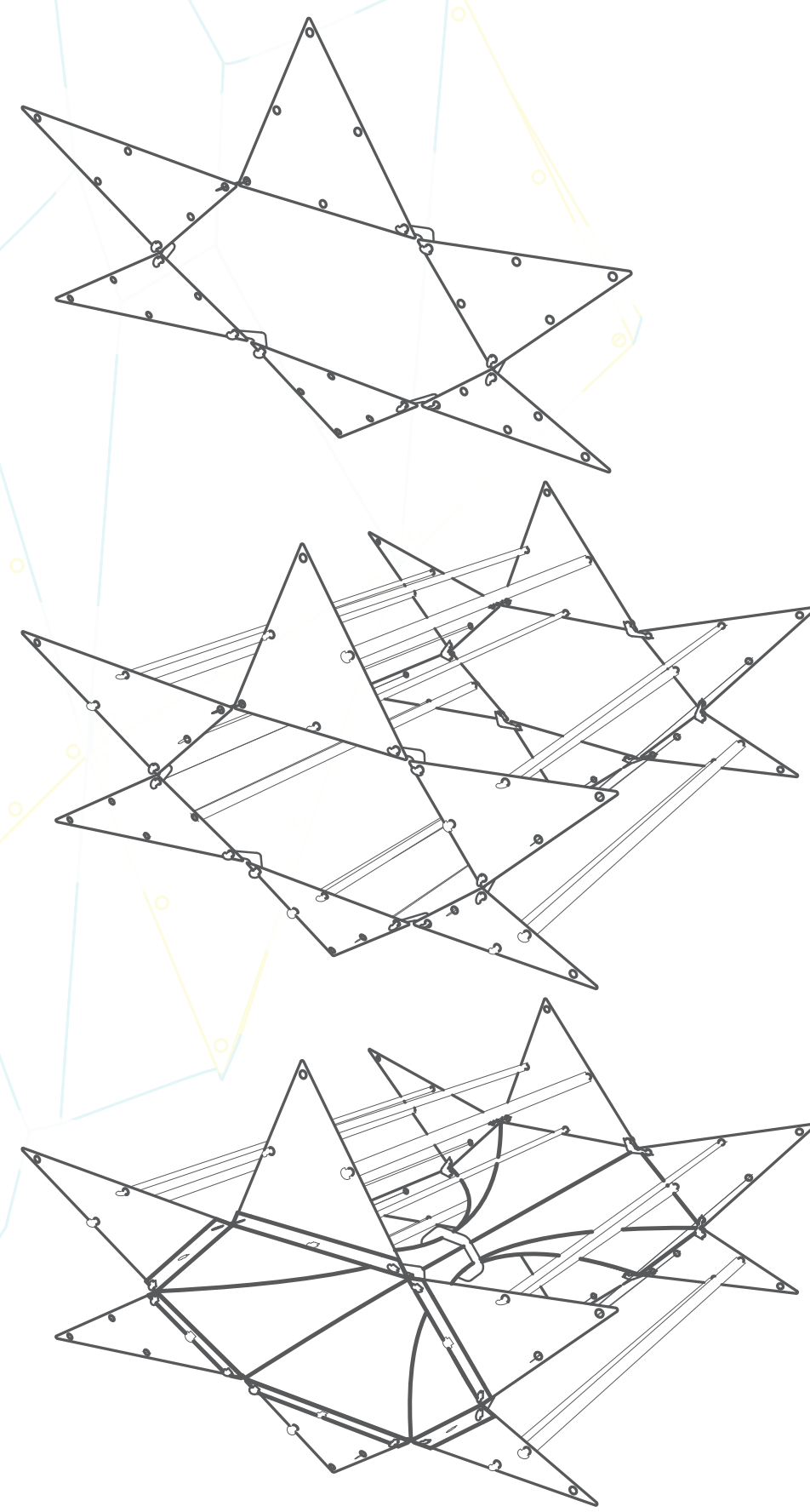


TECTONIC

Rather than resolve connections with hardware, the solution is driven by each materials' intrinsic qualities. Integrated connections are achieved through a number of custom elements. Locating tabs in the aluminum compression members are secured through holes in each pair of triangular aluminum plates. Connections between one plate and another are achieved using v-shaped clips which also employ a locating tab detail to create a pinned relationship. Slits in the silicone sheet allow the material to stretch over and wrap the locating tabs of the aluminum profiles. Held in place by this hexagonal silicone network, an aluminum ring in its center span keeps the sheets in tension.

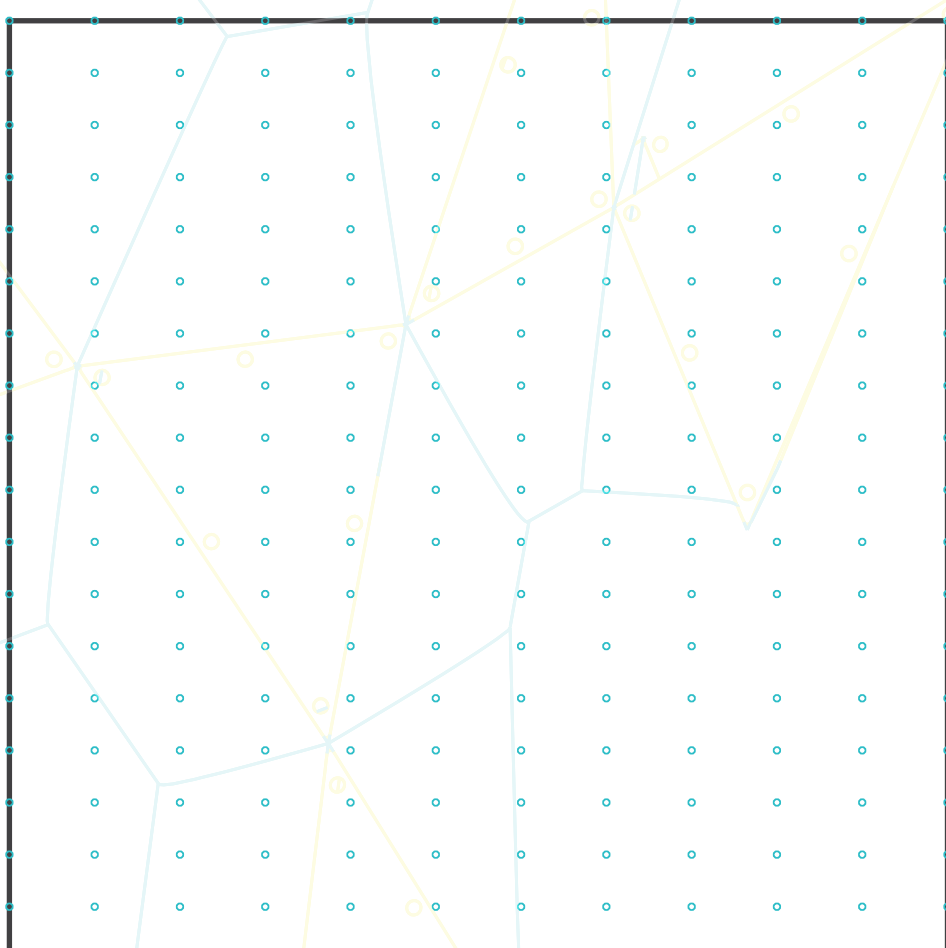
FABRICATION

All of the fabrication files are produced by unrolling surfaces to generate profile information for 3-axis cutting. Powder coated aluminum serves as the structural framework, and can easily be finely detailed to capture precise tolerances for machining on a CNC router. A sheet silicone provides a flexible and resilient counterpart which could be water-jet cut, or cut with a blade attachment on a CNC router.

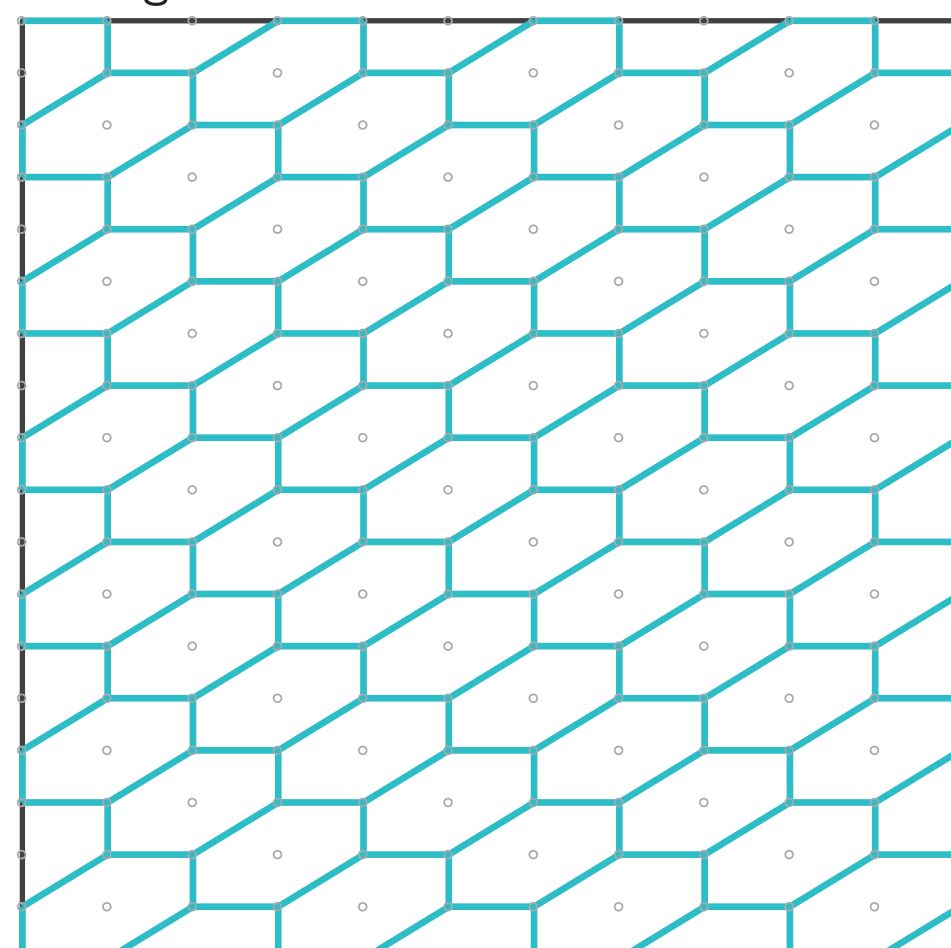


Structural Concept

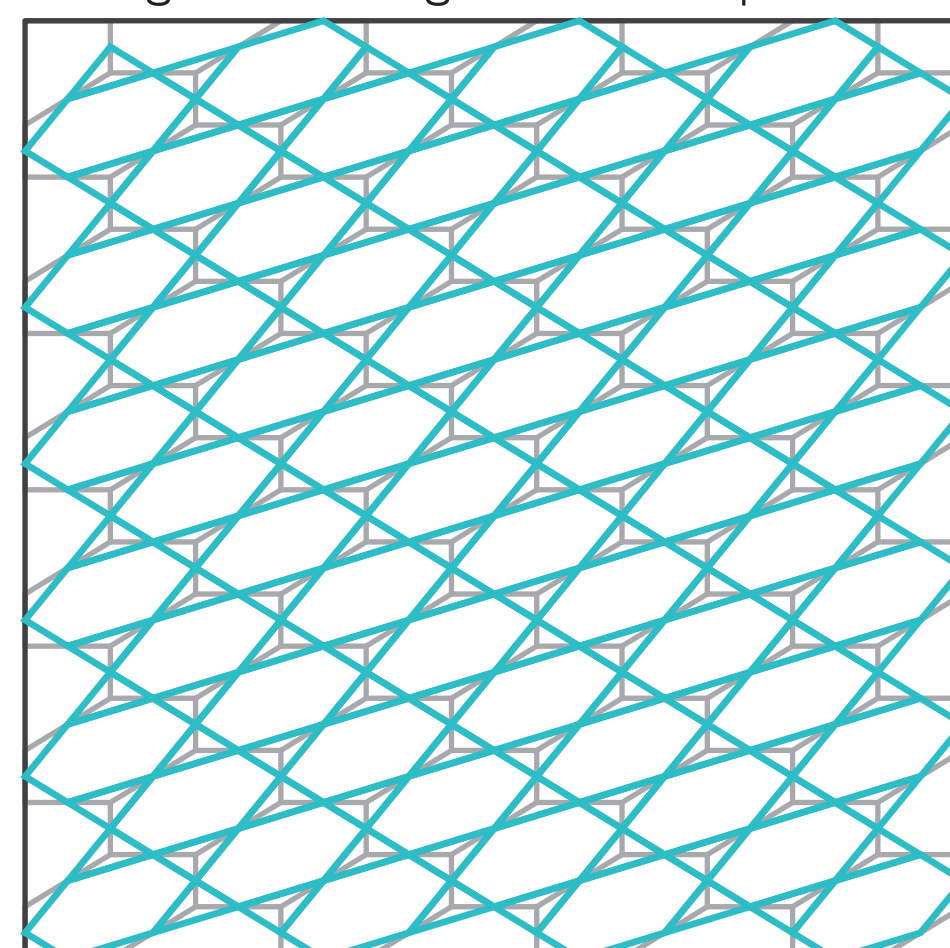
Point Grid



Hexagons from Cull Patterns



Hexagons + Triangles from Midpoints



Variation

