

Wooden Mallet: Exploration of Material Integrity

For this project, I designed and built a wooden mallet with a detachable handle, crafted from a single slab of hardwood. My inspiration came from the idea of simplicity in form, in turn to expose and highlight the flaws of the raw material, which are the integral factor in the composition's visual appeal.



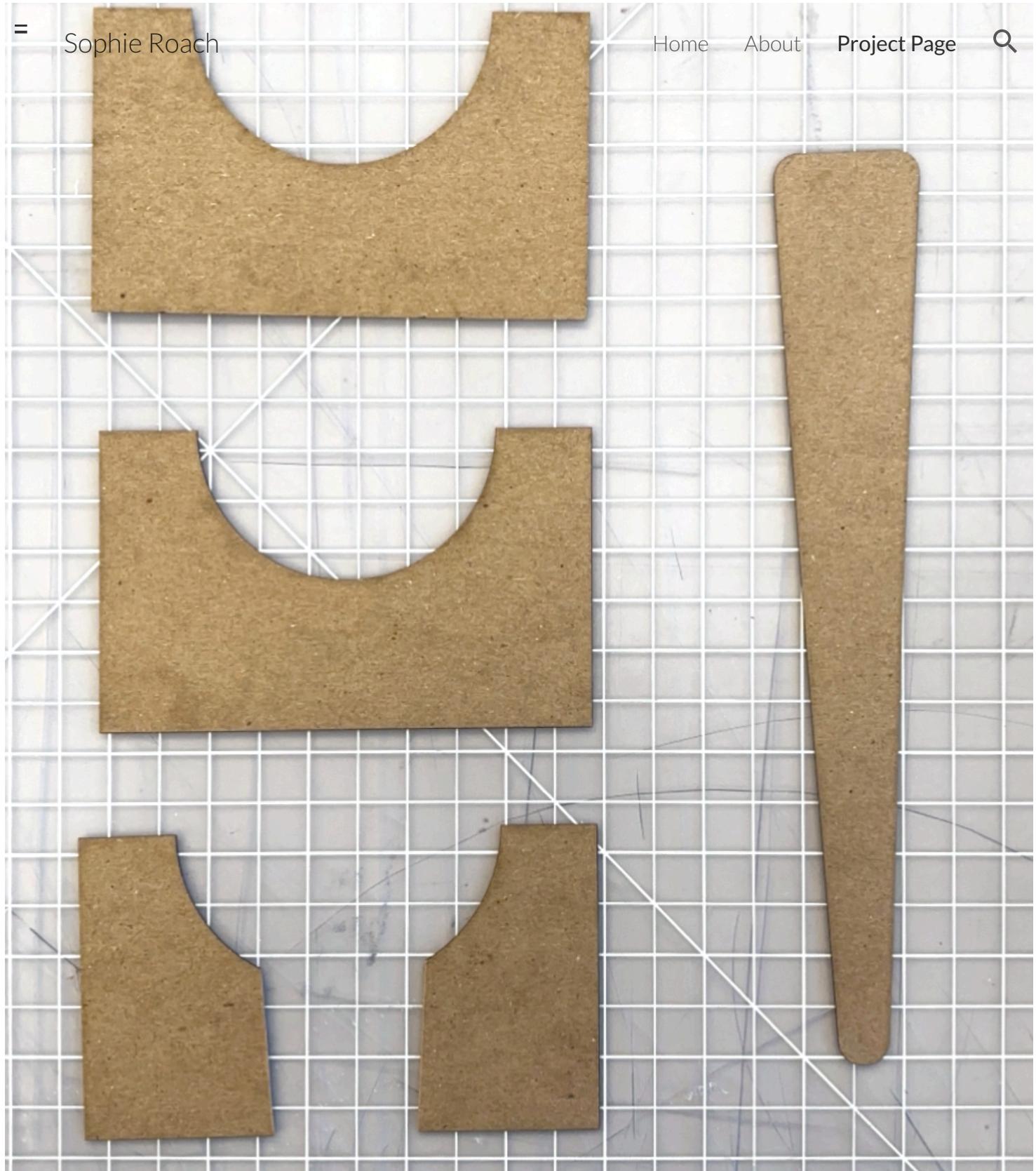
I wanted the design to feel purposeful, where every curve and connection reflected both function and craft. Throughout the process, I learned the fundamentals of woodworking and fabrication, gaining hands-on experience with saws, sanders, and drill presses to shape and refine the piece. Each stage of the process, from rough cutting to fine finishing, taught me the importance of precision, workflow, and material awareness. The detachable handle was developed to explore modularity and ease of repair, emphasizing sustainable design principles.

Process:

I created my first shop orthographic drawing to guide fabrication, then used laser cutting to translate digital precision into physical components. By calculating the taper angle of the detachable handle, I combined design intuition with mathematical accuracy, bridging technical drawing and hands-on making.







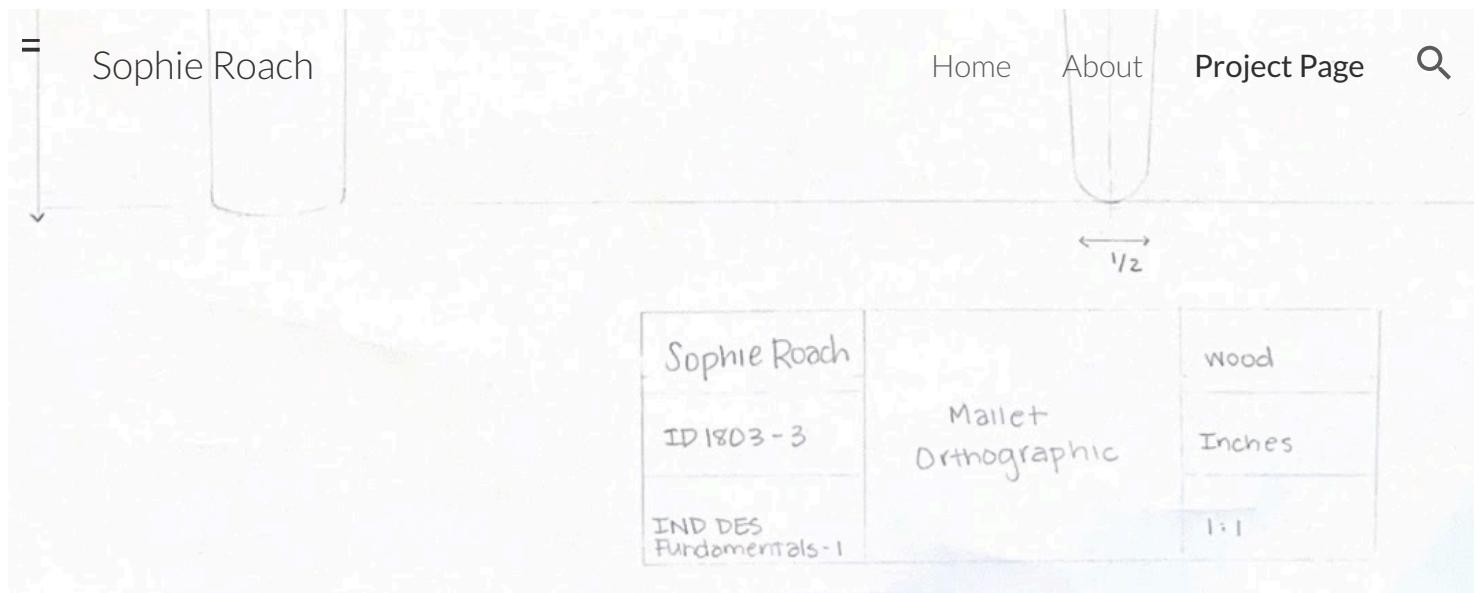
= Sophie Roach

Home About Project Page 



Sophie Roach

[Home](#)[About](#)[Project Page](#)

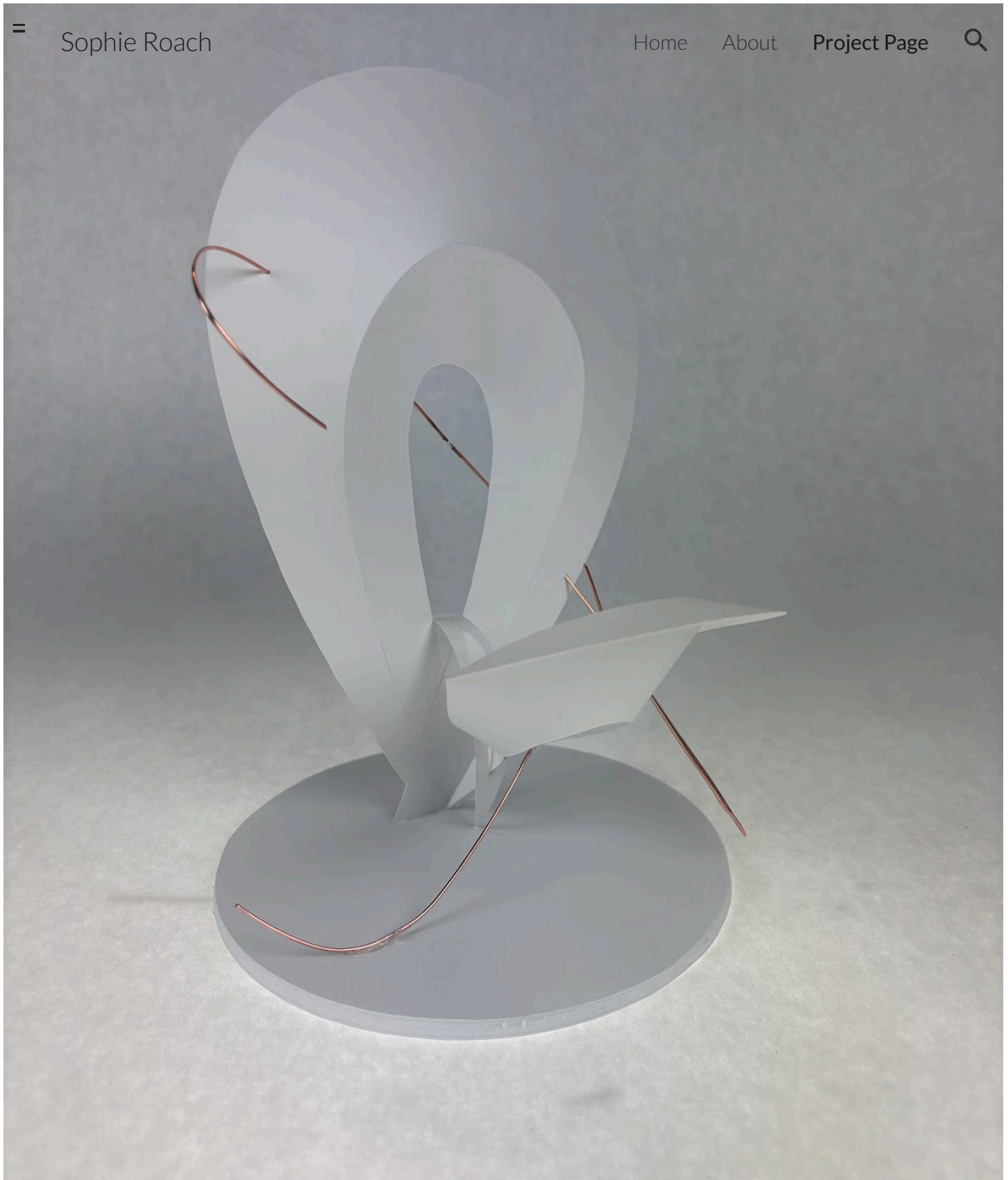


This project deepened my appreciation for craftsmanship, material honesty, and the integration of design thinking into physical making. Additionally, as the first project I had full creative freedom over from start to finish, it allowed me to develop confidence in my design decisions and refine my personal approach to form, function, and process.

Spatial Composition: Interaction of Line and Plane

Inspired by the organic form of a flower, this composition explores the relationship between line and plane through curved paper surfaces and flowing wire elements. The design captures the sense of balance and movement found in nature, emphasizing how simple materials can express spatial harmony.





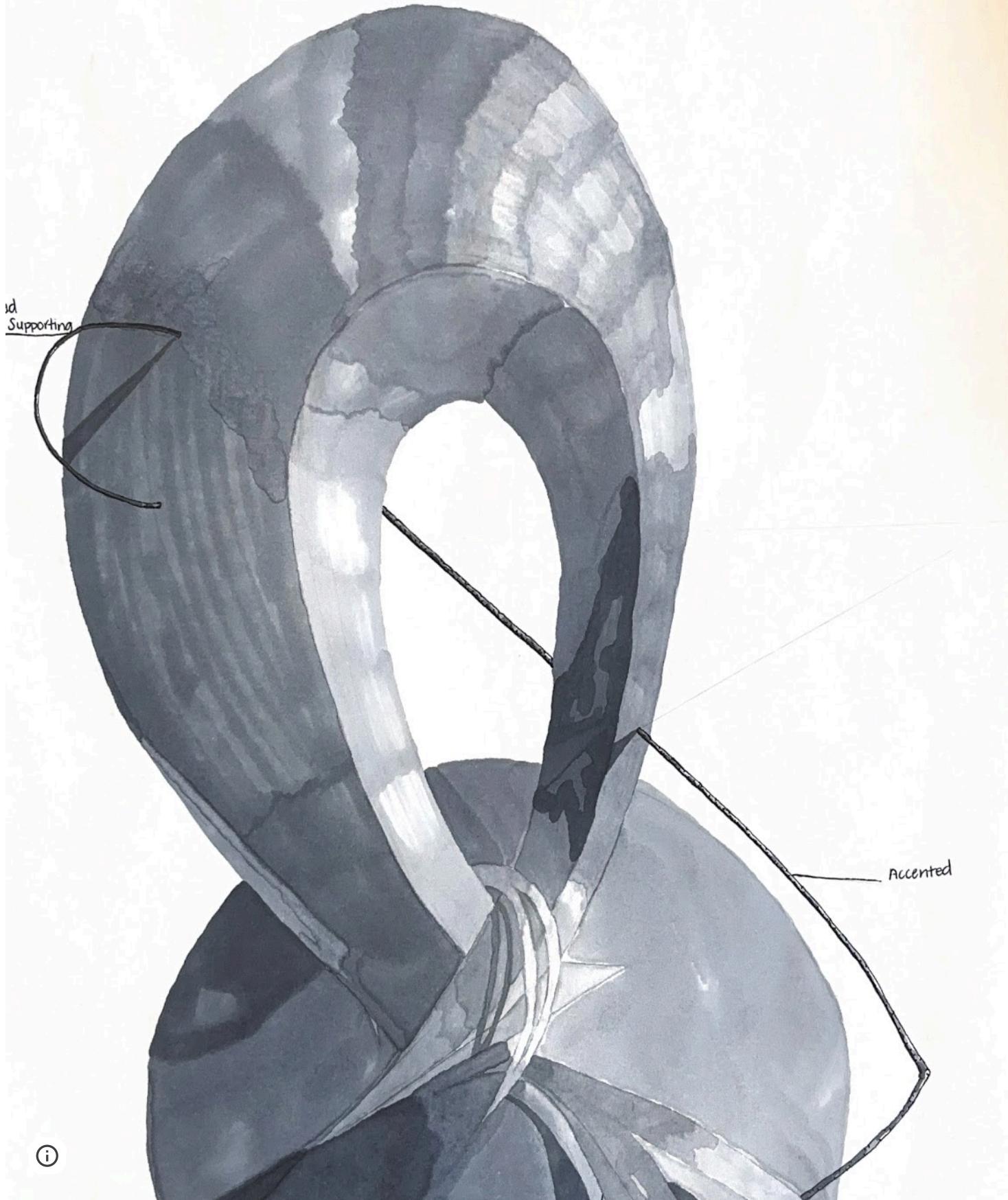


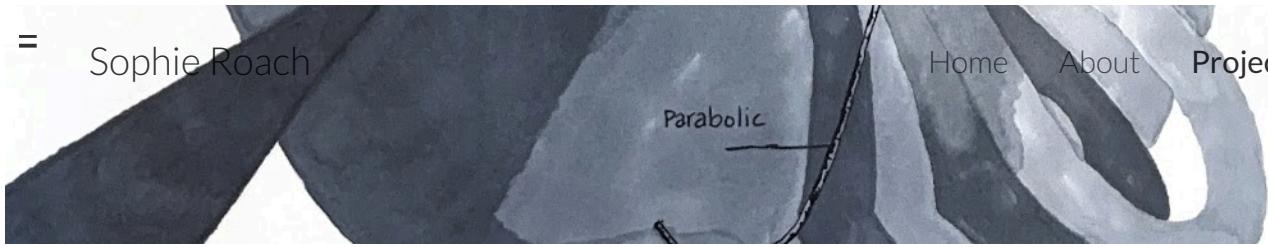
In creating an abstract composition inspired by organic shapes, my goal was to capture the dynamism and structural integrity found in natural forms while using minimal materials: paper and wire. The project challenged me to consider how curvature, tension, and negative space influence spatial relationships and visual harmony. Each plane was shaped to evoke the unfolding of petals, specifically in the variations of hierarchy and angle, while the linear elements introduced energy and rhythm, mirroring the subtle, mundane actions of nature. Throughout the process, I experimented with proportion and stability, learning how delicate adjustments could transform both balance and expression.

Process:

I learned to solder wire for the first time, refining precision and control while constructing delicate linear connections. Working with cardstock as a new material, I explored how subtle bends and folds could define planar structure, and by using markers for shading, I developed a deeper understanding of light, shadow, and depth in visual presentation.







Sophie Roach

Home

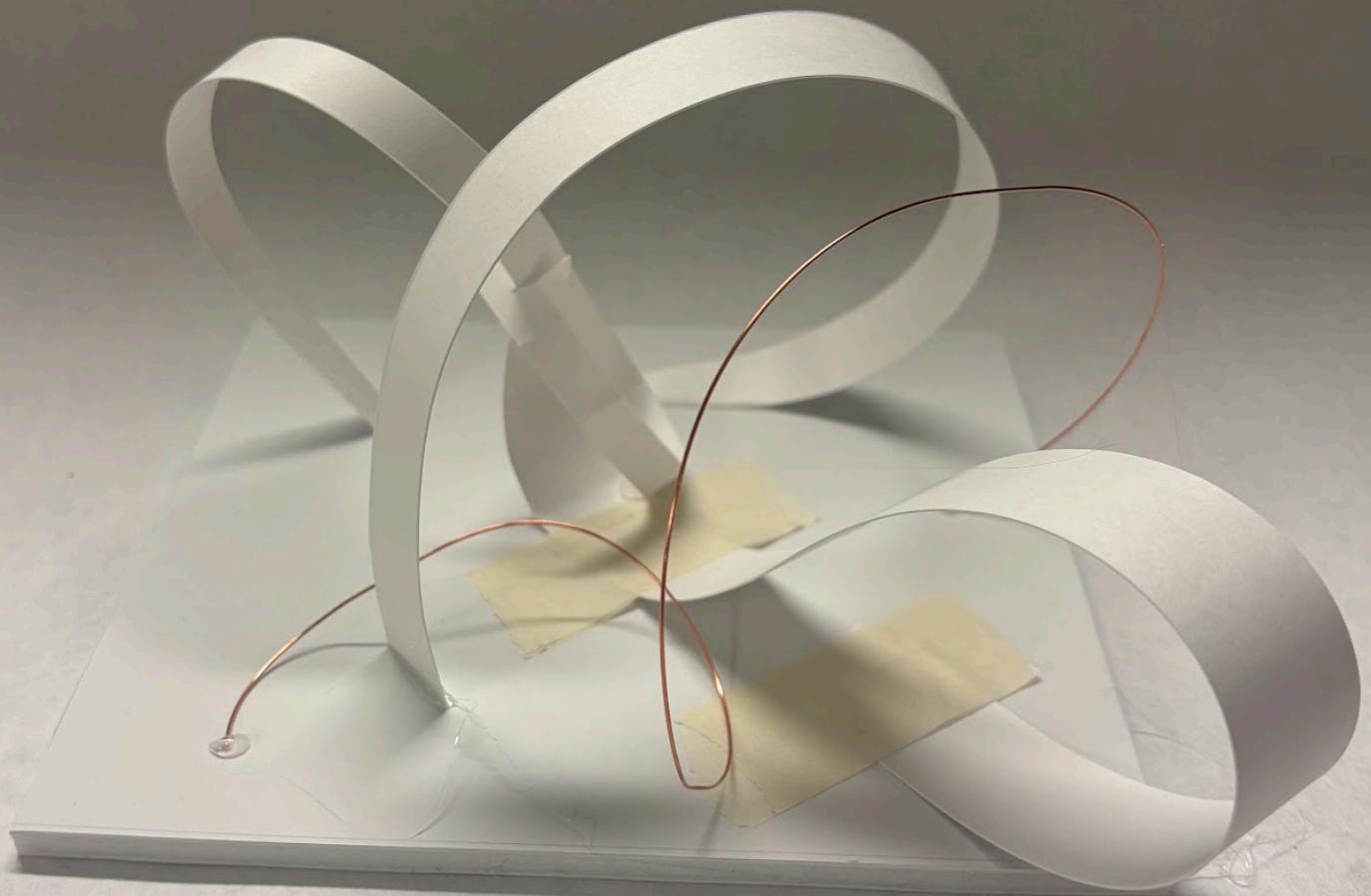
About

Project Page



Sophie Roach
Section 3
9118125

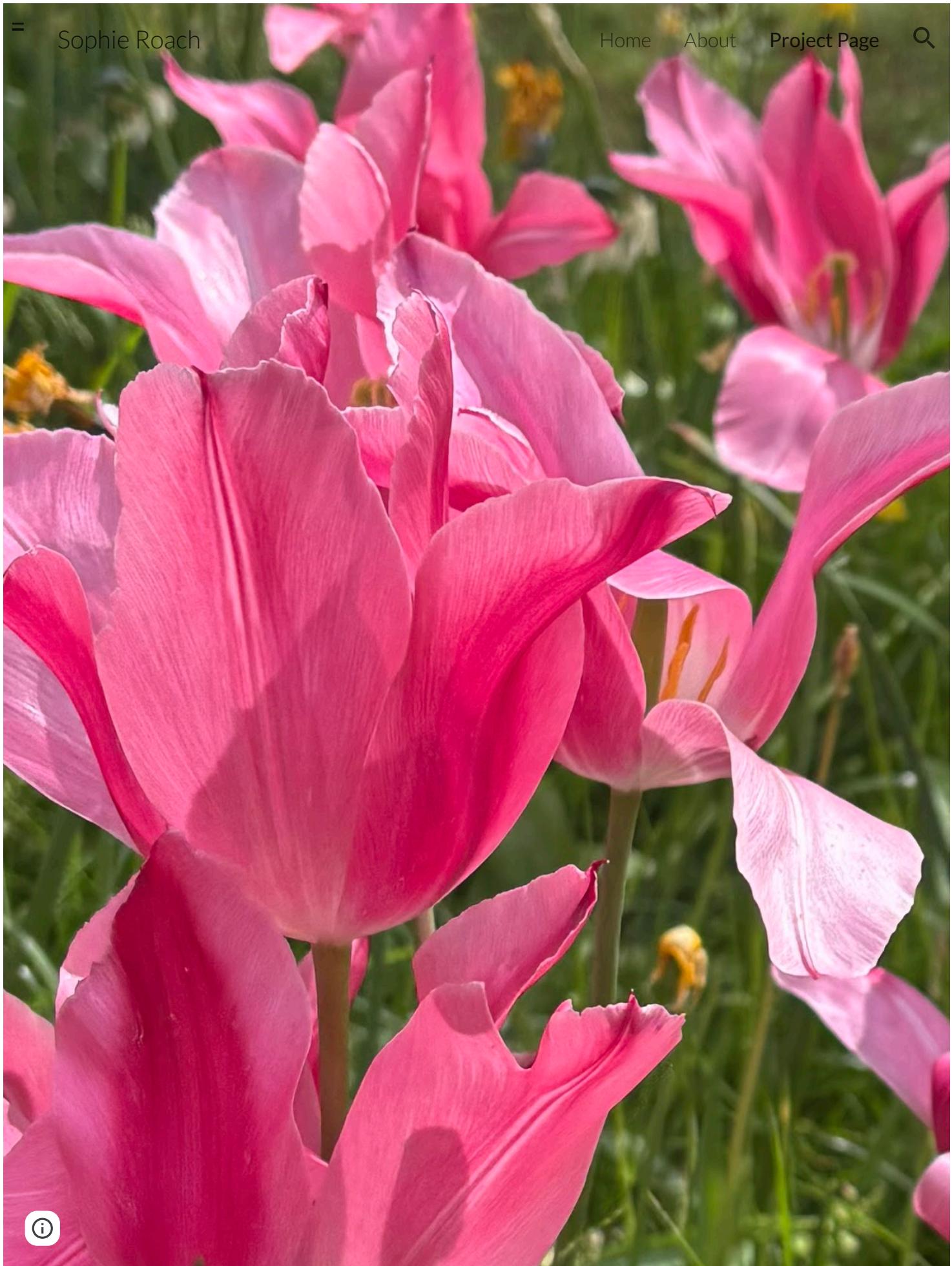


[= Sophie Roach](#)[Home](#) [About](#) [Project Page](#) 

= Sophie Roach

Home About Project Page 

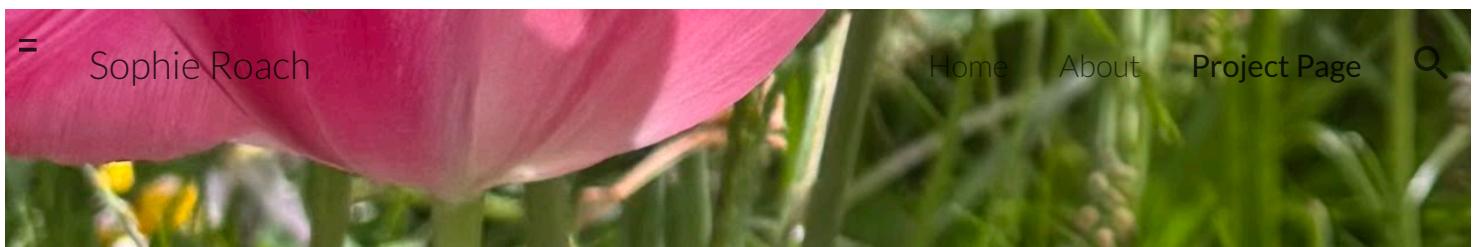


A close-up photograph of several pink tulips in full bloom. The flowers have large, ruffled petals with a subtle texture. In the background, more tulips and some yellow flowers are visible, though slightly out of focus. The lighting is bright, highlighting the petals.

Sophie Roach

Home About Project Page





Sophie Roach

Home

About

Project Page



This project strengthened my understanding of spatial composition and material expression, teaching me how line and plane interact to create structure and movement. Through learning to solder, work with cardstock, and render with markers, I gained confidence in combining technical precision with artistic intuition, reinforcing the connection between form and visual storytelling.

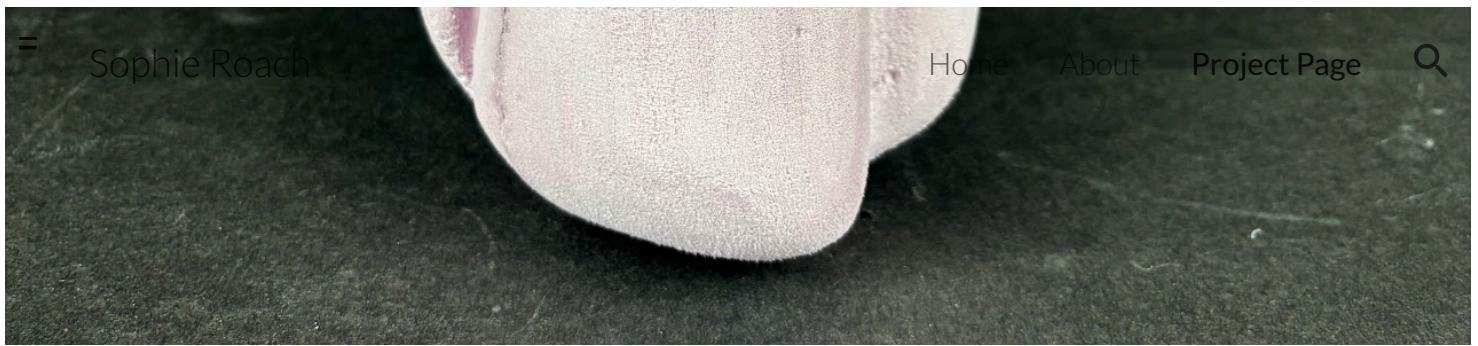
Dynamic Form: Motion and Tension in Structure

Inspired by the mechanics of a bug's pincer, this project explores dynamic motion and structural tension through an abstract form. The composition captures the balance between rigidity and movement, translating the precision of natural mechanisms into an expressive design.

My goal was to focus on how organic geometry can convey movement and energy even when stationary, by capturing the tension and balance found in nature through the interaction of concave and convex surfaces, tapered edges, and directional flow. I explored how subtle curvature and asymmetry could guide the viewer's eye and create the illusion of motion through form alone. Throughout the process, I refined my orthographic sketches to define precise form, translating two-dimensional lines into a three-dimensional surface that felt both fluid and intentional. By carving and sanding the foam, I gained a deeper understanding of how surface treatment and proportion affect visual tension and harmony.



[= Sophie Roach](#)[Home](#)[About](#)[Project Page](#)

[= Sophie Roach](#)[Home](#)[About](#)[Project Page](#)

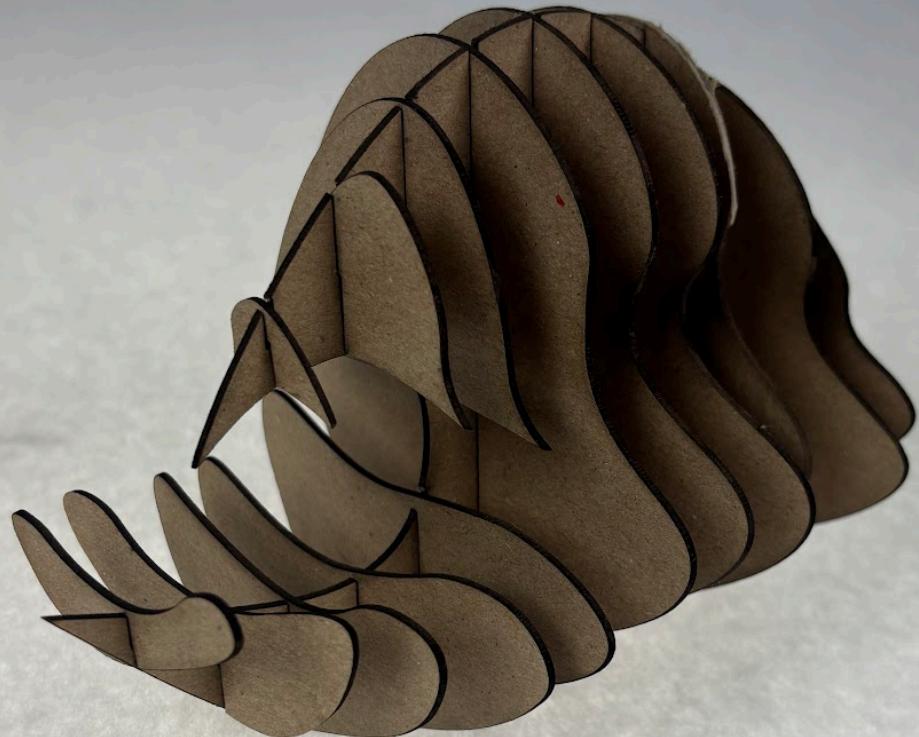
Process:

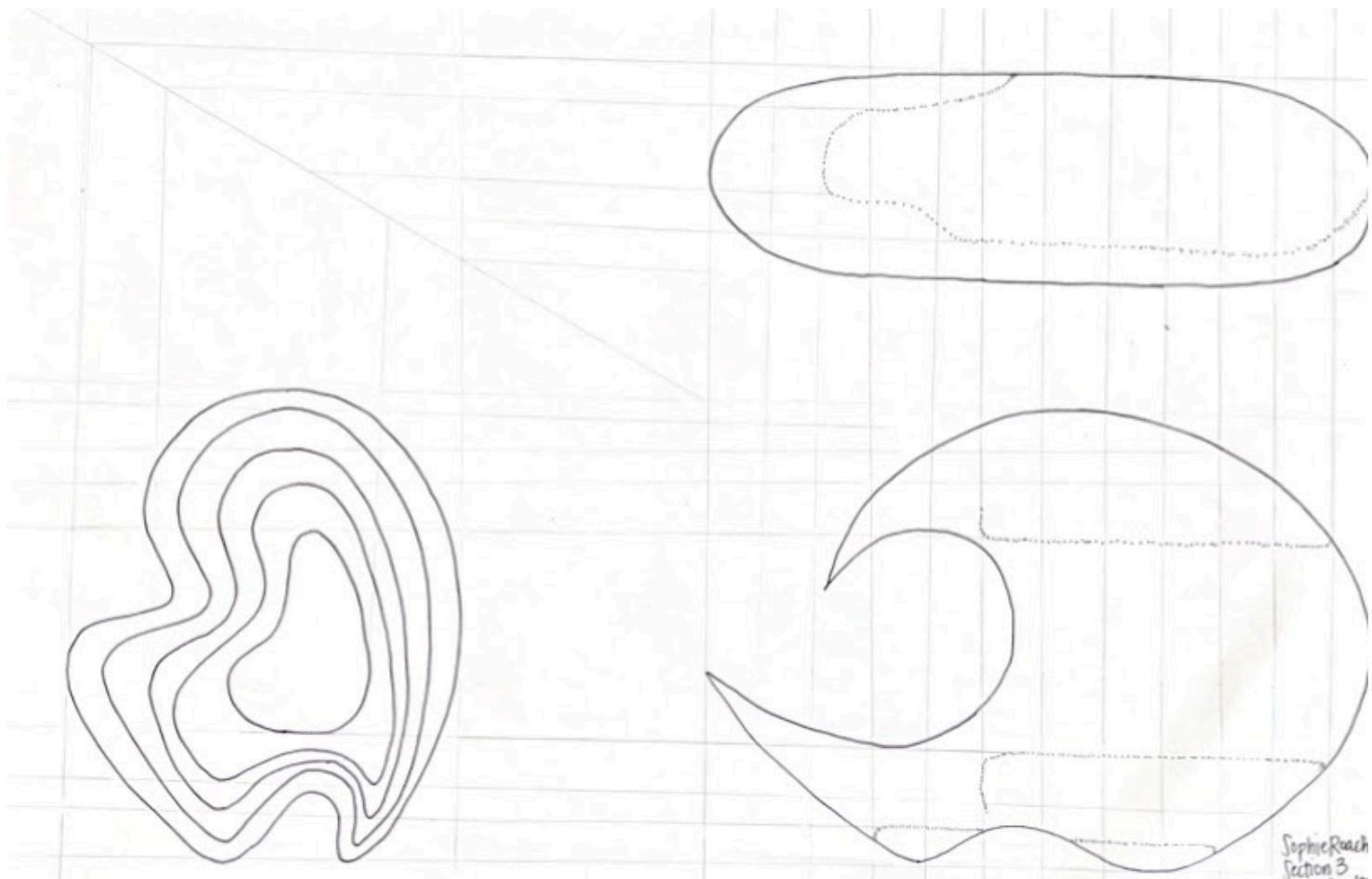
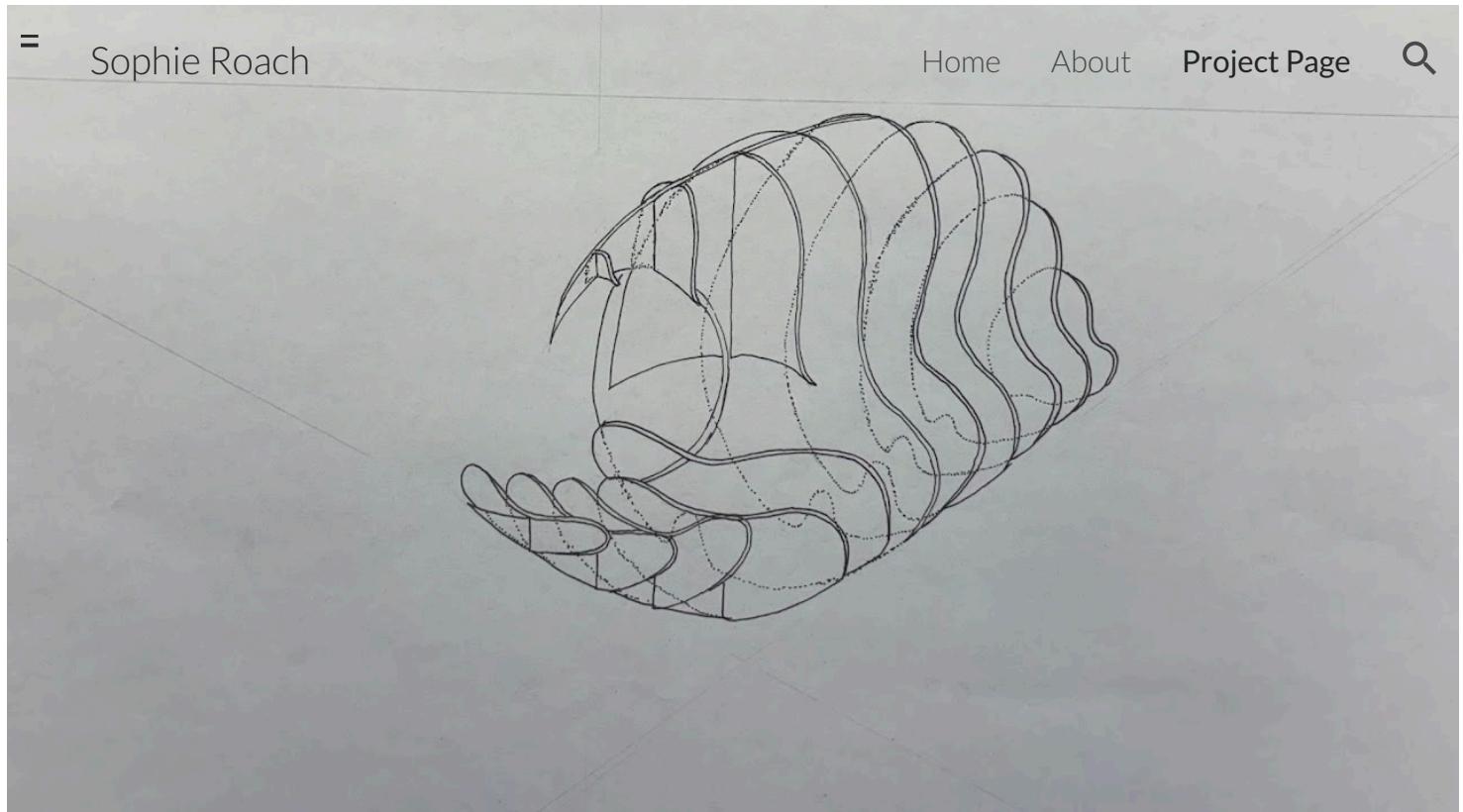
I learned to render a ribs-and-strings model for the first time, developing a stronger understanding of structure, depth, and spatial continuity through layered linework. This project also advanced my technical precision as I refined my laser-cutting skills to achieve smooth, accurate contours. Working with foam for the first time using a hot wire cutter taught me how to control form through gradual shaping, emphasizing fluid transitions and dimensional balance in physical modeling.



= Sophie Roach

Home About Project Page 





- = This project strengthened my appreciation for dynamic design principles, specifically how rhythm, contrast, and balance can transform static material into something that feels alive and in motion.

Sophie Roach

Home

About

Project Page

